

6.4 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 (>98%), at its maximum power control level, as defined in KDB 789033 v01r04, and at the appropriate frequencies. Method SA-1, as defined in KDB 789033 v01r04, was used to measure the power spectral density.

In the 5.15 – 5.25GHz band, the maximum permissible power spectral density is 4dBm/MHz.

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

Test Procedure Used

KDB 789033 v01r04 – 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 $\geq 2 \times$ (span/RBW)
6. Sweep time = auto
7. Detector = power averaging (RMS)
8. Trigger was set to free run since the EUT was operating at a duty cycle $\geq 98\%$
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.

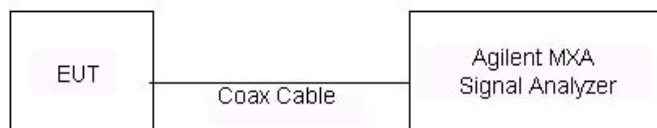




Figure 6-3. Test Instrument & Measurement Setup

Test Notes



None

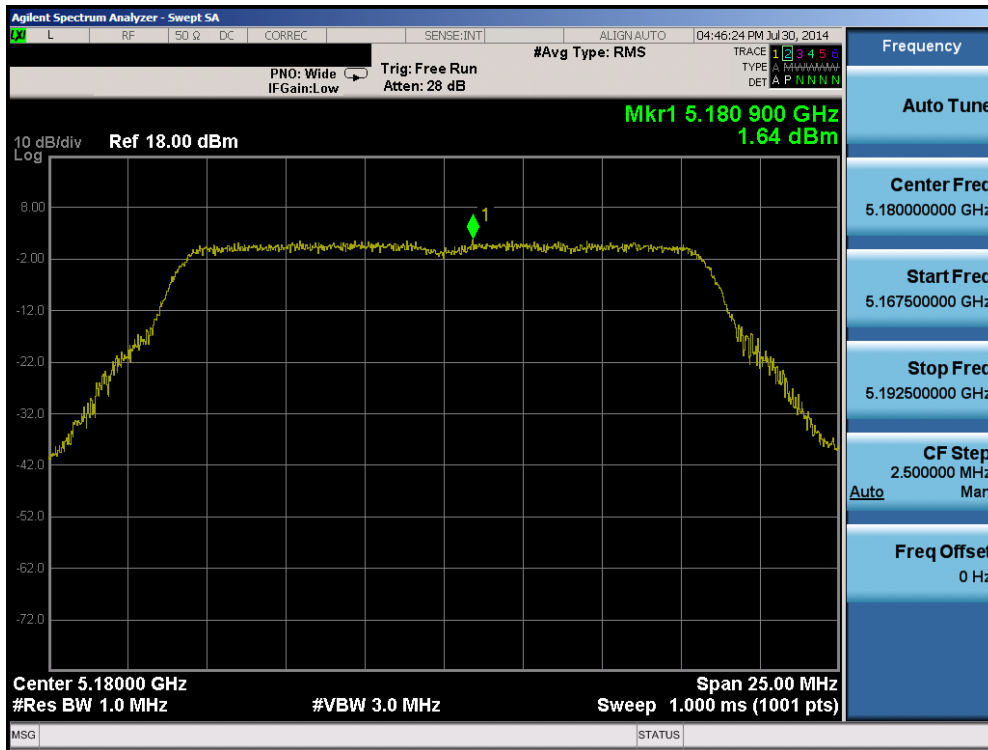
FCC ID: A3LSMN916KOR	 PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 56 of 189	

Antenna-1 Power Spectral Density Measurements

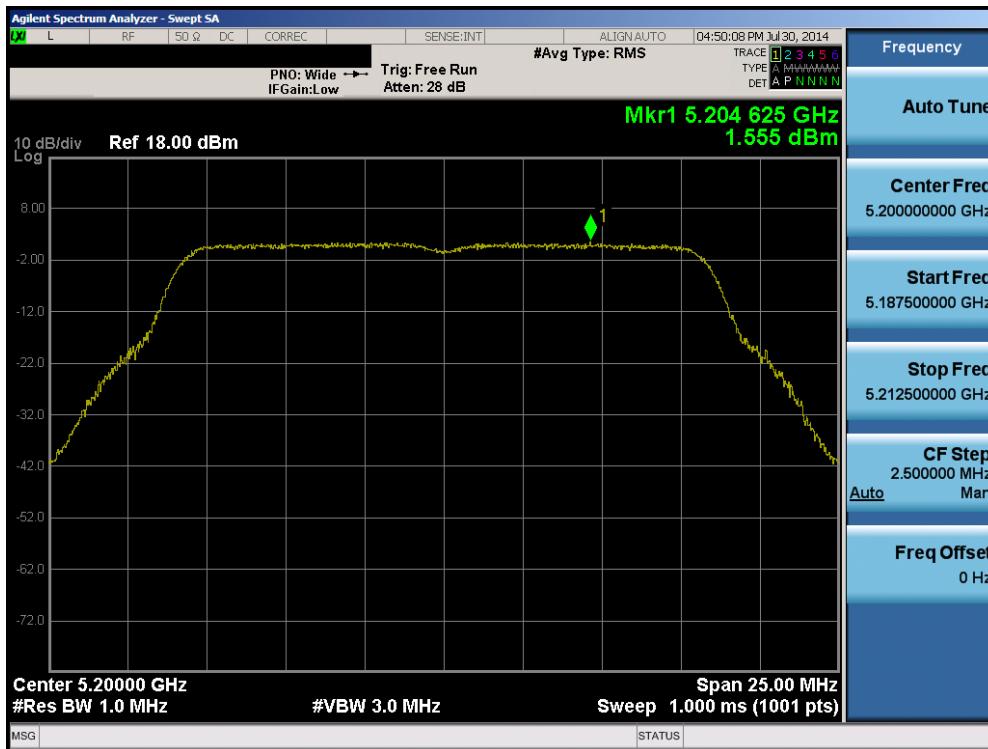
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density [dBm/MHz]	Margin [dB]	Pass / Fail
Band 1	5180	36	a	6	1.64	4.0	-2.36	Pass
	5200	40	a	6	1.56	4.0	-2.45	Pass
	5240	48	a	6	1.73	4.0	-2.27	Pass
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	1.11	4.0	-2.89	Pass
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	0.89	4.0	-3.11	Pass
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	1.10	4.0	-2.90	Pass
	5190	38	n (40MHz)	13.5/15 (MCS0)	-1.05	4.0	-5.05	Pass
	5230	46	n (40MHz)	13.5/15 (MCS0)	-0.92	4.0	-4.92	Pass
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-6.19	4.0	-10.19	Pass
Band 2A	5260	52	a	6	1.41	11.0	-9.59	Pass
	5280	56	a	6	1.40	11.0	-9.60	Pass
	5320	64	a	6	0.63	11.0	-10.37	Pass
	5260	52	n (20MHz)	6.5/7.2 (MCS0)	1.03	11.0	-9.97	Pass
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	1.59	11.0	-9.41	Pass
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	0.66	11.0	-10.34	Pass
	5270	54	n (40MHz)	13.5/15 (MCS0)	-0.33	11.0	-11.33	Pass
	5310	62	n (40MHz)	13.5/15 (MCS0)	-0.21	11.0	-11.21	Pass
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	-6.23	11.0	-17.23	Pass
Band 2C	5500	100	a	6	1.06	11.0	-9.94	Pass
	5580	116	a	6	0.66	11.0	-10.34	Pass
	5700	140	a	6	1.84	11.0	-9.17	Pass
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	0.12	11.0	-10.88	Pass
	5580	116	n (20MHz)	6.5/7.2 (MCS0)	0.44	11.0	-10.56	Pass
	5700	140	n (20MHz)	6.5/7.2 (MCS0)	0.84	11.0	-10.16	Pass
	5510	102	n (40MHz)	13.5/15 (MCS0)	-0.66	11.0	-11.66	Pass
	5550	110	n (40MHz)	13.5/15 (MCS0)	-0.22	11.0	-11.22	Pass
	5670	134	n (40MHz)	13.5/15 (MCS0)	-0.29	11.0	-11.29	Pass
5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-6.11	11.0	-17.11	Pass	

Table 6-18. Conducted Power Spectral Density Measurements

FCC ID: A3LSMN916KOR	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 57 of 189

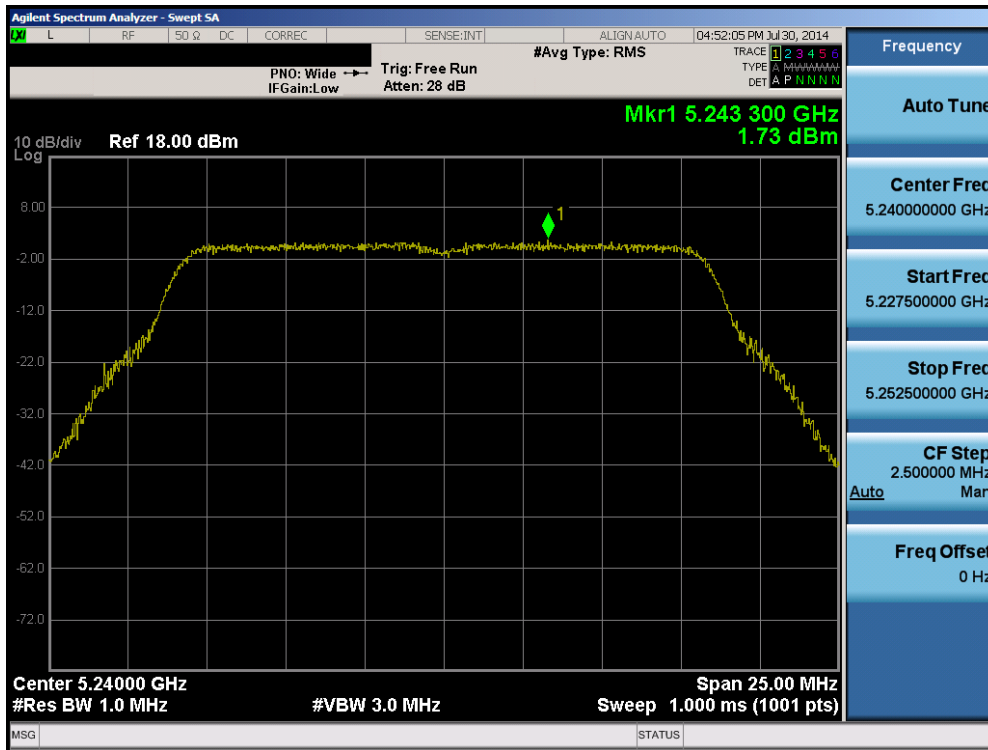


Plot 6-69. Peak Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 36)

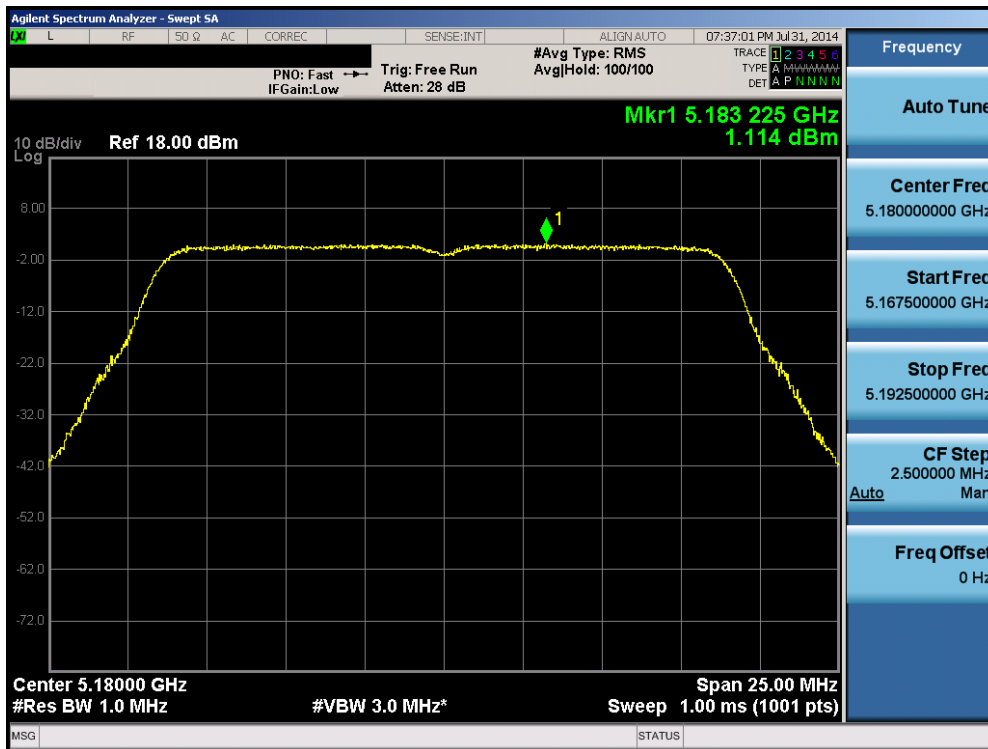


Plot 6-70. Peak Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 40)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 58 of 189

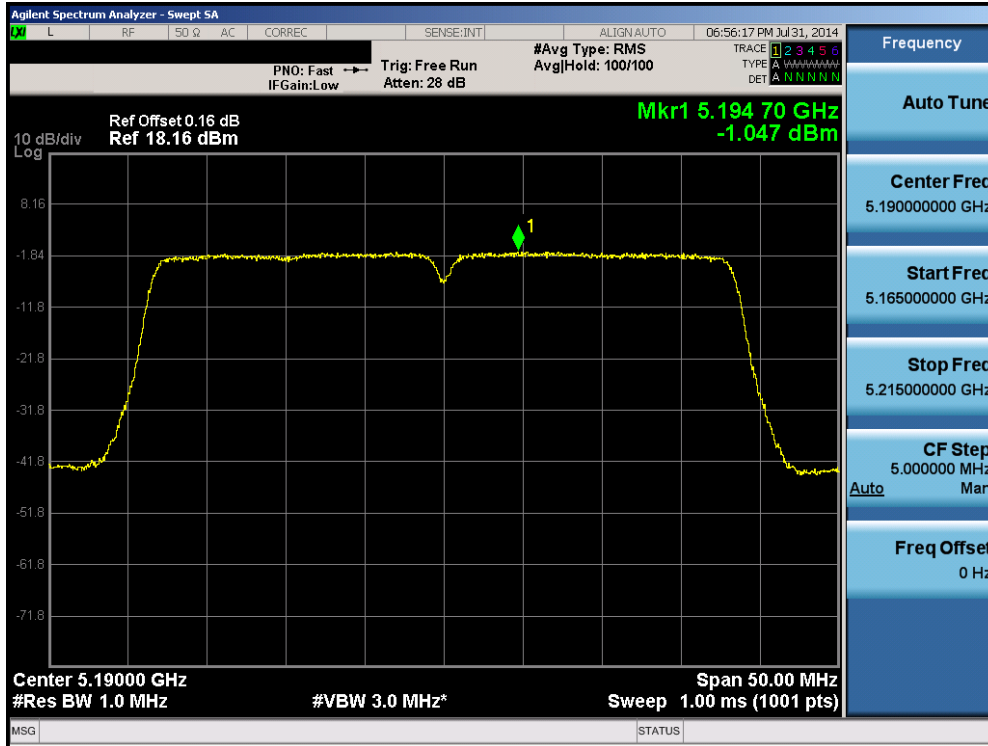


Plot 6-71. Peak Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 48)

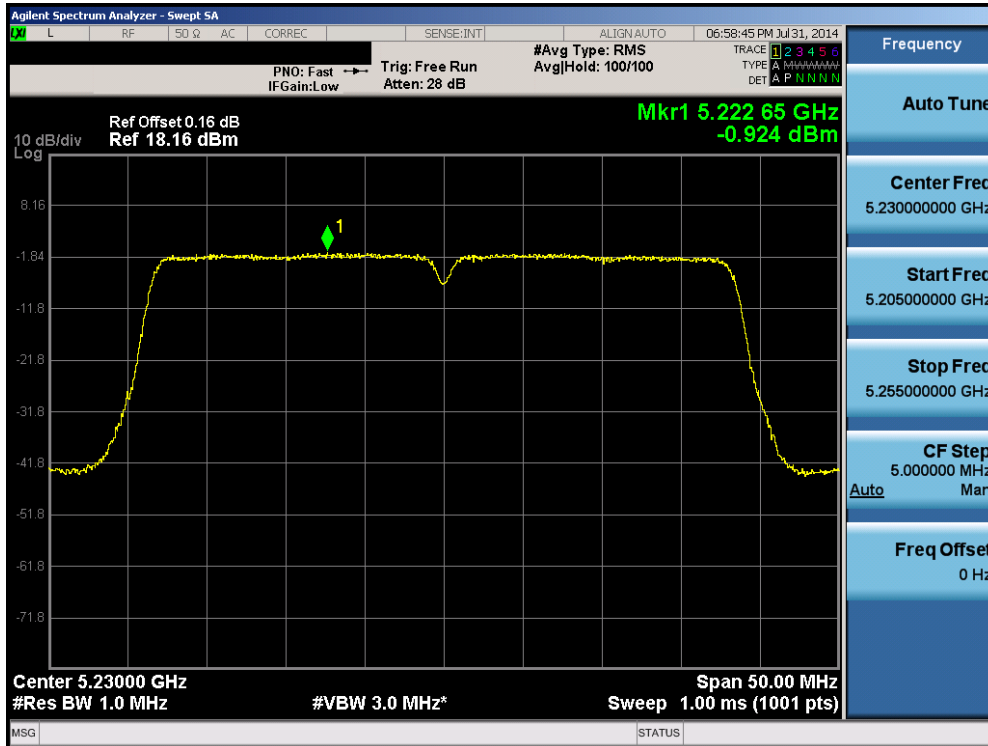


Plot 6-72. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 36)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 59 of 189

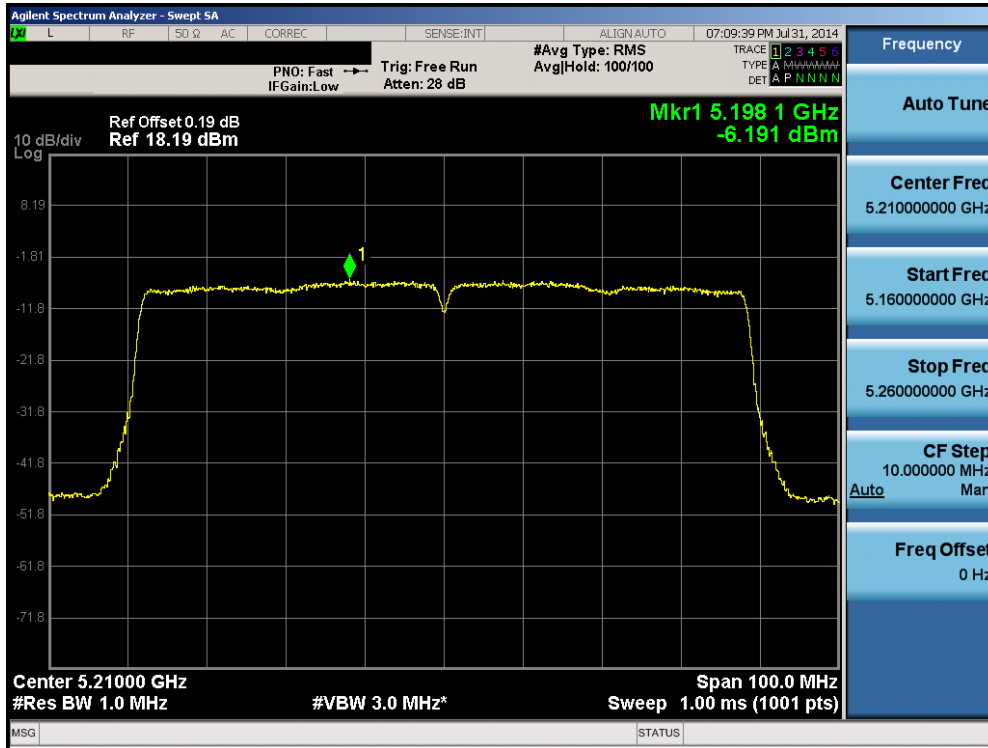


Plot 6-75. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 38)

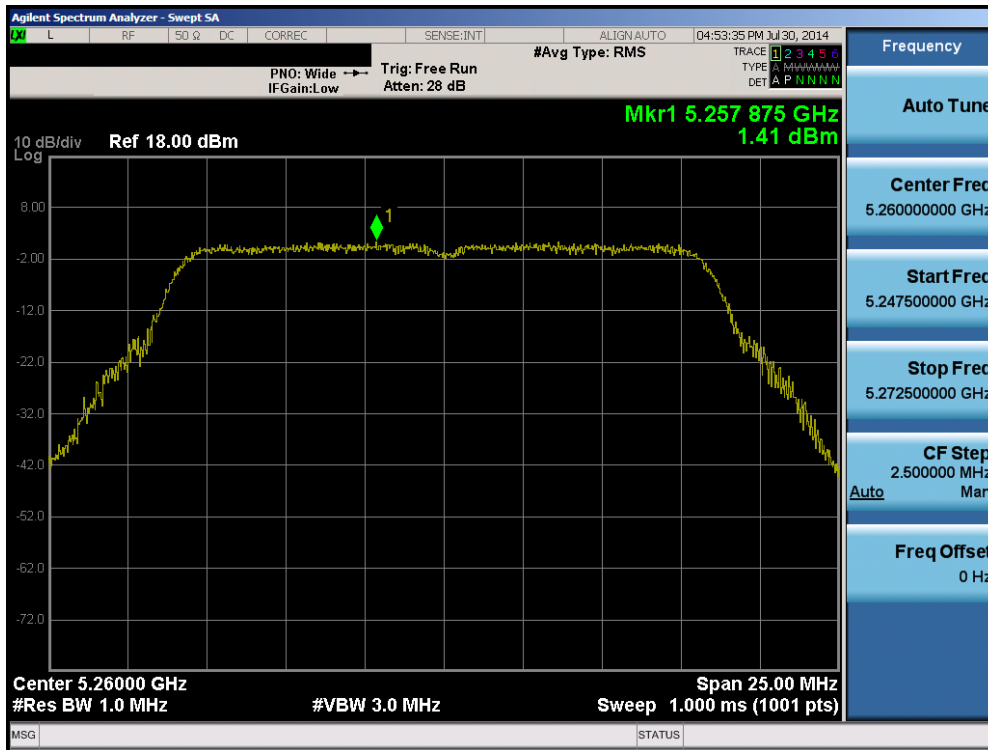


Plot 6-76. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 46)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 61 of 189

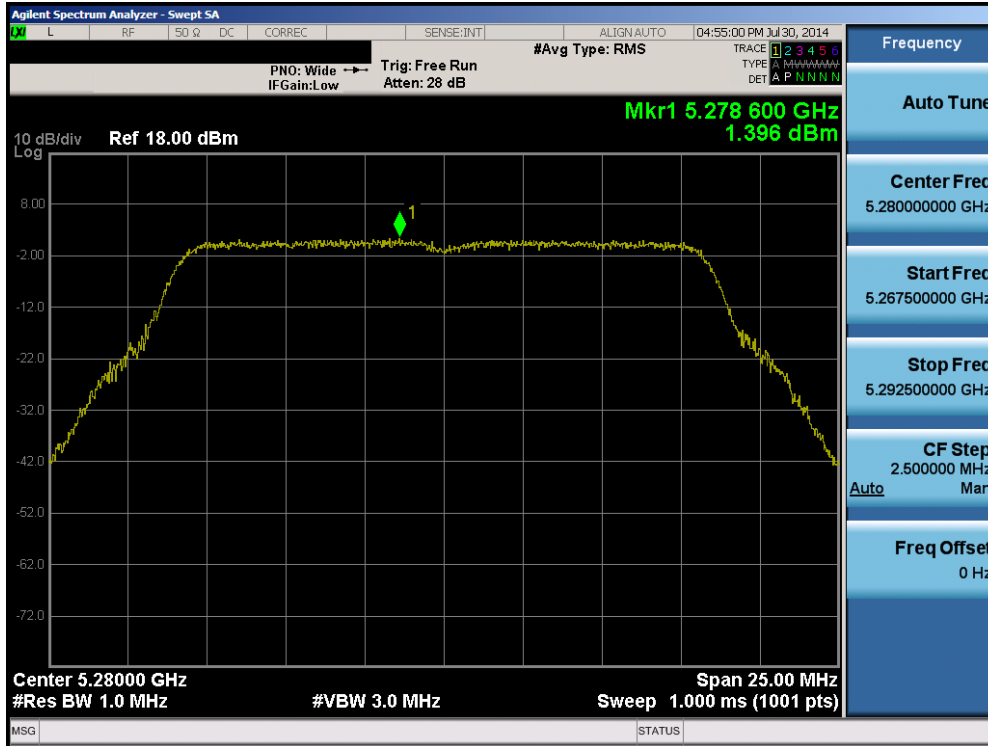


Plot 6-77. Peak Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 1) – Ch. 42)

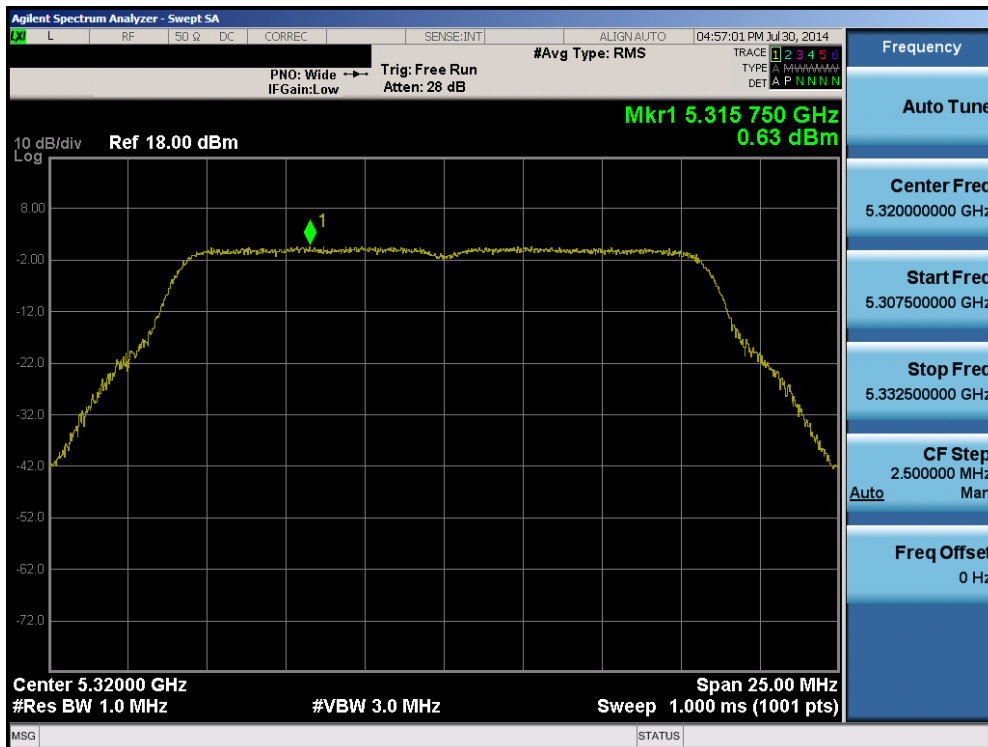


Plot 6-78. Peak Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 52)

FCC ID: A3LSMN916KOR	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: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 62 of 189

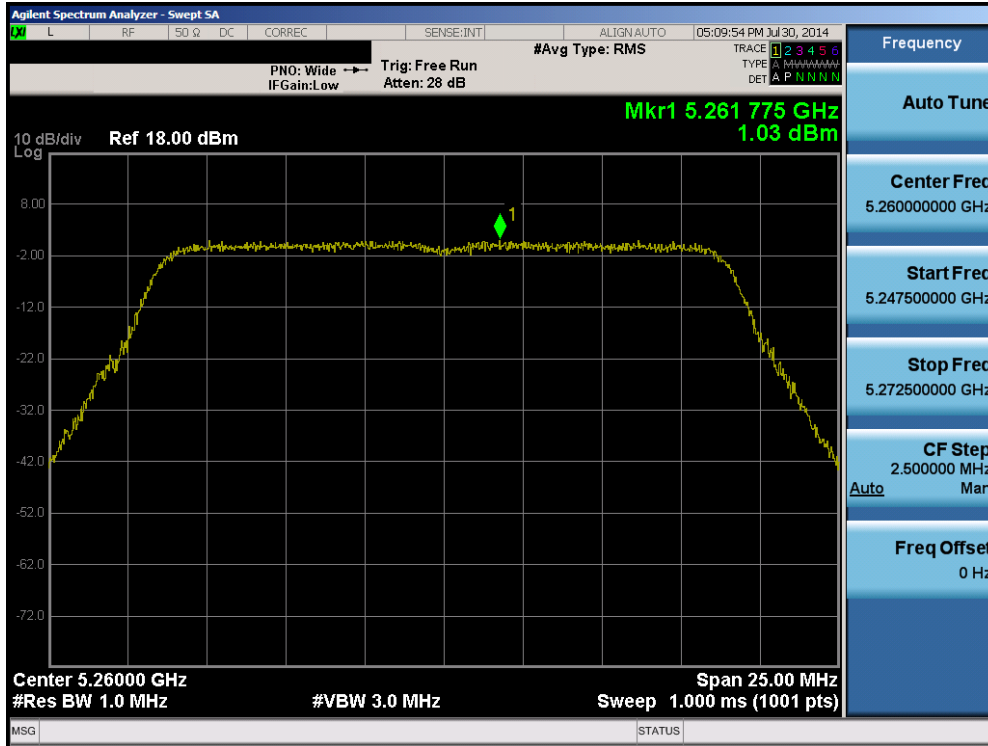


Plot 6-79. Peak Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 56)

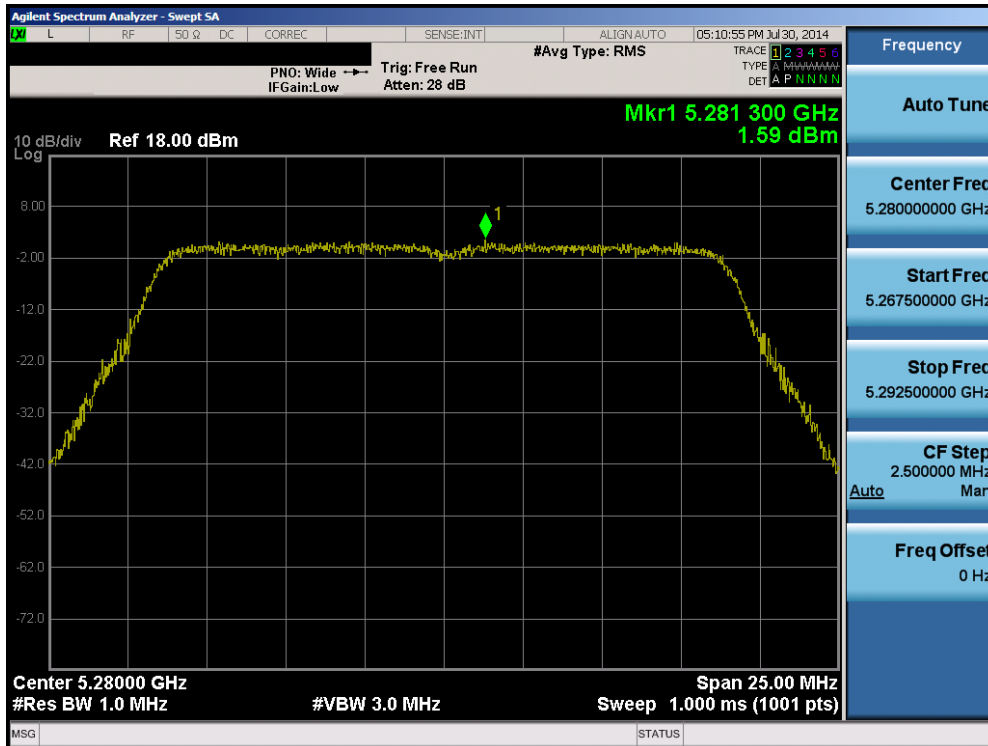


Plot 6-80. Peak Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 64)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 63 of 189

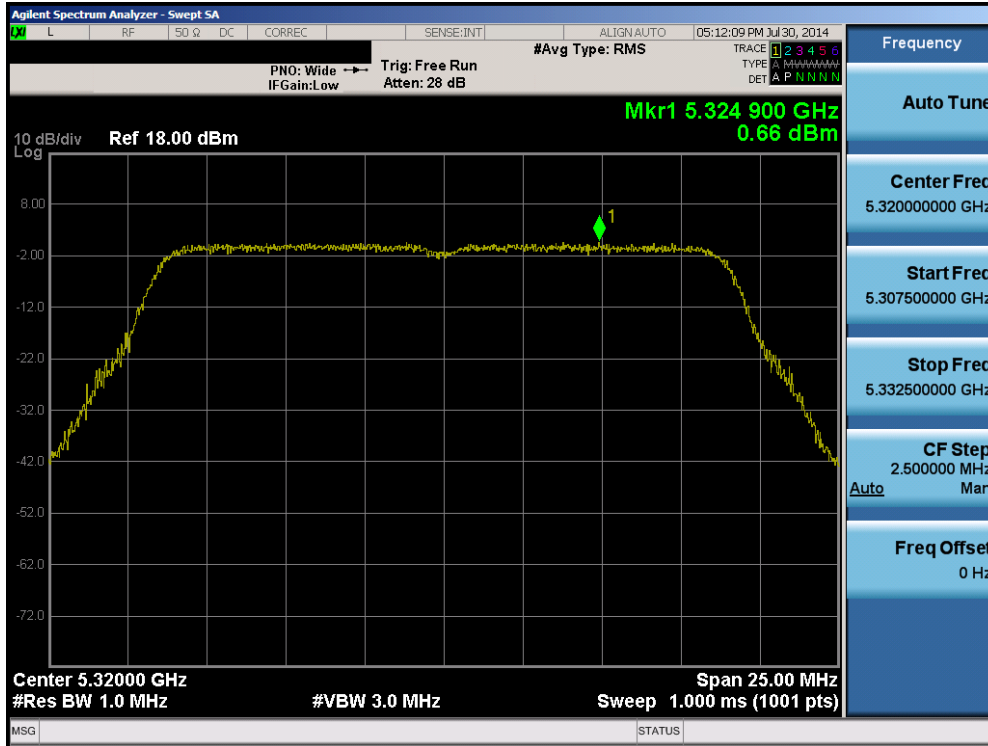


Plot 6-81. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 52)

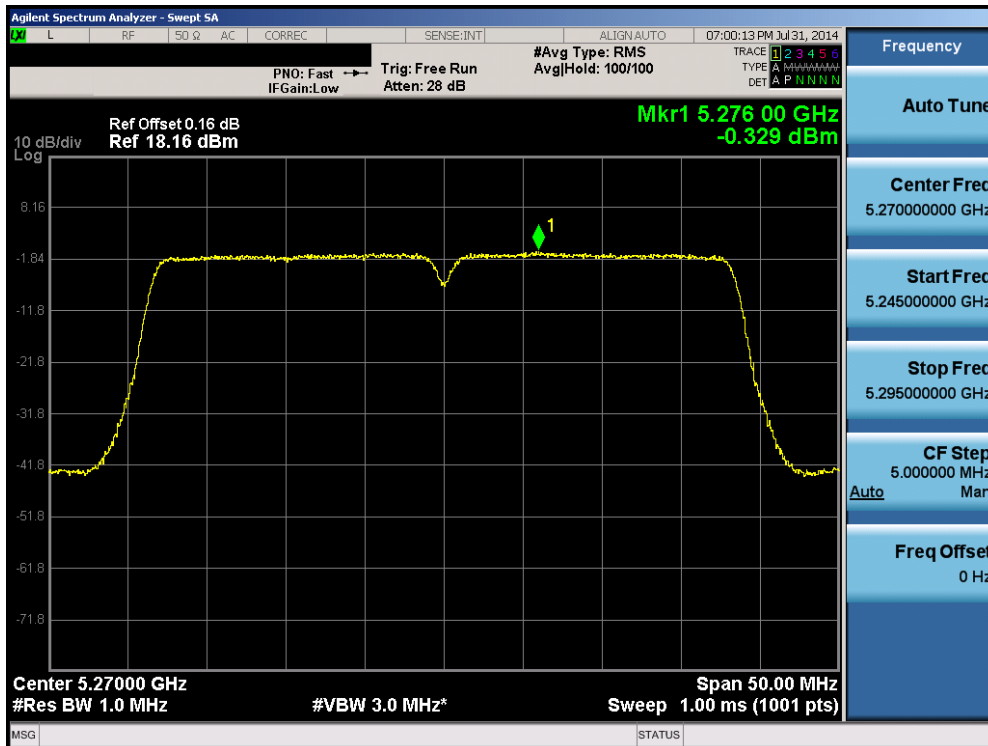


Plot 6-82. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 56)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 64 of 189

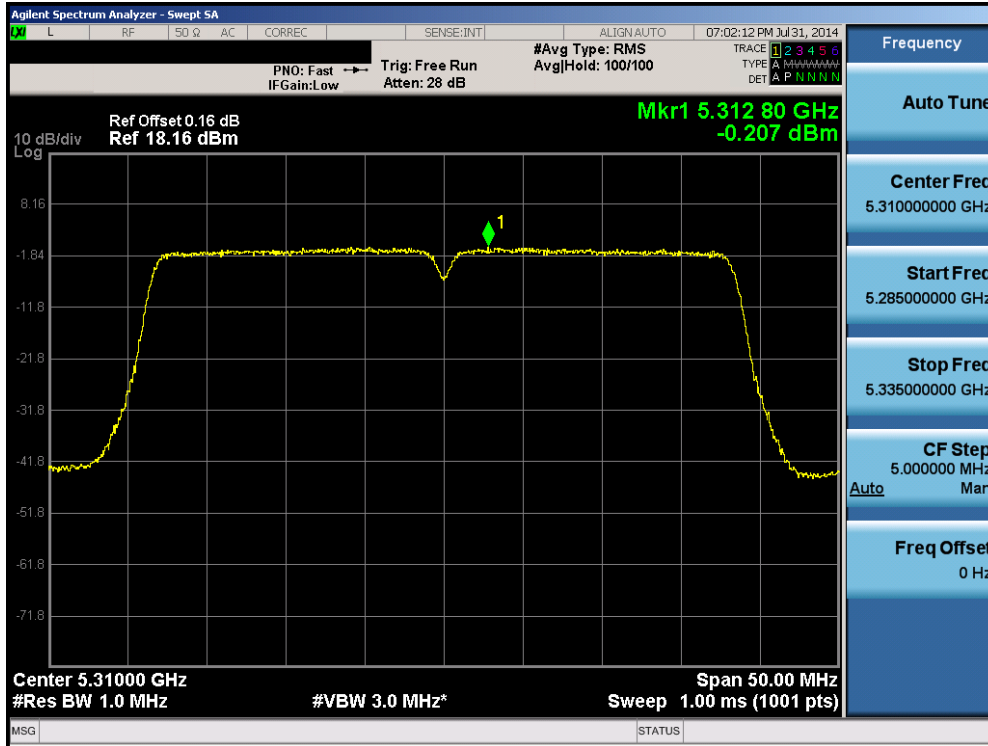


Plot 6-83. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 64)

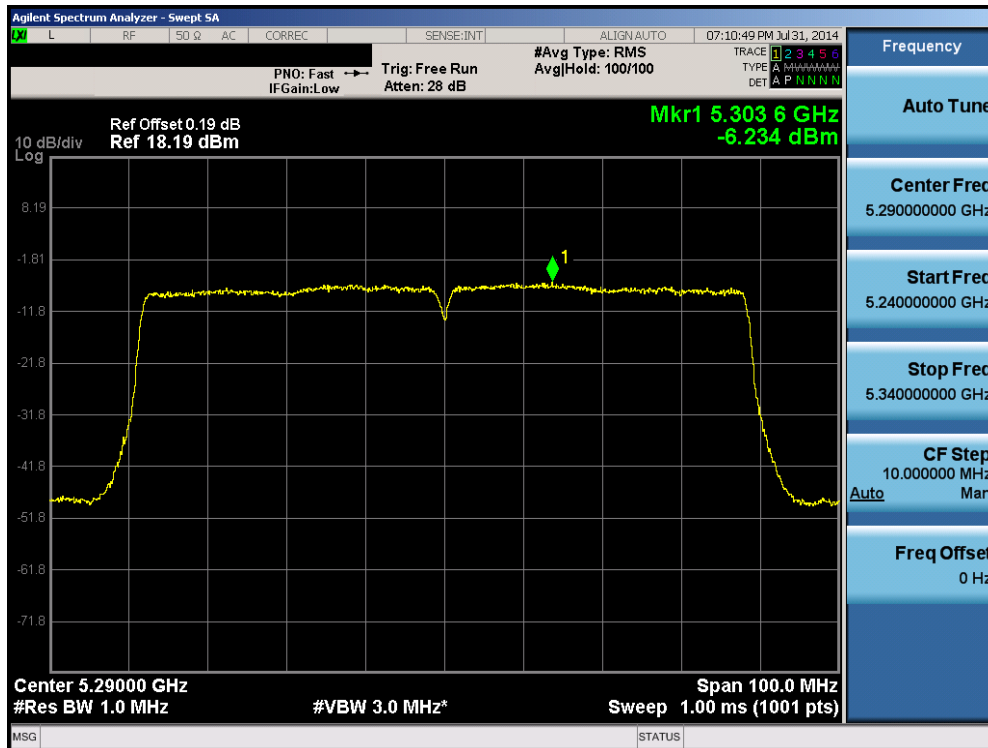


Plot 6-84. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 54)

FCC ID: A3LSMN916KOR		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 65 of 189

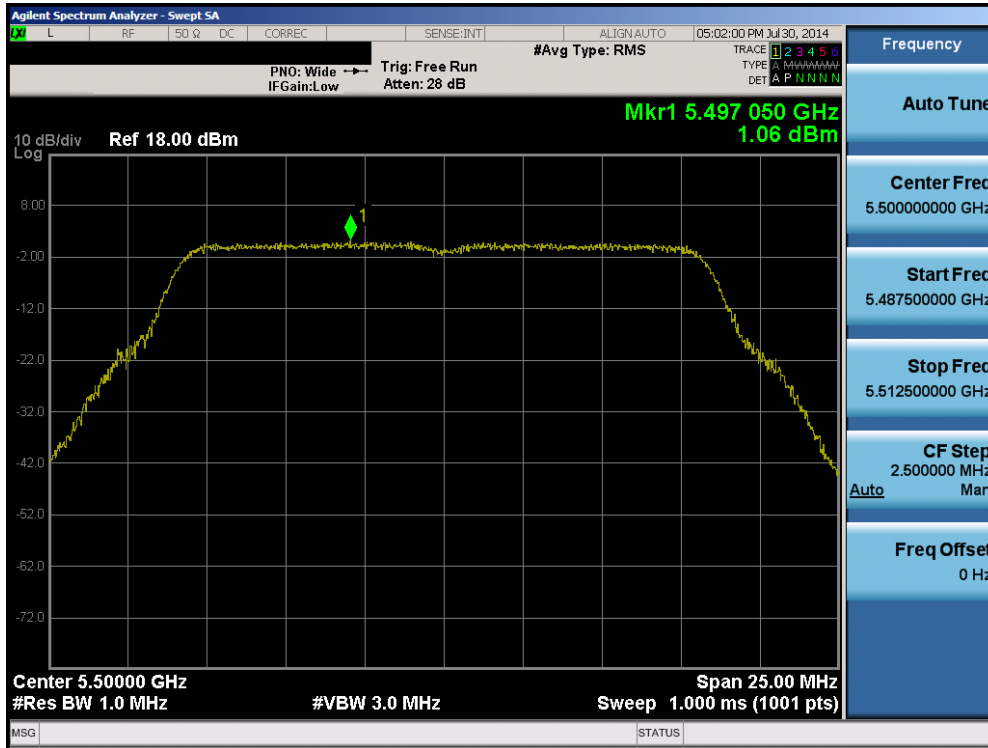


Plot 6-85. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 62)

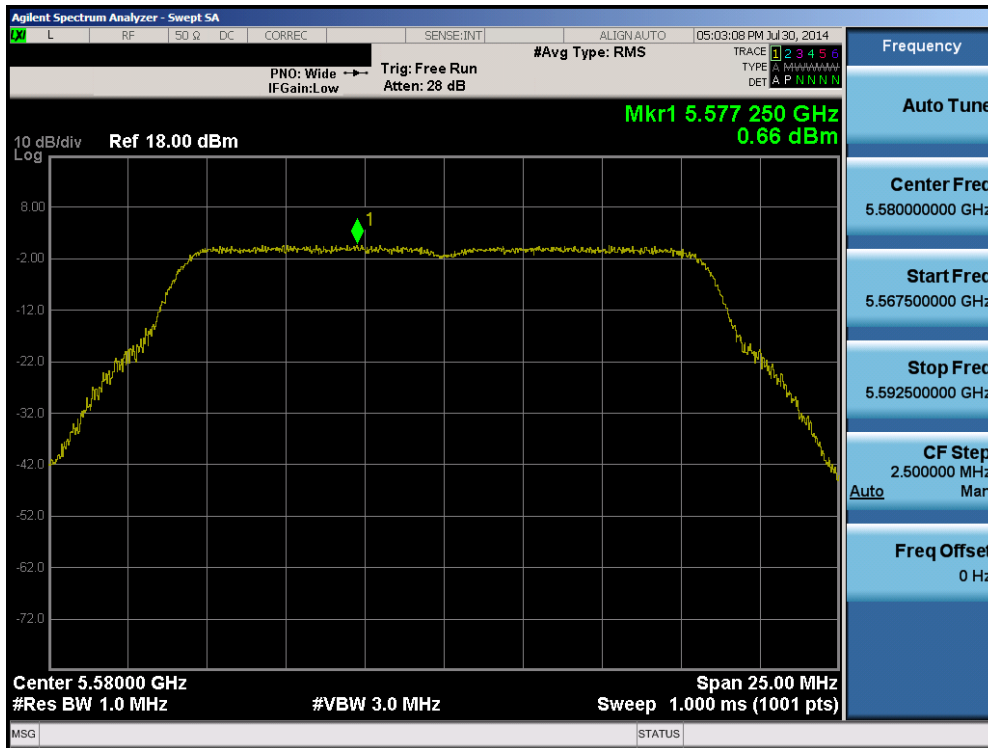


Plot 6-86. Peak Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 66 of 189

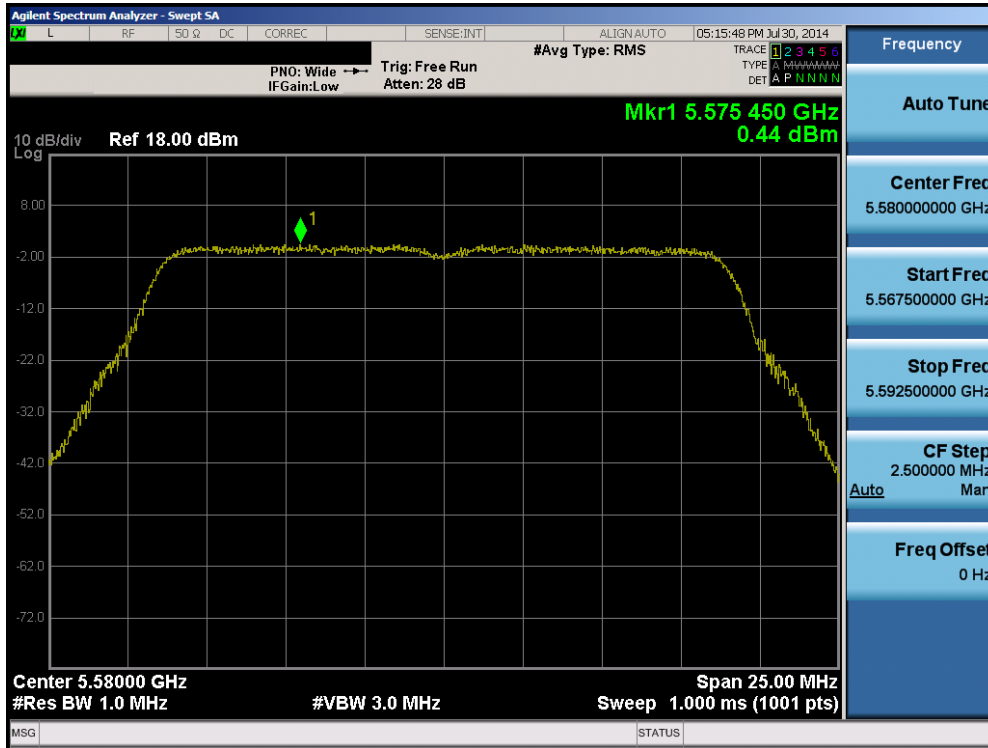


Plot 6-87. Peak Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 100)

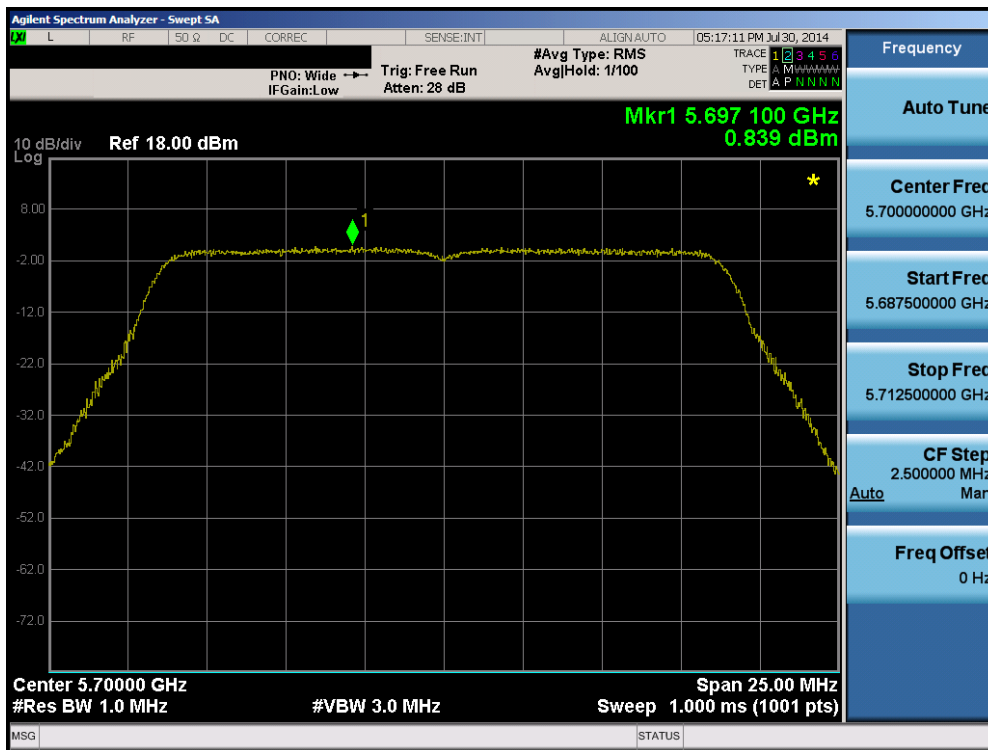


Plot 6-88. Peak Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 116)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 67 of 189

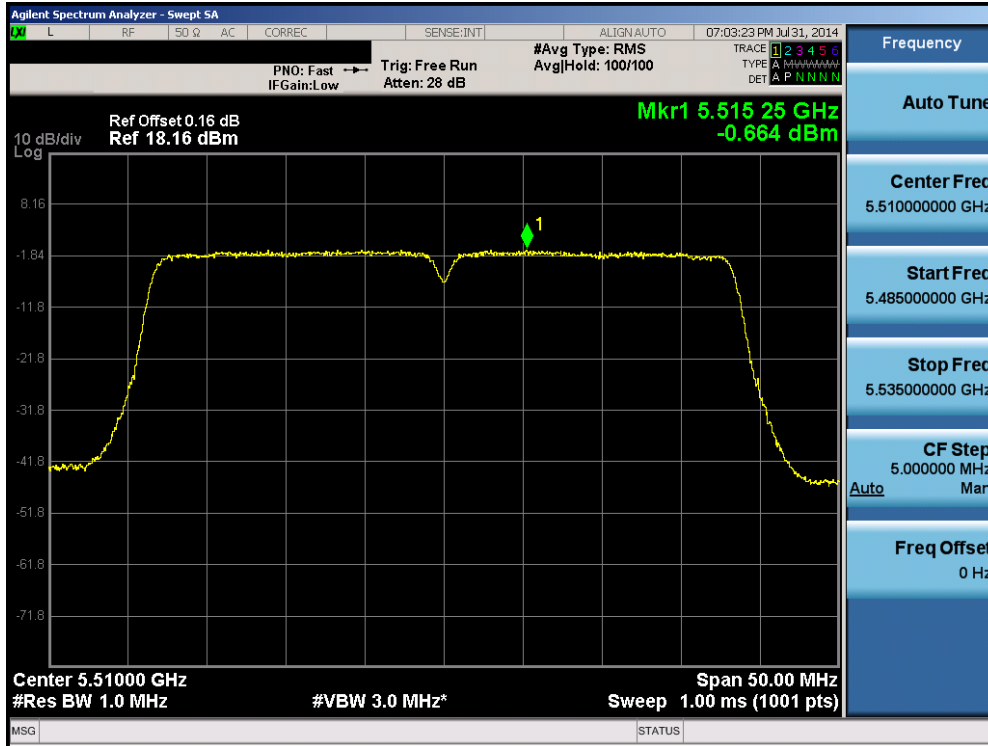


Plot 6-91. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 116)

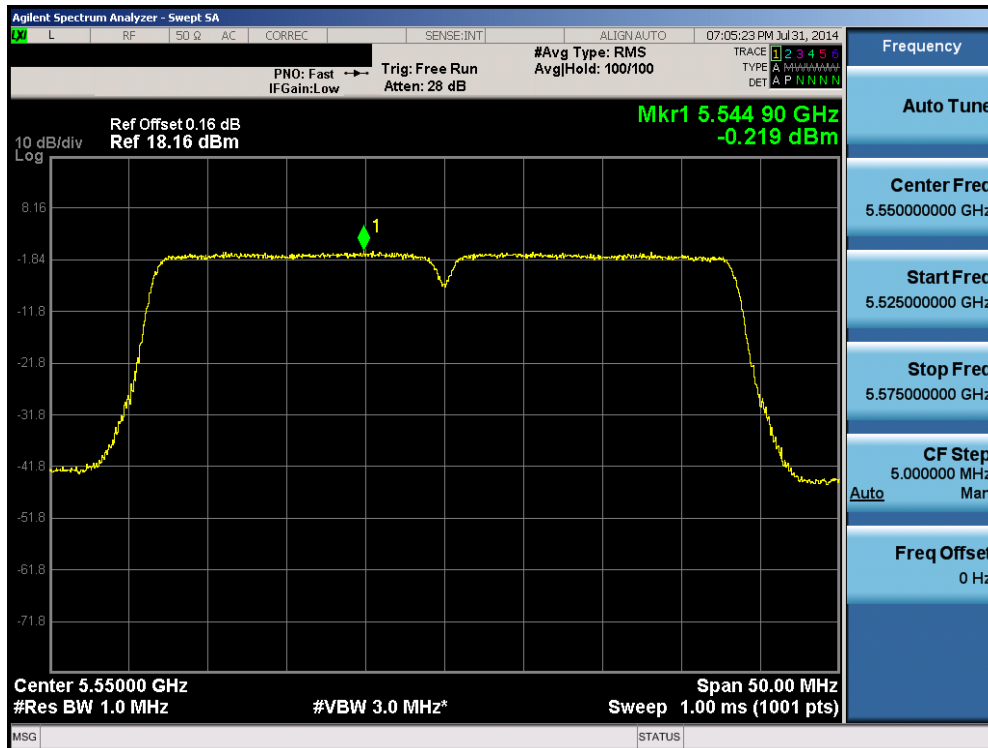


Plot 6-92. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 140)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 69 of 189



Plot 6-93. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 102)





Plot 6-94. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 110)

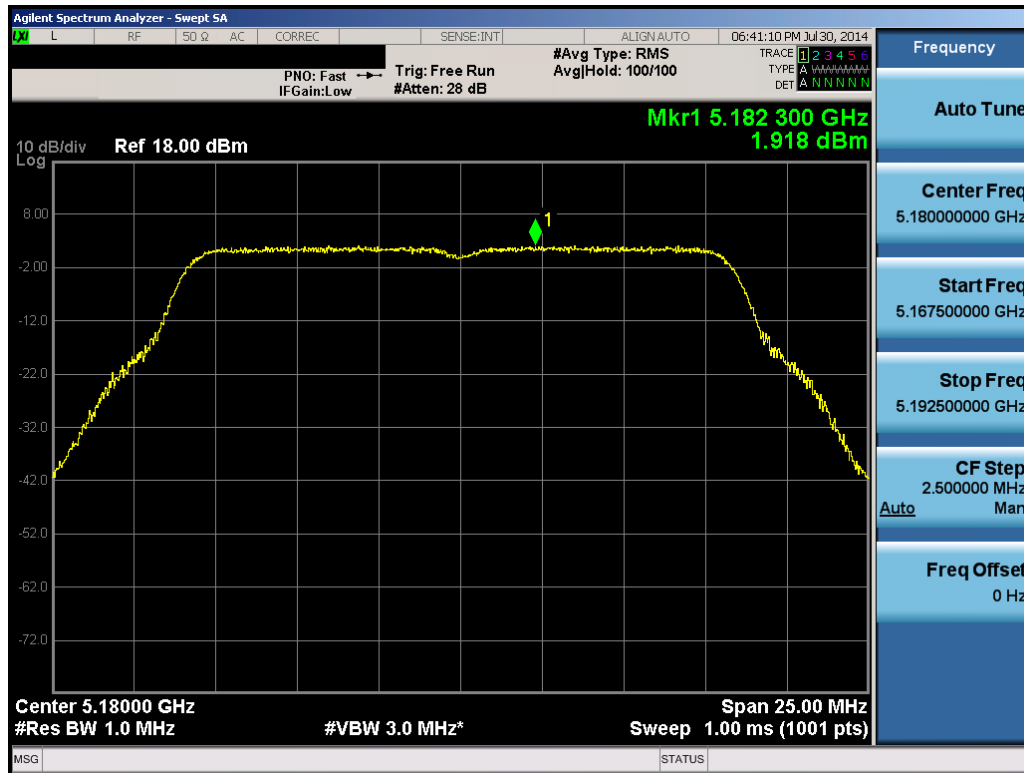
FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 70 of 189

Antenna-2 Power Spectral Density Measurements

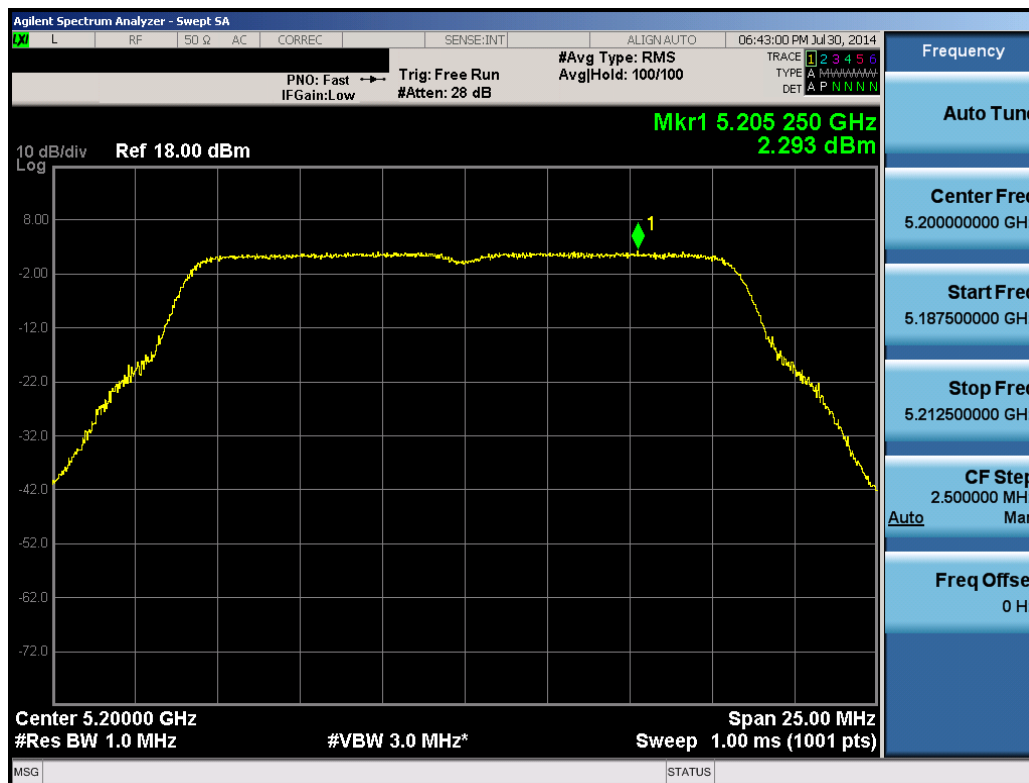
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density [dBm/MHz]	Margin [dB]	Pass / Fail
Band 1	5180	36	a	6	1.92	4.0	-2.08	Pass
	5200	40	a	6	2.29	4.0	-1.71	Pass
	5240	48	a	6	2.48	4.0	-1.52	Pass
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	0.82	4.0	-3.18	Pass
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	0.95	4.0	-3.05	Pass
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	0.82	4.0	-3.18	Pass
	5190	38	n (40MHz)	13.5/15 (MCS0)	-1.24	4.0	-5.24	Pass
	5230	46	n (40MHz)	13.5/15 (MCS0)	-1.04	4.0	-5.04	Pass
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-6.51	4.0	-10.51	Pass
Band 2A	5260	52	a	6	1.60	11.0	-9.40	Pass
	5280	56	a	6	1.53	11.0	-9.47	Pass
	5320	64	a	6	1.75	11.0	-9.25	Pass
	5260	52	n (20MHz)	6.5/7.2 (MCS0)	1.34	11.0	-9.66	Pass
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	1.22	11.0	-9.78	Pass
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	1.45	11.0	-9.55	Pass
	5270	54	n (40MHz)	13.5/15 (MCS0)	-0.57	11.0	-11.57	Pass
	5310	62	n (40MHz)	13.5/15 (MCS0)	-0.56	11.0	-11.56	Pass
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	-5.85	11.0	-16.85	Pass
Band 2C	5500	100	a	6	1.42	11.0	-9.58	Pass
	5580	116	a	6	1.59	11.0	-9.41	Pass
	5700	140	a	6	1.44	11.0	-9.56	Pass
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	1.12	11.0	-9.89	Pass
	5580	116	n (20MHz)	6.5/7.2 (MCS0)	1.08	11.0	-9.92	Pass
	5700	140	n (20MHz)	6.5/7.2 (MCS0)	1.16	11.0	-9.84	Pass
	5510	102	n (40MHz)	13.5/15 (MCS0)	-0.41	11.0	-11.41	Pass
	5550	110	n (40MHz)	13.5/15 (MCS0)	-0.02	11.0	-11.02	Pass
	5670	134	n (40MHz)	13.5/15 (MCS0)	-0.40	11.0	-11.40	Pass
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-5.27	11.0	-16.27	Pass

Table 6-19. Conducted Power Spectral Density Measurements

FCC ID: A3LSMN916KOR	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 72 of 189



Plot 6-97. Peak Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 36)

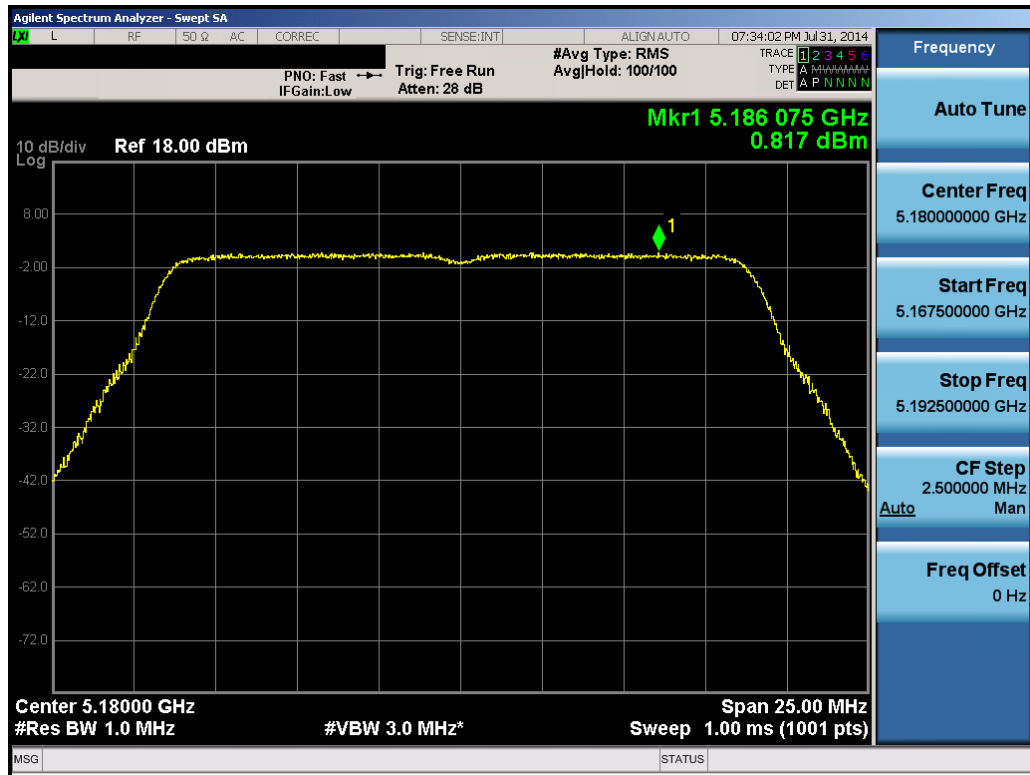


Plot 6-98. Peak Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 40)

FCC ID: A3LSMN916KOR	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: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 73 of 189

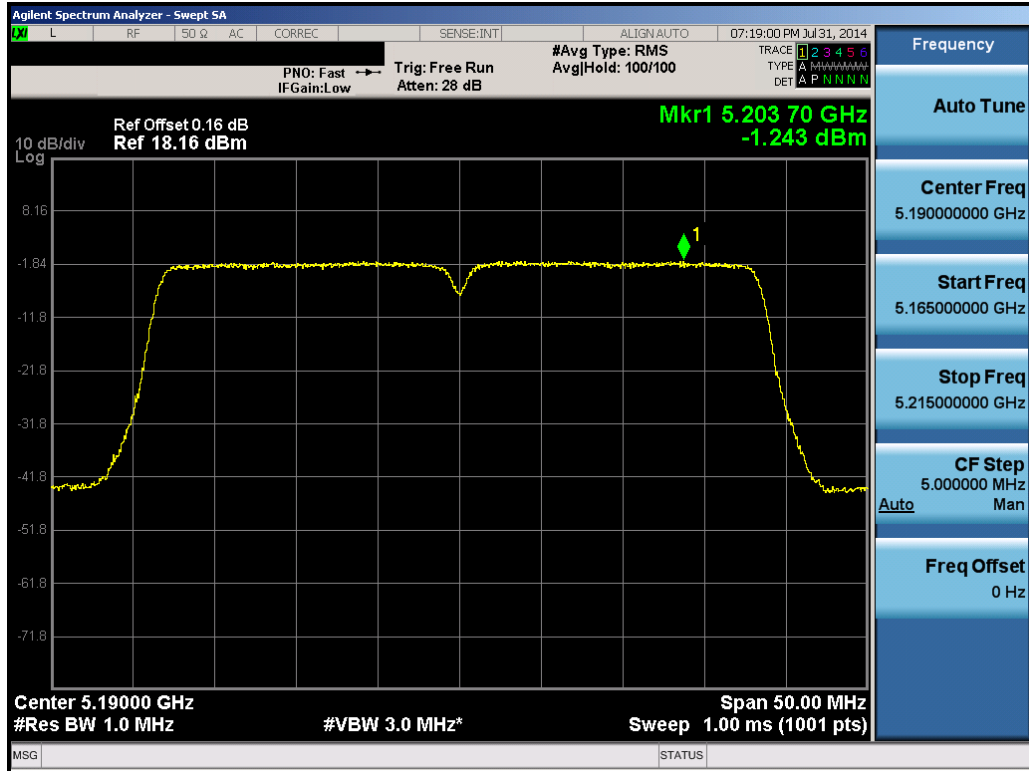


Plot 6-99. Peak Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 48)

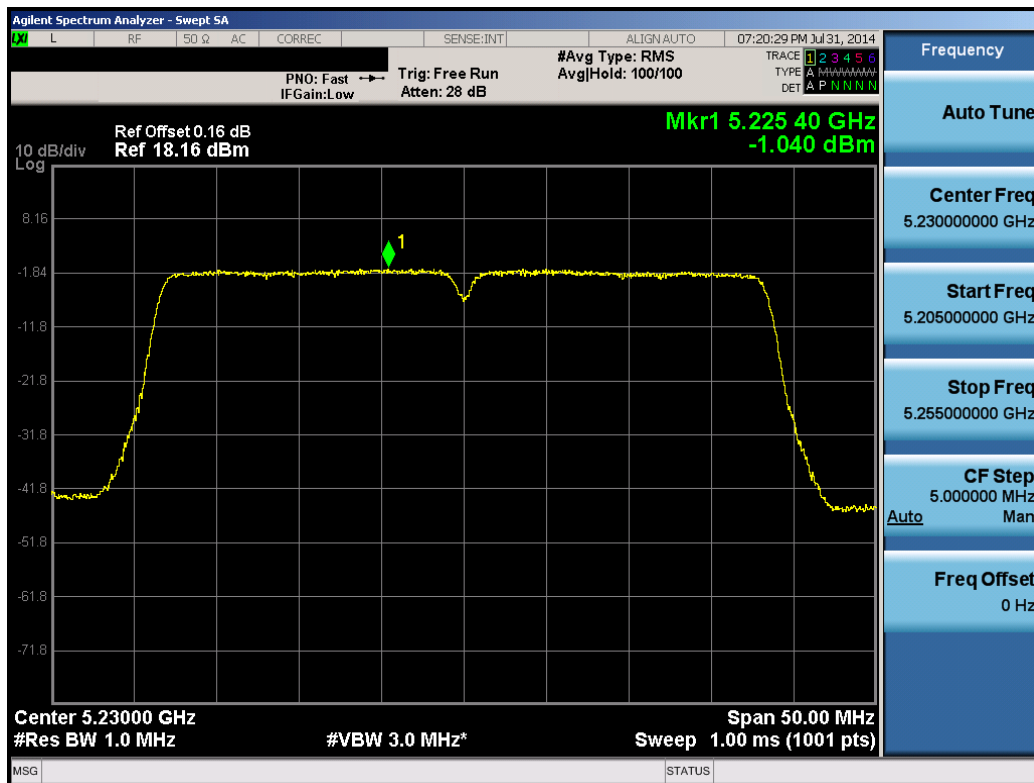


Plot 6-100. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 36)

FCC ID: A3LSMN916KOR	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: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 74 of 189

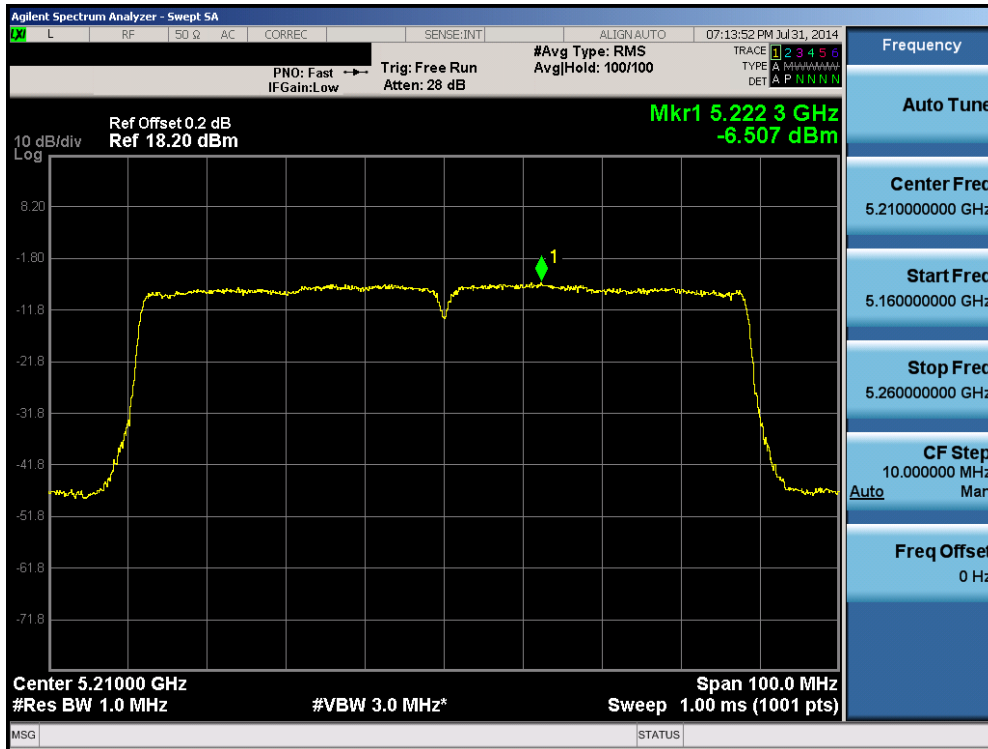


Plot 6-103. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 38)

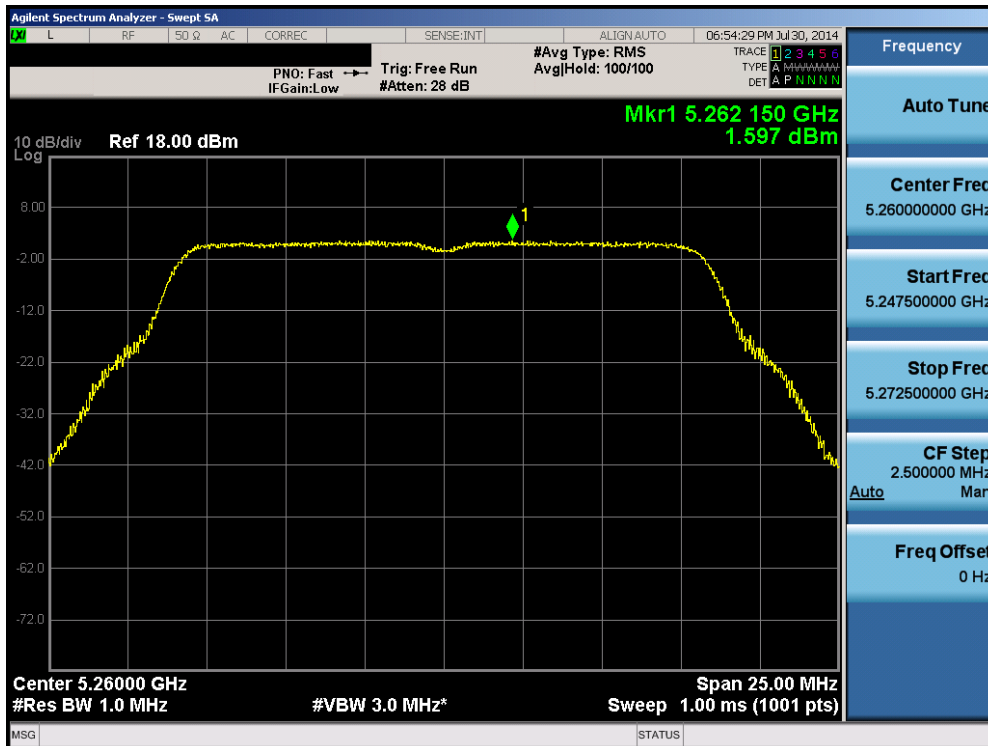


Plot 6-104. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 46)

FCC ID: A3LSMN916KOR	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: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 76 of 189

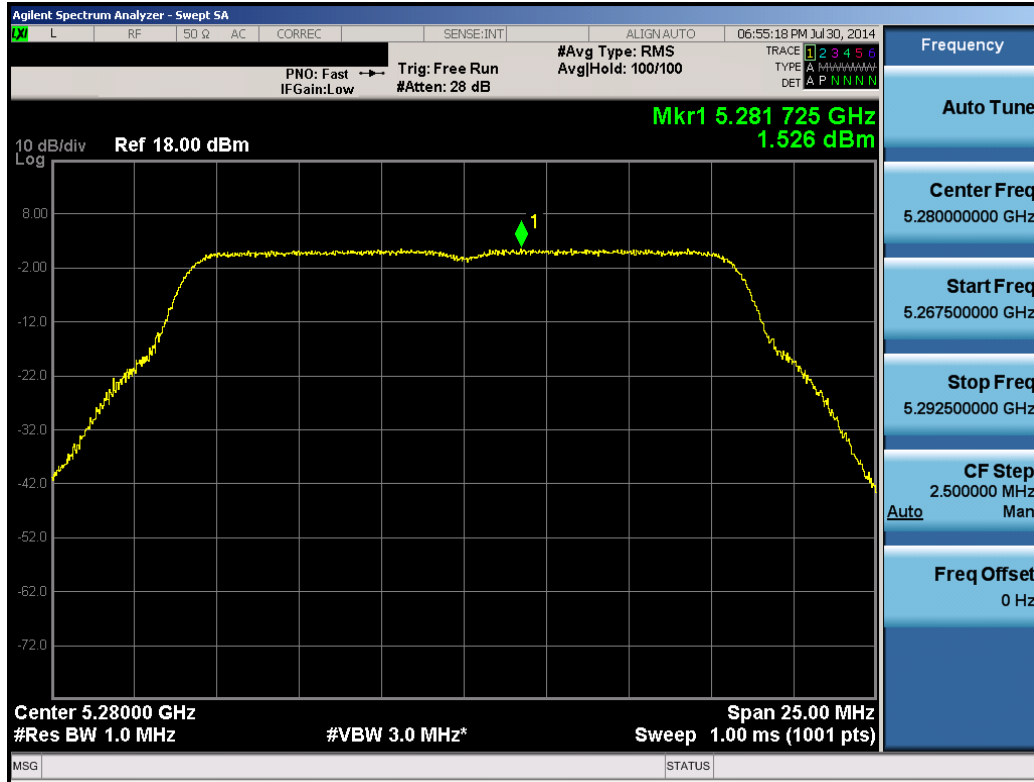


Plot 6-105. Peak Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 1) – Ch. 42)



Plot 6-106. Peak Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 52)

FCC ID: A3LSMN916KOR	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: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 77 of 189

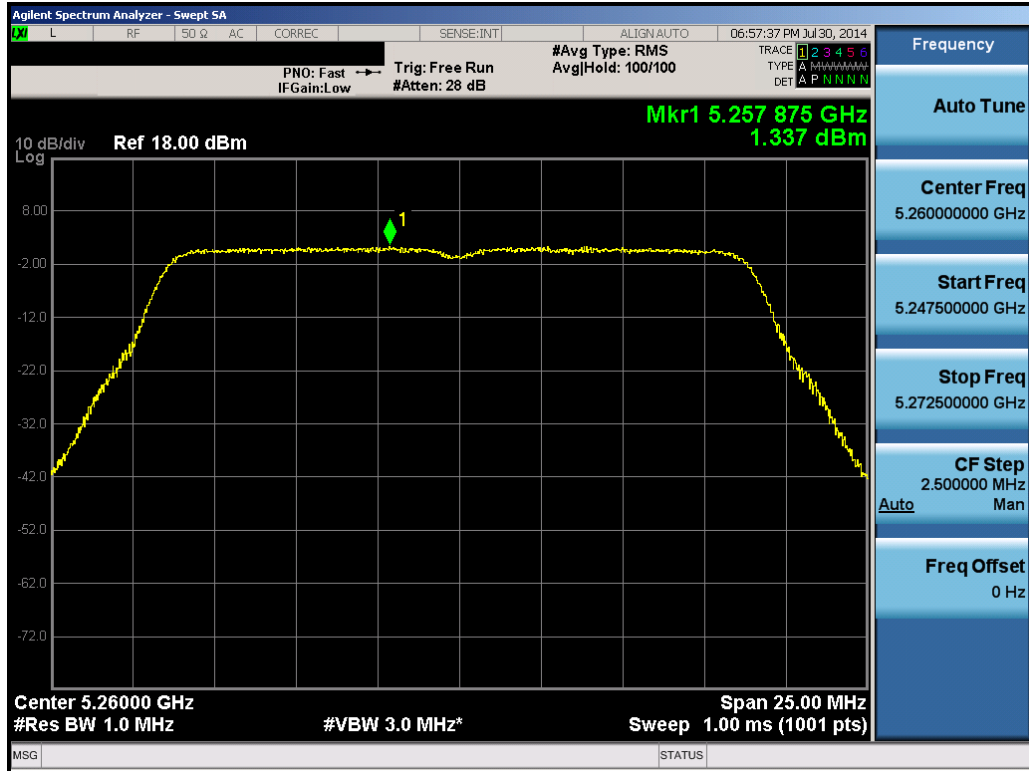


Plot 6-107. Peak Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 56)

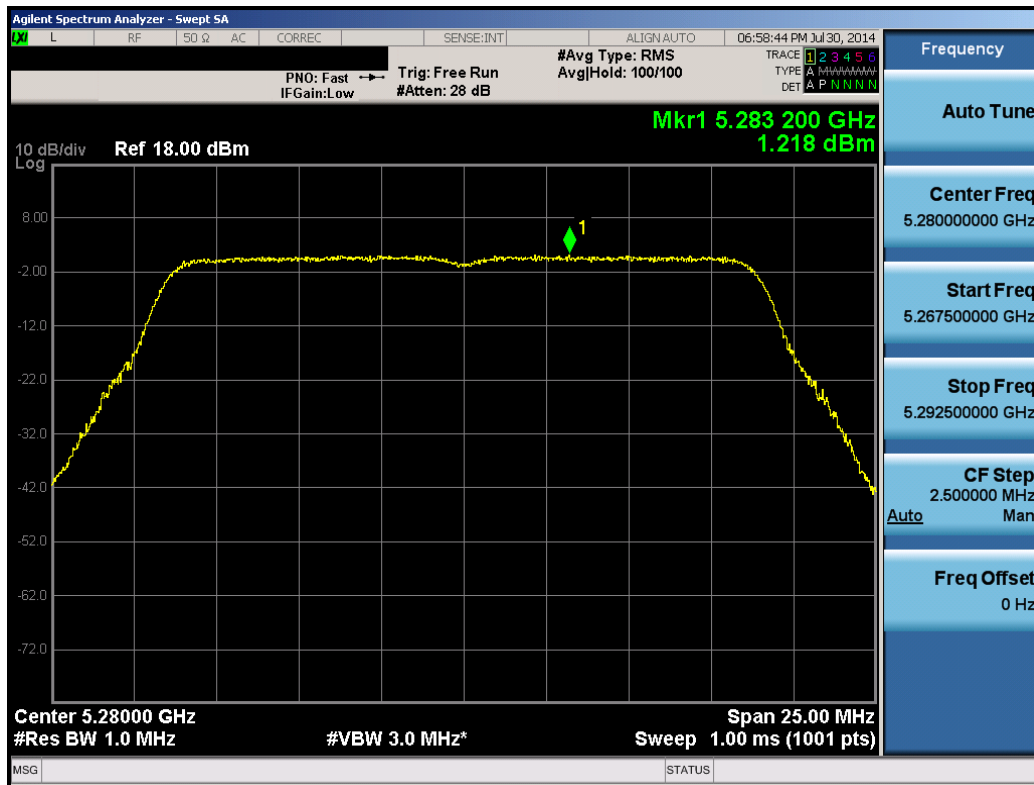


Plot 6-108. Peak Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 64)

FCC ID: A3LSMN916KOR	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: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 78 of 189

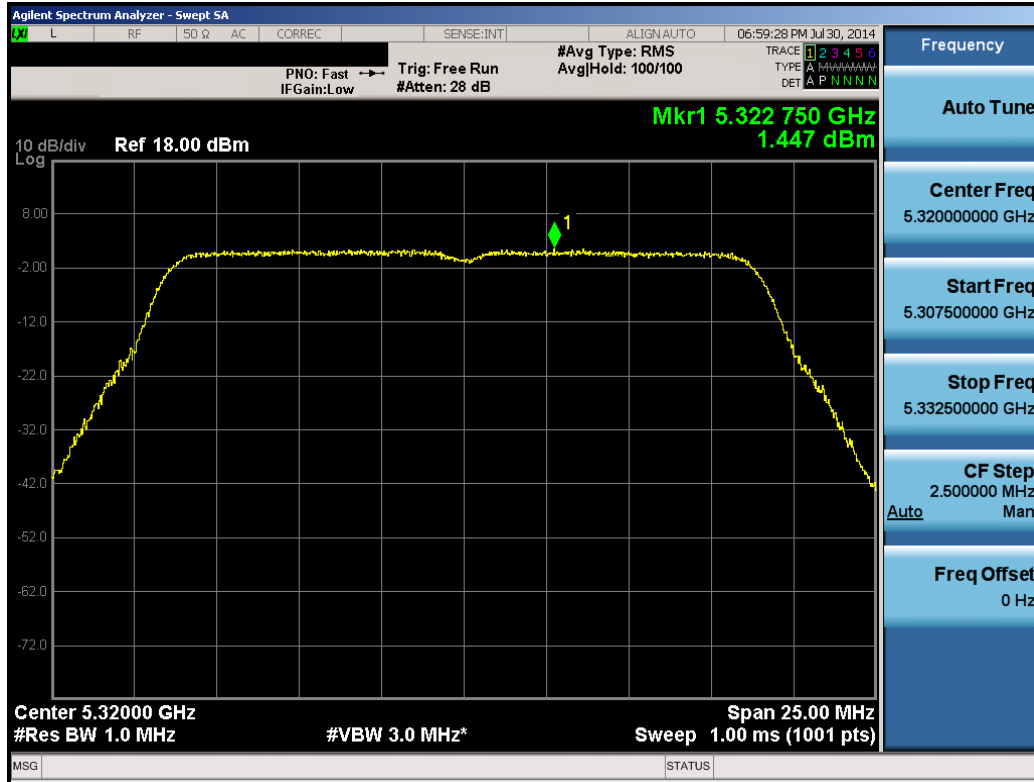


Plot 6-109. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 52)

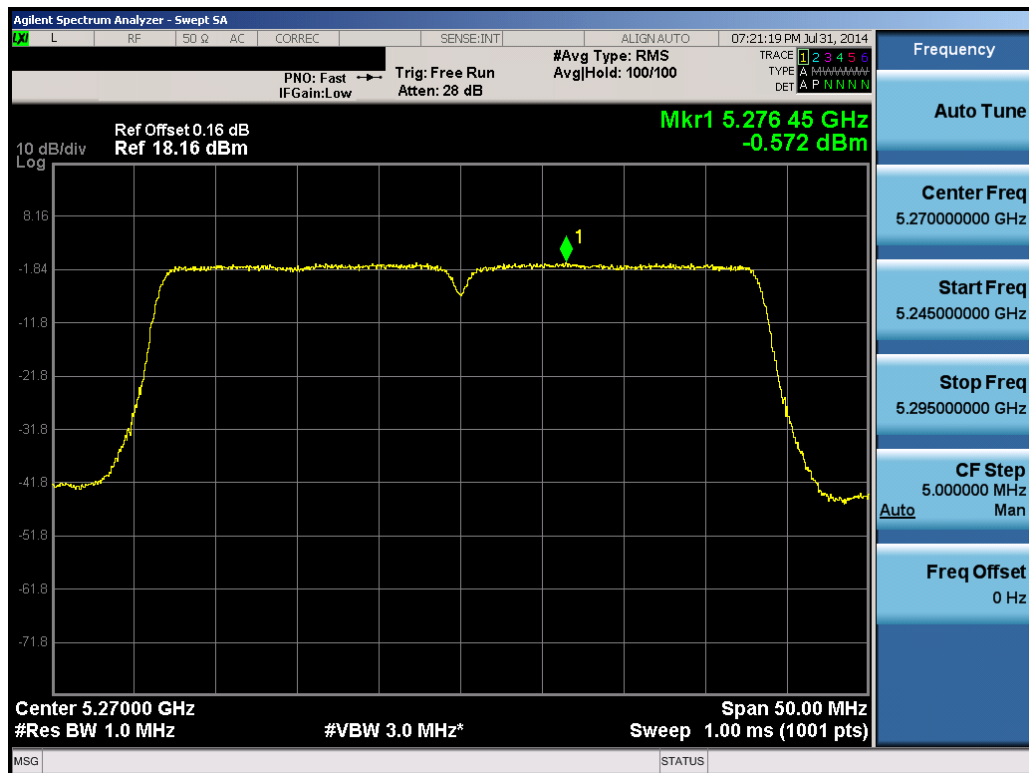


Plot 6-110. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 56)

FCC ID: A3LSMN916KOR	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: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 79 of 189

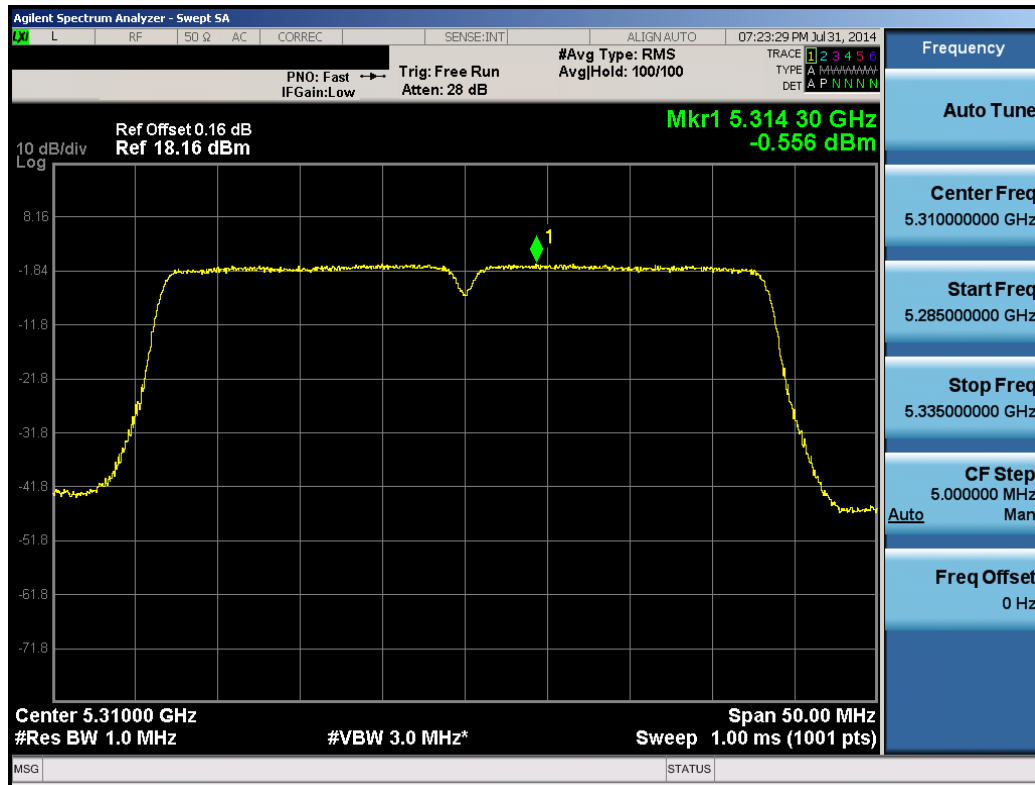


Plot 6-111. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 64)

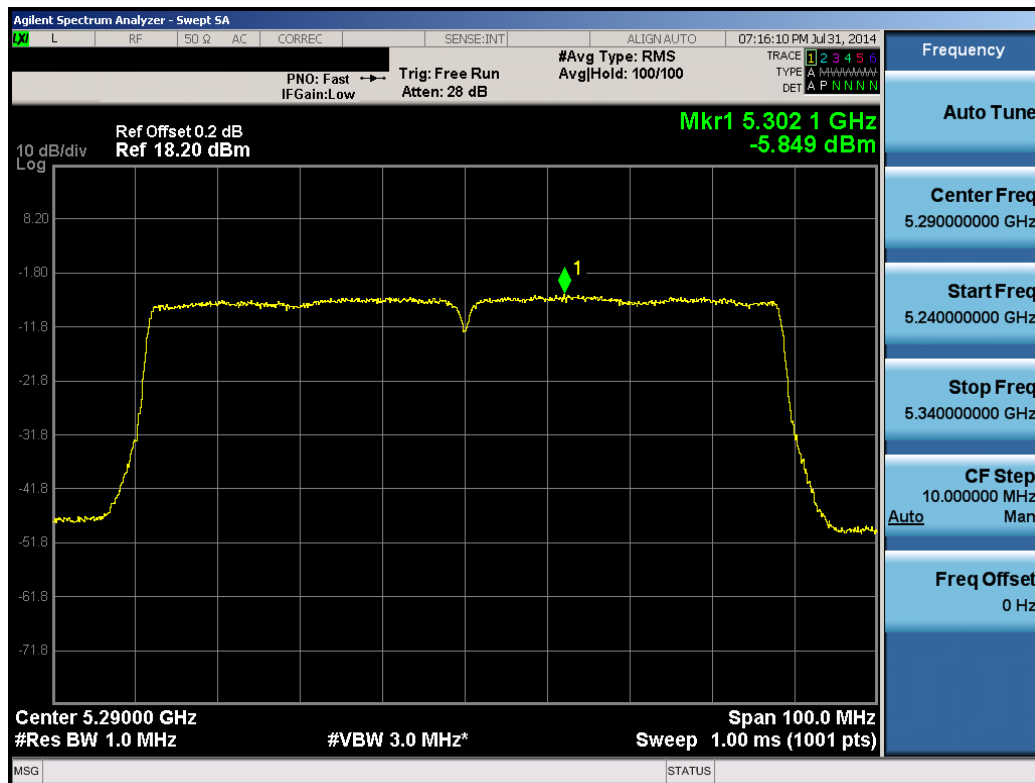


Plot 6-112. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 54)

FCC ID: A3LSMN916KOR	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: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 80 of 189

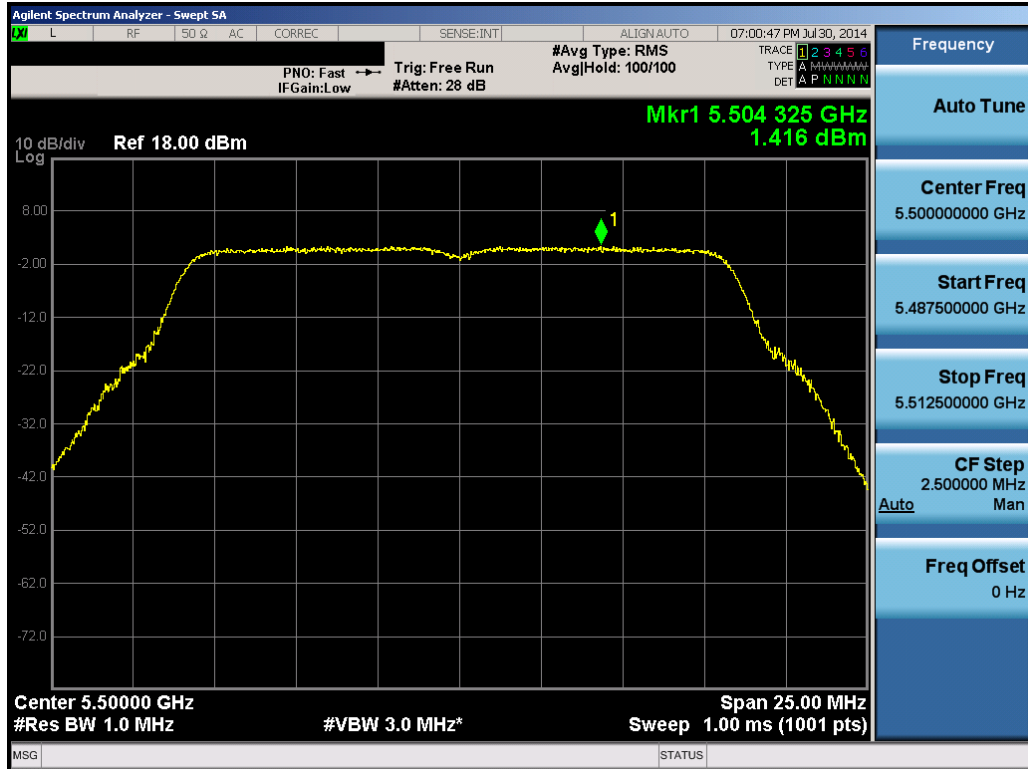


Plot 6-113. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 62)

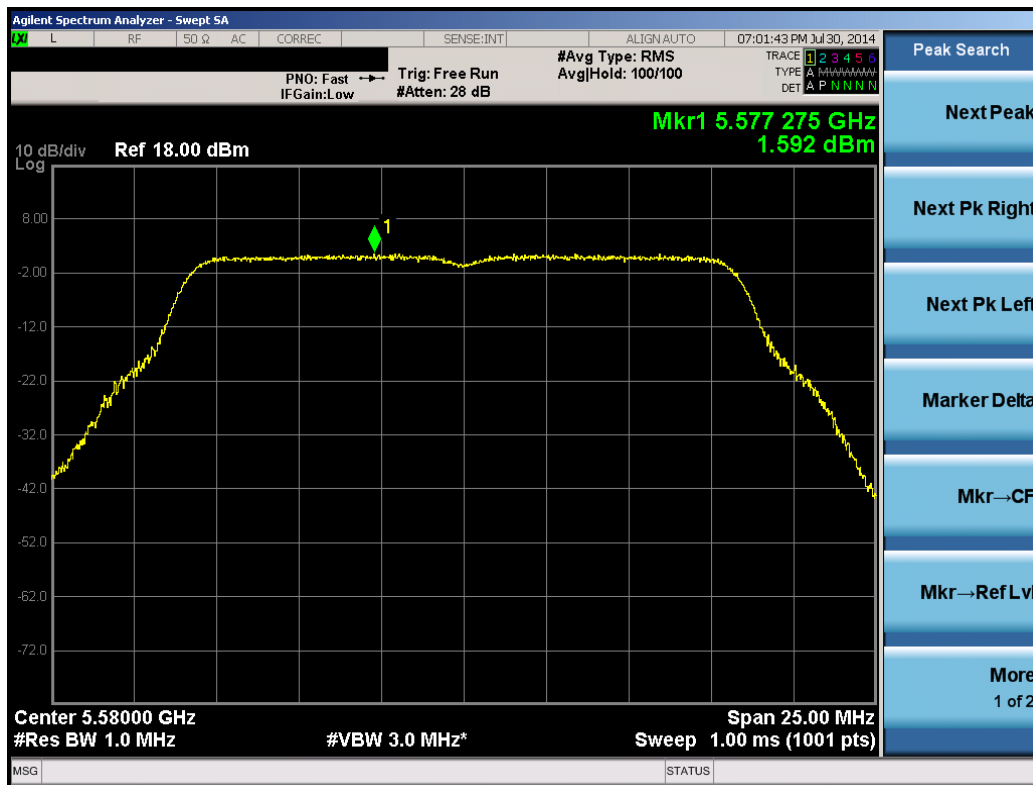


Plot 6-114. Peak Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)

FCC ID: A3LSMN916KOR	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: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 81 of 189

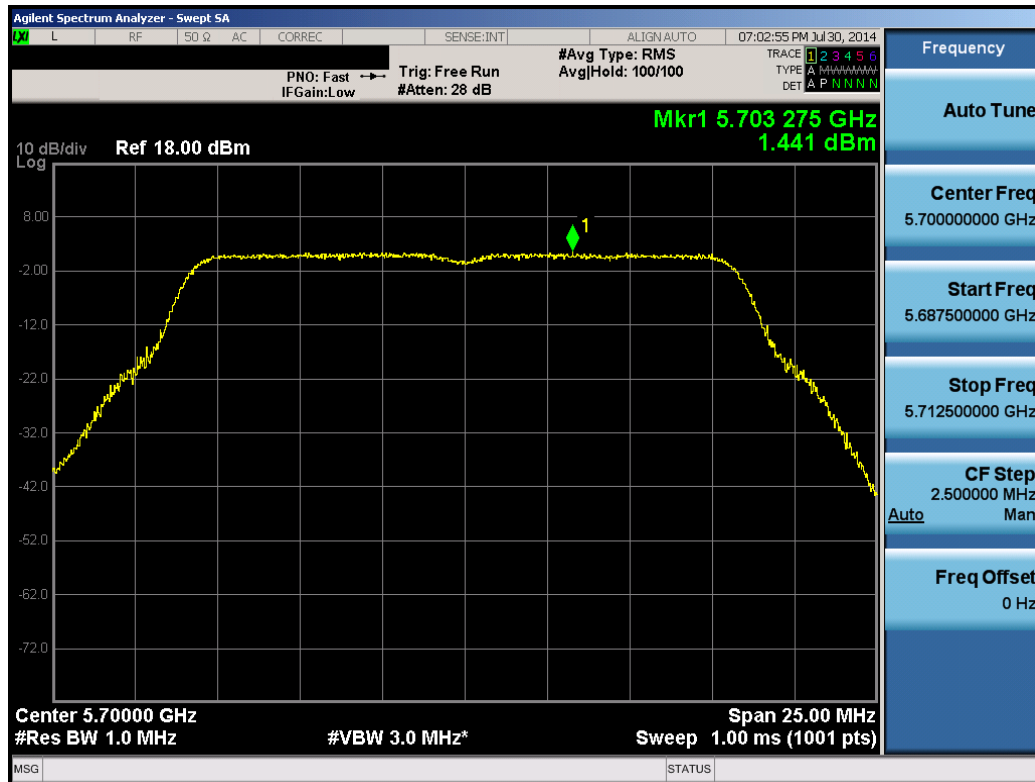


Plot 6-115. Peak Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 100)

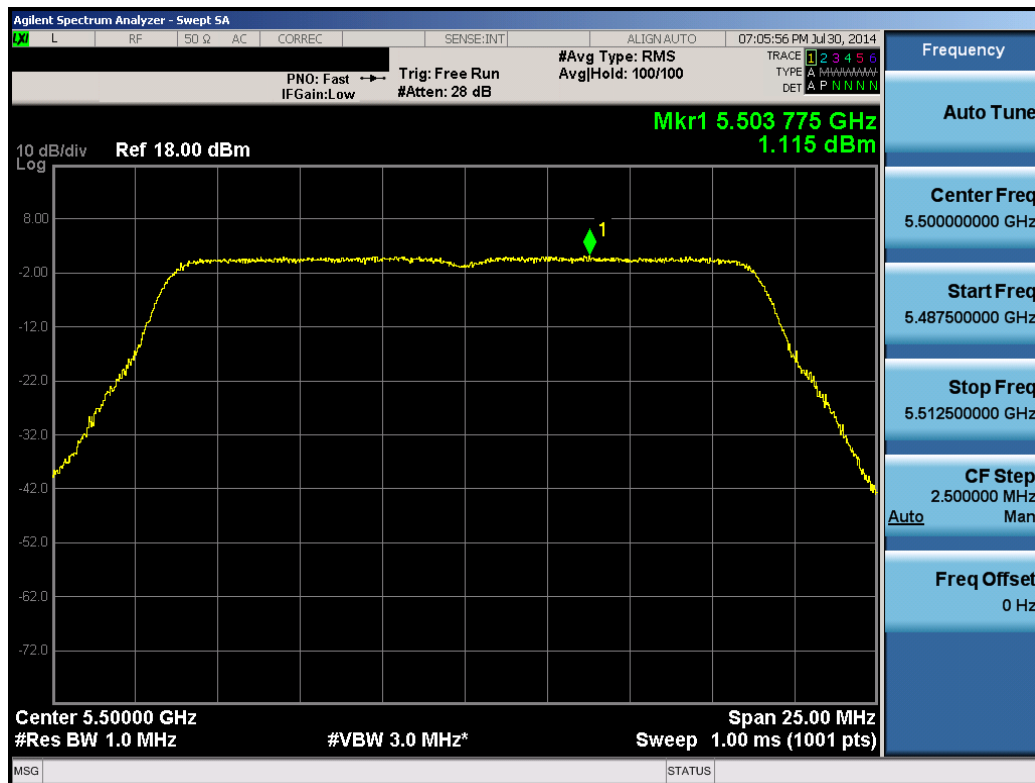


Plot 6-116. Peak Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 116)

FCC ID: A3LSMN916KOR	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: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 82 of 189

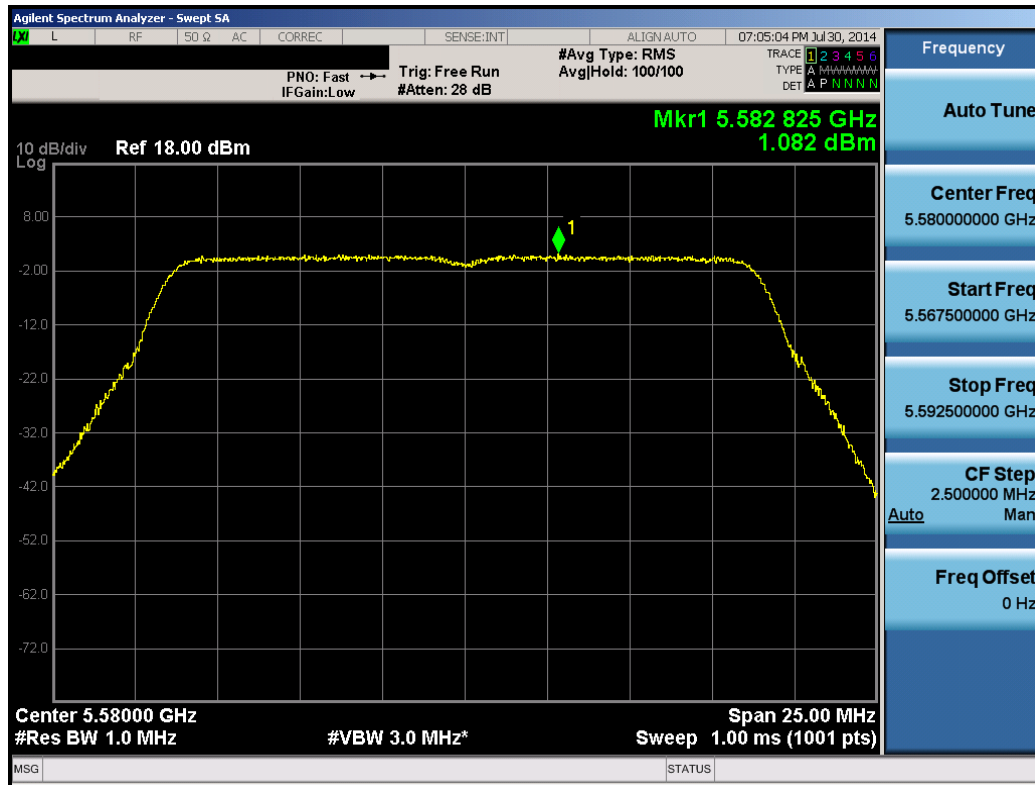


Plot 6-117. Peak Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 140)

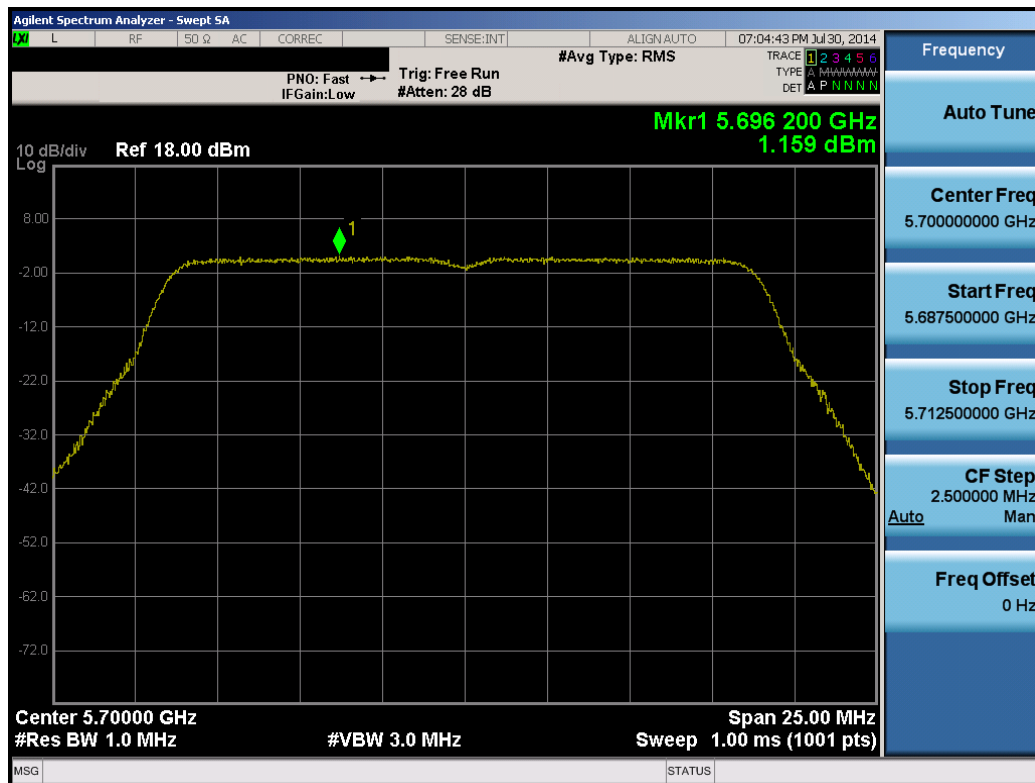


Plot 6-118. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)

FCC ID: A3LSMN916KOR	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: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 83 of 189

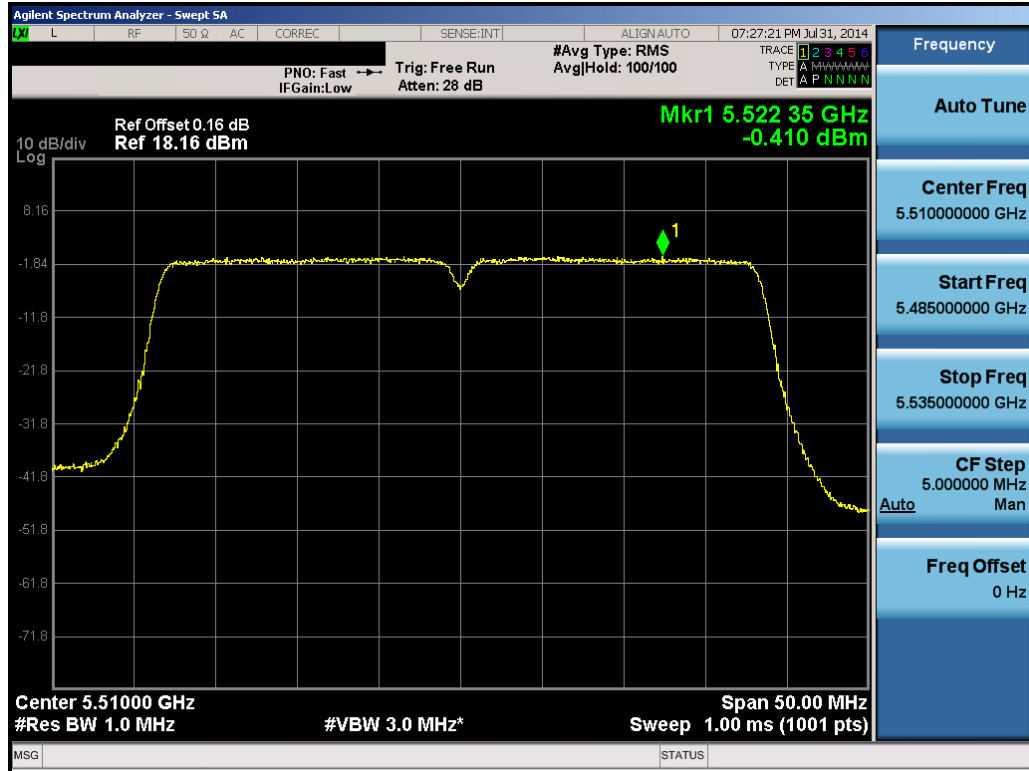


Plot 6-119. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 116)

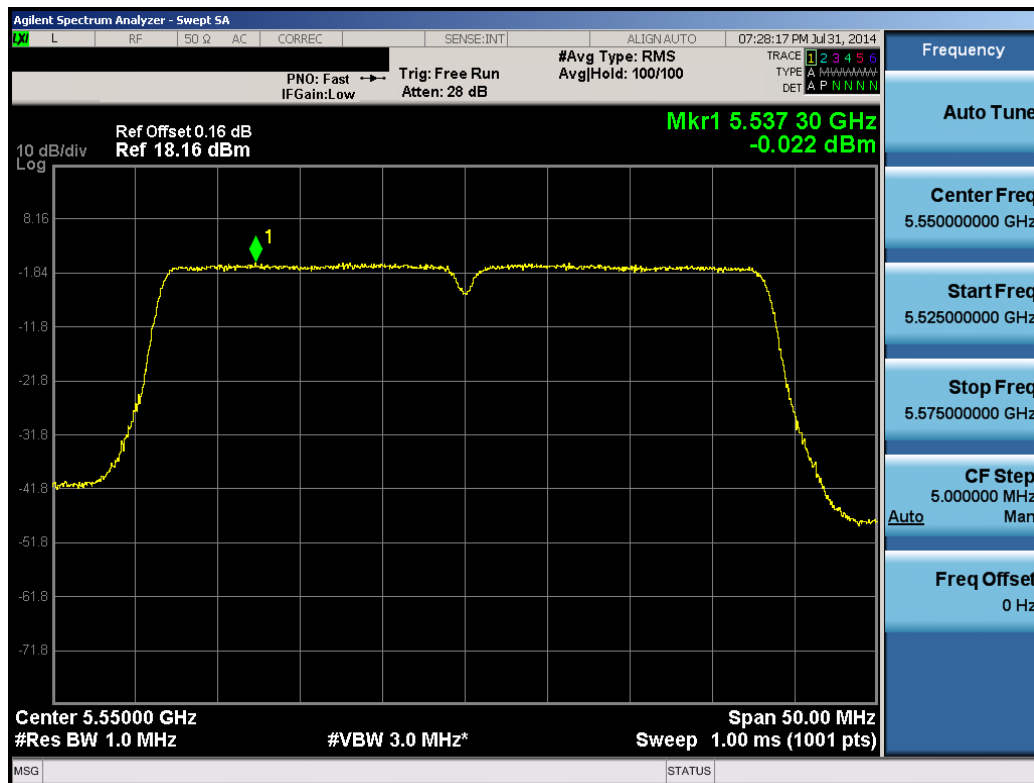


Plot 6-120. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 140)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 84 of 189

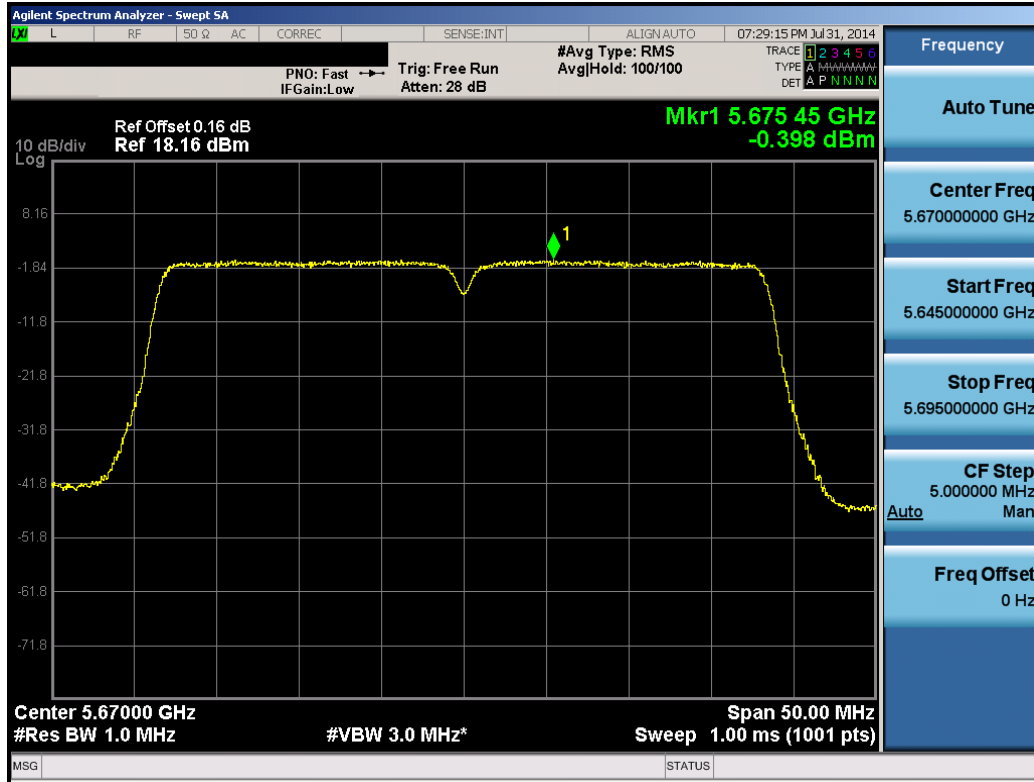


Plot 6-121. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 102)

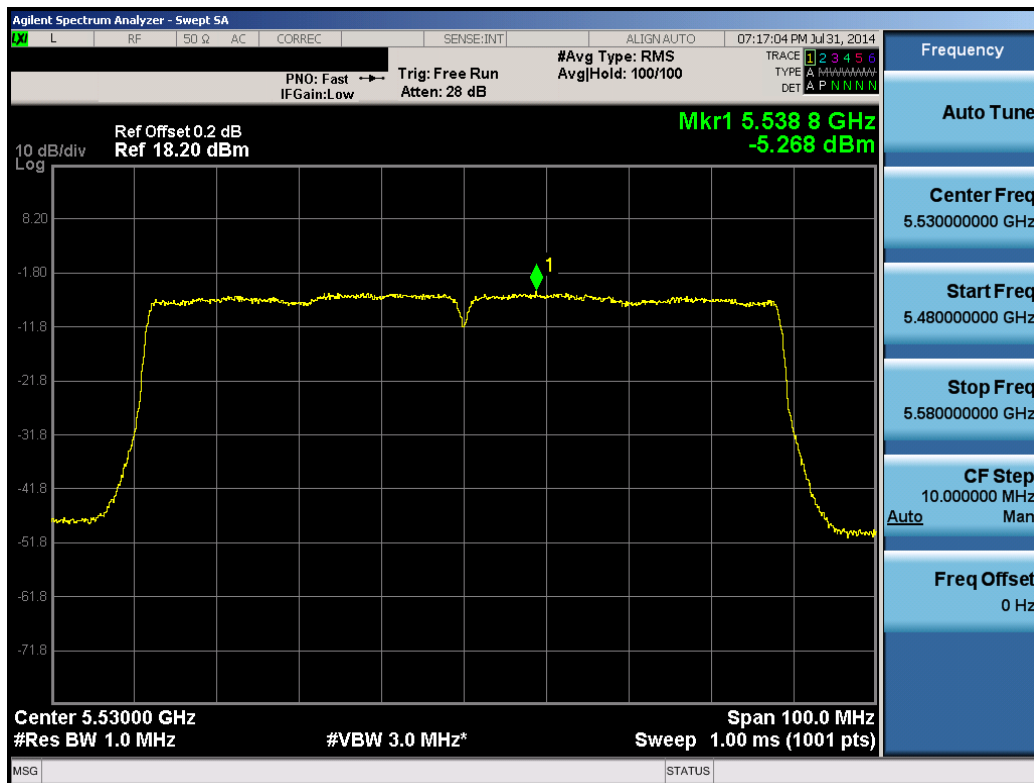


Plot 6-122. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 110)

FCC ID: A3LSMN916KOR	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: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 85 of 189



Plot 6-123. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 134)



Plot 6-124. Peak Power Spectral Density Plot (80MHz BW 802.11a/n/ac (UNII Band 2C) – Ch. 106)

FCC ID: A3LSMN916KOR	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: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 86 of 189

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)	1.11	0.82	3.98	4.0	-0.02	Pass
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	0.89	0.95	3.93	4.0	-0.07	Pass
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	1.10	0.82	3.97	4.0	-0.03	Pass
	5190	38	n (40MHz)	13.5/15 (MCS0)	-1.05	-1.24	1.87	4.0	-2.13	Pass
	5230	46	n (40MHz)	13.5/15 (MCS0)	-0.92	-1.04	2.03	4.0	-1.97	Pass
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-6.19	-6.51	-3.34	4.0	-7.34	Pass
Band 2A	5260	52	n (20MHz)	6.5/7.2 (MCS0)	1.03	1.34	4.20	11.0	-6.80	Pass
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	1.59	1.22	4.42	11.0	-6.58	Pass
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	0.66	1.45	4.08	11.0	-6.92	Pass
	5270	54	n (40MHz)	13.5/15 (MCS0)	-0.33	-0.57	2.56	11.0	-8.44	Pass
	5310	62	n (40MHz)	13.5/15 (MCS0)	-0.21	-0.56	2.63	11.0	-8.37	Pass
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	-6.23	-5.85	-3.03	11.0	-14.03	Pass
Band 2C	5500	100	n (20MHz)	6.5/7.2 (MCS0)	0.12	1.12	3.66	11.0	-7.34	Pass
	5580	116	n (20MHz)	6.5/7.2 (MCS0)	0.44	1.08	3.78	11.0	-7.22	Pass
	5700	140	n (20MHz)	6.5/7.2 (MCS0)	0.84	1.16	4.01	11.0	-6.99	Pass
	5510	102	n (40MHz)	13.5/15 (MCS0)	-0.66	-0.41	2.48	11.0	-8.52	Pass
	5550	110	n (40MHz)	13.5/15 (MCS0)	-0.22	-0.02	2.89	11.0	-8.11	Pass
	5670	134	n (40MHz)	13.5/15 (MCS0)	-0.29	-0.40	2.67	11.0	-8.33	Pass
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-6.11	-5.27	-2.66	11.0	-13.66	Pass

Table 6-20. 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 1.11 dBm for Antenna-1 and 0.82 dBm for Antenna-2.

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

$$(1.11 \text{ dBm} + 0.82 \text{ dBm}) = (1.29 \text{ mW} + 1.21 \text{ mW}) = 2.50 \text{ mW} = 3.98 \text{ dBm}$$

FCC ID: A3LSMN916KOR	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 87 of 189

6.5 Peak Excursion Ratio – 802.11a/n/ac §15.407(a.6)

Test Overview and Limit

The spectrum analyzer was connected to the antenna terminal while the EUT was operating at its maximum duty cycle (>98%), at its maximum power control level, as defined in KDB 789033 v01r04, and at the appropriate frequencies. Method SA-1, as defined in KDB 789033 v01r04, was used to capture the average trace used to make the peak excursion measurement.

The largest permissible difference between the modulation envelope (measured using a peak hold function) and the maximum power spectral density is 13 dBm/MHz.

Test Procedure Used

KDB 789033 v01r04 – Section G

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. Detector = peak
6. Trace mode = max hold
7. Trace was allowed to stabilize
8. The peak search function of the spectrum analyzer was used to find the peak of the spectrum. This level was compared to the peak power density level found from the previous section to determine the peak excursion.

Test Setup

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

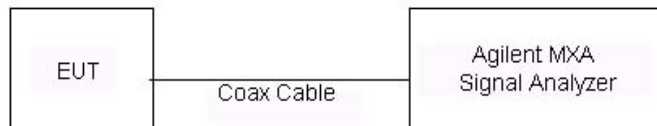




Figure 6-4. Test Instrument & Measurement Setup

Test Notes

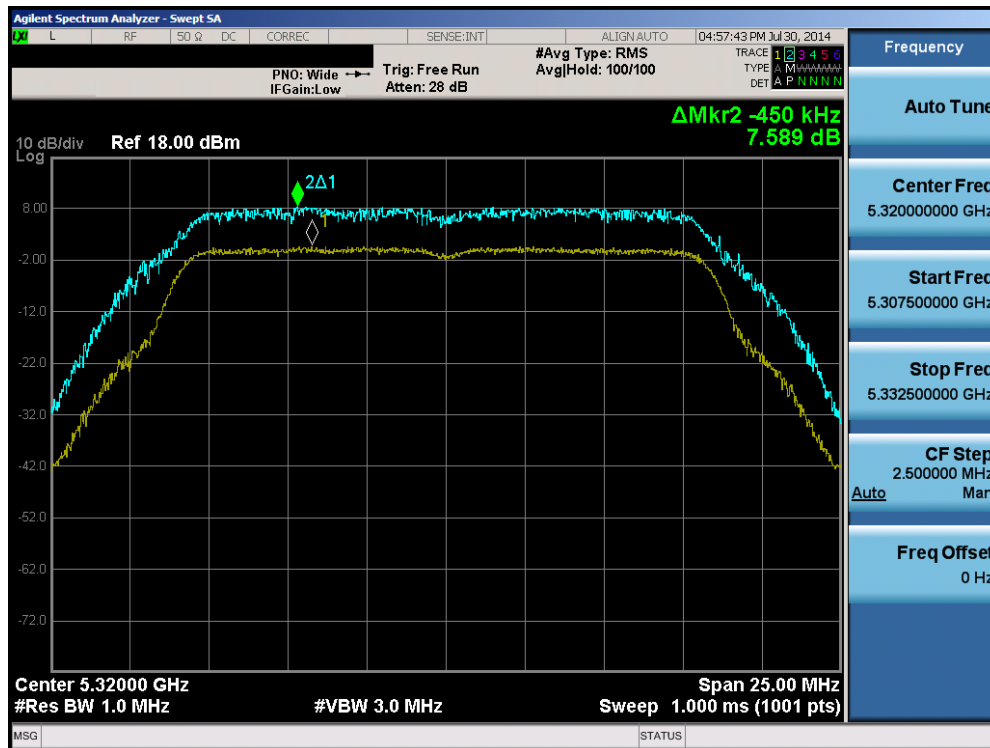
The peak excursion was investigated for all signal types, modulation types, channel bandwidths, and variations in signal parameters and the worst case data is shown below. Only the worst case modulation mode on a single channel among all bands is reported since that is sufficient to demonstrate compliance to the peak excursion requirement per KDB 789033 v01r04.

FCC ID: A3LSMN916KOR	 PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 88 of 189	

Antenna-1 Peak Excursion Ratio – 802.11a/n/ac

Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Peak Excursion Ratio [dBm]	Max Permissible Peak Excursion Ratio [dBm/MHz]	Margin [dB]	Pass / Fail
5320	64	a	6	7.59	13.0	-5.41	Pass
5290	58	ac (80MHz)	29.3/32.5 (MCS0)	9.18	13.0	-3.83	Pass
5500	100	n (20MHz)	6.5/7.2 (MCS0)	8.17	13.0	-4.84	Pass
5670	134	n (40MHz)	13.5/15 (MCS0)	8.54	13.0	-4.46	Pass

Table 6-21. Conducted Peak Excursion Ratio Measurements

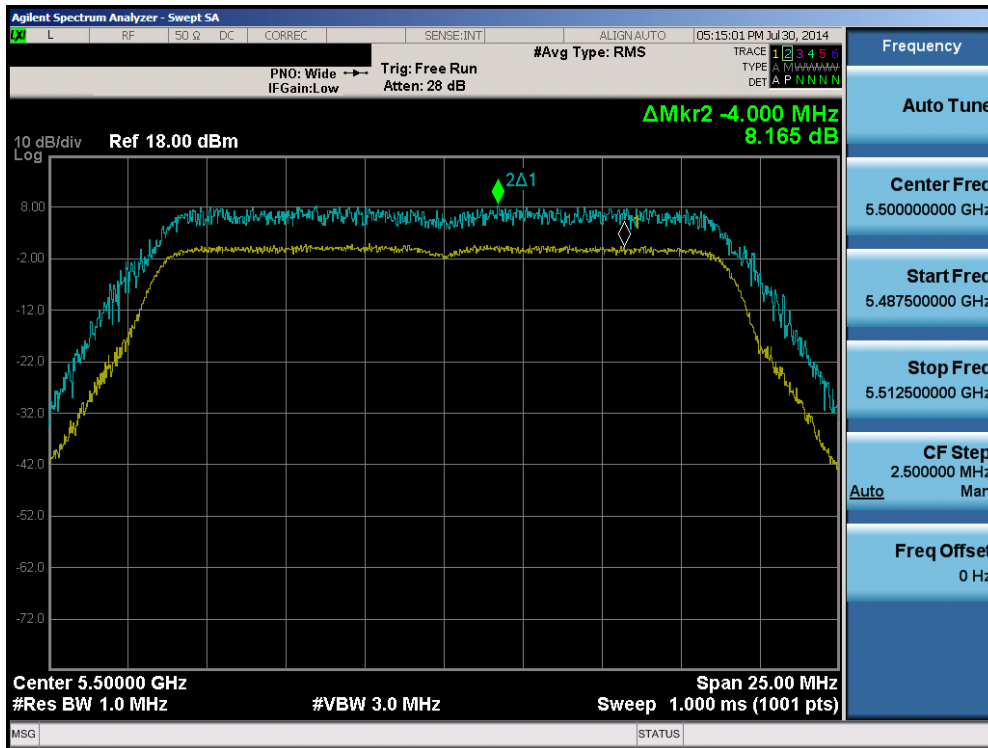


Plot 6-125. Peak Excursion Ratio Plot (802.11a (UNII Band 2A) – Ch. 64)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 89 of 189

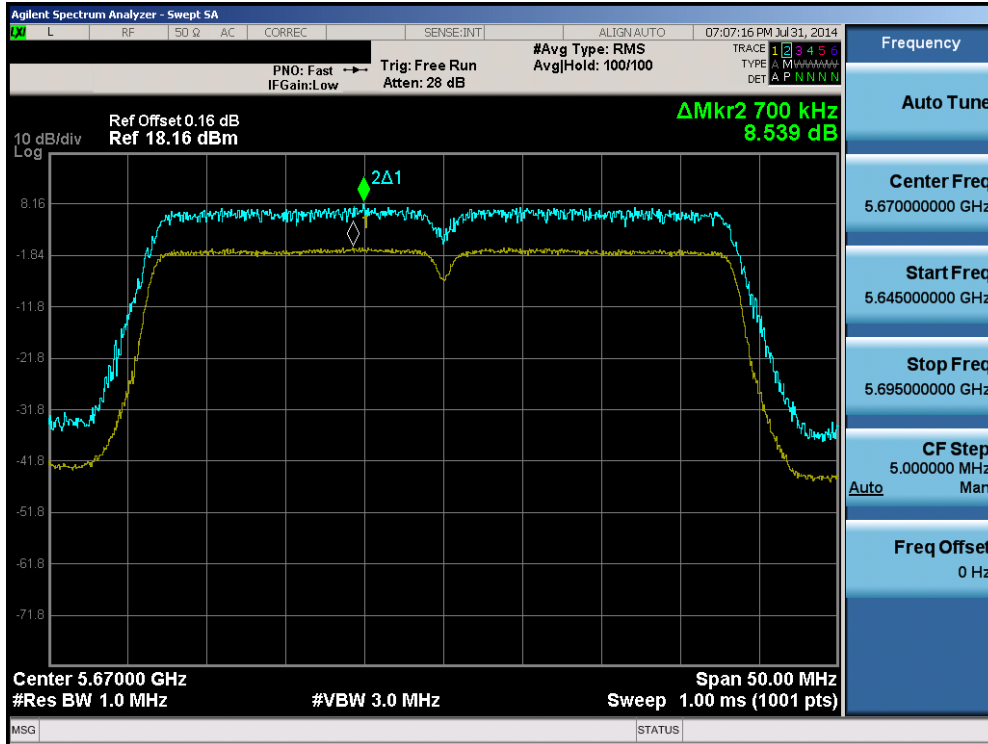


Plot 6-126. Peak Excursion Ratio Plot (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)



Plot 6-127. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 90 of 189



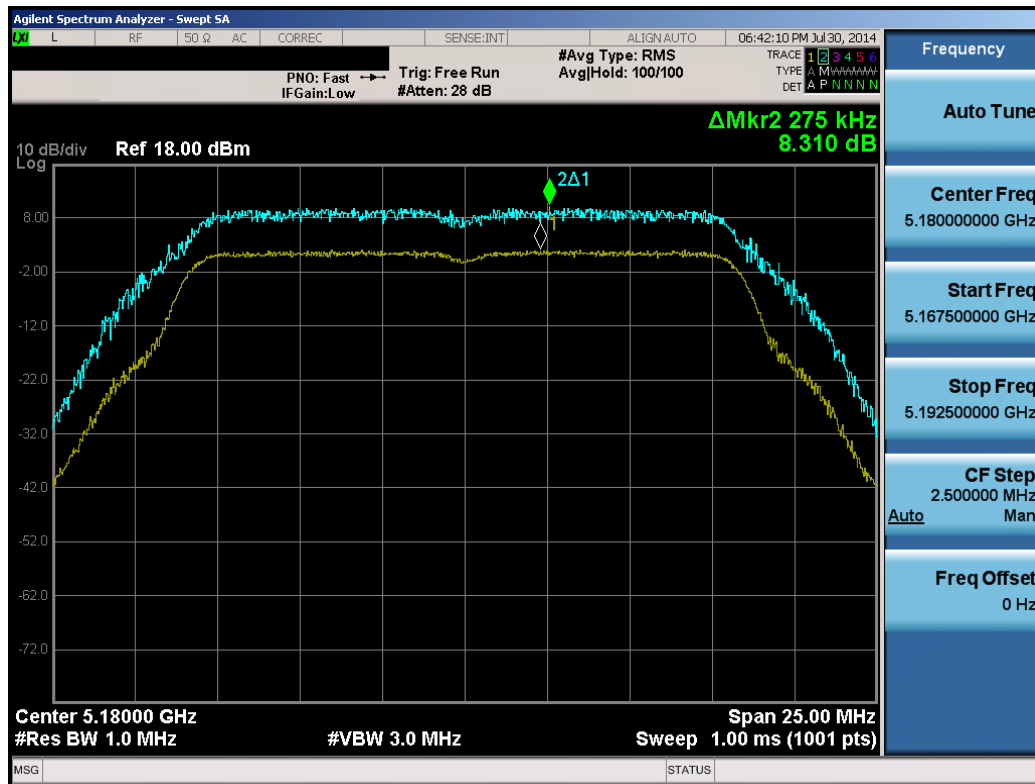
Plot 6-128. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 134)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 91 of 189

Antenna-2 Peak Excursion Ratio – 802.11a/n/ac

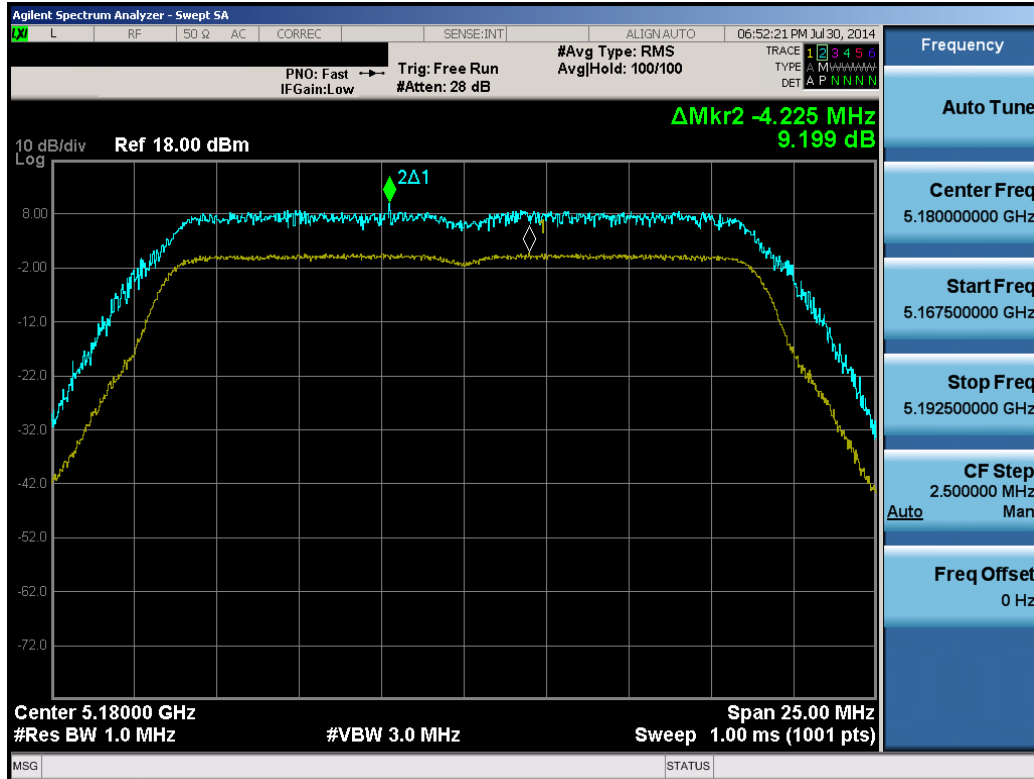
Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Peak Excursion Ratio [dBm]	Max Permissible Peak Excursion Ratio [dBm/MHz]	Margin [dB]	Pass / Fail
5180	36	a	6	8.31	13.0	-4.69	Pass
5180	36	n (20MHz)	6.5/7.2 (MCS0)	9.20	13.0	-3.80	Pass
5270	54	n (40MHz)	13.5/15 (MCS0)	8.79	13.0	-4.21	Pass
5290	58	ac (80MHz)	29.3/32.5 (MCS0)	8.14	13.0	-4.87	Pass

Table 6-22. Conducted Peak Excursion Ratio Measurements

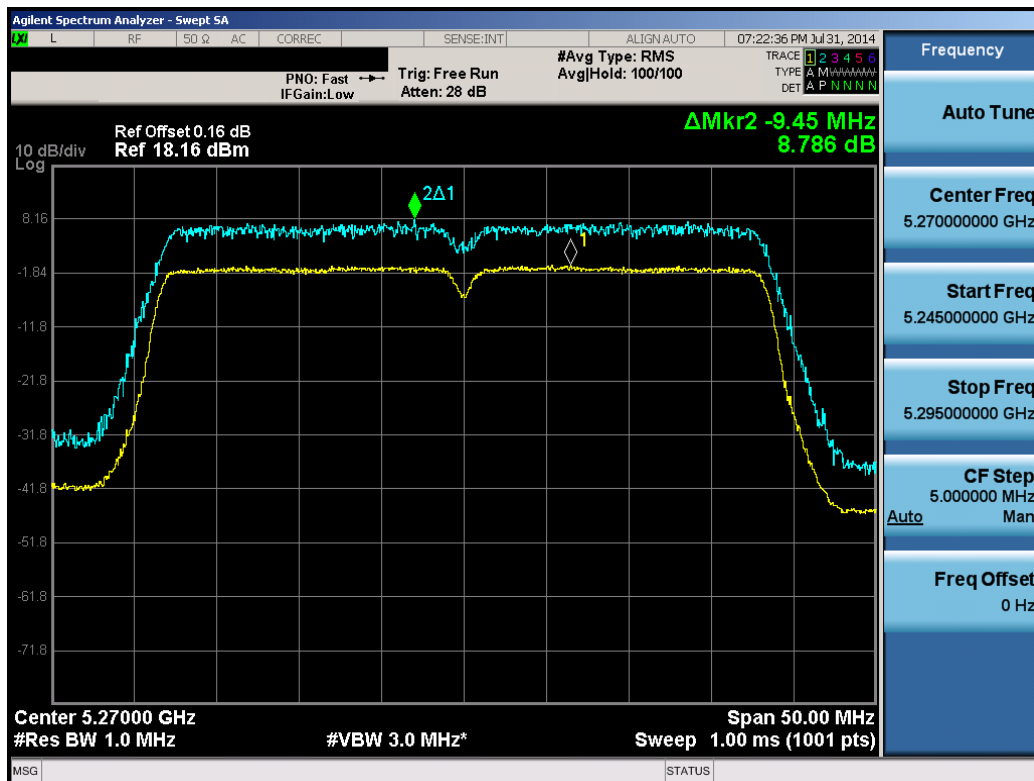


Plot 6-129. Peak Excursion Ratio Plot (802.11a (UNII Band 1) – Ch. 36)

FCC ID: A3LSMN916KOR	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: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 92 of 189

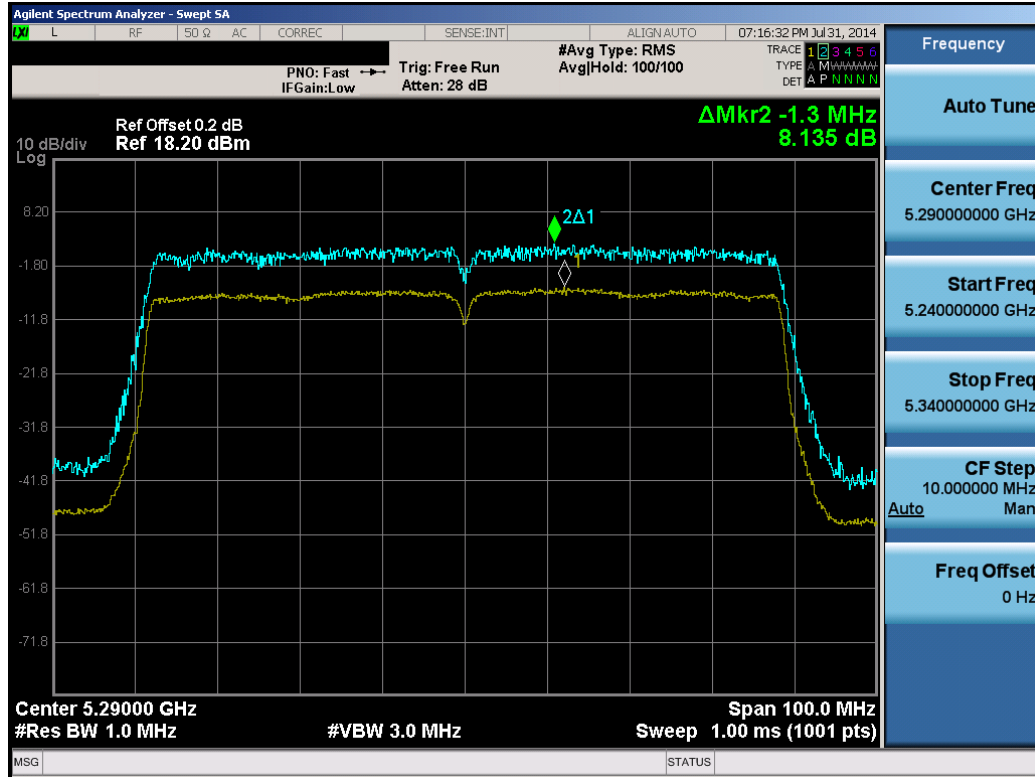


Plot 6-130. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 36)



Plot 6-131. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 54)

FCC ID: A3LSMN916KOR	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: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 93 of 189



Plot 6-132. Peak Excursion Ratio Plot (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 94 of 189

6.6 Frequency Stability

§15.407(g)

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



OPERATING FREQUENCY: 5,180,000,000 Hz
 CHANNEL: 36
 REFERENCE VOLTAGE: 3.80 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	5,179,999,999	-1	-0.00000002
100 %		- 30	5,179,999,996	-4	-0.00000008
100 %		- 20	5,179,999,981	-19	-0.00000037
100 %		- 10	5,179,999,998	-2	-0.00000004
100 %		0	5,180,000,026	26	0.00000050
100 %		+ 10	5,179,999,986	-14	-0.00000027
100 %		+ 20	5,180,000,017	17	0.00000033
100 %		+ 30	5,180,000,002	2	0.00000004
100 %		+ 40	5,179,999,975	-25	-0.00000048
100 %		+ 50	5,179,999,989	-11	-0.00000021
BATT. ENDPOINT		3.50	+ 20	5,179,999,987	-13

Table 6-23. Frequency Stability Measurements for UNII Band 1 (Ch. 36)

Note:

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

FCC ID: A3LSMN916KOR	 PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 95 of 189	

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: 3.80 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	5,260,000,015	15	0.00000029
100 %		- 30	5,259,999,997	-3	-0.00000006
100 %		- 20	5,260,000,018	18	0.00000034
100 %		- 10	5,259,999,979	-21	-0.00000040
100 %		0	5,259,999,994	-6	-0.00000011
100 %		+ 10	5,260,000,028	28	0.00000053
100 %		+ 20	5,260,000,028	28	0.00000053
100 %		+ 30	5,259,999,972	-28	-0.00000053
100 %		+ 40	5,260,000,012	12	0.00000023
100 %		+ 50	5,259,999,988	-12	-0.00000023
BATT. ENDPOINT		3.50	+ 20	5,259,999,982	-18

Table 6-24. Frequency Stability Measurements for UNII Band 2A (Ch. 52)

Note:

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

FCC ID: A3LSMN916KOR	 PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 96 of 189	

Frequency Stability

§15.407(g)

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



OPERATING FREQUENCY: 5,500,000,000 Hz
 CHANNEL: 100
 REFERENCE VOLTAGE: 3.80 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	5,500,000,004	4	0.00000007
100 %		- 30	5,499,999,978	-22	-0.00000040
100 %		- 20	5,499,999,981	-19	-0.00000035
100 %		- 10	5,500,000,019	19	0.00000035
100 %		0	5,499,999,996	-4	-0.00000007
100 %		+ 10	5,500,000,020	20	0.00000036
100 %		+ 20	5,499,999,987	-13	-0.00000024
100 %		+ 30	5,499,999,996	-4	-0.00000007
100 %		+ 40	5,500,000,027	27	0.00000049
100 %		+ 50	5,499,999,994	-6	-0.00000011
BATT. ENDPOINT	3.50	+ 20	5,500,000,000	0	0.00000000

Table 6-25. 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.

FCC ID: A3LSMN916KOR	 PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 97 of 189	

6.7 Radiated Spurious Emission Measurements

§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 (>98%), at its maximum power control level, as defined in KDB 789033 v01r04, and at the appropriate frequencies. All channels, modes (e.g. 802.11a, 802.11n (20MHz BW) and 802.11n (40MHz BW)), 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 6-26 per Section 15.209.

Frequency	Field Strength [μ V/m]	Measured Distance [Meters]
0.009 – 0.490 MHz	2400/F (kHz)	300
0.490 – 1.705 MHz	24000/F (kHz)	30
1.705 – 30.00 MHz	30	30
30.00 – 88.00 MHz	100	3
88.00 – 216.0 MHz	150	3
216.0 – 960.0 MHz	200	3
Above 960.0 MHz	500	3

Table 6-26. Radiated Limits



Test Procedures Used

KDB 789033 v01r04 – Section H

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

FCC ID: A3LSMN916KOR	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 98 of 189

Peak Measurements above 1GHz

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

Peak Measurements below 1GHz

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

Test Setup

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

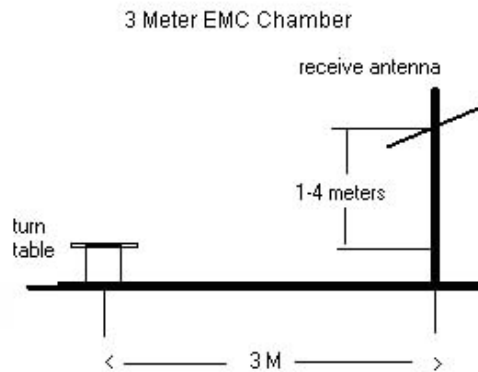




Figure 6-5. Test Instrument & Measurement Setup

FCC ID: A3LSMN916KOR		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 99 of 189	

Test Notes

1. All radiated spurious emissions levels were measured in a radiated test setup per the guidance of KDB 789033 v01r04 Section H.
2. All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 are below the limit shown in Table 6-26.
3. All spurious emissions lying in restricted bands specified in §15.205 are below the limit shown in Table 6-11. All spurious emissions that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz. At a distance of 3 meters, the field strength limit in 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.
4. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
5. The battery used with this device for testing (Model: EB-BN910BBK) contains an embedded NFC antenna.
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.

Sample Calculations



Determining Spurious Emissions Levels

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

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:

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

FCC ID: A3LSMN916KOR		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 100 of 189

Antenna-1 Radiated Spurious Emission 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]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
10360.00	-102.32	Peak	H	H2	46.49	0.00	51.17	68.20	-17.03
* 15540.00	-114.90	Average	H	H2	48.07	0.00	40.17	53.98	-13.80
* 15540.00	-103.92	Peak	H	H2	48.07	0.00	51.15	73.98	-22.82
* 20720.00	-109.62	Average	H	H2	44.05	-9.54	31.88	53.98	-22.10
* 20720.00	-99.94	Peak	H	H2	44.05	-9.54	41.56	73.98	-32.42
25900.00	-100.36	Peak	H	H2	44.95	-9.54	42.05	68.20	-26.15

Table 6-27. 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]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
10400.00	-95.44	Peak	H	H2	46.56	0.00	58.12	68.20	-10.08
* 15600.00	-114.38	Average	H	H2	47.90	0.00	40.53	53.98	-13.45
* 15600.00	-102.93	Peak	H	H2	47.90	0.00	51.98	73.98	-22.00
* 20800.00	-106.08	Average	H	H2	44.04	-9.54	35.41	53.98	-18.57
* 20800.00	-100.52	Peak	H	H2	44.04	-9.54	40.97	73.98	-33.01
26000.00	-100.96	Peak	H	H2	45.00	-9.54	41.50	68.20	-26.70

Table 6-28. Radiated Measurements

FCC ID: A3LSMN916KOR	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 - 12/24/2014	EUT Type: Portable Handset	Page 101 of 189

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



Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10480.00	-102.03	Peak	H	H2	46.67	0.00	51.64	68.20	-16.56
* 15720.00	-114.19	Average	H	H2	47.65	0.00	40.46	53.98	-13.52
* 15720.00	-102.52	Peak	H	H2	47.65	0.00	52.13	73.98	-21.85
* 20960.00	-111.38	Average	H	H2	43.96	-9.54	30.04	53.98	-23.94
* 20960.00	-101.47	Peak	H	H2	43.96	-9.54	39.95	73.98	-34.03
26200.00	-100.10	Peak	H	H2	44.84	-9.54	42.19	68.20	-26.01

Table 6-29. Radiated Measurements

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

Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10520.00	-99.74	Peak	H	H2	46.74	0.00	53.99	68.20	-14.21
* 15780.00	-112.08	Average	H	H2	47.70	0.00	42.62	53.98	-11.36
* 15780.00	-99.85	Peak	H	H2	47.70	0.00	54.85	73.98	-19.13
* 21040.00	-108.20	Average	H	H2	43.89	-9.54	33.15	53.98	-20.83
* 21040.00	-101.16	Peak	H	H2	43.89	-9.54	40.19	73.98	-33.79
26300.00	-99.37	Peak	H	H2	44.80	-9.54	42.89	68.20	-25.31

Table 6-30. Radiated Measurements

FCC ID: A3LSMN916KOR	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 102 of 189

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



Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10560.00	-99.35	Peak	H	H2	46.87	0.00	54.51	68.20	-13.69
* 15840.00	-111.67	Average	H	H2	48.00	0.00	43.33	53.98	-10.65
* 15840.00	-99.53	Peak	H	H2	48.00	0.00	55.47	73.98	-18.51
* 21120.00	-108.04	Average	H	H2	43.79	-9.54	33.21	53.98	-20.77
* 21120.00	-101.14	Peak	H	H2	43.79	-9.54	40.11	73.98	-33.87
26400.00	-97.82	Peak	H	H2	44.80	-9.54	44.43	68.20	-23.77

Table 6-31. 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]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 10640.00	-111.32	Average	H	H2	47.15	0.00	42.83	53.98	-11.15
* 10640.00	-99.55	Peak	H	H2	47.15	0.00	54.60	73.98	-19.38
* 15960.00	-113.07	Average	H	H2	48.56	0.00	42.49	53.98	-11.49
* 15960.00	-99.49	Peak	H	H2	48.56	0.00	56.07	73.98	-17.91
* 21280.00	-108.62	Average	H	H2	43.66	-9.54	32.50	53.98	-21.48
* 21280.00	-102.58	Peak	H	H2	43.66	-9.54	38.54	73.98	-35.44
26600.00	-111.31	Peak	H	H2	47.32	-9.54	33.47	68.20	-34.73

Table 6-32. Radiated Measurements

FCC ID: A3LSMN916KOR	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 103 of 189

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



Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11000.00	-111.36	Average	H	H	47.12	0.00	42.76	53.98	-11.22
* 11000.00	-98.34	Peak	H	H	47.12	0.00	55.78	73.98	-18.20
16500.00	-100.22	Peak	H	H	49.46	0.00	56.23	68.20	-11.97
22000.00	-99.58	Peak	H	H	43.97	-9.54	41.84	68.20	-26.36
27500.00	-111.71	Peak	H	H	48.36	-9.54	34.11	68.20	-34.09

Table 6-33. 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]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11160.00	-111.57	Average	H	H	46.96	0.00	42.40	53.98	-11.58
* 11160.00	-98.92	Peak	H	H	46.96	0.00	55.05	73.98	-18.93
16740.00	-98.86	Peak	H	H	49.79	0.00	57.93	68.20	-10.27
* 22320.00	-100.89	Average	H	H	44.45	-9.54	41.02	53.98	-12.96
* 22320.00	-97.60	Peak	H	H	44.45	-9.54	44.31	73.98	-29.67
27900.00	-109.04	Peak	H	H	48.05	-9.54	36.47	68.20	-31.73



Table 6-34. Radiated Measurements

FCC ID: A3LSMN916KOR	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 104 of 189

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5700MHz
 Channel: 140

Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11400.00	-111.89	Average	H	H	47.21	0.00	42.32	53.98	-11.66
* 11400.00	-99.21	Peak	H	H	47.21	0.00	55.00	73.98	-18.98
17100.00	-99.46	Peak	H	H	53.13	0.00	60.67	68.20	-7.53
* 22800.00	-101.46	Average	H	H	44.45	-9.54	40.45	53.98	-13.53
* 22800.00	-97.49	Peak	H	H	44.45	-9.54	44.42	73.98	-29.56
28500.00	-109.66	Peak	H	H	48.01	-9.54	35.81	68.20	-32.39

Table 6-35. Radiated Measurements

FCC ID: A3LSMN916KOR	 PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 105 of 189	

Antenna-2 Radiated Spurious Emission 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]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10360.00	-102.58	Peak	H2	V	46.49	0.00	50.91	68.20	-17.29
* 15540.00	-114.17	Average	H2	V	48.07	0.00	40.90	53.98	-13.07
* 15540.00	-102.14	Peak	H2	V	48.07	0.00	52.93	73.98	-21.04
* 20720.00	-109.43	Average	H2	V	44.05	-9.54	32.07	53.98	-21.91
* 20720.00	-101.76	Peak	H2	V	44.05	-9.54	39.74	73.98	-34.24
25900.00	-101.68	Peak	H2	V	44.95	-9.54	40.73	68.20	-27.47

Table 6-36. 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]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10400.00	-101.28	Peak	H2	V	46.56	0.00	52.28	68.20	-15.92
* 15600.00	-113.83	Average	H2	V	47.90	0.00	41.08	53.98	-12.90
* 15600.00	-102.16	Peak	H2	V	47.90	0.00	52.75	73.98	-21.23
* 20800.00	-107.74	Average	H2	V	44.04	-9.54	33.75	53.98	-20.23
* 20800.00	-100.71	Peak	H2	V	44.04	-9.54	40.78	73.98	-33.20
26000.00	-100.28	Peak	H2	V	45.00	-9.54	42.18	68.20	-26.02

Table 6-37. Radiated Measurements

FCC ID: A3LSMN916KOR	 PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 106 of 189	

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



Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10480.00	-103.22	Peak	H2	V	46.67	0.00	50.45	68.20	-17.75
* 15720.00	-114.29	Average	H2	V	47.65	0.00	40.36	53.98	-13.62
* 15720.00	-102.33	Peak	H2	V	47.65	0.00	52.32	73.98	-21.66
* 20960.00	-105.71	Average	H2	V	43.96	-9.54	35.71	53.98	-18.27
* 20960.00	-101.05	Peak	H2	V	43.96	-9.54	40.37	73.98	-33.61
26200.00	-100.50	Peak	H2	V	44.84	-9.54	41.79	68.20	-26.41

Table 6-38. Radiated Measurements

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

Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10520.00	-99.14	Peak	V	H2	46.74	0.00	54.59	68.20	-13.61
* 15780.00	-111.64	Average	V	H2	47.70	0.00	43.06	53.98	-10.92
* 15780.00	-100.83	Peak	V	H2	47.70	0.00	53.87	73.98	-20.11
* 21040.00	-107.58	Average	V	H2	43.89	-9.54	33.77	53.98	-20.21
* 21040.00	-98.25	Peak	V	H2	43.89	-9.54	43.10	73.98	-30.88
26300.00	-98.59	Peak	V	H2	44.80	-9.54	43.67	68.20	-24.53

Table 6-39. Radiated Measurements

FCC ID: A3LSMN916KOR	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 107 of 189

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



Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
10560.00	-99.19	Peak	V	H2	46.87	0.00	54.67	68.20	-13.53
* 15840.00	-112.03	Average	V	H2	48.00	0.00	42.97	53.98	-11.01
* 15840.00	-99.86	Peak	V	H2	48.00	0.00	55.14	73.98	-18.84
* 21120.00	-103.77	Average	V	H2	43.79	-9.54	37.48	53.98	-16.50
* 21120.00	-99.05	Peak	V	H2	43.79	-9.54	42.20	73.98	-31.78
26400.00	-97.44	Peak	V	H2	44.80	-9.54	44.81	68.20	-23.39

Table 6-40. 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]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
* 10640.00	-111.07	Average	V	H2	47.15	0.00	43.08	53.98	-10.90
* 10640.00	-98.93	Peak	V	H2	47.15	0.00	55.22	73.98	-18.76
* 15960.00	-111.48	Average	V	H2	48.56	0.00	44.08	53.98	-9.90
* 15960.00	-99.12	Peak	V	H2	48.56	0.00	56.44	73.98	-17.54
* 21280.00	-102.72	Average	V	H2	43.66	-9.54	38.40	53.98	-15.58
* 21280.00	-98.62	Peak	V	H2	43.66	-9.54	42.50	73.98	-31.48
26600.00	-120.28	Peak	V	H2	47.32	-9.54	24.50	68.20	-43.70

Table 6-41. Radiated Measurements

FCC ID: A3LSMN916KOR	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 108 of 189

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



Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11000.00	-111.59	Average	V	H2	47.12	0.00	42.53	53.98	-11.45
* 11000.00	-98.59	Peak	V	H2	47.12	0.00	55.53	73.98	-18.45
16500.00	-99.62	Peak	V	H2	49.46	0.00	56.83	68.20	-11.37
22000.00	-99.21	Peak	V	H2	43.97	-9.54	42.21	68.20	-25.99
27500.00	-110.10	Peak	V	H2	48.36	-9.54	35.72	68.20	-32.48

Table 6-42. 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]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11160.00	-111.66	Average	V	H2	46.96	0.00	42.31	53.98	-11.67
* 11160.00	-98.96	Peak	V	H2	46.96	0.00	55.01	73.98	-18.97
16740.00	-100.39	Peak	V	H2	49.79	0.00	56.40	68.20	-11.80
* 22320.00	-106.47	Average	V	H2	44.45	-9.54	35.44	53.98	-18.54
* 22320.00	-98.74	Peak	V	H2	44.45	-9.54	43.17	73.98	-30.81
27900.00	-108.66	Peak	V	H2	48.05	-9.54	36.85	68.20	-31.35



Table 6-43. Radiated Measurements

FCC ID: A3LSMN916KOR	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 109 of 189

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5700MHz
 Channel: 140

Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11400.00	-111.96	Average	V	H2	47.21	0.00	42.25	53.98	-11.73
* 11400.00	-99.45	Peak	V	H2	47.21	0.00	54.76	73.98	-19.22
17100.00	-99.66	Peak	V	H2	53.13	0.00	60.47	68.20	-7.73
* 22800.00	-101.05	Average	V	H2	44.45	-9.54	40.86	53.98	-13.12
* 22800.00	-96.51	Peak	V	H2	44.45	-9.54	45.40	73.98	-28.58
28500.00	-109.39	Peak	V	H2	48.01	-9.54	36.08	68.20	-32.12

Table 6-44. Radiated Measurements

FCC ID: A3LSMN916KOR	 PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 110 of 189	

MIMO Radiated Spurious Emission Measurements

Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5180MHz
 Channel: 36



Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10360.00	-101.44	Peak	H	H	46.49	0.00	52.05	68.20	-16.15
* 15540.00	-114.31	Average	H	H	48.07	0.00	40.76	53.98	-13.21
* 15540.00	-102.15	Peak	H	H	48.07	0.00	52.92	73.98	-21.05
* 20720.00	-106.23	Average	H	H	44.05	-9.54	35.27	53.98	-18.71
* 20720.00	-100.15	Peak	H	H	44.05	-9.54	41.35	73.98	-32.63
25900.00	-99.99	Peak	H	H	44.95	-9.54	42.42	68.20	-25.78

Table 6-45. Radiated Measurements

Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5200MHz
 Channel: 40

Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10400.00	-101.85	Peak	H	H	46.56	0.00	51.71	68.20	-16.49
* 15600.00	-114.27	Average	H	H	47.90	0.00	40.64	53.98	-13.34
* 15600.00	-102.26	Peak	H	H	47.90	0.00	52.65	73.98	-21.33
* 20800.00	-106.94	Average	H	H	44.04	-9.54	34.55	53.98	-19.43
* 20800.00	-100.29	Peak	H	H	44.04	-9.54	41.20	73.98	-32.78
26000.00	-101.69	Peak	H	H	45.00	-9.54	40.77	68.20	-27.43

Table 6-46. Radiated Measurements

FCC ID: A3LSMN916KOR	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 111 of 189

Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5240MHz
 Channel: 48



Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
10480.00	-102.37	Peak	H	H	46.67	0.00	51.30	68.20	-16.90
* 15720.00	-111.60	Average	H	H	47.65	0.00	43.05	53.98	-10.93
* 15720.00	-102.61	Peak	H	H	47.65	0.00	52.04	73.98	-21.94
* 20960.00	-107.21	Average	H	H	43.96	-9.54	34.21	53.98	-19.77
* 20960.00	-100.77	Peak	H	H	43.96	-9.54	40.65	73.98	-33.33
26200.00	-99.48	Peak	H	H	44.84	-9.54	42.81	68.20	-25.39

Table 6-47. Radiated Measurements

Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5260MHz
 Channel: 52

Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
10520.00	-98.66	Peak	H	H	46.74	0.00	55.07	68.20	-13.13
* 15780.00	-111.91	Average	H	H	47.70	0.00	42.79	53.98	-11.19
* 15780.00	-100.26	Peak	H	H	47.70	0.00	54.44	73.98	-19.54
* 21040.00	-108.33	Average	H	H	43.89	-9.54	33.02	53.98	-20.96
* 21040.00	-101.16	Peak	H	H	43.89	-9.54	40.19	73.98	-33.79
26300.00	-98.35	Peak	H	H	44.80	-9.54	43.91	68.20	-24.29

Table 6-48. Radiated Measurements

FCC ID: A3LSMN916KOR	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 112 of 189

Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5280MHz
 Channel: 56



Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10560.00	-99.32	Peak	H	H	46.87	0.00	54.54	68.20	-13.66
* 15840.00	-111.22	Average	H	H	48.00	0.00	43.78	53.98	-10.20
* 15840.00	-100.48	Peak	H	H	48.00	0.00	54.52	73.98	-19.46
* 21120.00	-108.16	Average	H	H	43.79	-9.54	33.09	53.98	-20.89
* 21120.00	-101.26	Peak	H	H	43.79	-9.54	39.99	73.98	-33.99
26400.00	-97.11	Peak	H	H	44.80	-9.54	45.14	68.20	-23.06

Table 6-49. Radiated Measurements

Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5320MHz
 Channel: 64

Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 10640.00	-111.95	Average	H	H	47.15	0.00	42.20	53.98	-11.78
* 10640.00	-99.41	Peak	H	H	47.15	0.00	54.74	73.98	-19.24
* 15960.00	-110.89	Average	H	H	48.56	0.00	44.67	53.98	-9.31
* 15960.00	-99.31	Peak	H	H	48.56	0.00	56.25	73.98	-17.73
* 21280.00	-108.58	Average	H	H	43.66	-9.54	32.54	53.98	-21.44
* 21280.00	-101.97	Peak	H	H	43.66	-9.54	39.15	73.98	-34.83
26600.00	-109.74	Peak	H	H	47.32	-9.54	35.04	68.20	-33.16

Table 6-50. Radiated Measurements

FCC ID: A3LSMN916KOR	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 113 of 189

Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5500MHz
 Channel: 100



Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11000.00	-111.51	Average	V	V	47.12	0.00	42.61	53.98	-11.37
* 11000.00	-99.36	Peak	V	V	47.12	0.00	54.76	73.98	-19.22
16500.00	-99.52	Peak	V	V	49.46	0.00	56.93	68.20	-11.27
22000.00	-96.84	Peak	V	V	43.97	-9.54	44.58	68.20	-23.62
27500.00	-108.30	Peak	V	V	48.36	-9.54	37.52	68.20	-30.68

Table 6-51. Radiated Measurements

Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5580MHz
 Channel: 116

Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11160.00	-111.76	Average	V	V	46.96	0.00	42.21	53.98	-11.77
* 11160.00	-98.74	Peak	V	V	46.96	0.00	55.23	73.98	-18.75
16740.00	-99.48	Peak	V	V	49.79	0.00	57.31	68.20	-10.89
* 22320.00	-101.06	Average	V	V	44.45	-9.54	40.85	53.98	-13.13
* 22320.00	-97.23	Peak	V	V	44.45	-9.54	44.68	73.98	-29.30
27900.00	-108.32	Peak	V	V	48.05	-9.54	37.19	68.20	-31.01



Table 6-52. Radiated Measurements

FCC ID: A3LSMN916KOR	 PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 114 of 189

Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5700MHz
 Channel: 140

Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11400.00	-111.71	Average	V	V	47.21	0.00	42.50	53.98	-11.48
* 11400.00	-99.22	Peak	V	V	47.21	0.00	54.99	73.98	-18.99
17100.00	-99.24	Peak	V	V	53.13	0.00	60.89	68.20	-7.31
* 22800.00	-100.64	Average	V	V	44.45	-9.54	41.27	53.98	-12.71
* 22800.00	-96.75	Peak	V	V	44.45	-9.54	45.16	73.98	-28.82
28500.00	-109.74	Peak	V	V	48.01	-9.54	35.73	68.20	-32.47

Table 6-53. Radiated Measurements

FCC ID: A3LSMN916KOR		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 115 of 189

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

§15.407(b.1)(b.2) §15.205 §15.209

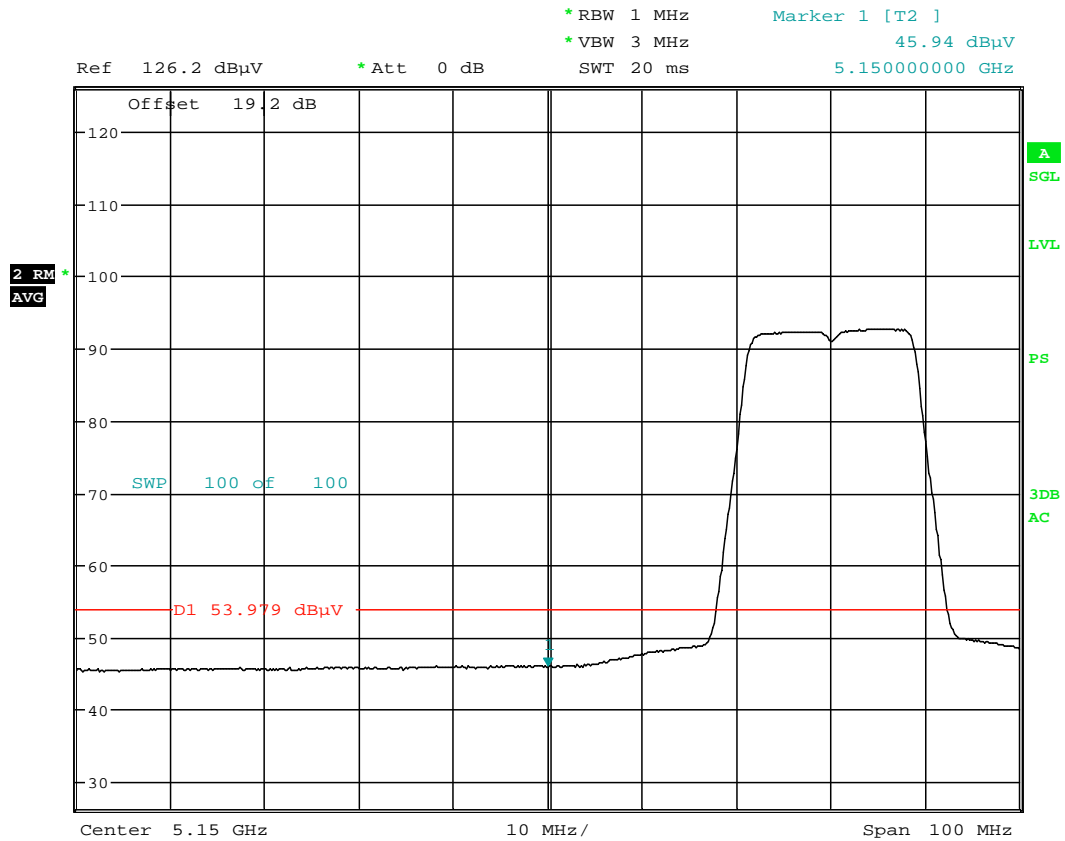
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36



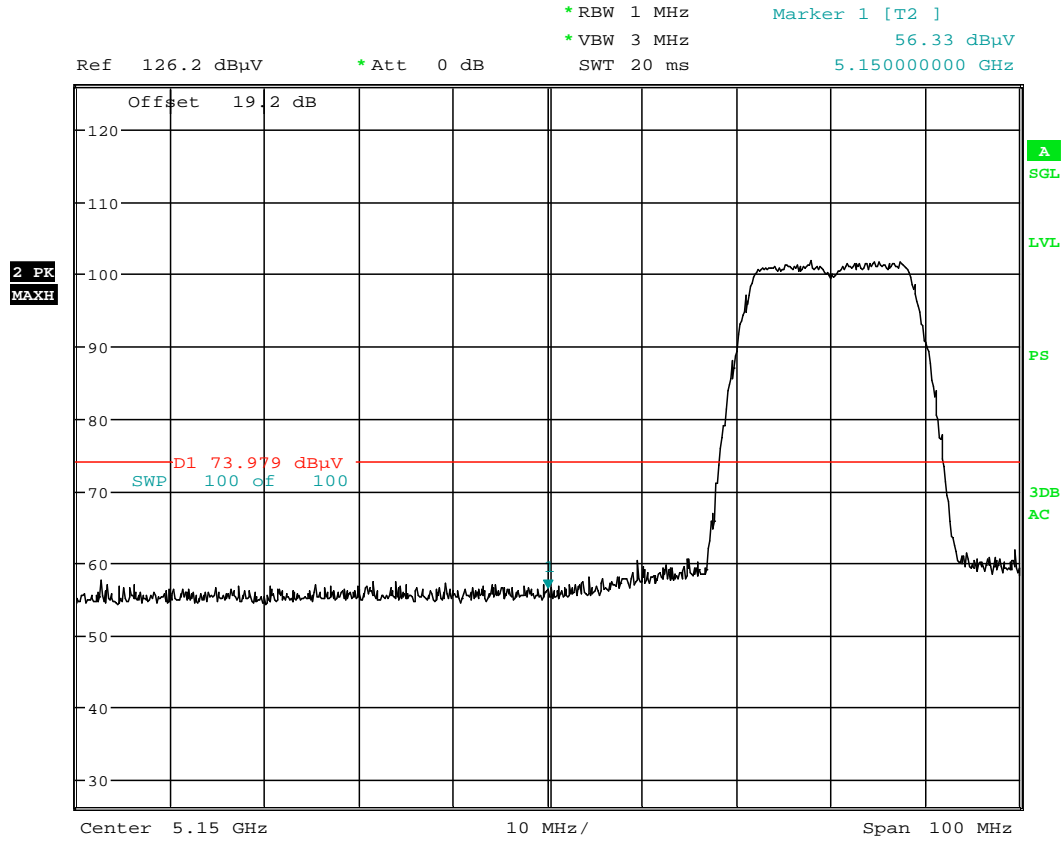
Date: 28.JUL.2014 21:43:56

Plot 6-133. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 116 of 189

Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 28.JUL.2014 21:45:07

Plot 6-134. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 117 of 189	

Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

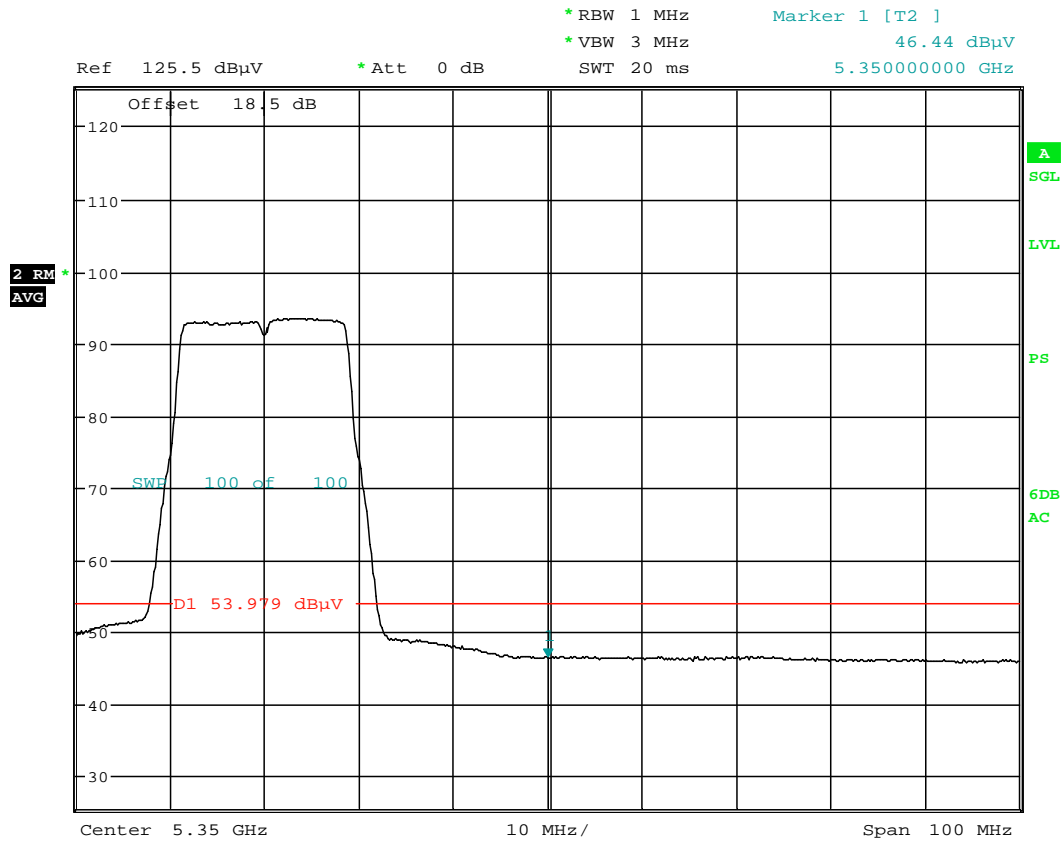
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5320MHz

Channel: 64



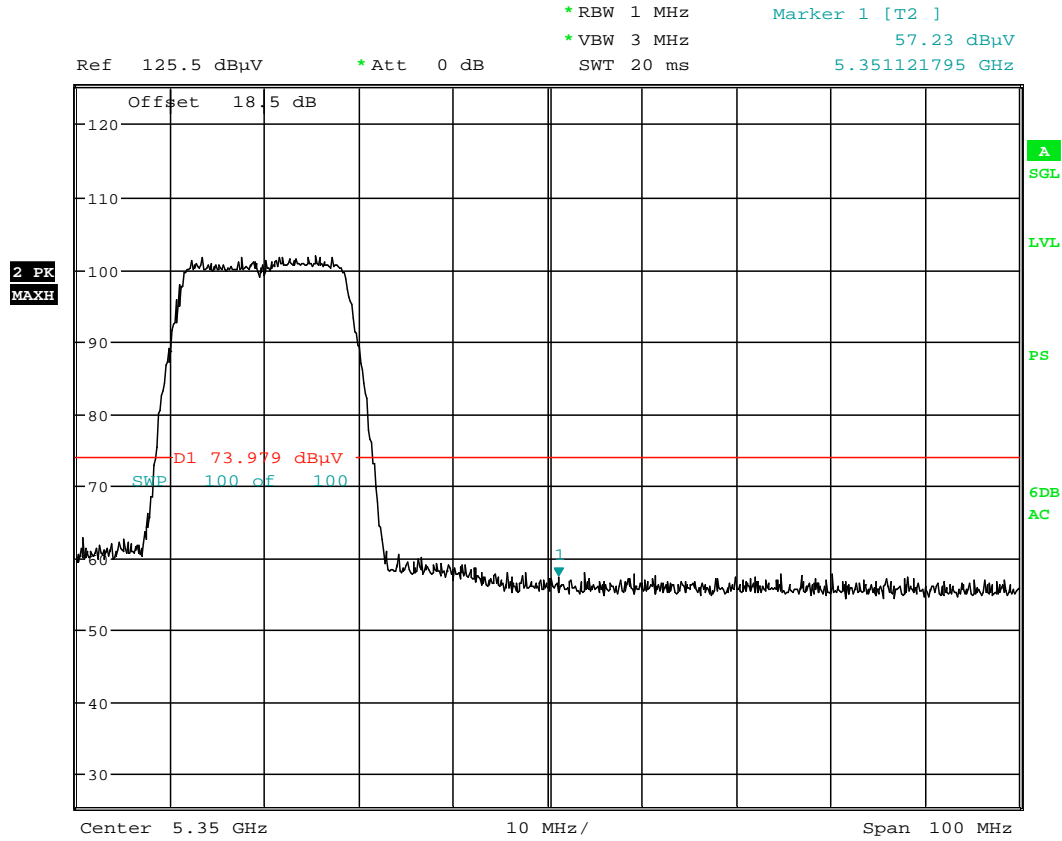
Date: 28.JUL.2014 22:00:00

Plot 6-135. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 118 of 189

Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 28.JUL.2014 22:00:36

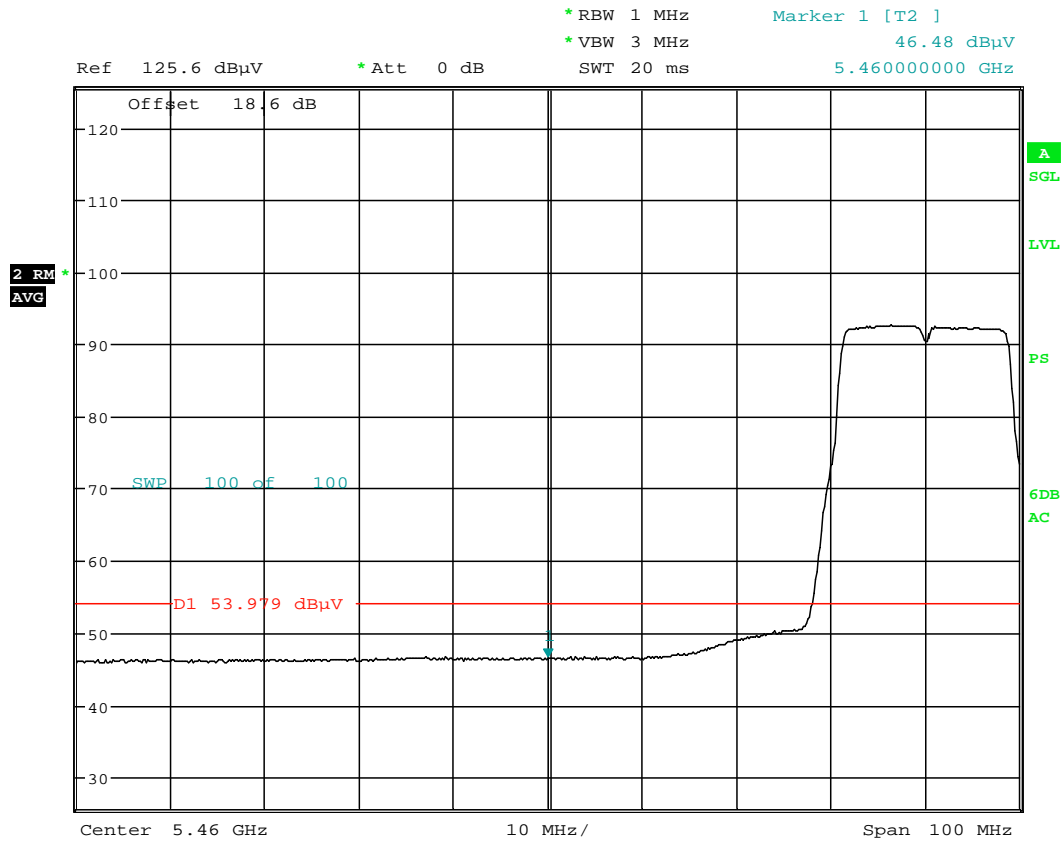
Plot 6-136. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 119 of 189	

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



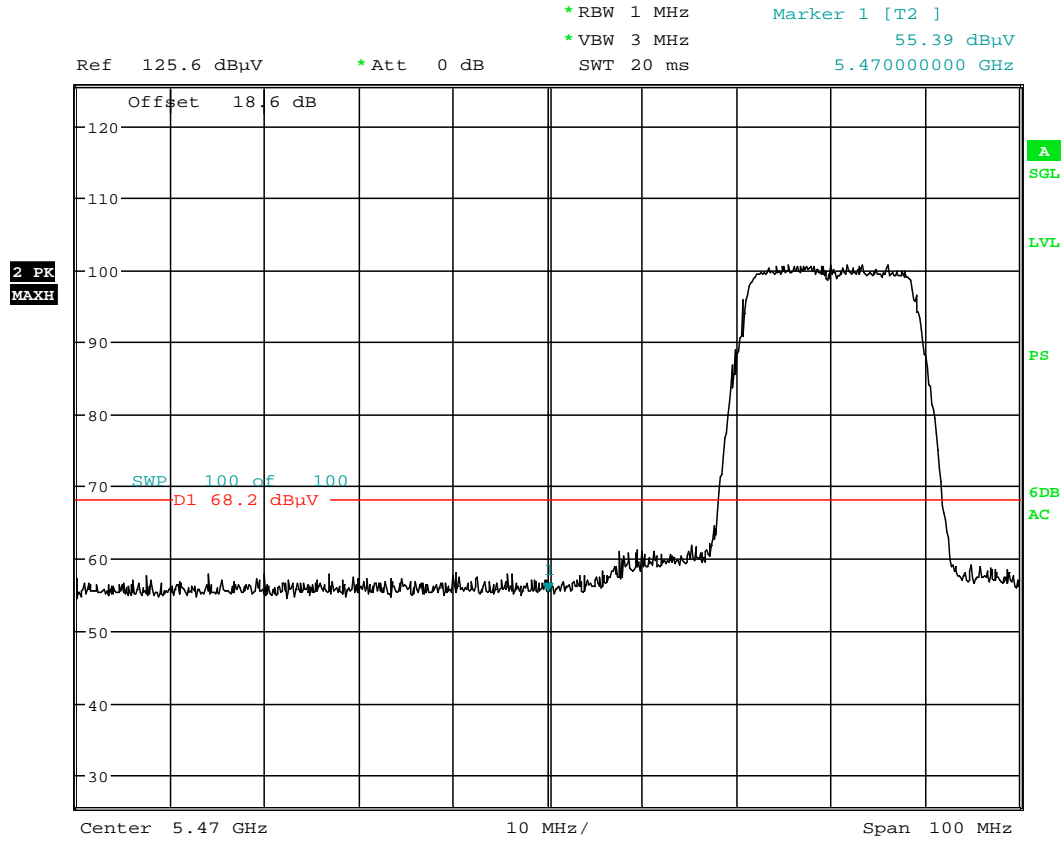
Date: 28.JUL.2014 22:20:06

Plot 6-137. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 120 of 189

Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 28.JUL.2014 22:21:14

Plot 6-138. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMN916KOR		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 121 of 189	

Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

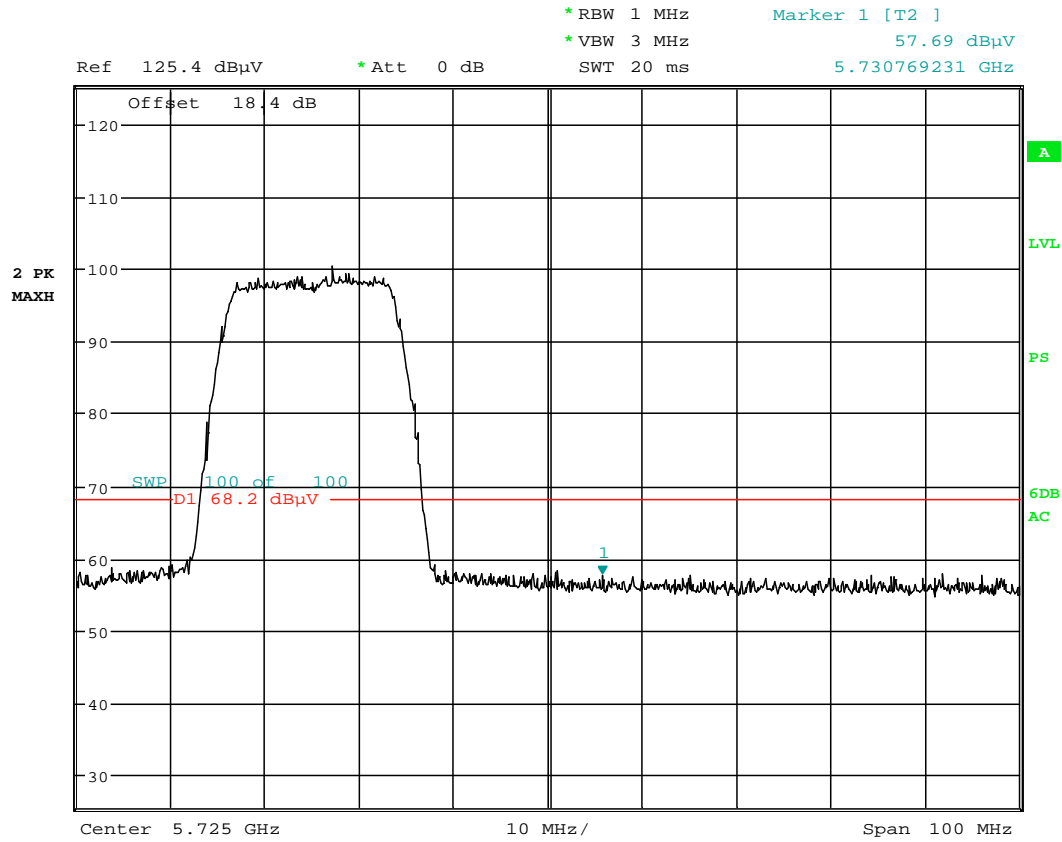
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5700MHz

Channel: 140



Date: 28.JUL.2014 22:46:12

Plot 6-139. Radiated Upper Band Edge Plot (Peak – UNII Band 2C)



FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 122 of 189

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

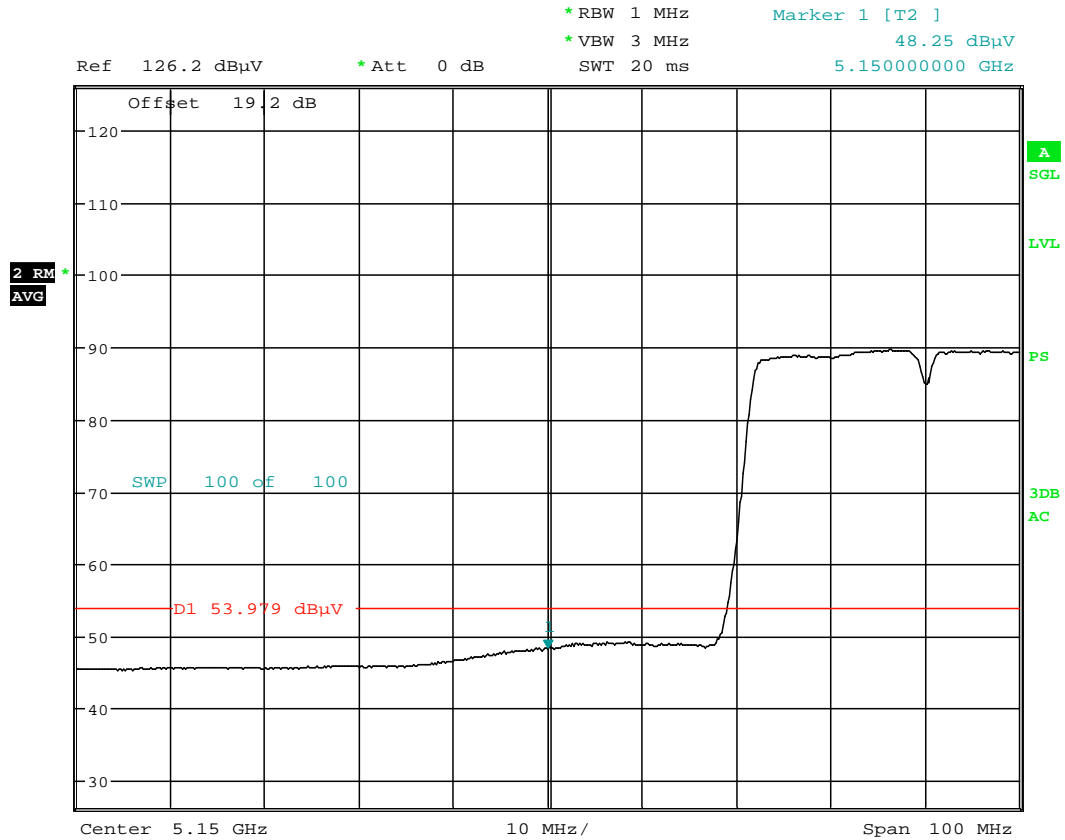
The table below shows additional correction factors that need to be applied to the average measurement plots in this section based on the duty cycle of the emissions.

Mode	Tx Frequency (MHz)	Channel	Radiated Level [dB μ V/m]	Duty Cycle Correction	Limit [dB μ V/m]	Corrected Radiated Level	Average Margin [dB]
802.11n 40MHz ANT1	5190	38	48.25	0.31	53.98	48.56	-5.42
	5310	62	50.1			50.41	-3.57
	5510	102	46.85			47.16	-6.82

Table 6-54. Radiated Band Edge Duty Cycle Corrections

FCC ID: A3LSMN916KOR		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 123 of 189

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



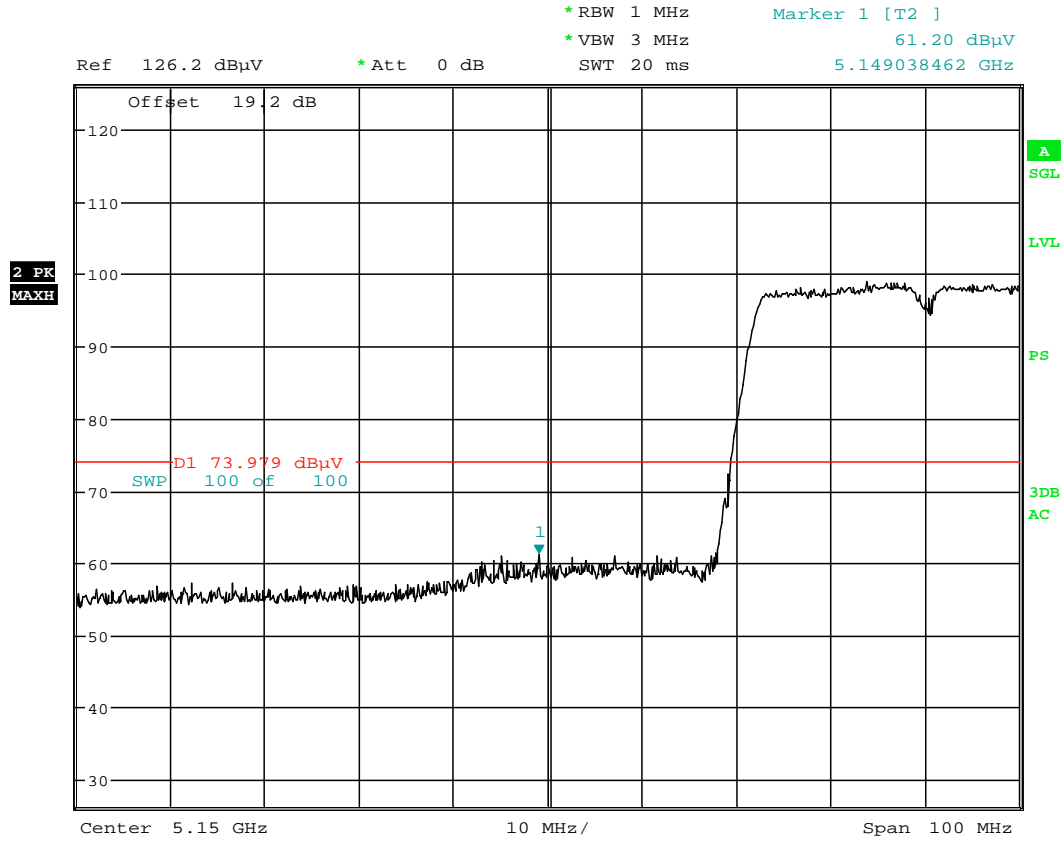
Date: 28.JUL.2014 21:47:14

Plot 6-140. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 124 of 189	

Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 28.JUL.2014 21:47:55

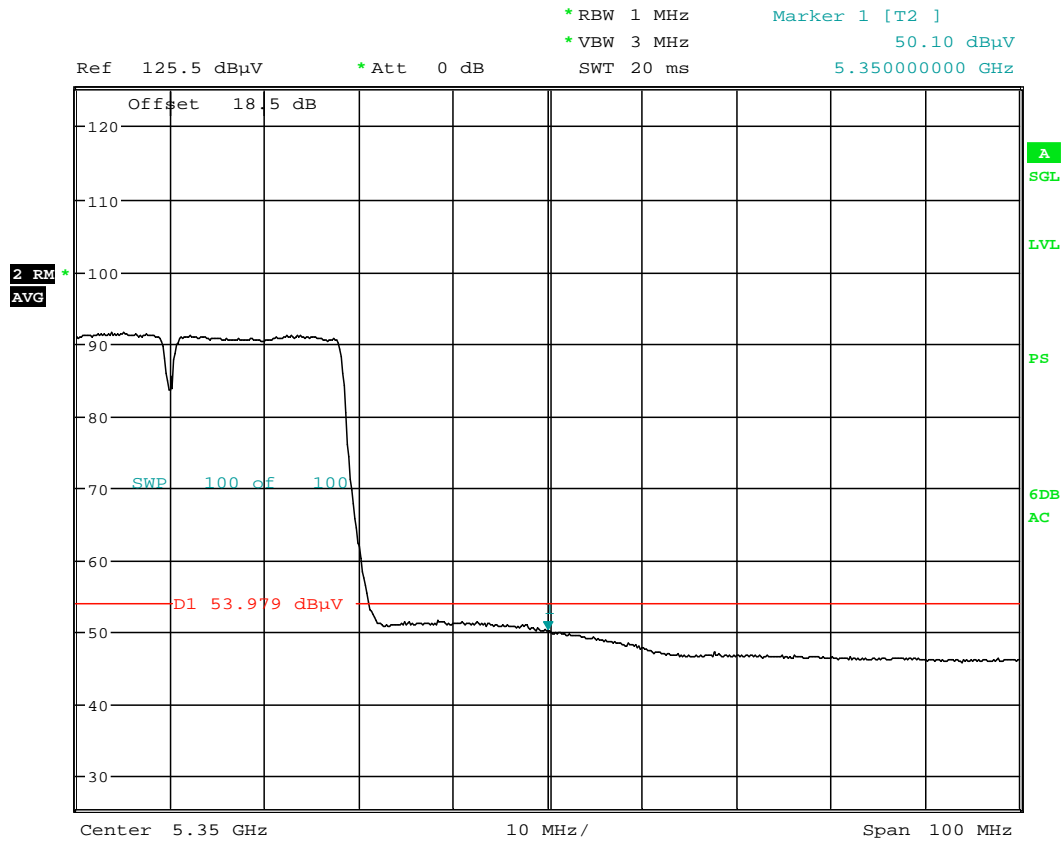
Plot 6-141. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSMN916KOR		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 125 of 189	

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



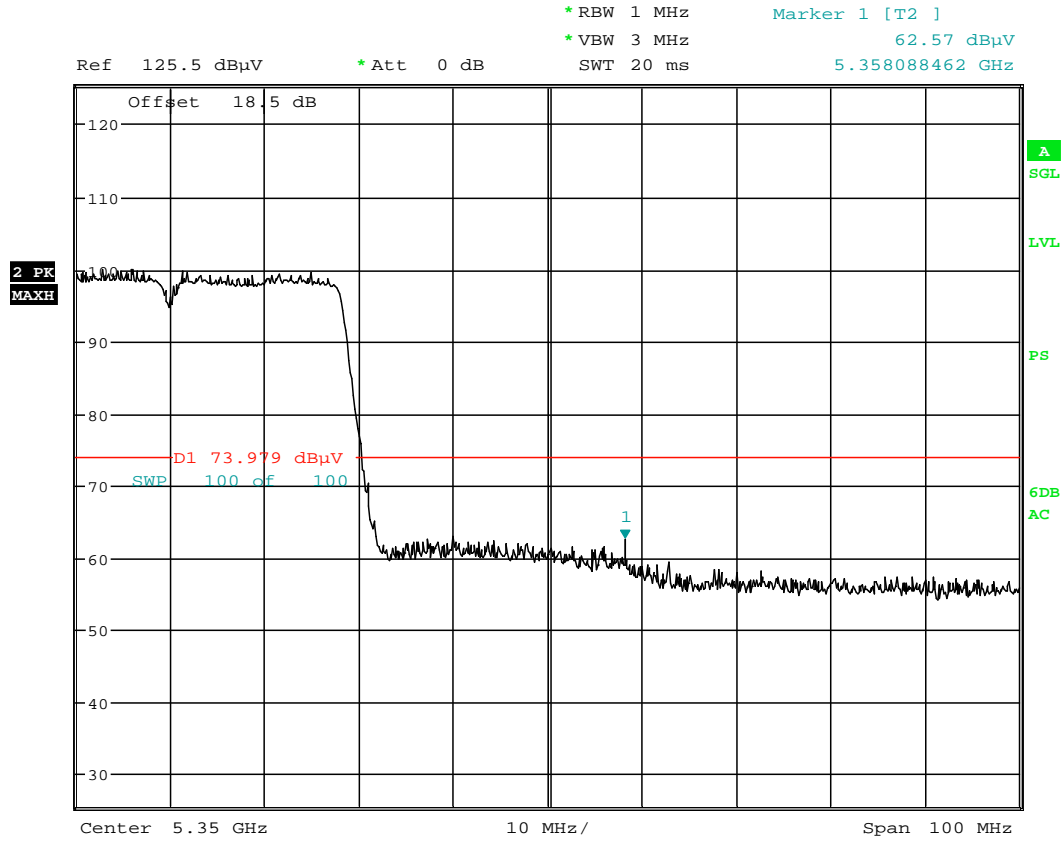
Date: 28.JUL.2014 22:04:52

Plot 6-142. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 126 of 189

Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 28.JUL.2014 22:05:30

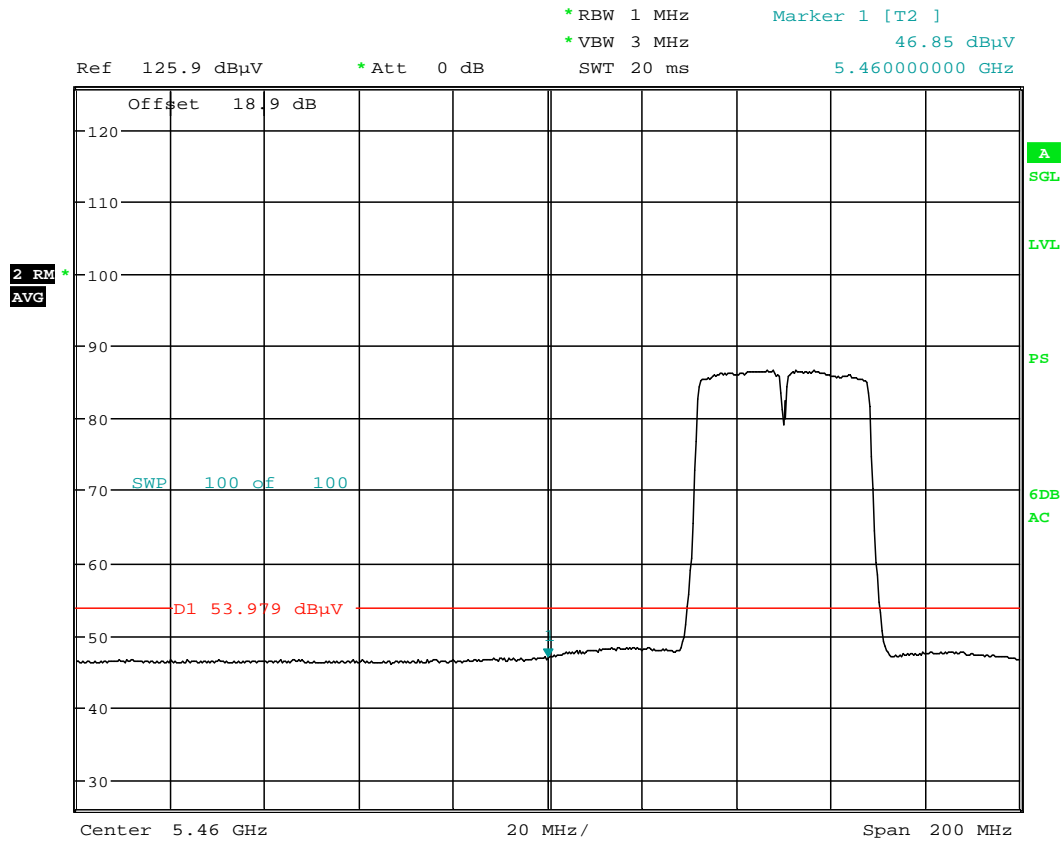
Plot 6-143. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMN916KOR	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 127 of 189

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



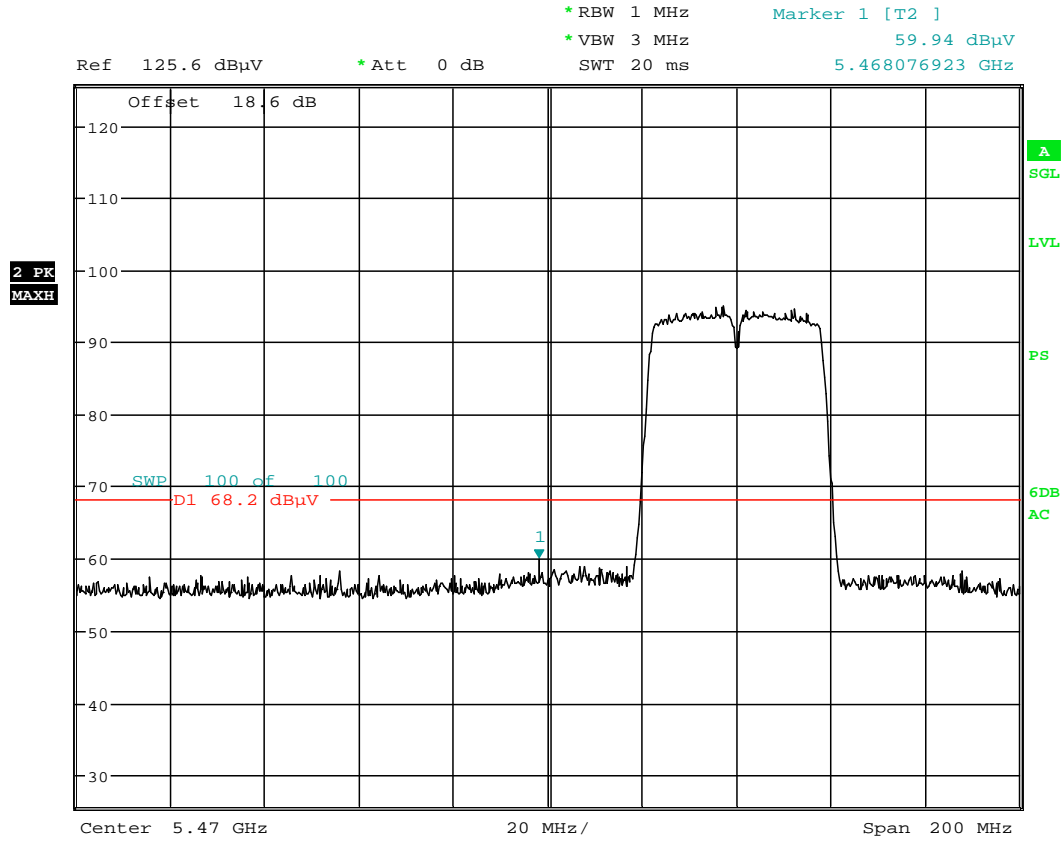
Date: 28.JUL.2014 22:31:59

Plot 6-144. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 128 of 189	

Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 28.JUL.2014 22:32:37

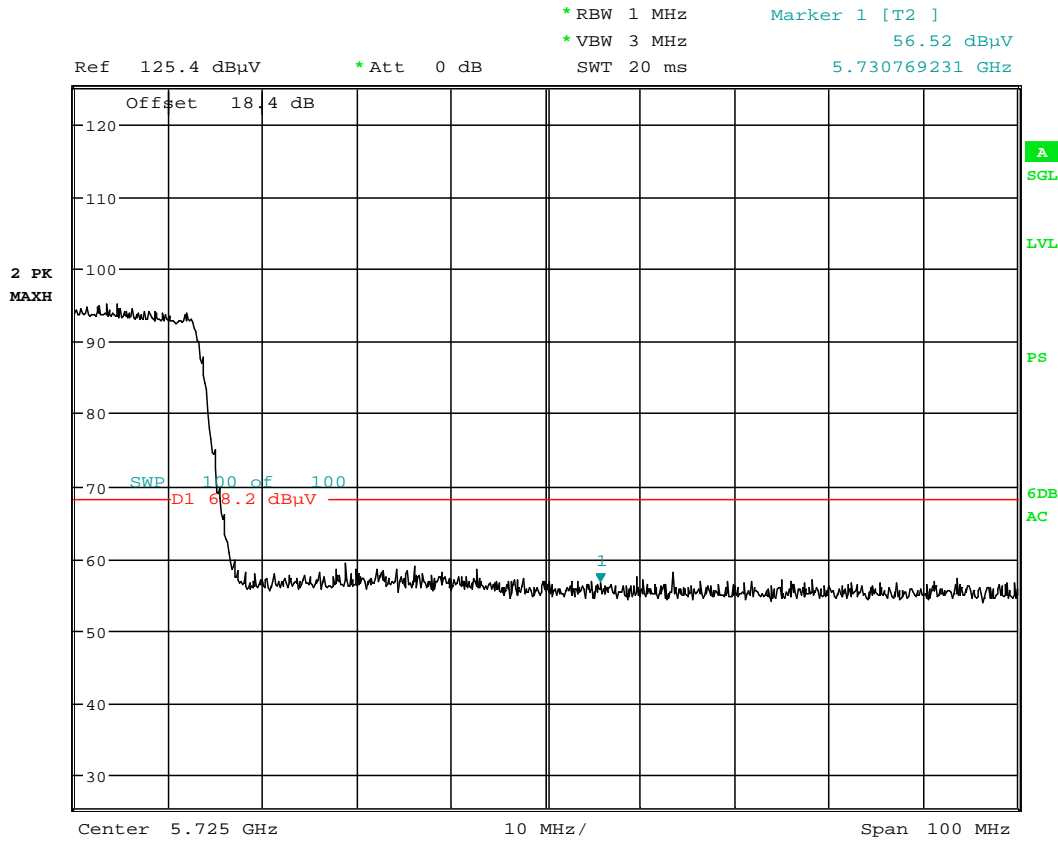
Plot 6-145. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 129 of 189	

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: 5670MHz
 Channel: 134



Date: 28.JUL.2014 22:47:58

Plot 6-146. Radiated Upper Band Edge Plot (Peak – UNII Band 2C)



FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 130 of 189	

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

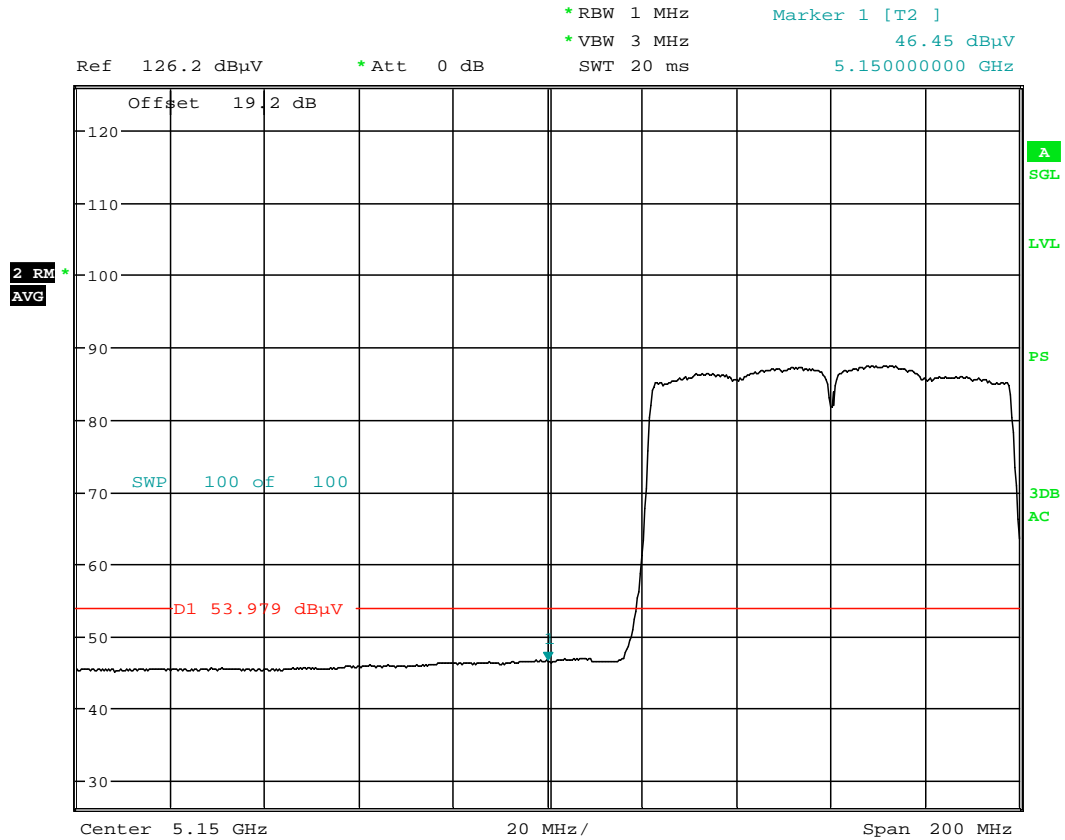
The table below shows additional correction factors that need to be applied to the average measurement plots in this section based on the duty cycle of the emissions.

Mode	Tx Frequency (MHz)	Channel	Radiated Level [dB μ V/m]	Duty Cycle Correction	Limit [dB μ V/m]	Corrected Radiated Level	Average Margin [dB]
802.11ac 80MHz ANT1	5210	42	46.45	0.38	53.98	46.76	-7.22
	5290	58	47.13			47.44	-6.54
	5530	106	47.07			47.38	-6.6

Table 6-55. Radiated Band Edge Duty Cycle Corrections

FCC ID: A3LSMN916KOR		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 131 of 189

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



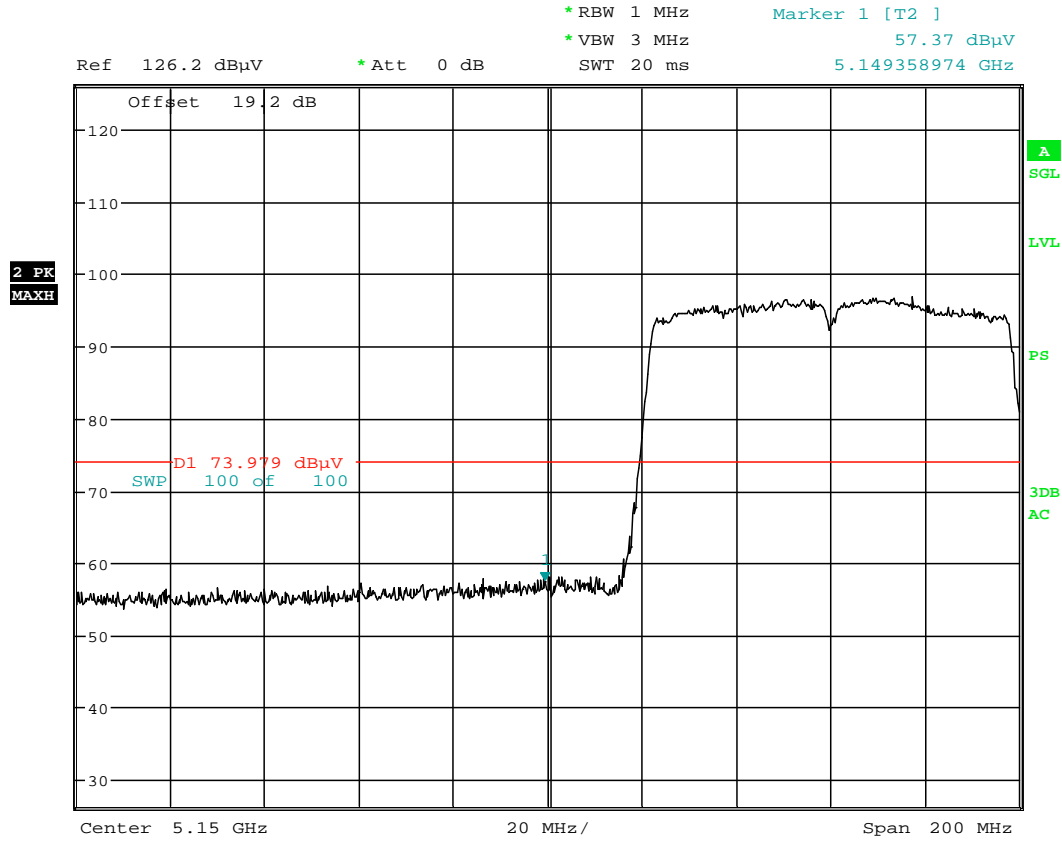
Date: 28.JUL.2014 21:53:25

Plot 6-147. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 132 of 189	

Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 28.JUL.2014 21:53:54

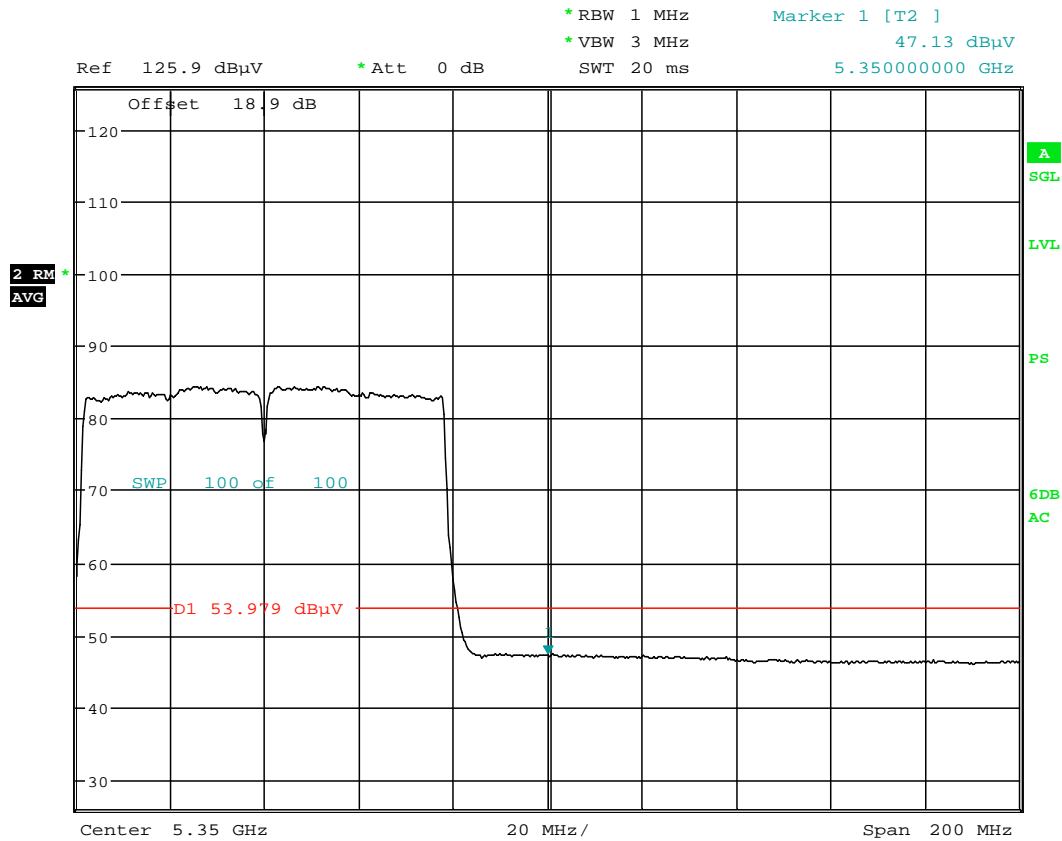
Plot 6-148. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 133 of 189	

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



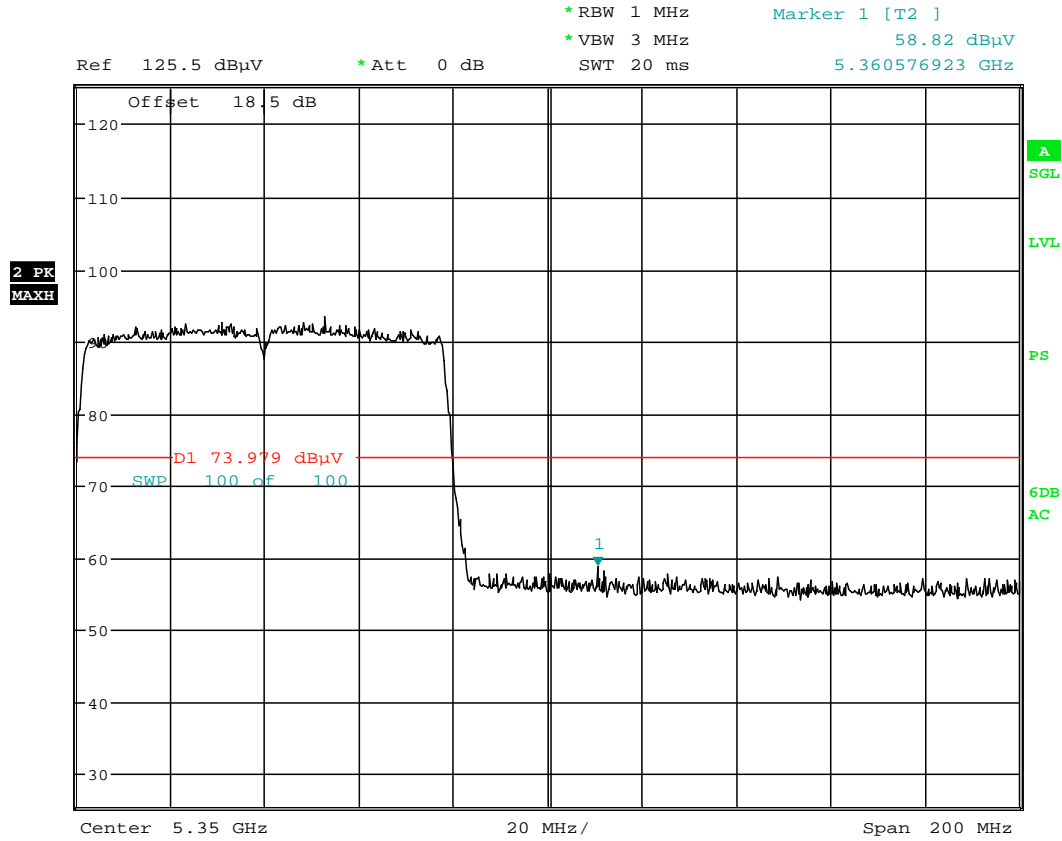
Date: 28.JUL.2014 22:14:38

Plot 6-149. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 134 of 189

Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 28.JUL.2014 22:15:23

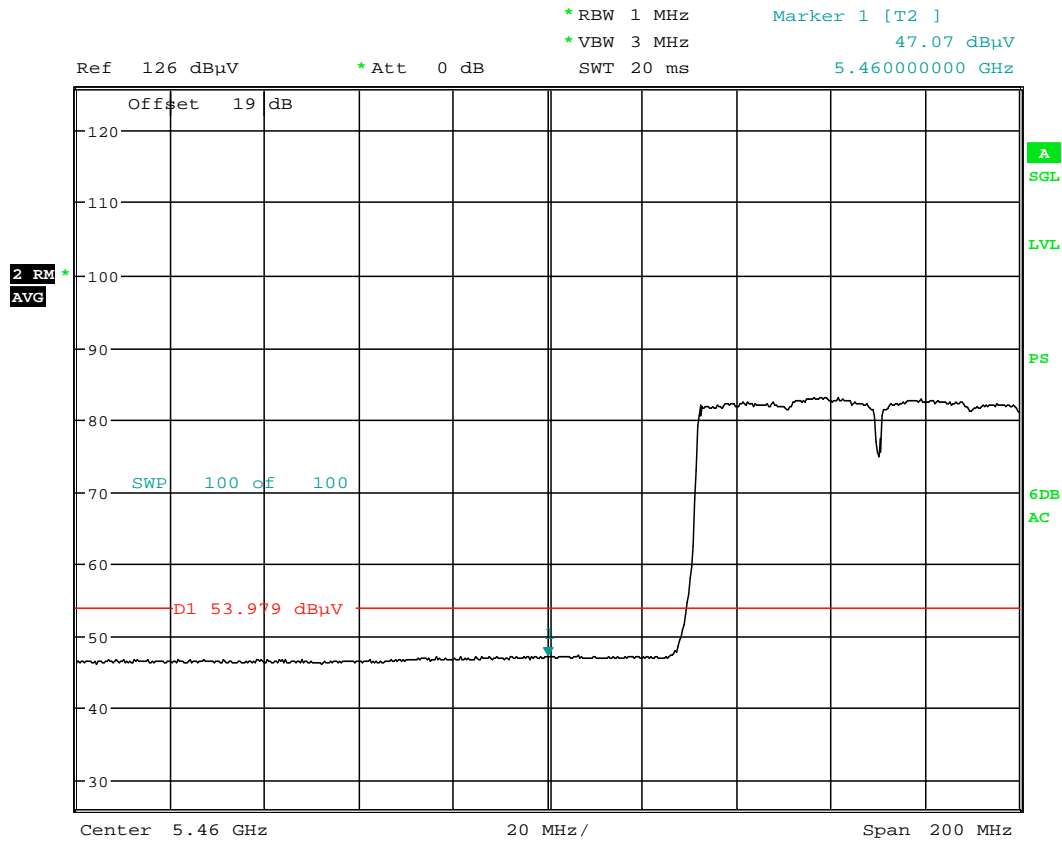
Plot 6-150. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 135 of 189	

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



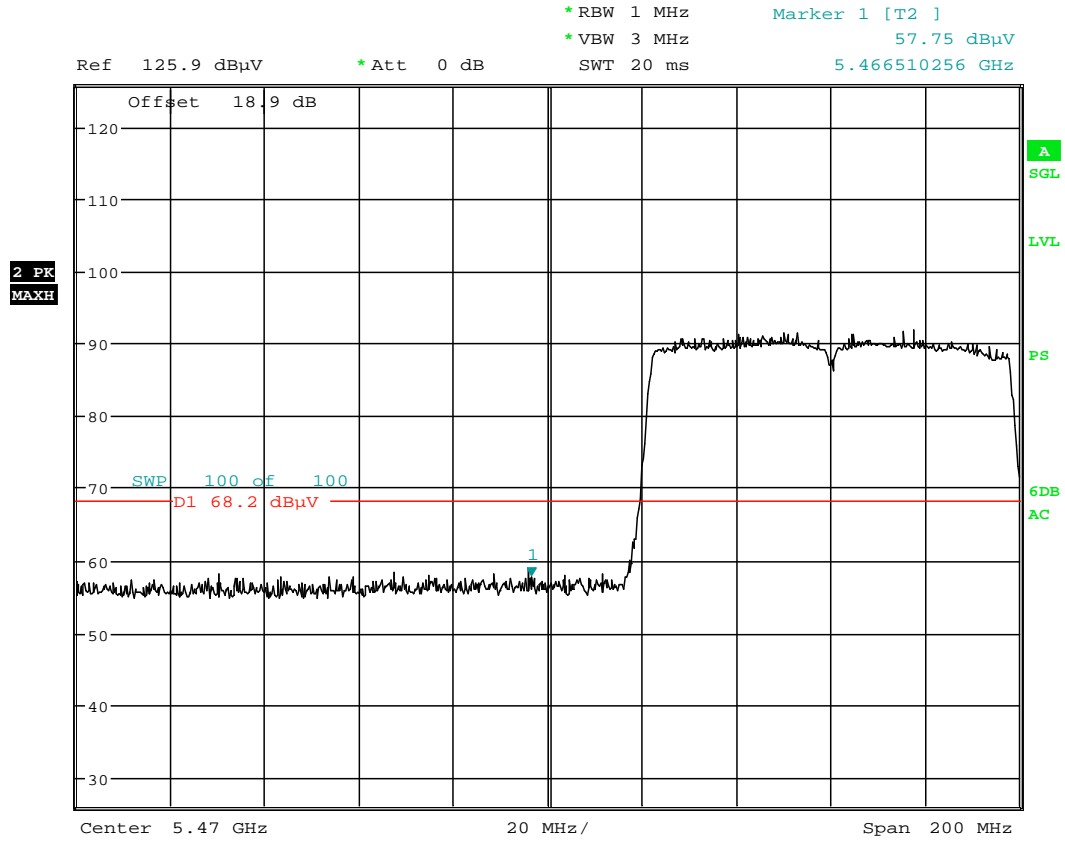
Date: 28.JUL.2014 22:37:39

Plot 6-151. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 136 of 189	

Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 28.JUL.2014 22:38:36

Plot 6-152. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 137 of 189

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

§15.407(b.1)(b.2) §15.205 §15.209

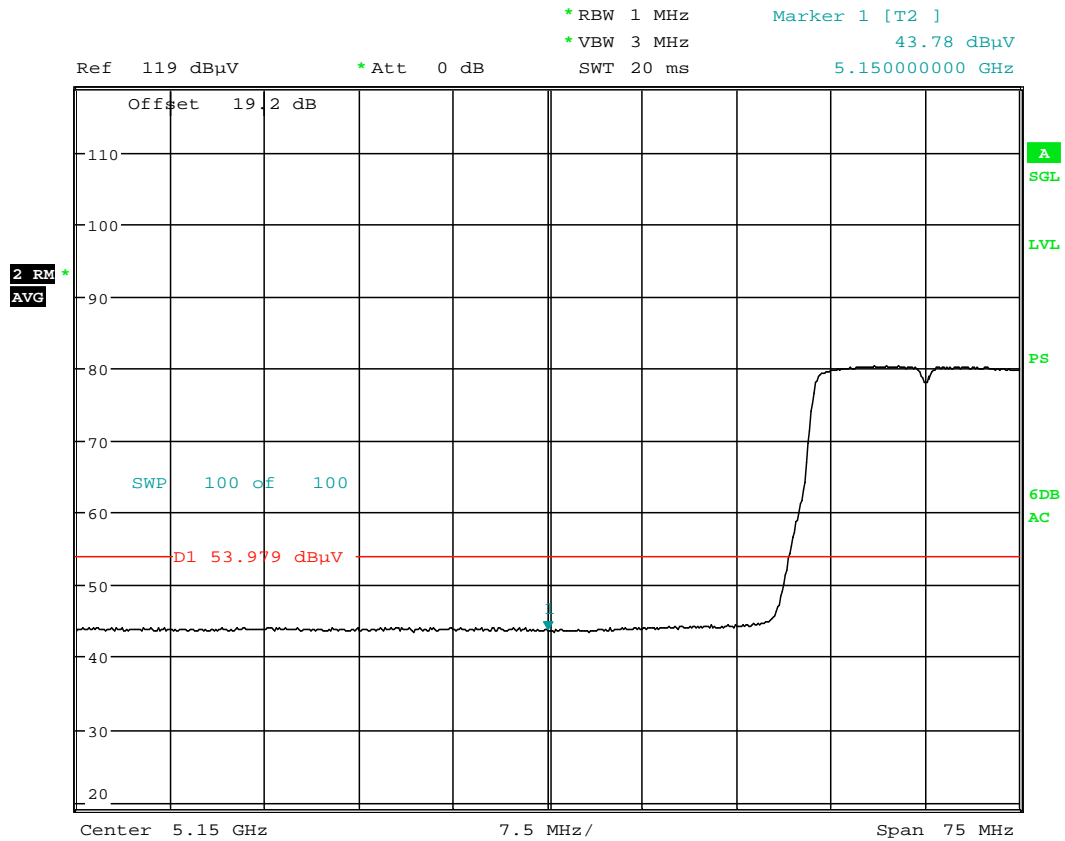
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36



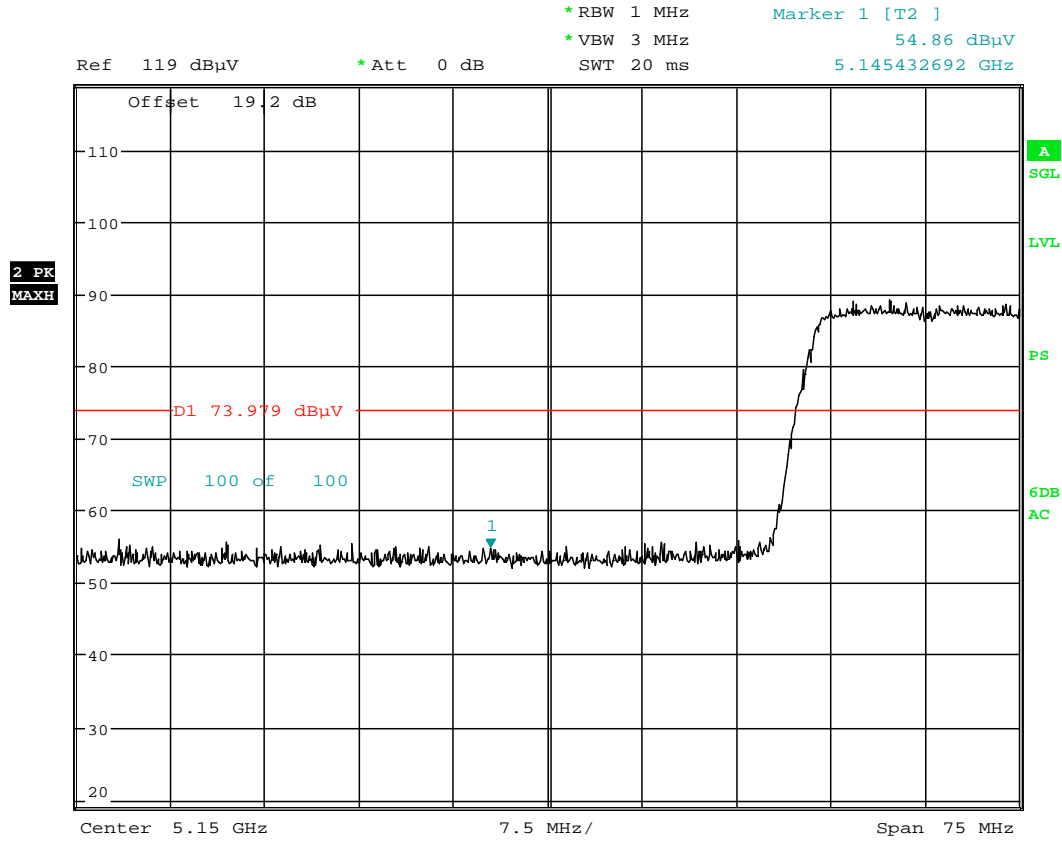
Date: 29.JUL.2014 01:22:46

Plot 6-153. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 138 of 189

Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 29.JUL.2014 01:23:19

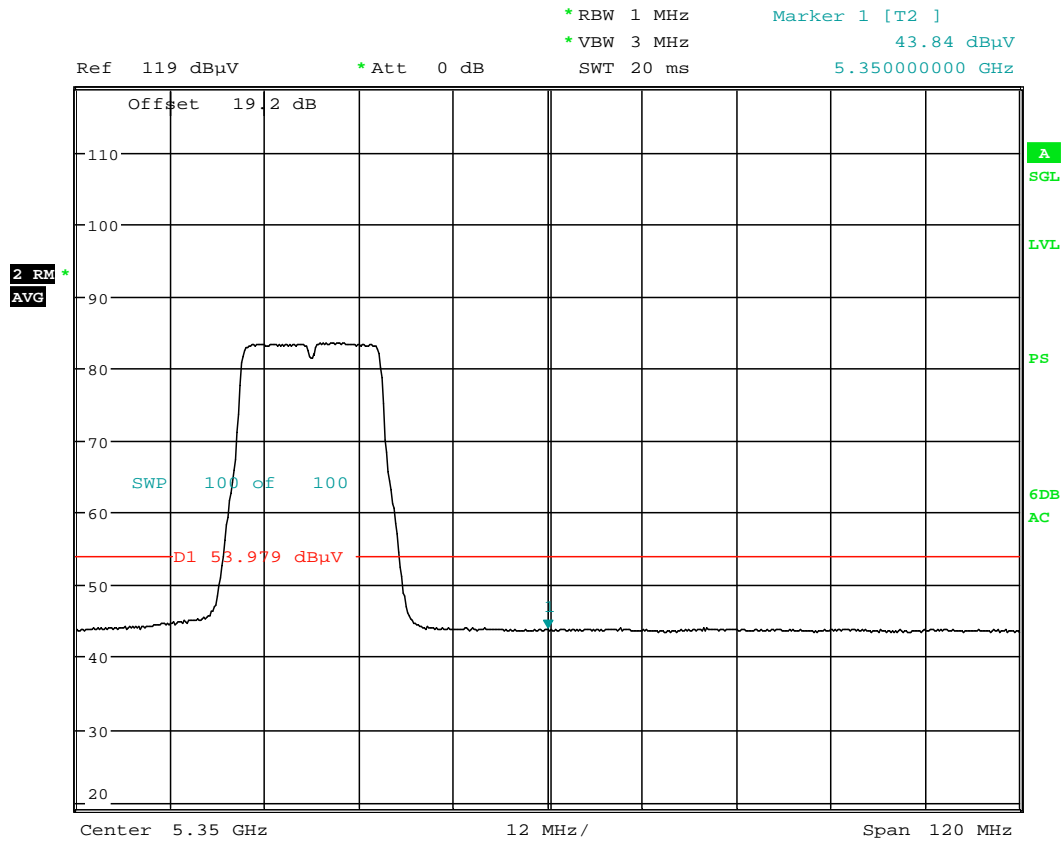
Plot 6-154. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSMN916KOR	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 139 of 189

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



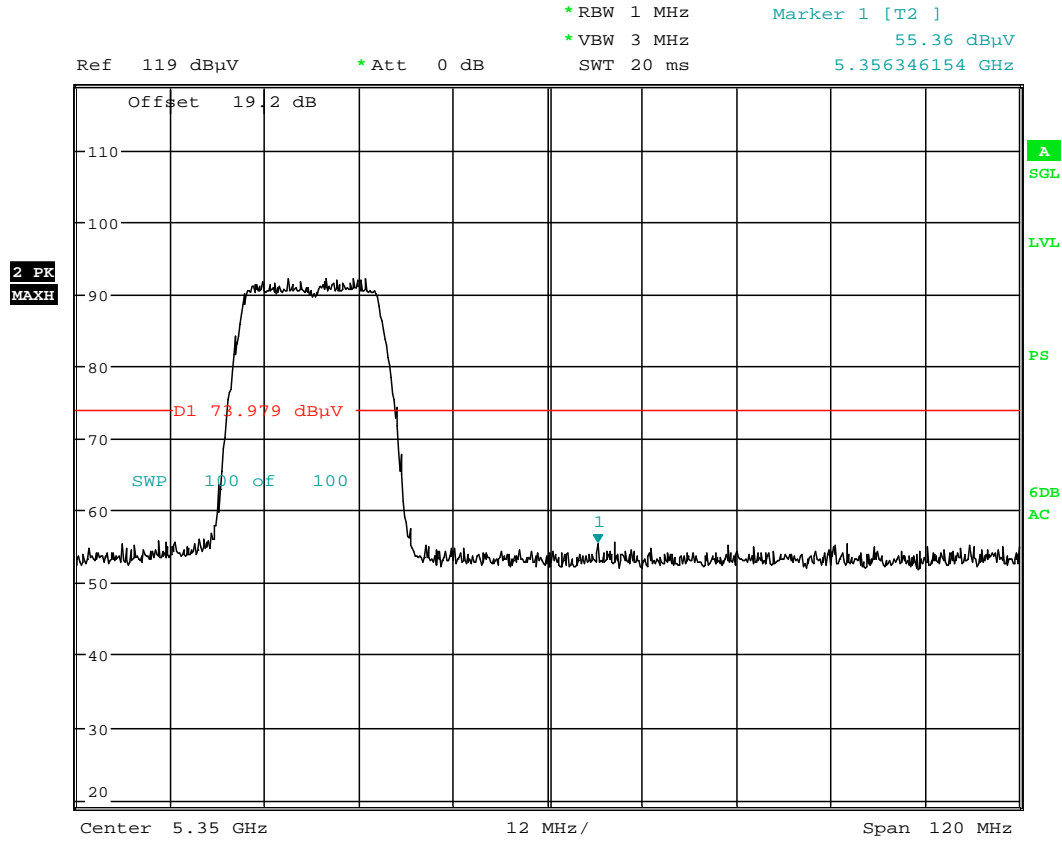
Date: 29.JUL.2014 02:04:03

Plot 6-155. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 140 of 189

Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 29.JUL.2014 02:04:31

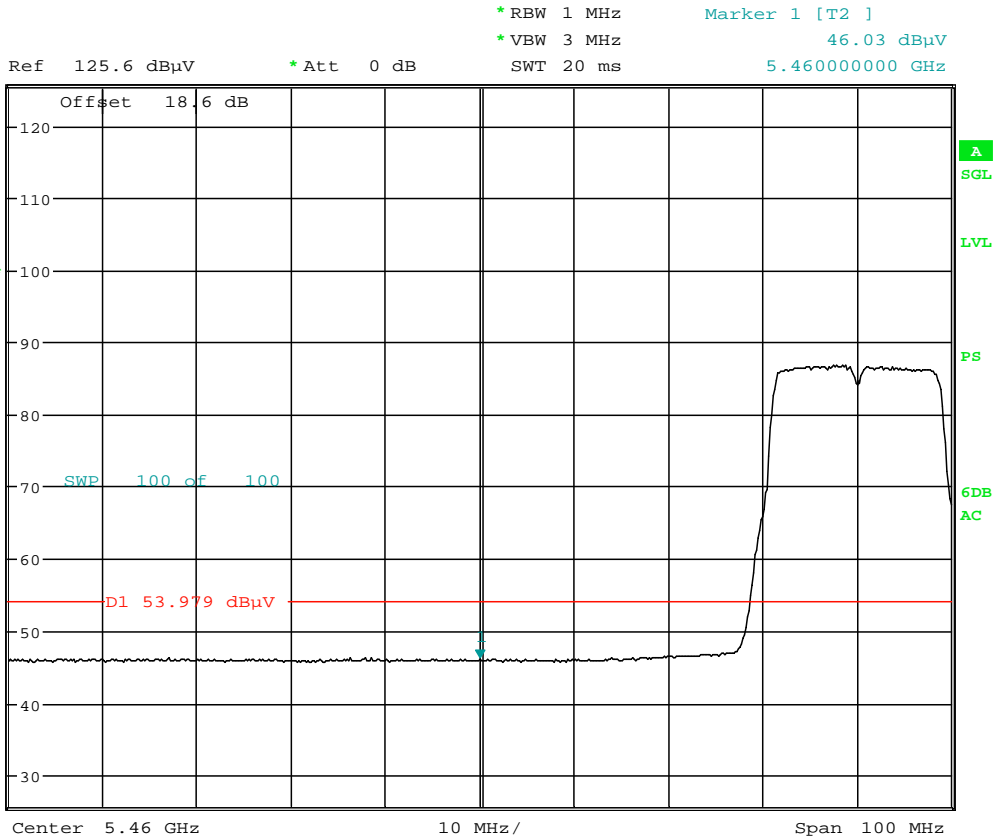
Plot 6-156. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 141 of 189	

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

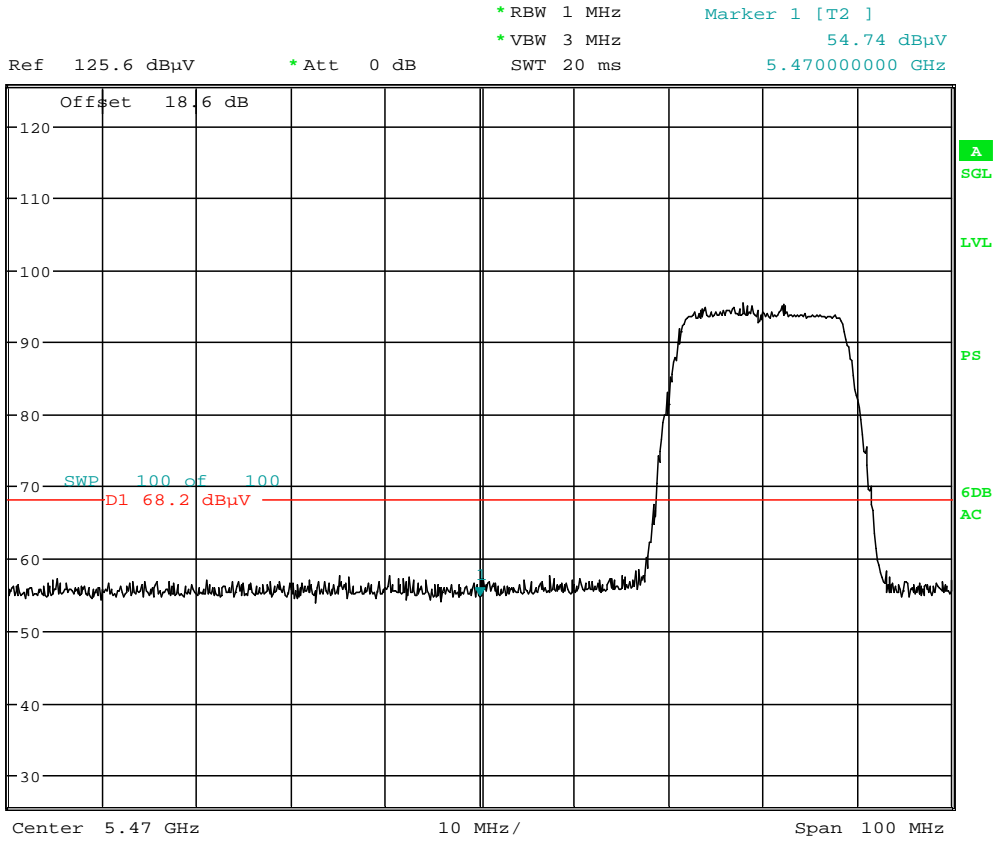


Date: 29.JUL.2014 22:32:22

Plot 6-157. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 142 of 189	

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



Date: 29.JUL.2014 22:32:53

Plot 6-158. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 143 of 189

Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

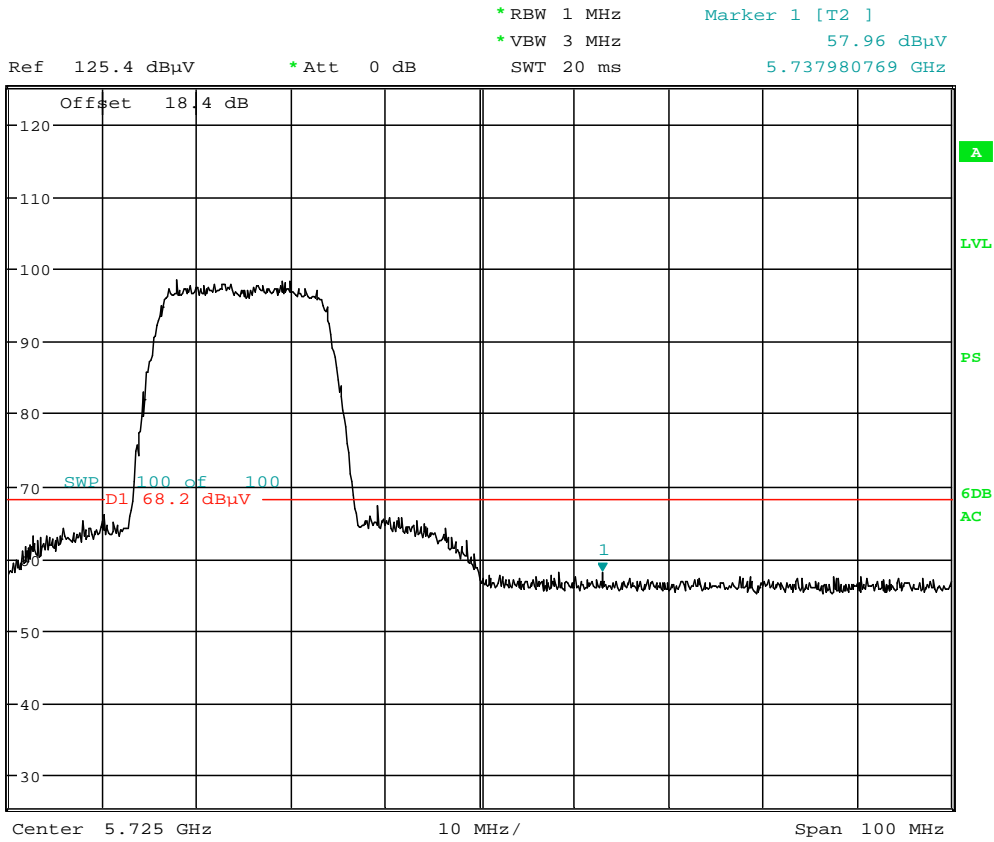
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5700MHz

Channel: 140



Date: 29.JUL.2014 22:48:20

Plot 6-159. Radiated Upper Band Edge Plot (Peak – UNII Band 2C)



FCC ID: A3LSMN916KOR	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: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 144 of 189

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

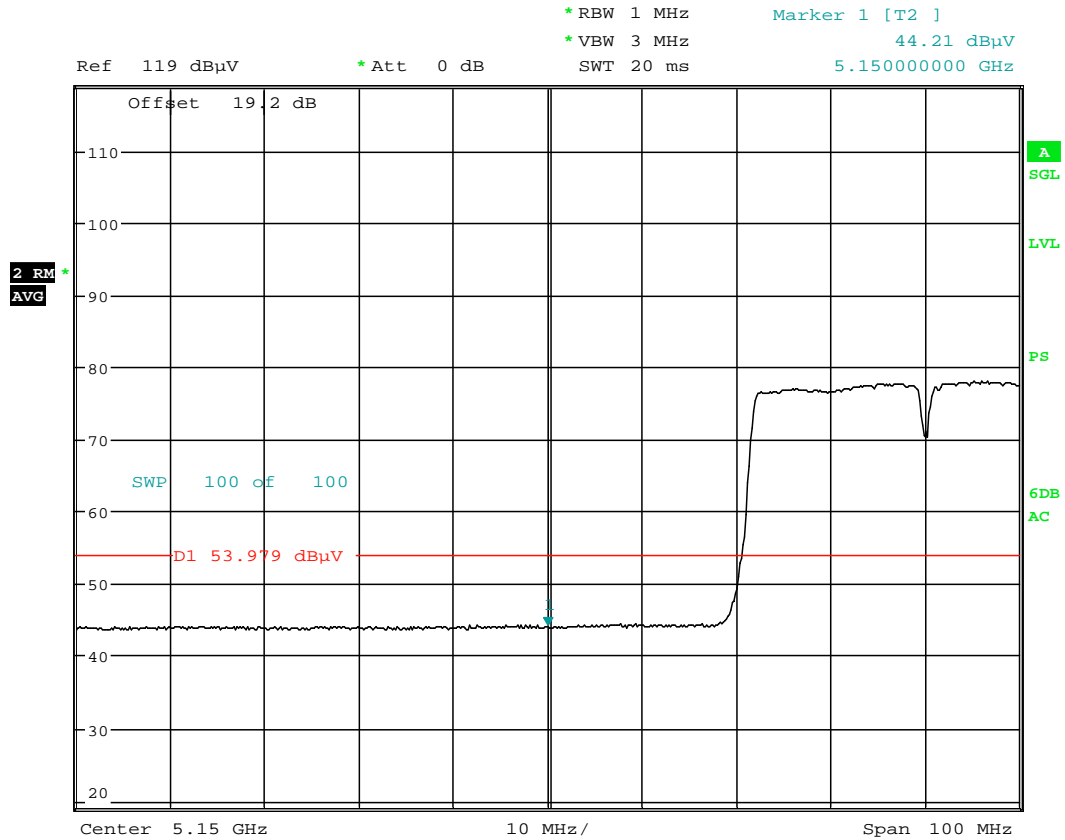
The table below shows additional correction factors that need to be applied to the average measurement plots in this section based on the duty cycle of the emissions.

Mode	Tx Frequency (MHz)	Channel	Radiated Level [dB μ V/m]	Duty Cycle Correction	Limit [dB μ V/m]	Corrected Radiated Level	Average Margin [dB]
802.11n 40MHz ANT2	5190	38	44.21	0.31	53.98	44.52	-9.46
	5310	62	50.5			50.81	-3.17
	5510	102	46.52			46.83	-7.15

Table 6-56. Radiated Band Edge Duty Cycle Corrections

FCC ID: A3LSMN916KOR	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 145 of 189

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



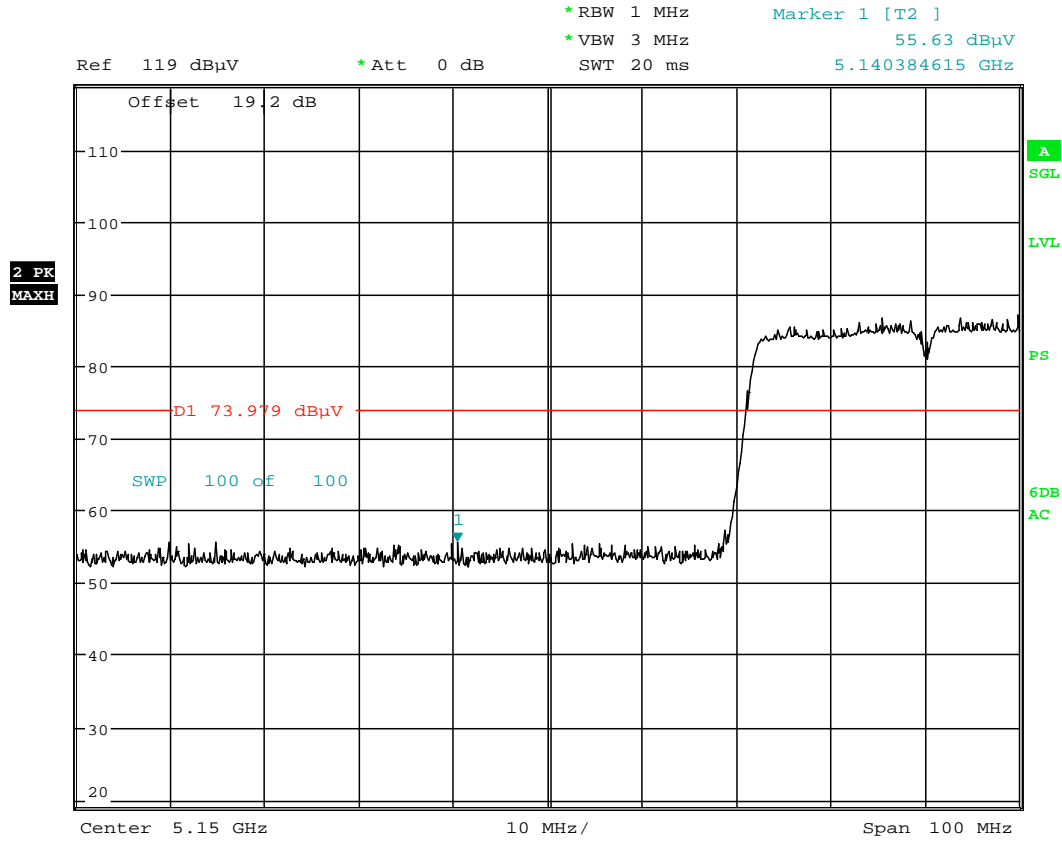
Date: 29.JUL.2014 01:49:42

Plot 6-160. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 146 of 189

Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 29.JUL.2014 01:50:10

Plot 6-161. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSMN916KOR	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 147 of 189

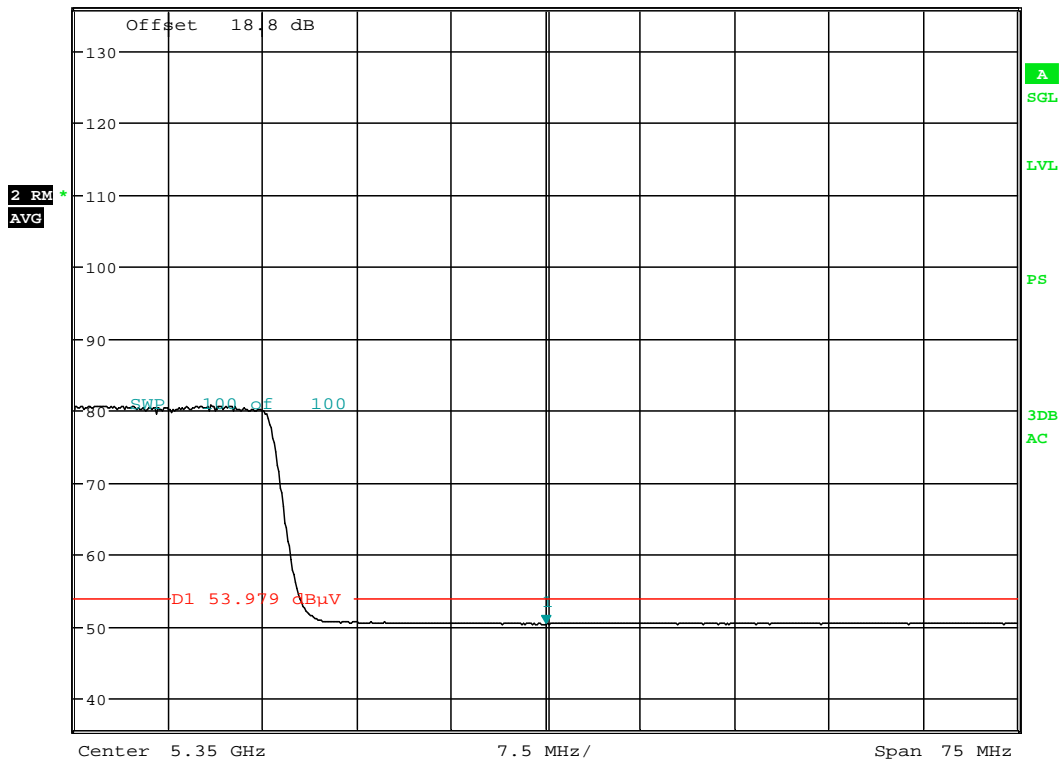
Radiated Band Edge Measurements (40MHz BW)

§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



Ref 135.8 dBµV * Att 10 dB SWT 20 ms Marker 1 [T2] 50.50 dBµV
 * RBW 1 MHz * VBW 3 MHz 5.35000000 GHz

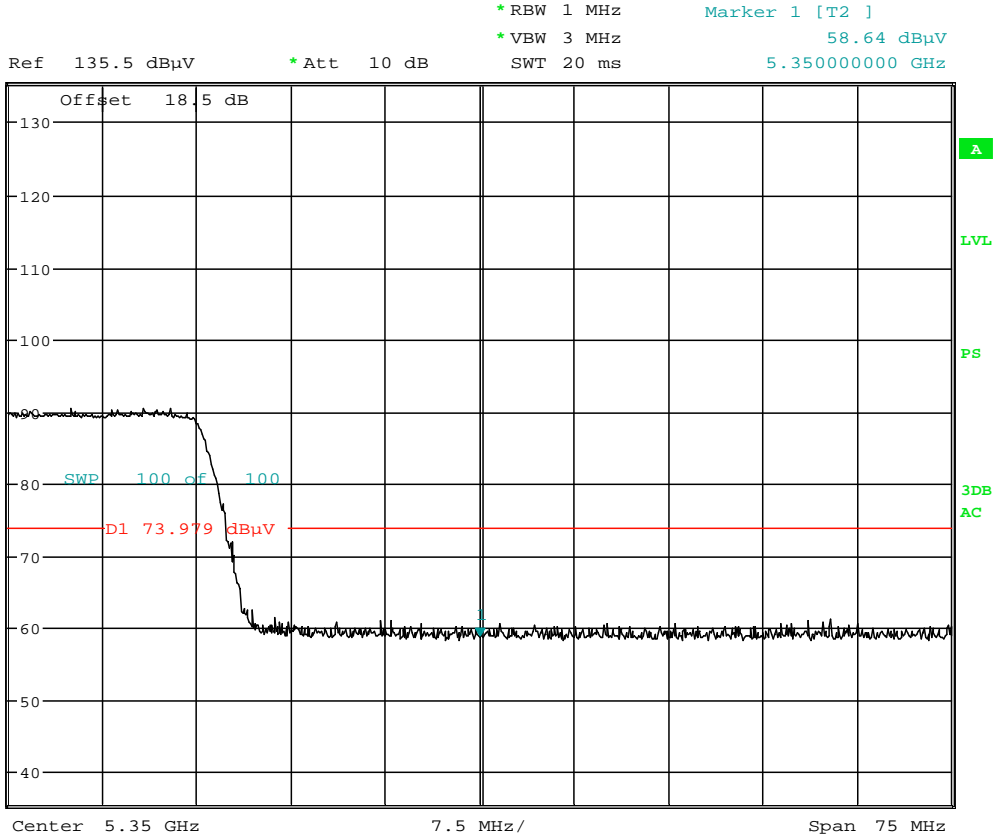


Date: 29.JUL.2014 22:19:35

Plot 6-162. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 148 of 189

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



Date: 29.JUL.2014 22:20:07

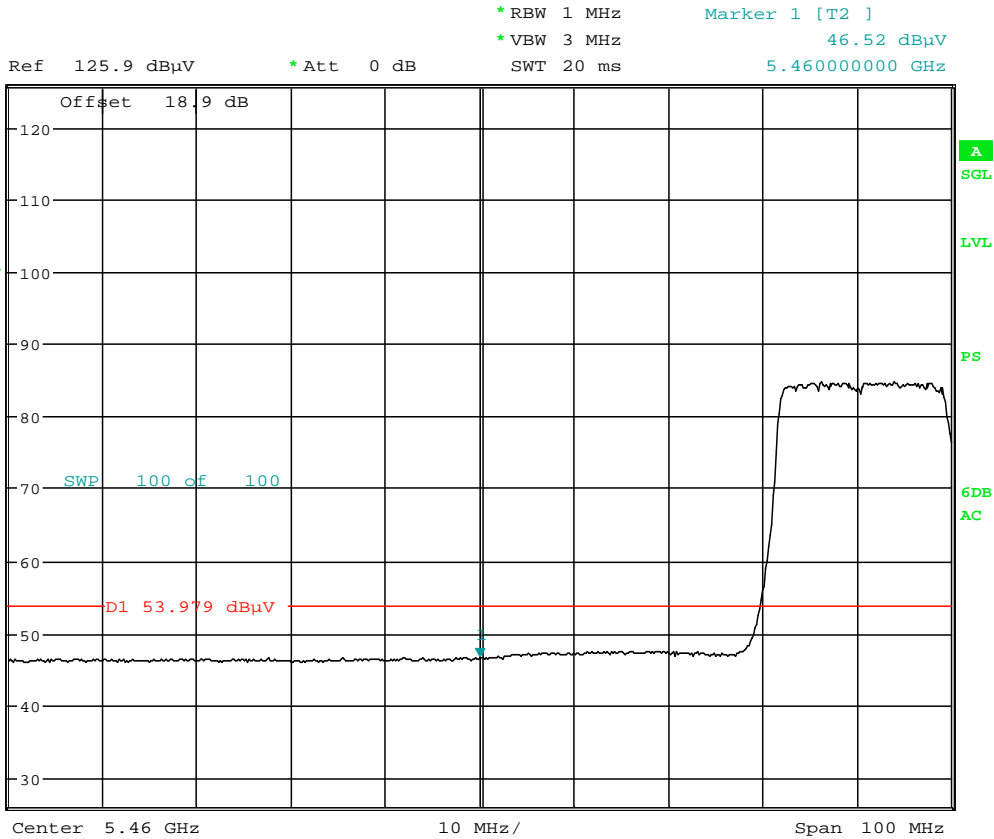
Plot 6-163. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMN916KOR	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 149 of 189

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

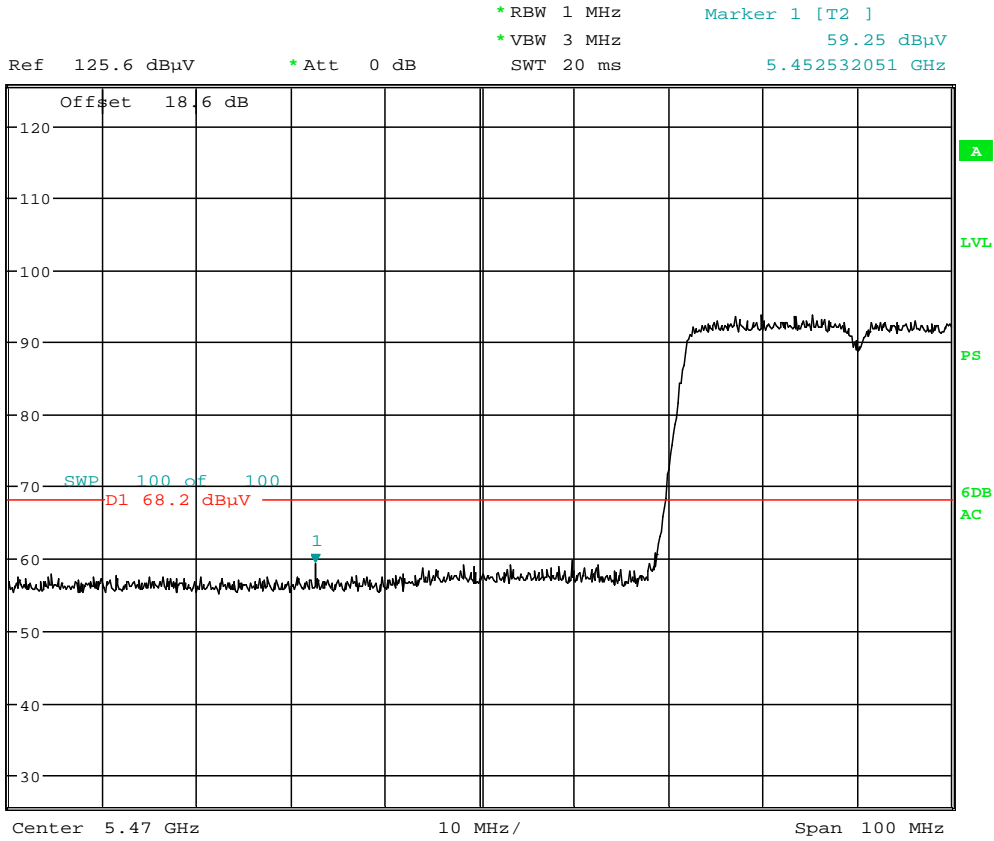


Date: 29.JUL.2014 22:35:07

Plot 6-164. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 150 of 189

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



Date: 29.JUL.2014 22:35:57

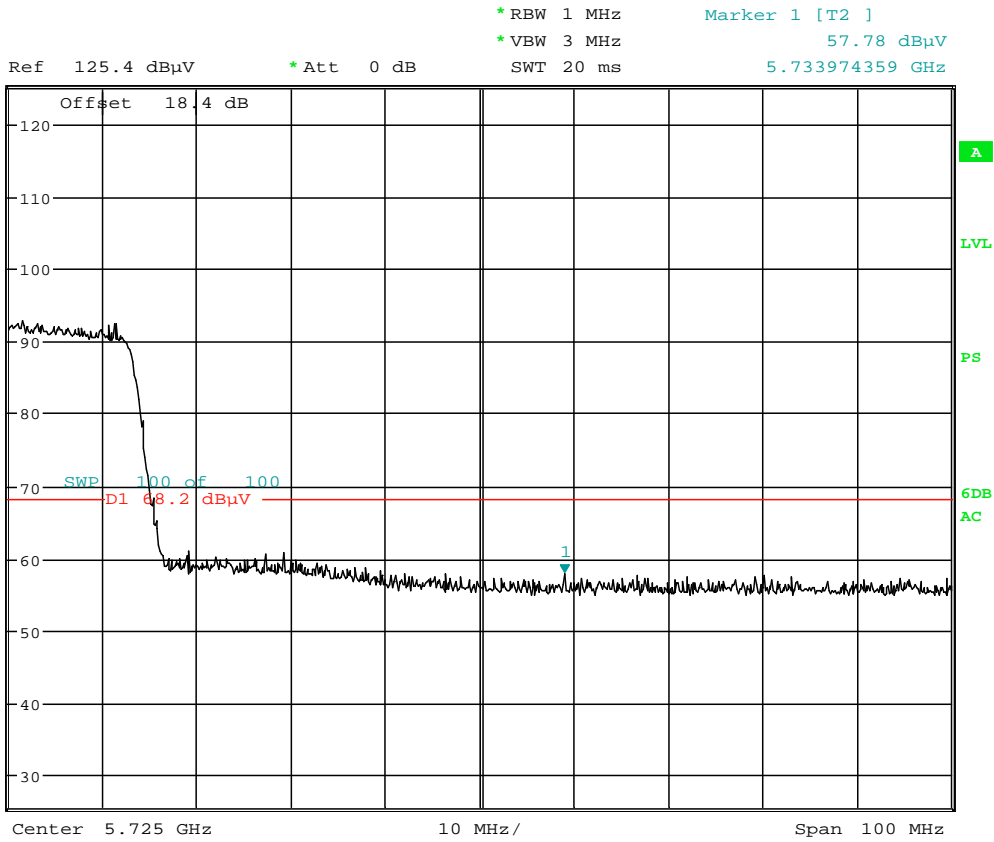
Plot 6-165. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 151 of 189	

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: 5670MHz
 Channel: 134



Date: 29.JUL.2014 22:55:35

Plot 6-166. Radiated Upper Band Edge Plot (Peak – UNII Band 2C)



FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 152 of 189	

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

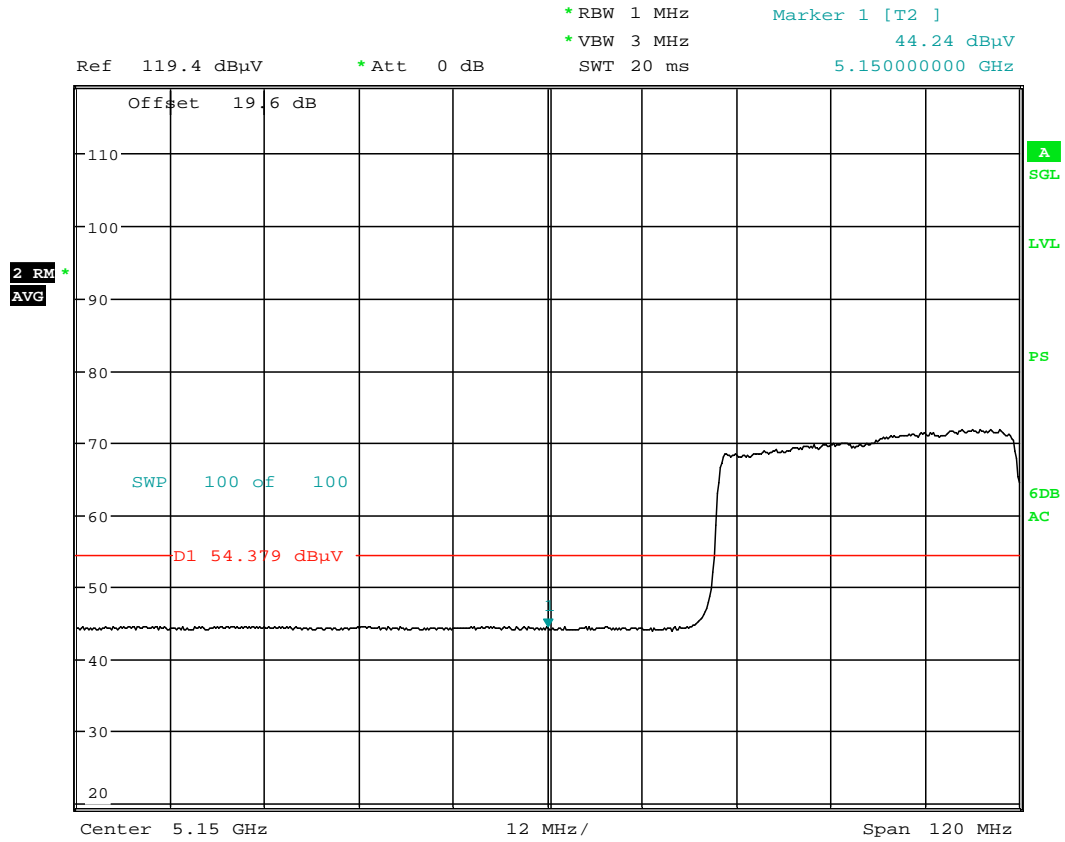
The table below shows additional correction factors that need to be applied to the average measurement plots in this section based on the duty cycle of the emissions.

Mode	Tx Frequency (MHz)	Channel	Radiated Level [dB μ V/m]	Duty Cycle Correction	Limit [dB μ V/m]	Corrected Radiated Level	Average Margin [dB]
802.11ac 80MHz ANT2	5210	42	44.24	0.4	53.98	44.55	-9.43
	5290	58	46.49			46.8	-7.18
	5530	106	46.64			46.95	-7.03

Table 6-57. Radiated Band Edge Duty Cycle Corrections

FCC ID: A3LSMN916KOR	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 153 of 189

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



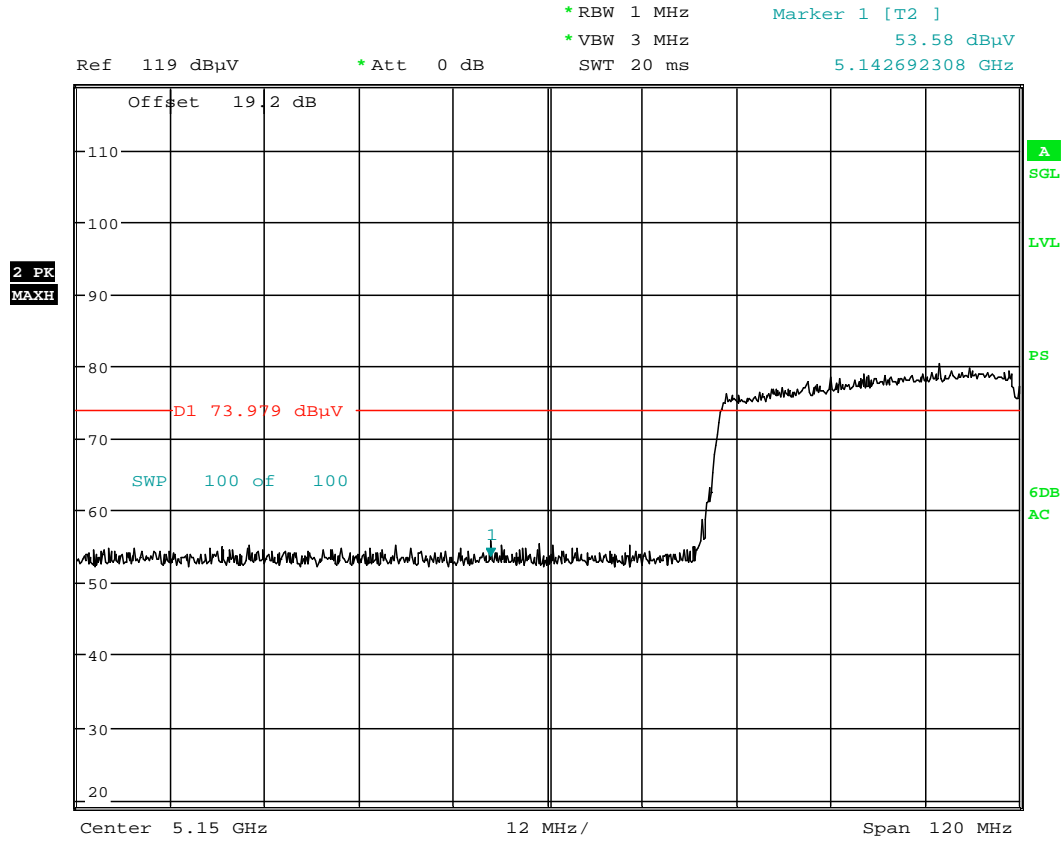
Date: 29.JUL.2014 01:58:07

Plot 6-167. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 154 of 189

Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 29.JUL.2014 01:58:54

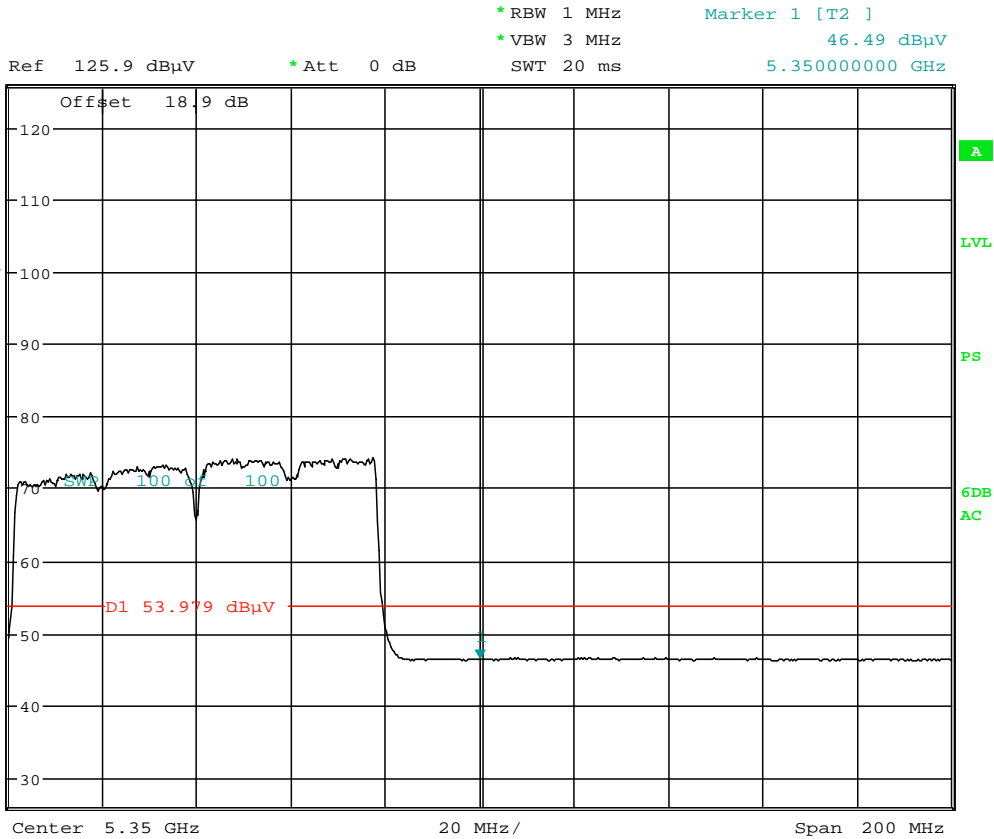
Plot 6-168. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSMN916KOR		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 155 of 189

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

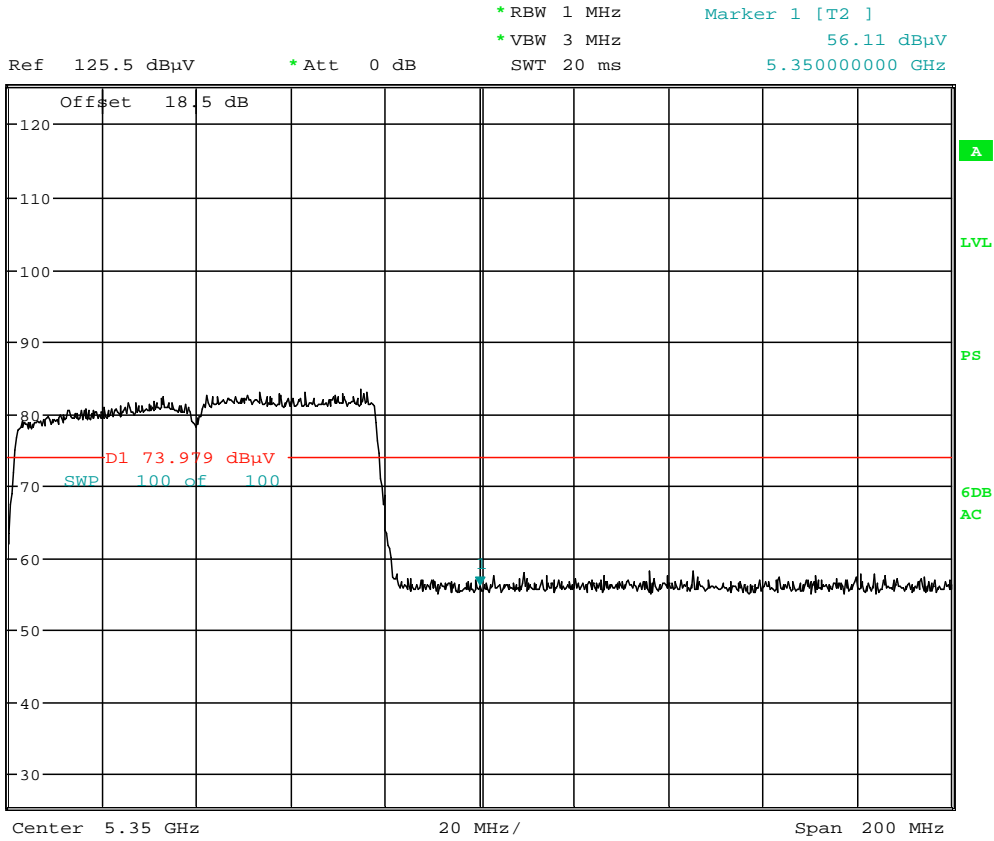


Date: 29.JUL.2014 22:26:09

Plot 6-169. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 156 of 189

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



Date: 29.JUL.2014 22:26:59

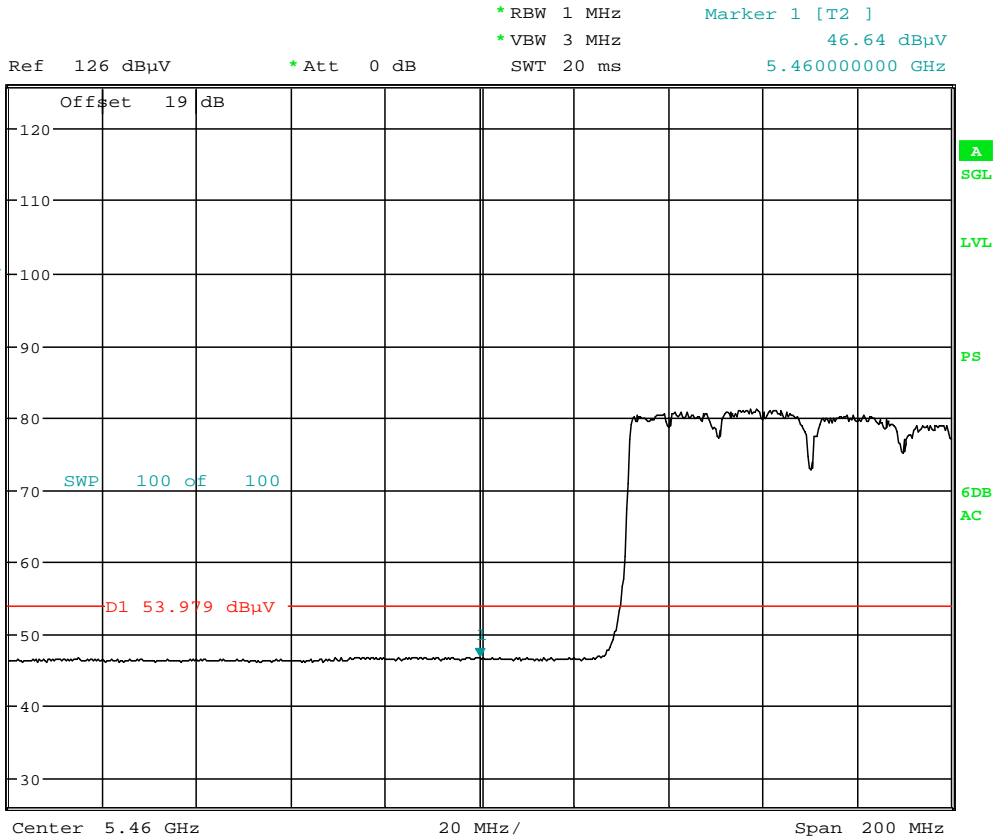
Plot 6-170. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMN916KOR	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 157 of 189

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

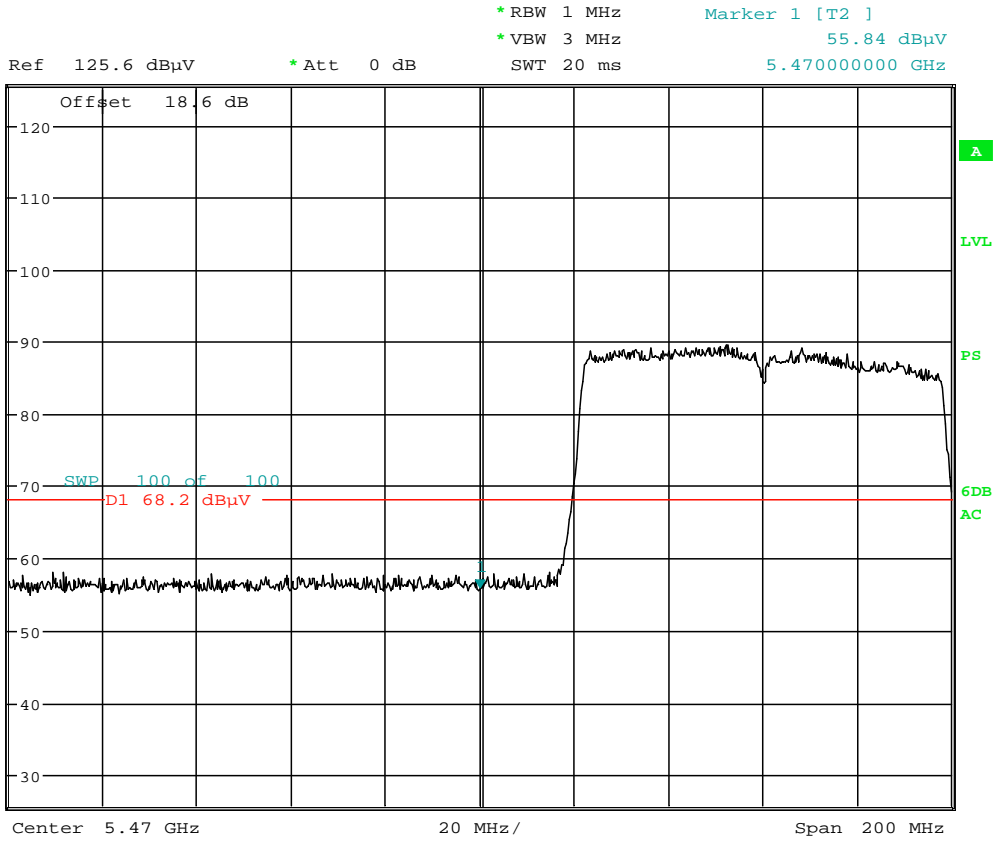


Date: 29.JUL.2014 22:41:56

Plot 6-171. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 158 of 189

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



Date: 29.JUL.2014 22:42:45

Plot 6-172. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)



FCC ID: A3LSMN916KOR	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 159 of 189

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

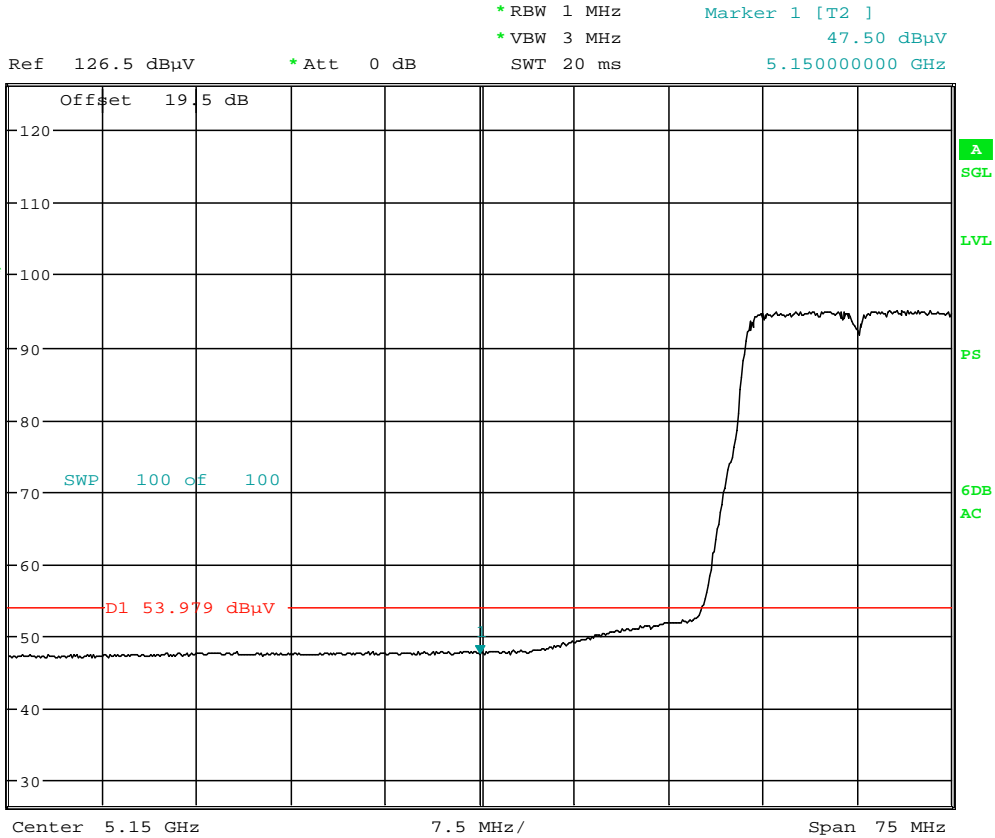
The table below shows additional correction factors that need to be applied to the average measurement plots in this section based on the duty cycle of the emissions.

Mode	Tx Frequency (MHz)	Channel	Radiated Level [dB μ V/m]	Duty Cycle Correction	Limit [dB μ V/m]	Corrected Radiated Level	Average Margin [dB]
802.11n 20MHz MIMO	5180	36	47.5	0.29	53.98	47.79	-6.19
	5320	64	46.42			46.71	-7.27
	5500	100	46.31			46.6	-7.38

Table 6-58. Radiated Band Edge Duty Cycle Corrections

FCC ID: A3LSMN916KOR	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 160 of 189

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



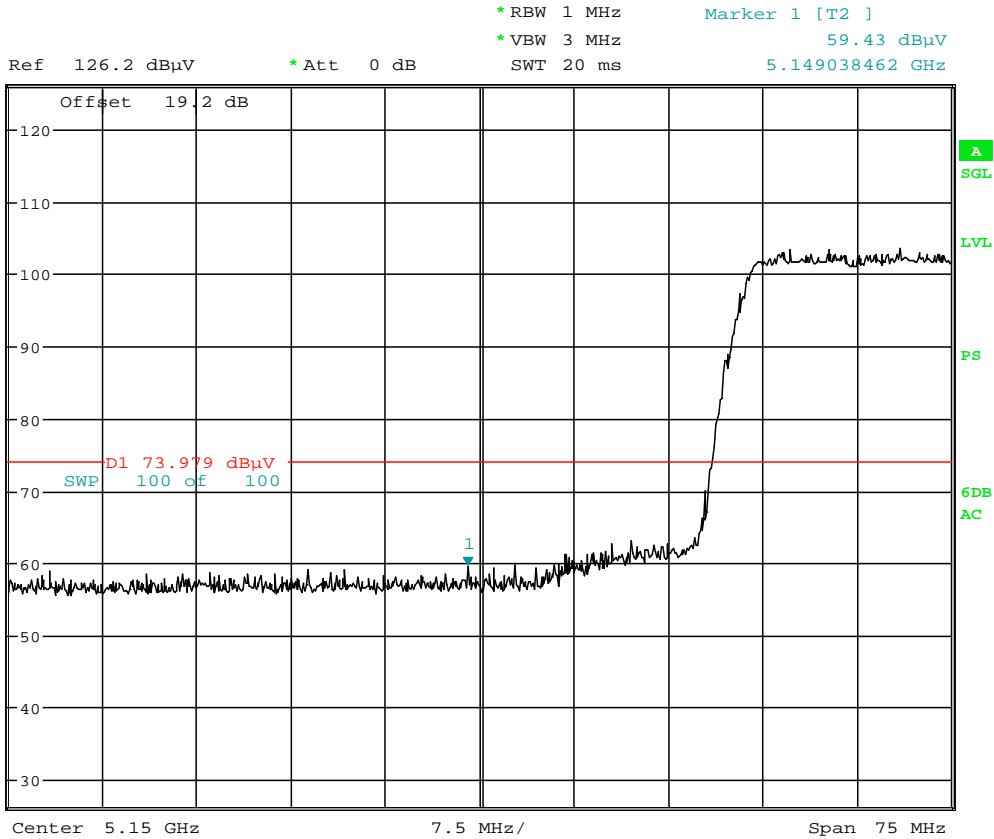
Date: 29.JUL.2014 23:52:06

Plot 6-173. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 161 of 189	

Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 29.JUL.2014 23:52:46

Plot 6-174. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSMN916KOR	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 162 of 189

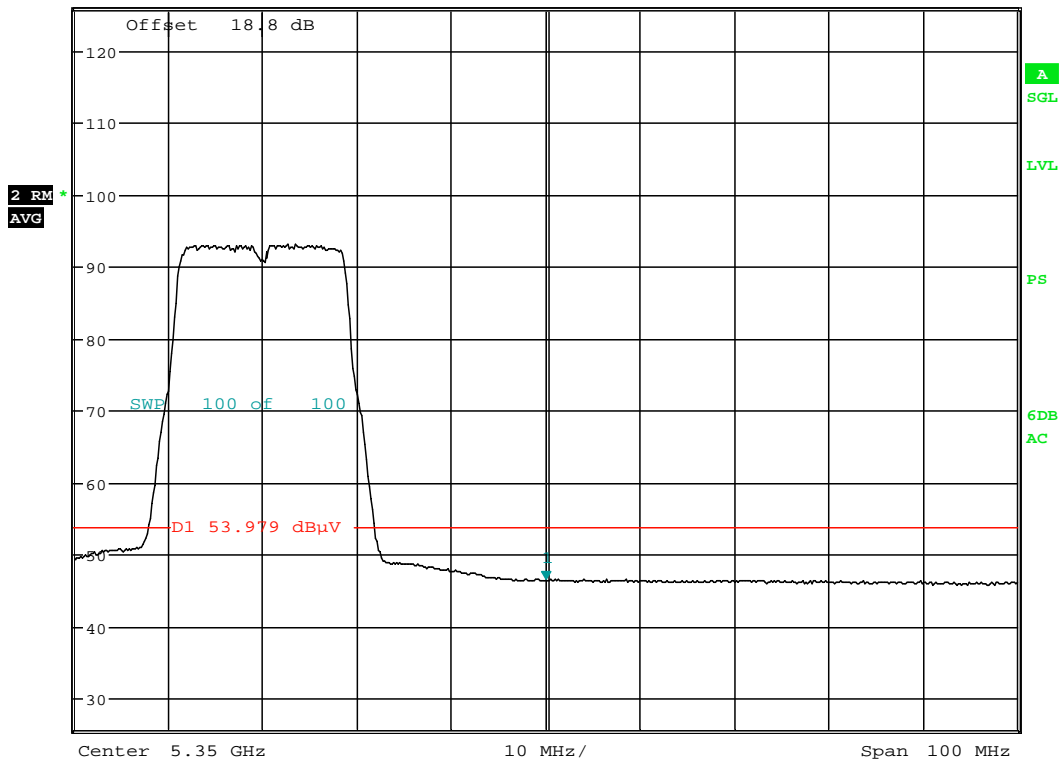
Radiated Band Edge Measurements (20MHz BW)

§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



Ref 125.8 dBμV * Att 0 dB SWT 20 ms Marker 1 [T2] 46.42 dBμV
 * RBW 1 MHz * VBW 3 MHz 5.35000000 GHz

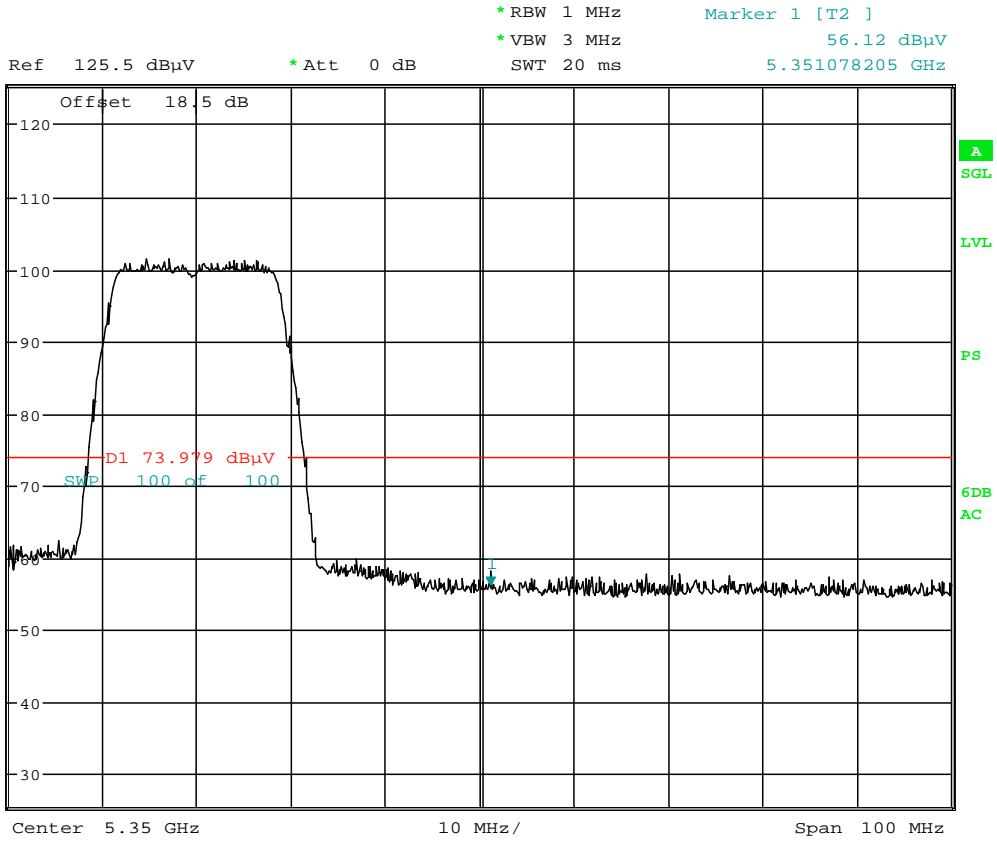


Date: 30.JUL.2014 00:35:51

Plot 6-175. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 163 of 189

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



Date: 30.JUL.2014 00:36:36

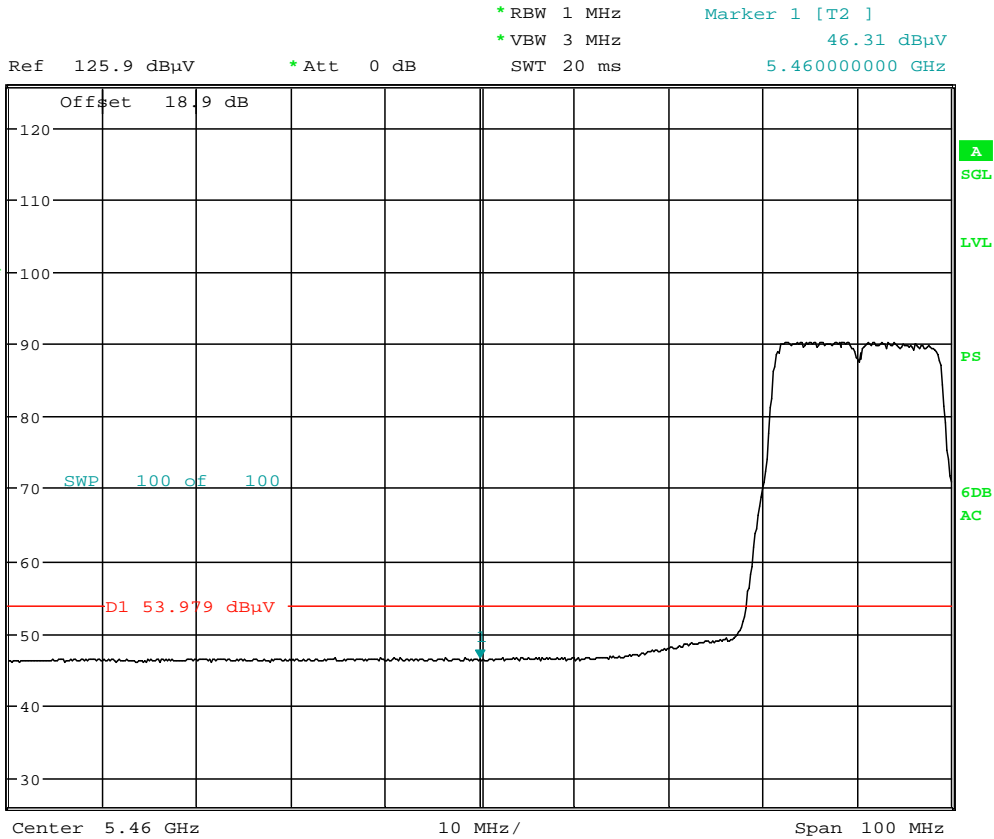
Plot 6-176. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 164 of 189

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

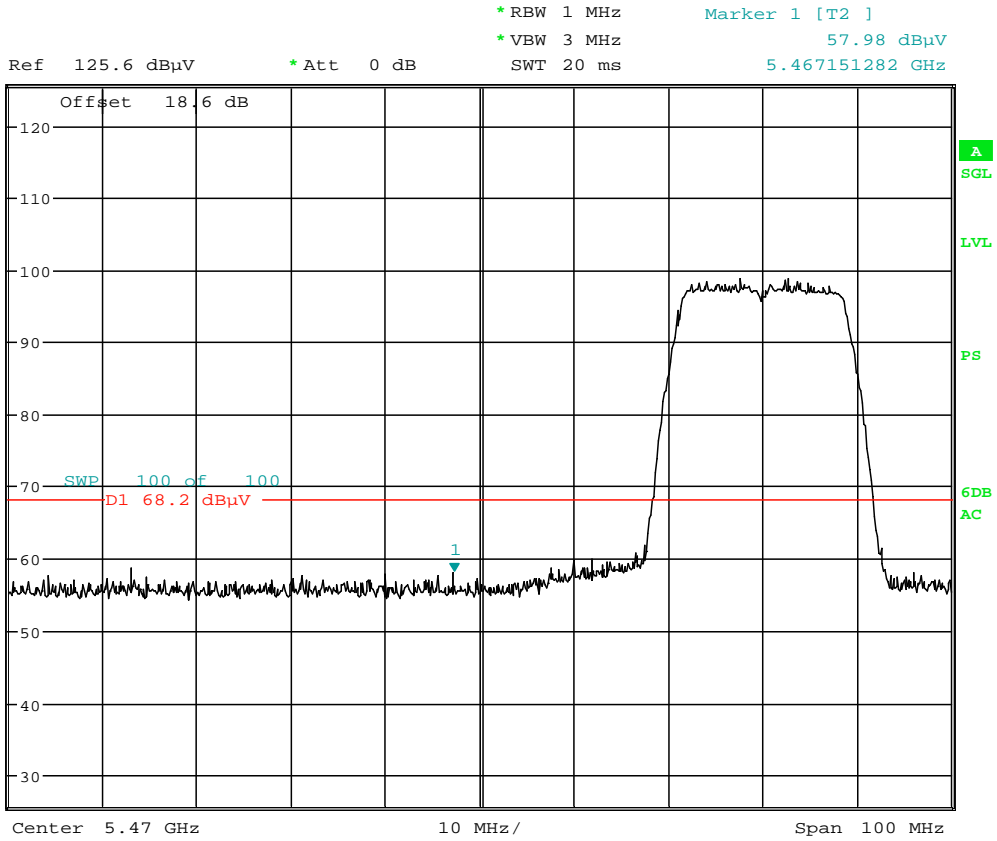


Date: 30.JUL.2014 01:02:53

Plot 6-177. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 165 of 189	

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



Date: 30.JUL.2014 01:03:47

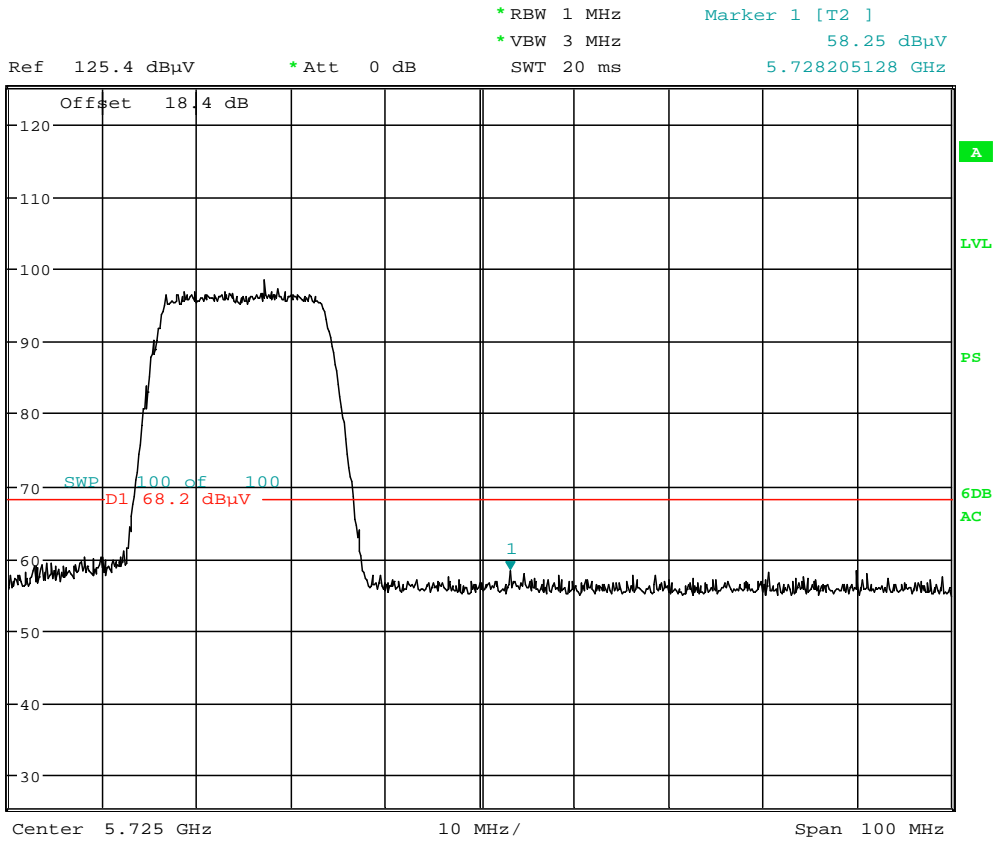
Plot 6-178. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMN916KOR	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 166 of 189

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: 5700MHz
 Channel: 140



Date: 30.JUL.2014 01:27:59

Plot 6-179. Radiated Upper Band Edge Plot (Peak – UNII Band 2C)



FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 167 of 189

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

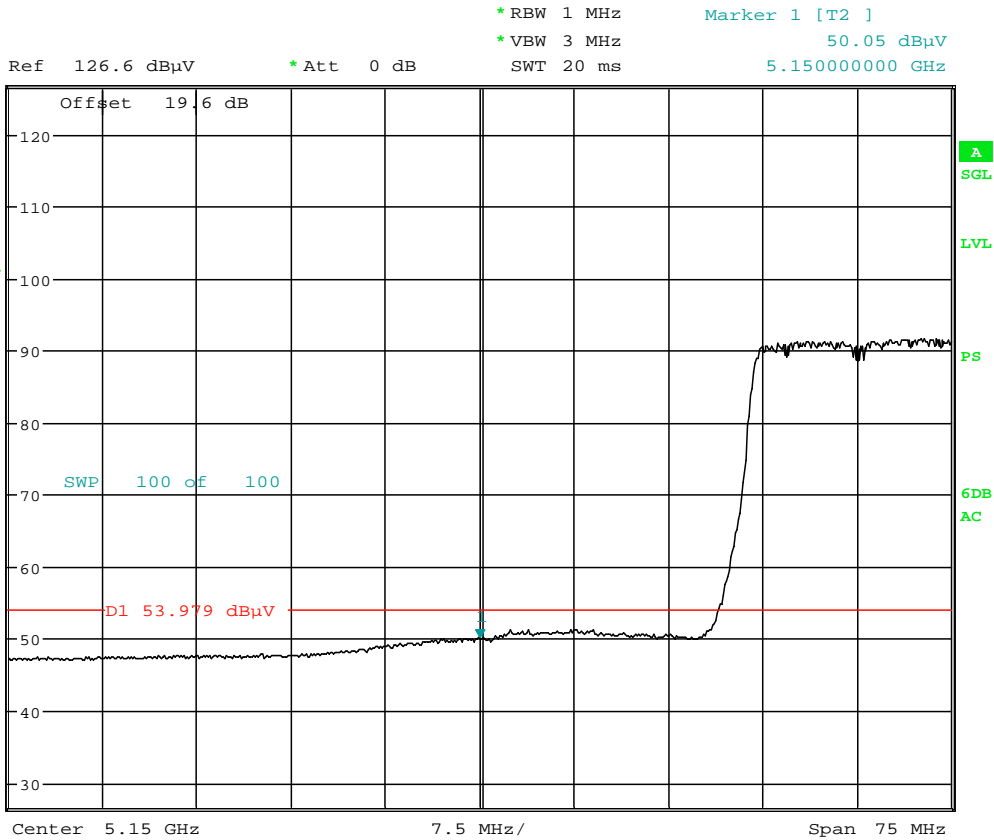
The table below shows additional correction factors that need to be applied to the average measurement plots in this section based on the duty cycle of the emissions.

Mode	Tx Frequency (MHz)	Channel	Radiated Level [dB μ V/m]	Duty Cycle Correction	Limit [dB μ V/m]	Corrected Radiated Level	Average Margin [dB]
802.11n 40MHz MIMO	5190	38	50.05	0.29	53.98	50.34	-3.64
	5310	62	48.39			48.68	-5.3
	5510	102	46.85			47.14	-6.84

Table 6-59. Radiated Band Edge Duty Cycle Corrections

FCC ID: A3LSMN916KOR		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 168 of 189

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

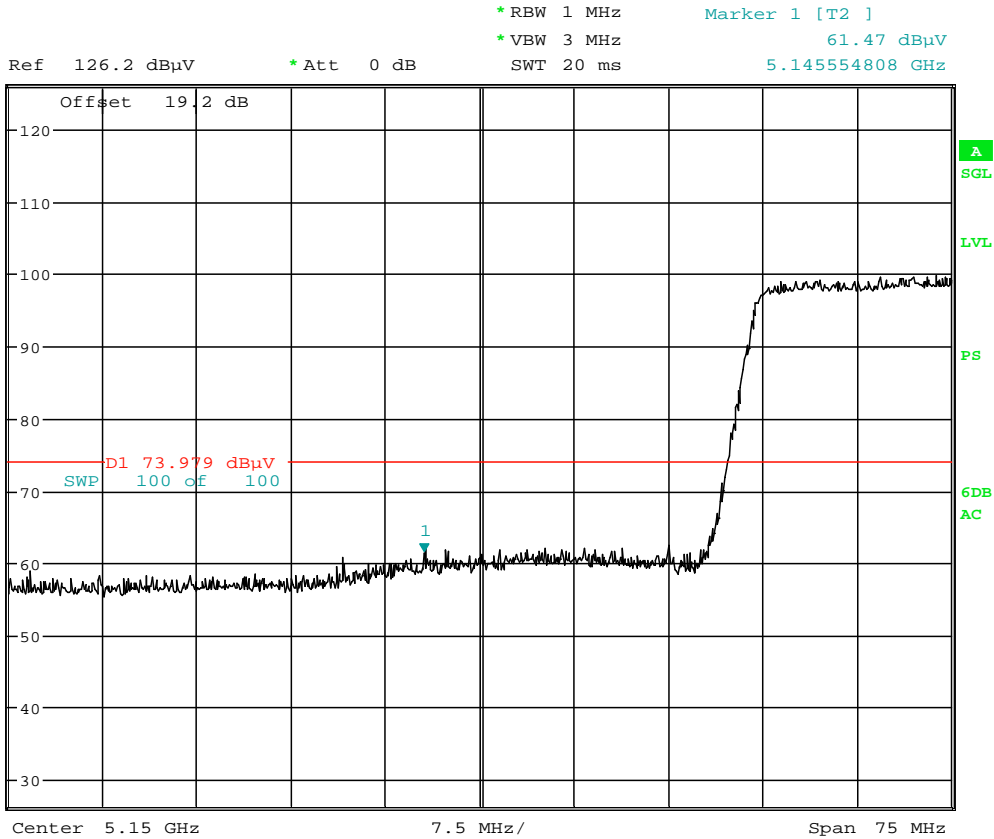


Date: 30.JUL.2014 00:00:35

Plot 6-180. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 169 of 189	

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



Date: 30.JUL.2014 00:01:26

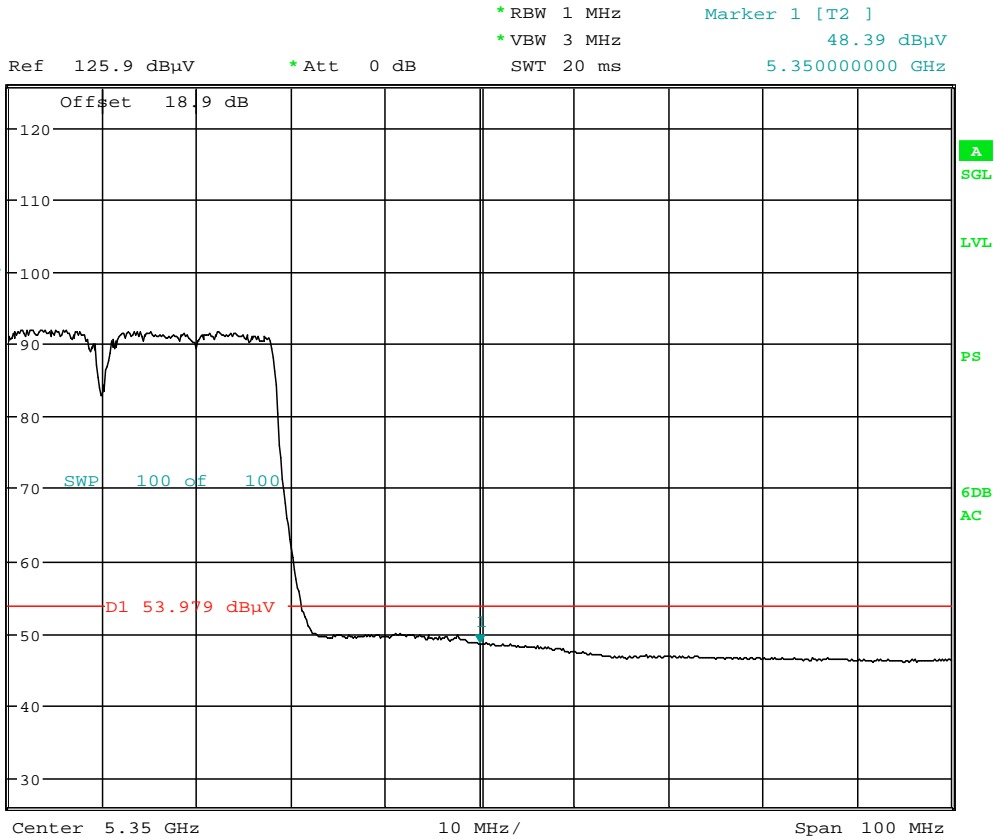
Plot 6-181. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 170 of 189

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

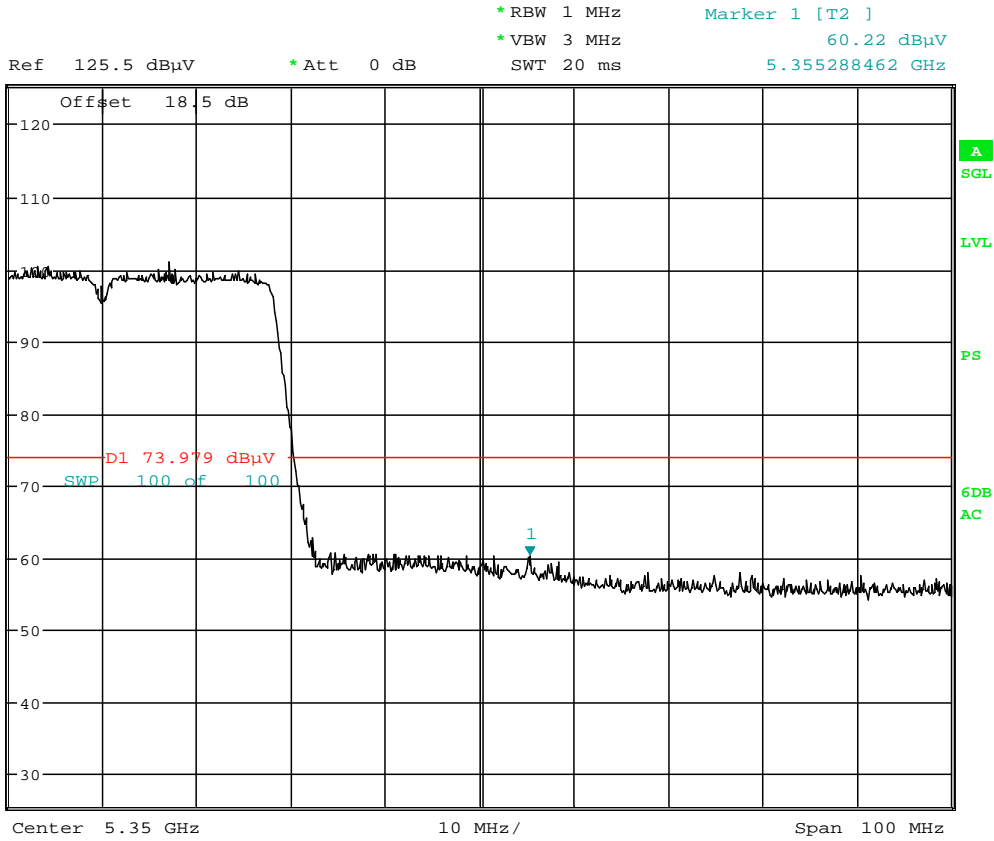


Date: 30.JUL.2014 00:47:54

Plot 6-182. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 171 of 189	

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



Date: 30.JUL.2014 00:48:34

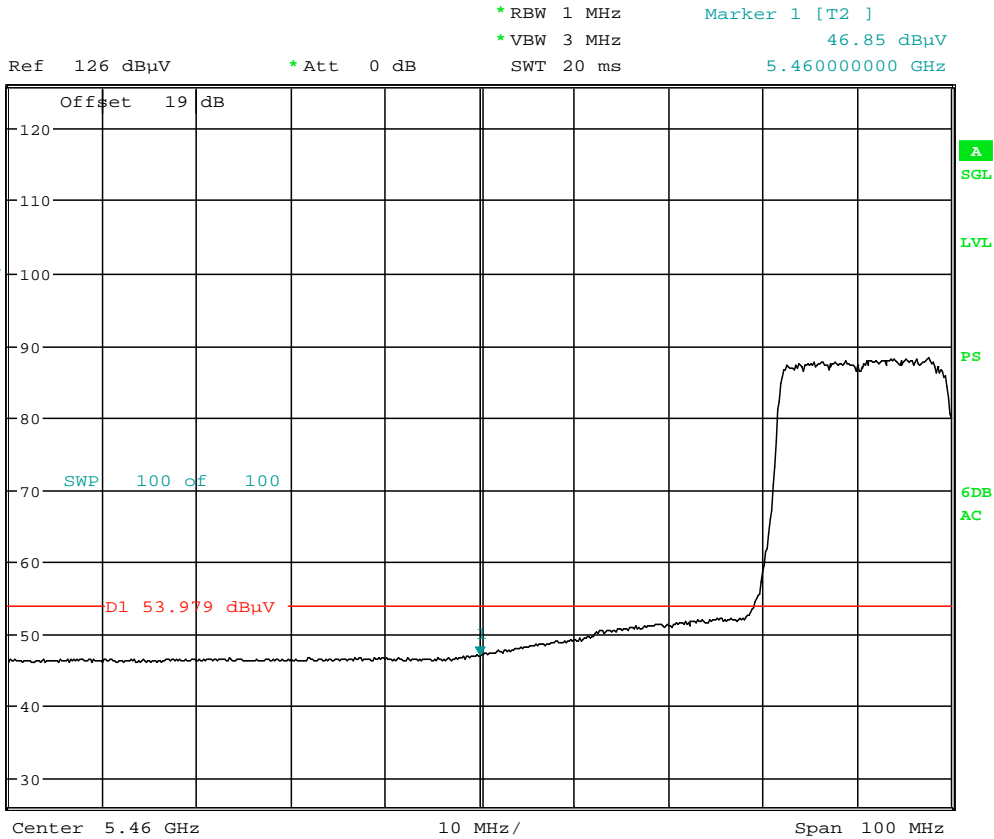
Plot 6-183. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 172 of 189	

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

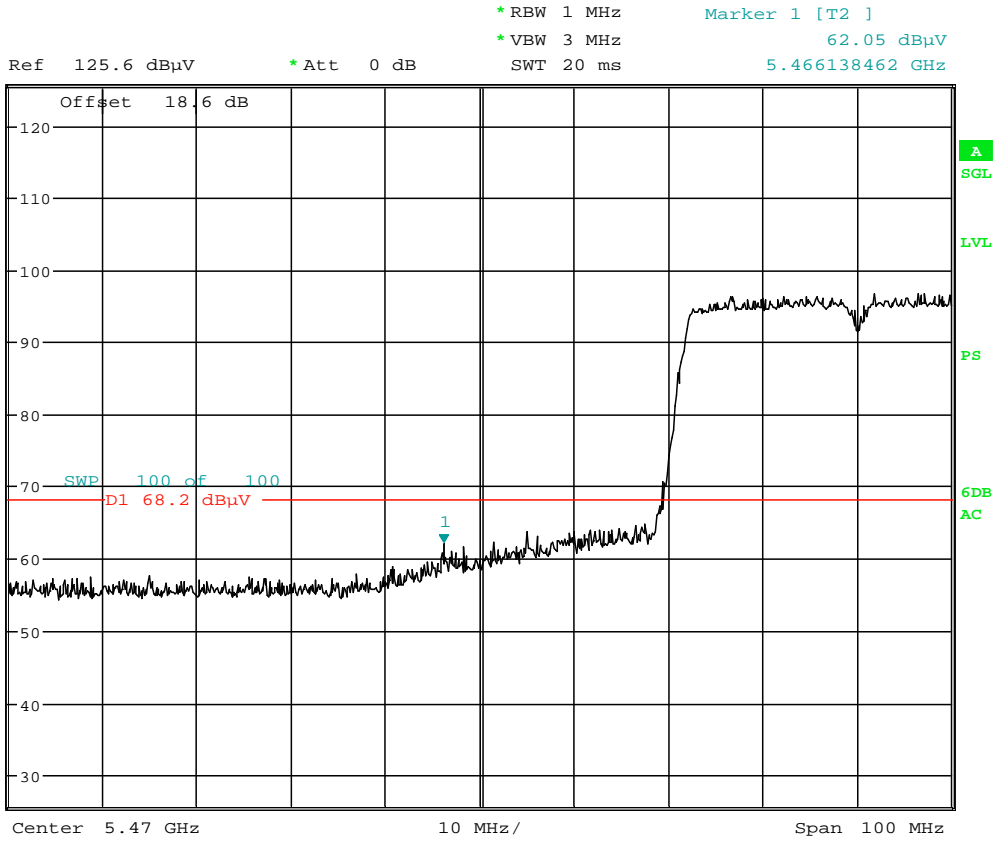


Date: 30.JUL.2014 01:13:54

Plot 6-184. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 173 of 189	

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



Date: 30.JUL.2014 01:15:07

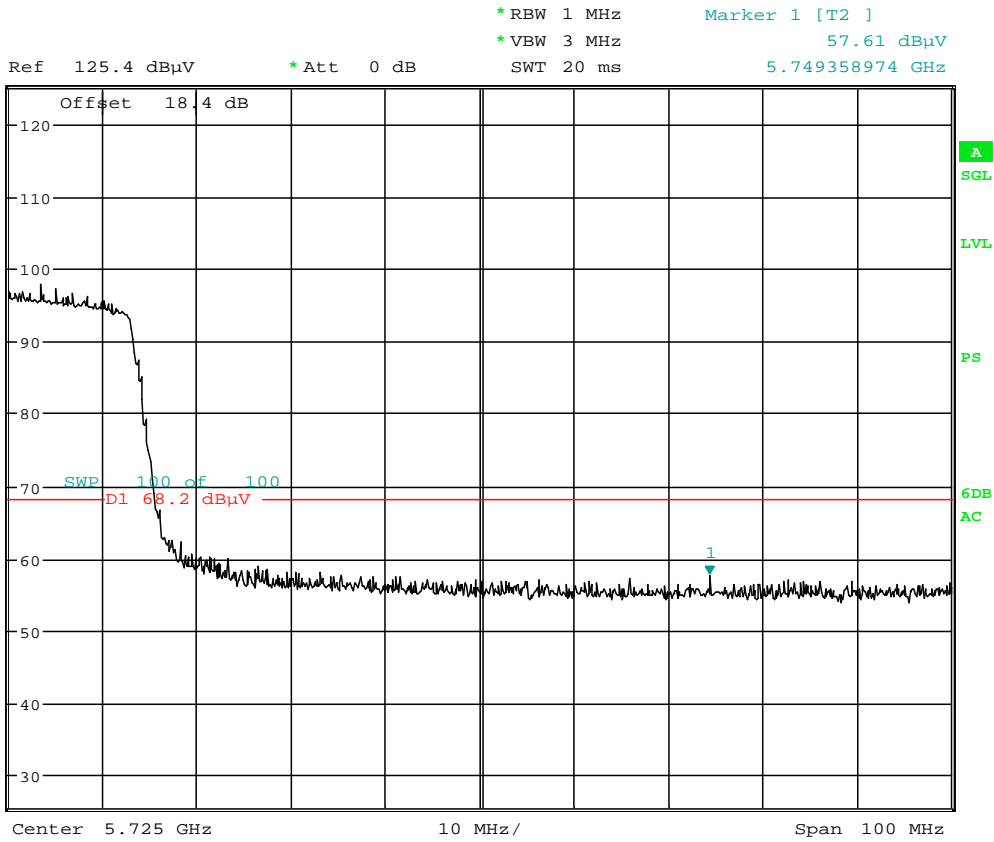
Plot 6-185. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMN916KOR	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 174 of 189

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: 5670MHz
 Channel: 134



Date: 30.JUL.2014 01:32:48

Plot 6-186. Radiated Upper Band Edge Plot (Peak – UNII Band 2C)



FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 175 of 189

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

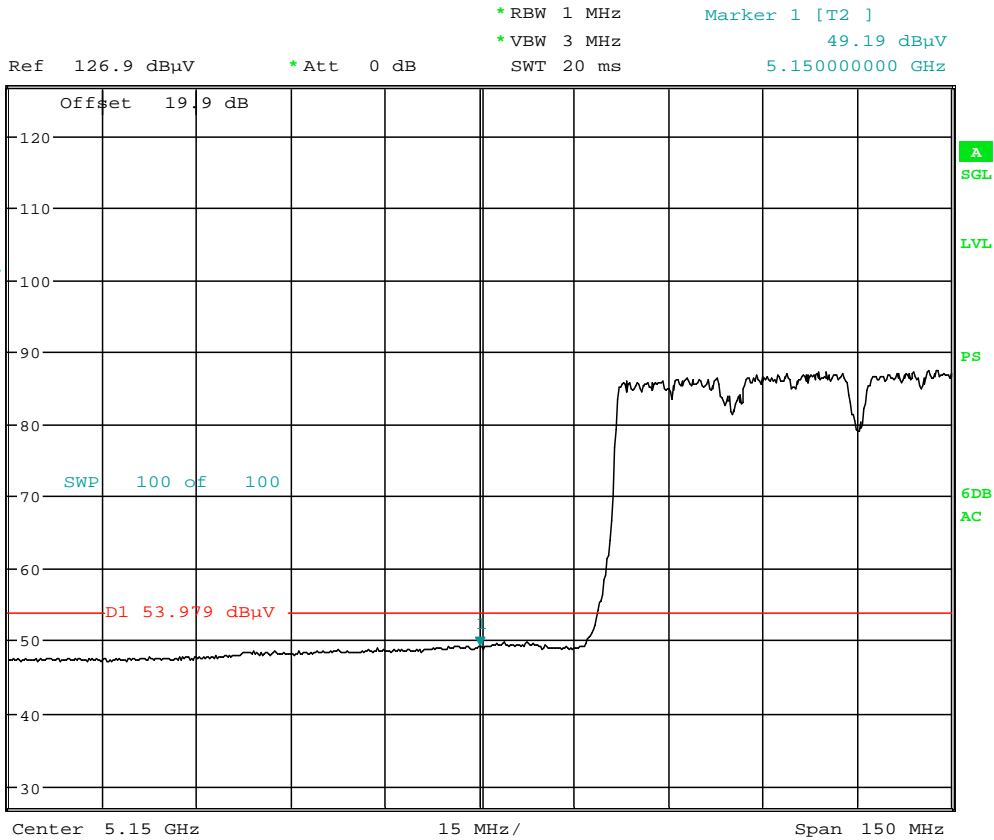
The table below shows additional correction factors that need to be applied to the average measurement plots in this section based on the duty cycle of the emissions.

Mode	Tx Frequency (MHz)	Channel	Radiated Level [dB μ V/m]	Duty Cycle Correction	Limit [dB μ V/m]	Corrected Radiated Level	Average Margin [dB]
802.11ac 80MHz ANT2	5210	42	49.19	0.7	53.98	49.48	-4.5
	5290	58	47.4			47.69	-6.29
	5530	106	47			47.29	-6.69

Table 6-60. Radiated Band Edge Duty Cycle Corrections

FCC ID: A3LSMN916KOR	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 176 of 189

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

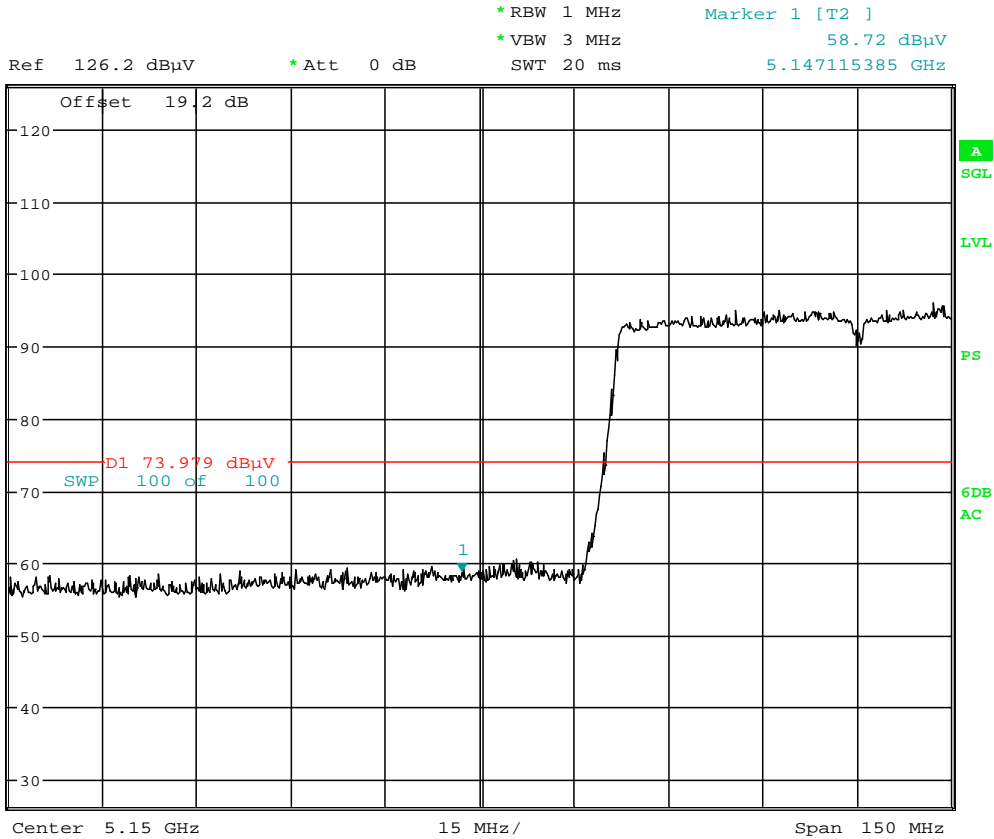


Date: 30.JUL.2014 00:11:05

Plot 6-187. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 177 of 189

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



Date: 30.JUL.2014 00:11:54

Plot 6-188. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 178 of 189

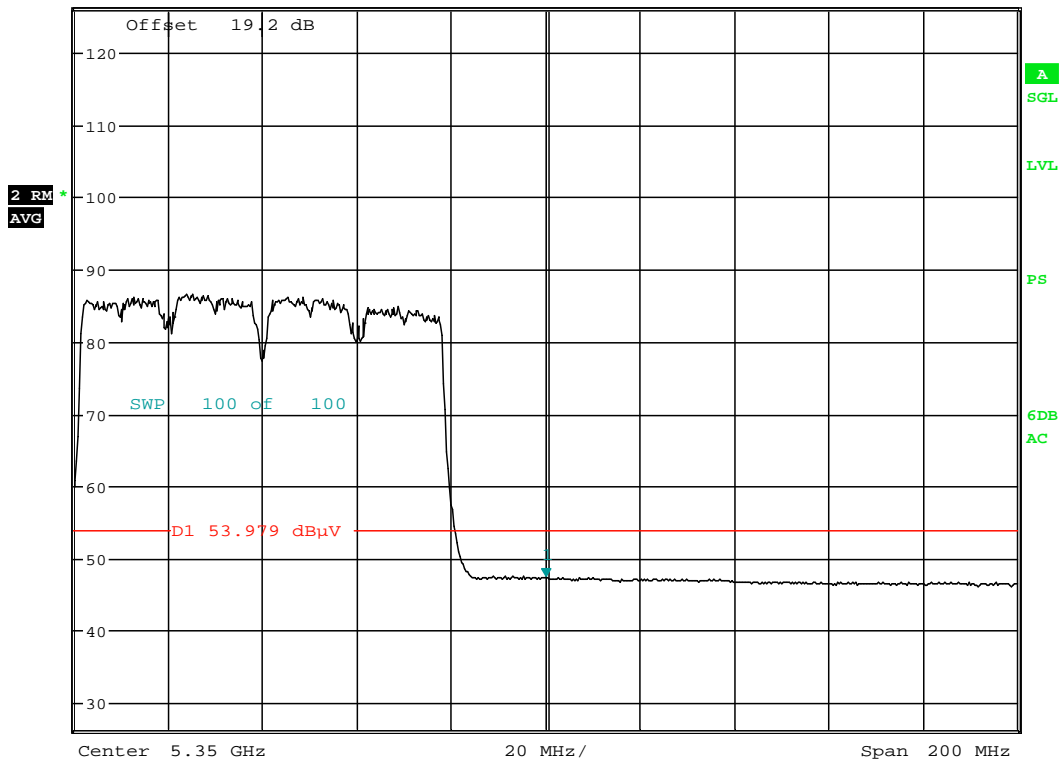
Radiated Band Edge Measurements (80MHz BW)

§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



Ref 126.2 dBμV * Att 0 dB SWT 20 ms Marker 1 [T2] 47.40 dBμV
 * RBW 1 MHz * VBW 3 MHz 5.35000000 GHz



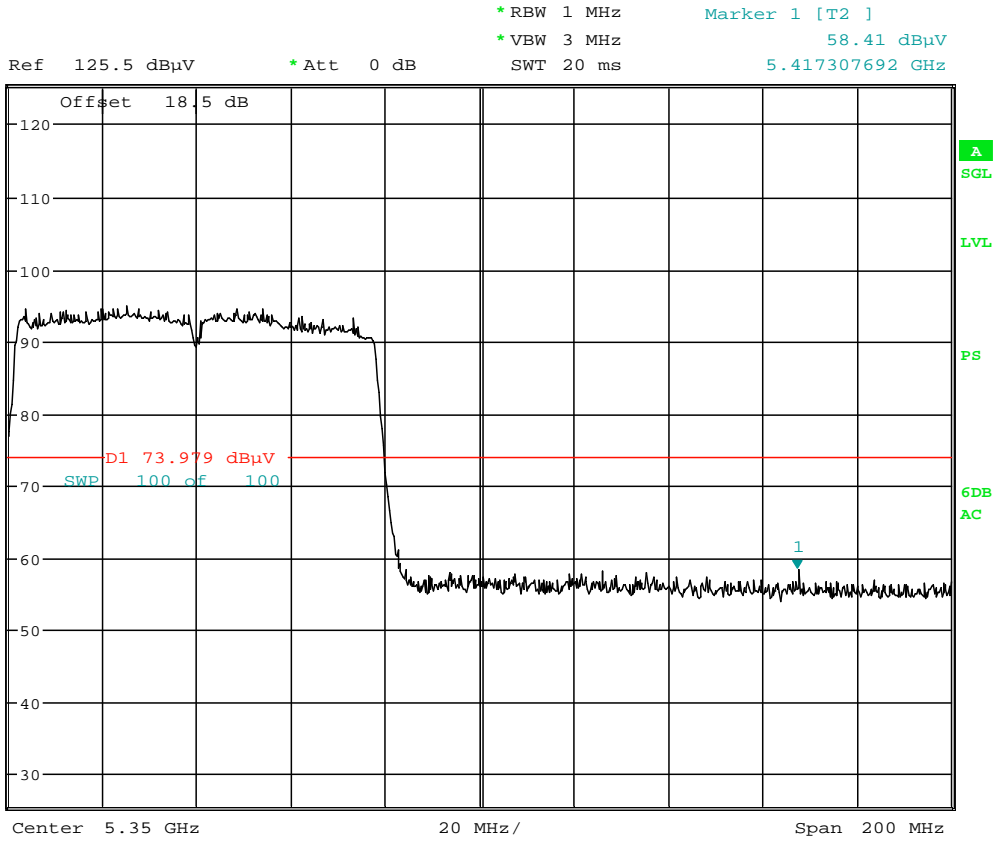
Date: 30.JUL.2014 00:54:00

Plot 6-189. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 179 of 189

Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 30.JUL.2014 00:54:50

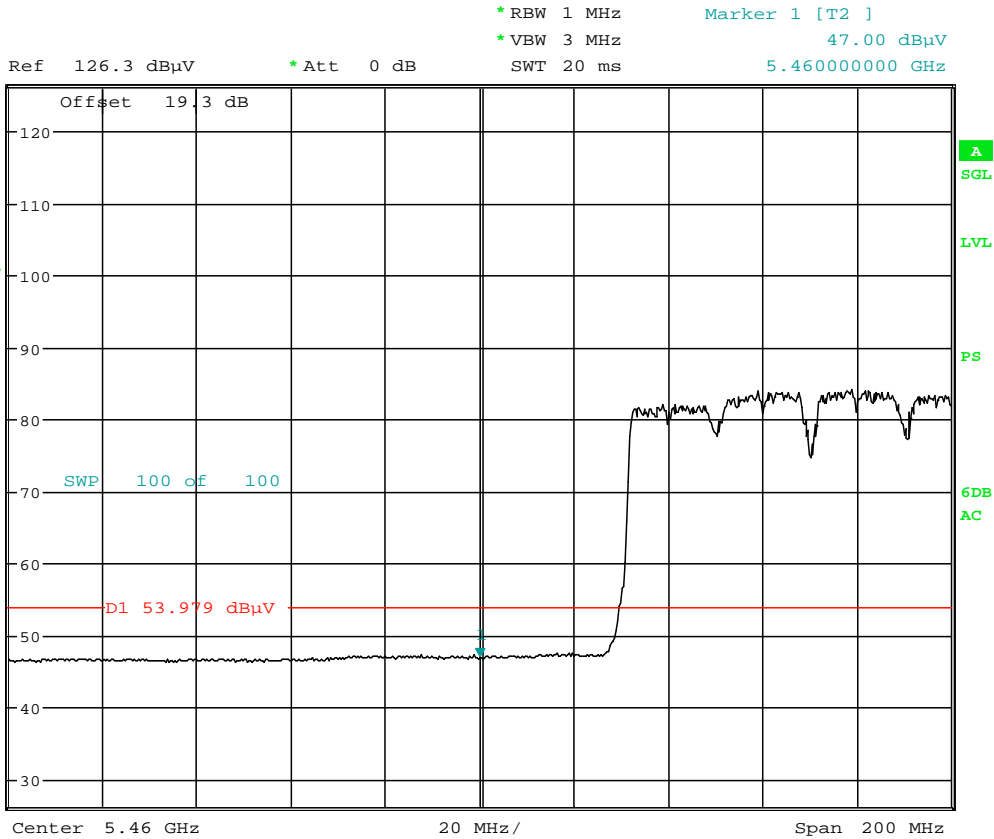
Plot 6-190. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 180 of 189	

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

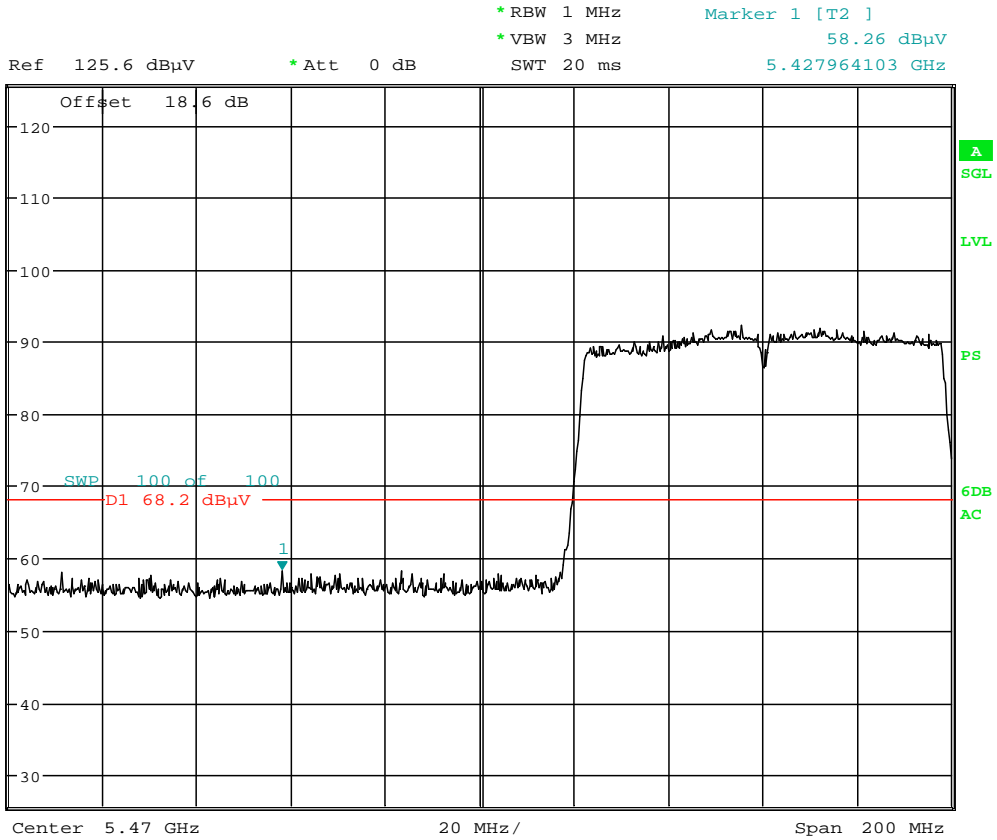


Date: 30.JUL.2014 01:20:22

Plot 6-191. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 181 of 189

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



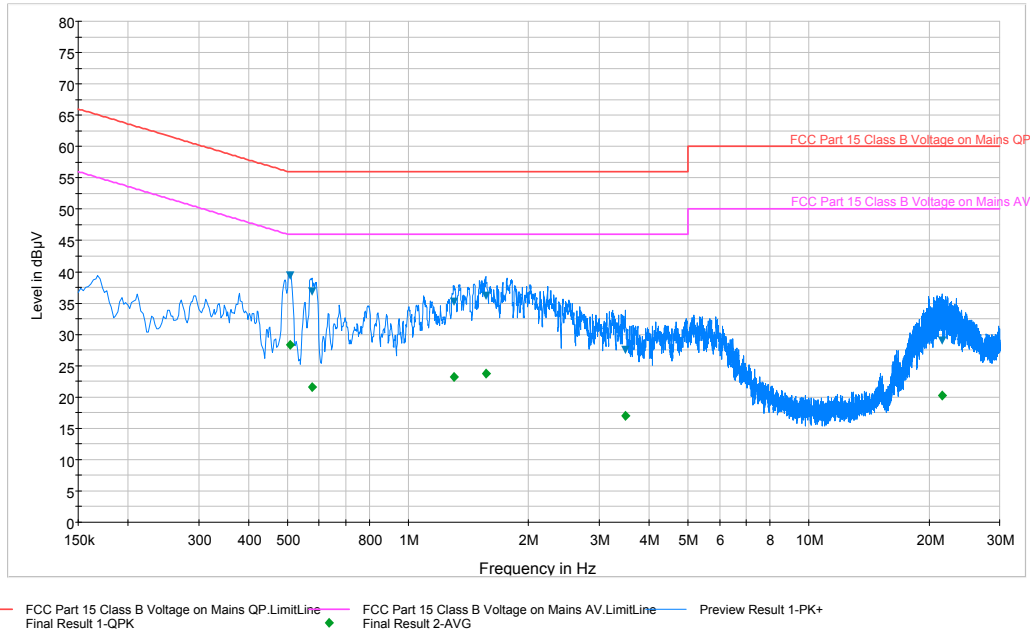
Date: 30.JUL.2014 01:21:30

Plot 6-192. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 182 of 189

6.17 Line-Conducted Test Data

\$15.407



Plot 6-193. Line Conducted Plot with 802.11a UNII Band 1 (L1)

Frequency MHz	Line	Corr. dB	QuasiPeak dBµV	Limit dBµV	Margin dB	Average dBµV	Limit dBµV	Margin dB
0.508	L1	0.1	39.40	56.00	16.60	28.40	46.00	17.60
0.575	L1	0.1	36.80	56.00	19.20	21.60	46.00	24.40
1.304	L1	0.1	35.30	56.00	20.70	23.20	46.00	22.80
1.563	L1	0.1	36.20	56.00	19.80	23.70	46.00	22.30
3.494	L1	0.2	27.50	56.00	28.50	17.00	46.00	29.00
21.584	L1	0.7	29.10	60.00	30.90	20.30	50.00	29.70

Table 6-61. Line Conducted Data with 802.11a UNII Band 1 (L1)

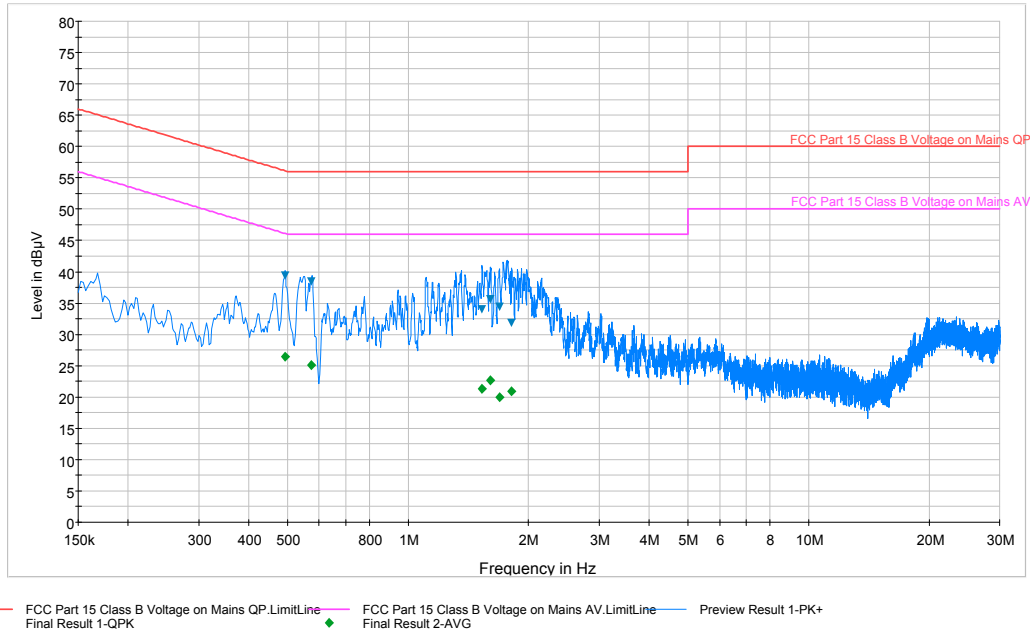
Notes:

- All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11a mode using 6Mbps on Channel 36. The emissions found were not affected by the choice of channel used during testing.
- The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
- L1 = Phase; N = Neutral
- Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
- QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Corr. (dB)
- Margin (dB) = QP/AVLimit (dBµV) - QP/AV Level (dBµV)
- Traces shown in plot are made using a peak detector.
- Deviations to the Specifications: None.

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 183 of 189

Line-Conducted Test Data

\$15.407



Plot 6-194. Line Conducted Plot with 802.11a UNII Band 1 (N)

Frequency MHz	Line	Corr. dB	QuasiPeak dBµV	Limit dBµV	Margin dB	Average dBµV	Limit dBµV	Margin dB
0.492	N	0.1	39.50	56.10	16.70	26.40	46.10	19.80
0.573	N	0.1	38.50	56.00	17.50	25.10	46.00	20.90
1.532	N	0.2	34.00	56.00	22.00	21.30	46.00	24.70
1.606	N	0.2	35.60	56.00	20.40	22.70	46.00	23.40
1.689	N	0.2	34.40	56.00	21.60	20.00	46.00	26.00
1.815	N	0.2	31.90	56.00	24.10	20.90	46.00	25.10

Table 6-62. Line Conducted Data with 802.11a UNII Band 1 (N)

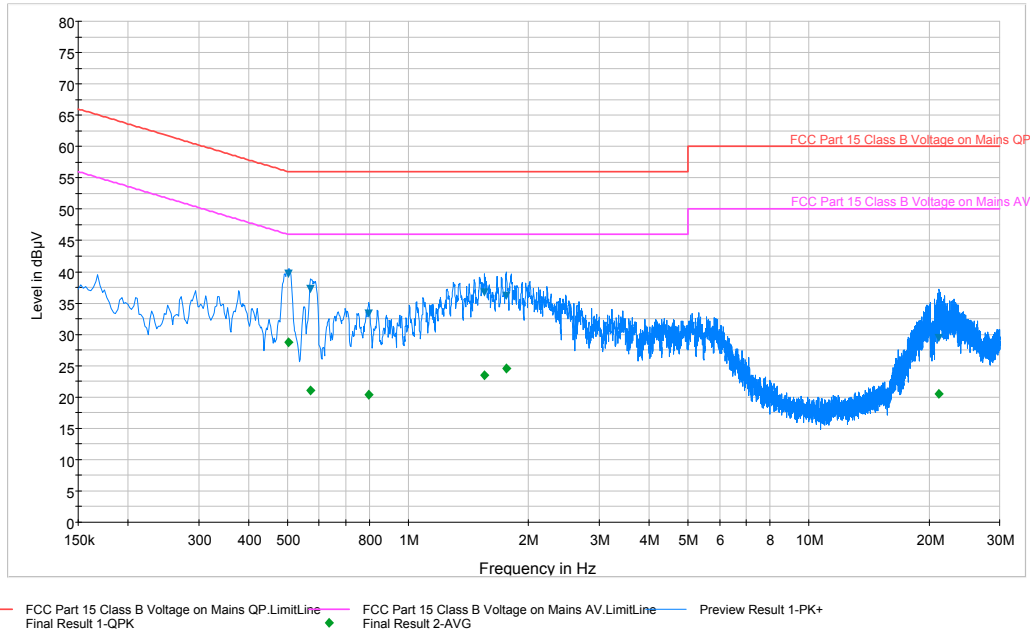
Notes:

- All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11a mode using 6Mbps on Channel 36. The emissions found were not affected by the choice of channel used during testing.
- The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
- L1 = Phase; N = Neutral
- Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
- QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Corr. (dB)
- Margin (dB) = QP/AVLimit (dBµV) - QP/AV Level (dBµV)
- Traces shown in plot are made using a peak detector.
- Deviations to the Specifications: None.

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 184 of 189

Line-Conducted Test Data

\$15.407



Plot 6-195. Line Conducted Plot with 802.11a UNII Band 2A (L1)

Frequency MHz	Line	Corr. dB	QuasiPeak dBµV	Limit dBµV	Margin dB	Average dBµV	Limit dBµV	Margin dB
0.503	L1	0.1	39.70	56.00	16.30	28.70	46.00	17.30
0.571	L1	0.1	37.20	56.00	18.80	21.10	46.00	24.90
0.798	L1	0.1	33.40	56.00	22.60	20.30	46.00	25.70
1.552	L1	0.1	36.70	56.00	19.30	23.50	46.00	22.50
1.759	L1	0.1	36.20	56.00	19.80	24.50	46.00	21.50
21.199	L1	0.7	29.40	60.00	30.60	20.60	50.00	29.40

Table 6-63. Line Conducted Data with 802.11a UNII Band 2A (L1)

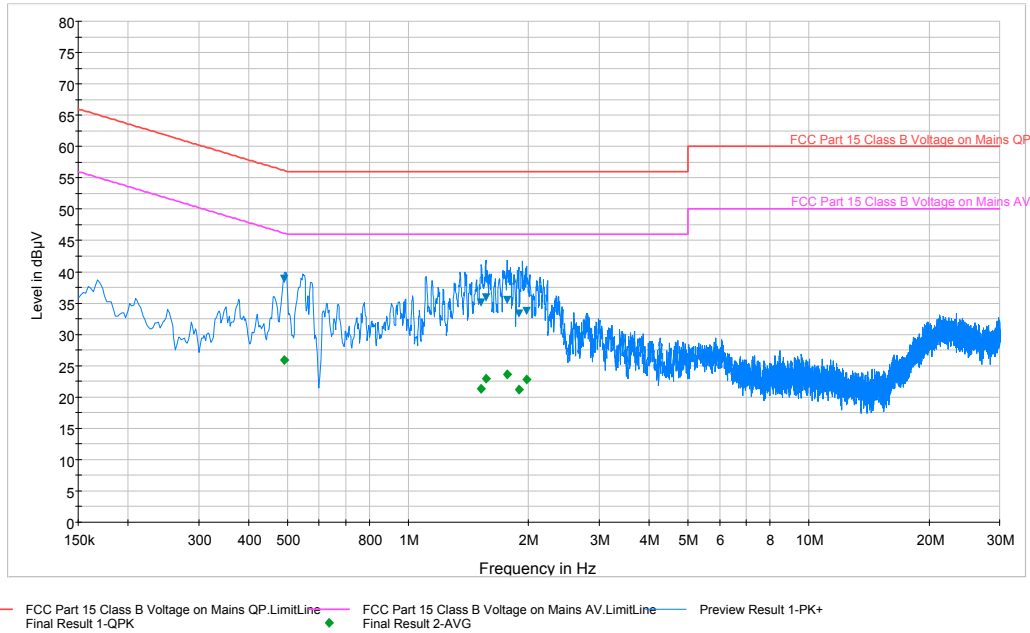
Notes:

- All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11a mode using 6Mbps on Channel 52. The emissions found were not affected by the choice of channel used during testing.
- The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
- L1 = Phase; N = Neutral
- Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
- QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Corr. (dB)
- Margin (dB) = QP/AVLimit (dBµV) - QP/AV Level (dBµV)
- Traces shown in plot are made using a peak detector.
- Deviations to the Specifications: None.

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 185 of 189

Line-Conducted Test Data

\$15.407



Plot 6-196. Line Conducted Plot with 802.11a UNII Band 2A (N)

Frequency MHz	Line	Corr. dB	QuasiPeak dBµV	Limit dBµV	Margin dB	Average dBµV	Limit dBµV	Margin dB
0.490	N	0.1	38.90	56.20	17.30	26.00	46.20	20.20
1.523	N	0.2	35.00	56.00	21.00	21.30	46.00	24.70
1.565	N	0.2	35.90	56.00	20.10	23.00	46.00	23.00
1.768	N	0.2	35.50	56.00	20.50	23.70	46.00	22.40
1.889	N	0.2	33.30	56.00	22.70	21.20	46.00	24.80
1.975	N	0.2	33.80	56.00	22.20	22.80	46.00	23.20

Table 6-64. Line Conducted Data with 802.11a UNII Band 2A (N)

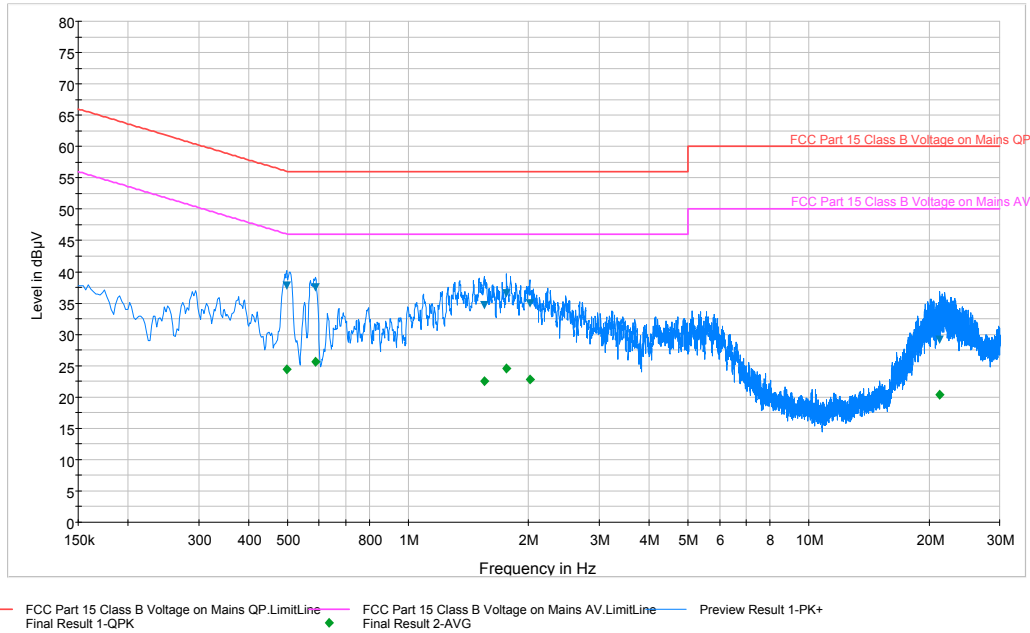
Notes:

- All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11a mode using 6Mbps on Channel 52. The emissions found were not affected by the choice of channel used during testing.
- The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
- L1 = Phase; N = Neutral
- Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
- QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Corr. (dB)
- Margin (dB) = QP/AVLimit (dBµV) - QP/AV Level (dBµV)
- Traces shown in plot are made using a peak detector.
- Deviations to the Specifications: None.

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 186 of 189

Line-Conducted Test Data

\$15.407



Plot 6-197. Line Conducted Plot with 802.11a UNII Band 2C (L1)

Frequency MHz	Line	Corr. dB	QuasiPeak dBµV	Limit dBµV	Margin dB	Average dBµV	Limit dBµV	Margin dB
0.499	L1	0.1	37.80	56.00	18.20	24.40	46.00	21.60
0.587	L1	0.1	37.50	56.00	18.50	25.70	46.00	20.30
1.547	L1	0.1	34.70	56.00	21.30	22.50	46.00	23.50
1.761	L1	0.1	36.60	56.00	19.40	24.60	46.00	21.40
2.013	L1	0.1	35.00	56.00	21.00	22.70	46.00	23.30
21.253	L1	0.7	29.10	60.00	30.90	20.30	50.00	29.70

Table 6-65. Line Conducted Plot with 802.11a UNII Band 2C (L1)

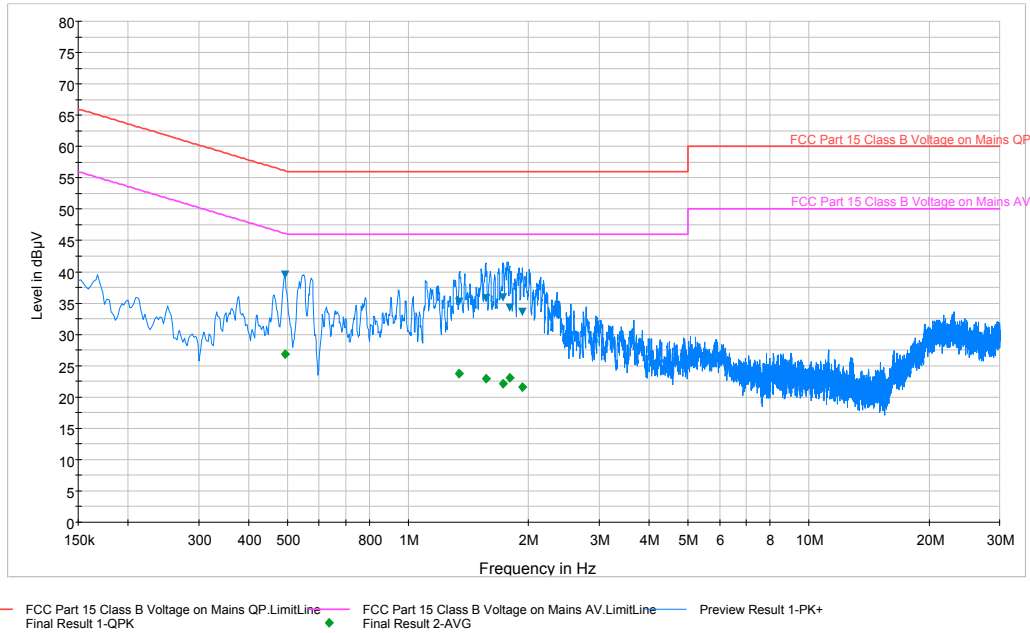
Notes:

- All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11a mode using 6Mbps on Channel 100. The emissions found were not affected by the choice of channel used during testing.
- The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
- L1 = Phase; N = Neutral
- Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
- QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Corr. (dB)
- Margin (dB) = QP/AVLimit (dBµV) - QP/AV Level (dBµV)
- Traces shown in plot are made using a peak detector.
- Deviations to the Specifications: None.

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 187 of 189

Line-Conducted Test Data

\$15.407



Plot 6-198. Line Conducted Plot with 802.11a UNII Band 2C (N)

Frequency MHz	Line	Corr. dB	QuasiPeak dBµV	Limit dBµV	Margin dB	Average dBµV	Limit dBµV	Margin dB
0.492	N	0.1	39.60	56.10	16.50	26.80	46.10	19.30
1.343	N	0.1	35.20	56.00	20.80	23.70	46.00	22.30
1.563	N	0.2	35.80	56.00	20.20	23.00	46.00	23.00
1.725	N	0.2	36.00	56.00	20.00	22.20	46.00	23.80
1.790	N	0.2	34.30	56.00	21.70	23.10	46.00	22.90
1.932	N	0.2	33.50	56.00	22.50	21.60	46.00	24.40

Table 6-66. Line Conducted Data with 802.11a UNII Band 2C (N)



Notes:

- All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11a mode using 6Mbps on Channel 100. The emissions found were not affected by the choice of channel used during testing.
- The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
- L1 = Phase; N = Neutral
- Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
- QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Corr. (dB)
- Margin (dB) = QP/AVLimit (dBµV) - QP/AV Level (dBµV)
- Traces shown in plot are made using a peak detector.
- Deviations to the Specifications: None.

FCC ID: A3LSMN916KOR	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset		Page 188 of 189

7.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMN916KOR** is in compliance with Part 15E of the FCC Rules.

FCC ID: A3LSMN916KOR	 PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1411242158.A3L	Test Dates: 7/28 - 10/2/2014, 11/24 -12/24/2014	EUT Type: Portable Handset	Page 189 of 189	