

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 $\geq 2 \times (\text{span}/\text{RBW})$
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.

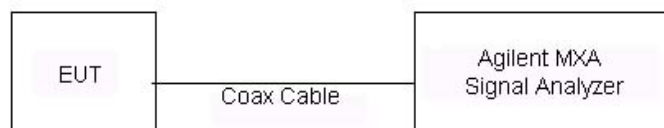


Figure 6-3. Test Instrument & Measurement Setup

Test Notes

None

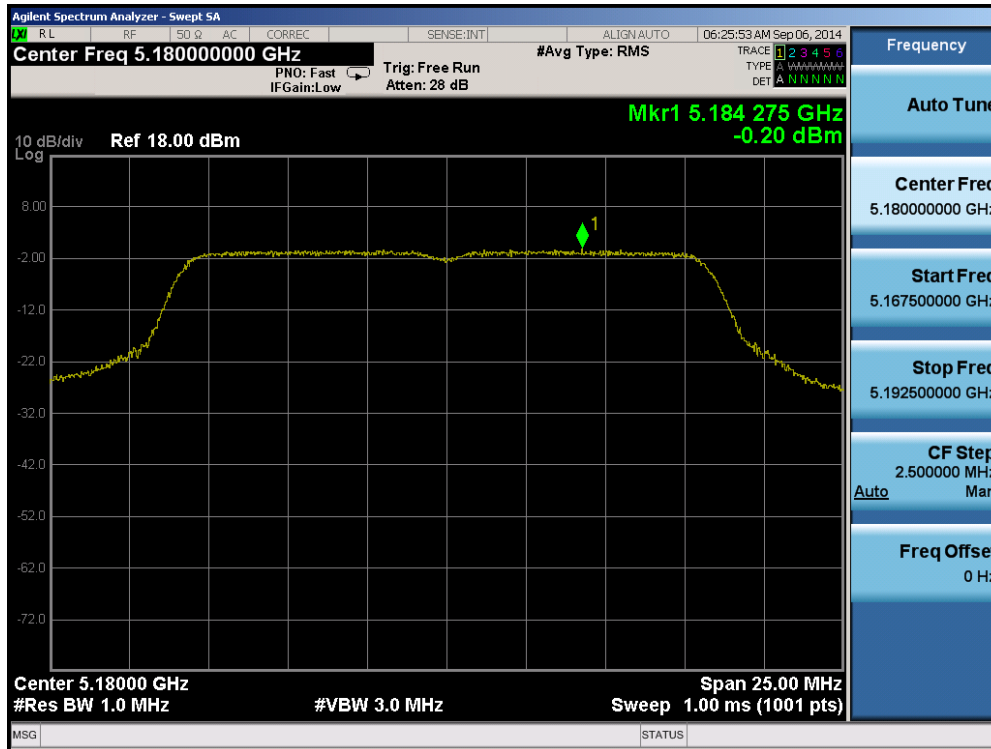
FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 56 of 182

Antenna-1 Power Spectral Density Measurements

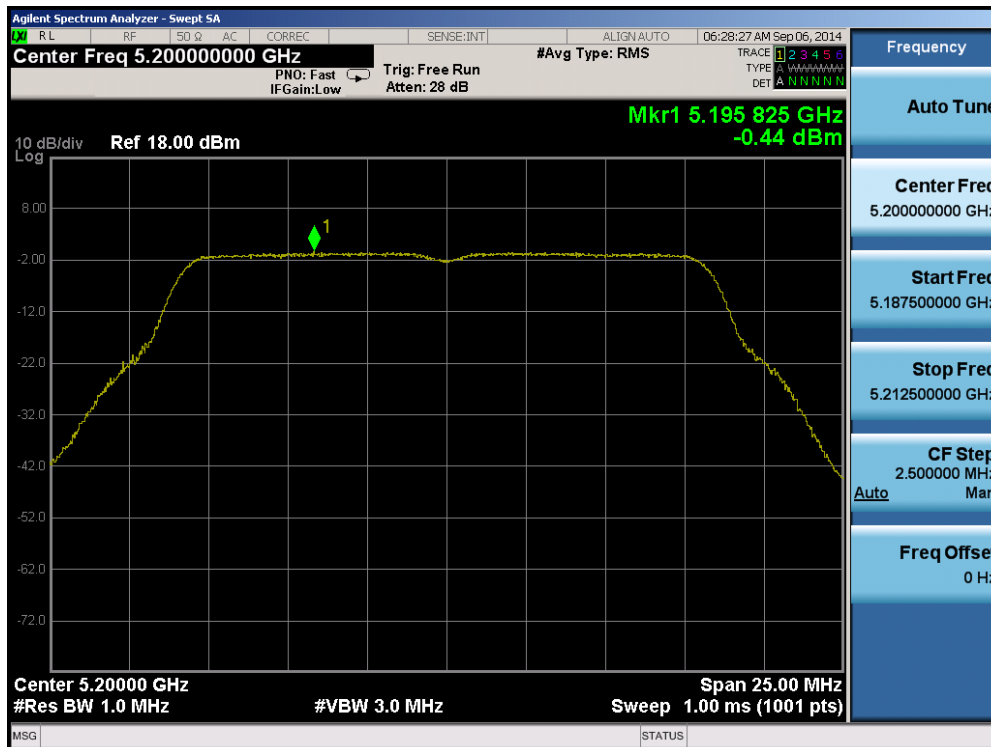
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density [dBm/MHz]	Margin [dB]	Pass / Fail
Band 1	5180	36	a	6	-0.20	4.0	-4.20	Pass
	5200	40	a	6	-0.44	4.0	-4.44	Pass
	5240	48	a	6	-0.18	4.0	-4.18	Pass
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	-1.22	4.0	-5.22	Pass
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	-0.64	4.0	-4.64	Pass
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	-0.58	4.0	-4.58	Pass
	5190	38	n (40MHz)	13.5/15 (MCS0)	-7.16	4.0	-11.16	Pass
	5230	46	n (40MHz)	13.5/15 (MCS0)	-6.79	4.0	-10.79	Pass
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-7.70	4.0	-11.70	Pass
Band 2A	5260	52	a	6	0.07	11.0	-10.93	Pass
	5280	56	a	6	-0.03	11.0	-11.03	Pass
	5320	64	a	6	0.67	11.0	-10.33	Pass
	5260	52	n (20MHz)	6.5/7.2 (MCS0)	-0.38	11.0	-11.38	Pass
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	-0.35	11.0	-11.35	Pass
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	0.22	11.0	-10.78	Pass
	5270	54	n (40MHz)	13.5/15 (MCS0)	-6.30	11.0	-17.30	Pass
	5310	62	n (40MHz)	13.5/15 (MCS0)	-6.20	11.0	-17.20	Pass
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	-7.31	11.0	-18.31	Pass
Band 2C	5500	100	a	6	0.91	11.0	-10.09	Pass
	5580	116	a	6	0.49	11.0	-10.51	Pass
	5700	140	a	6	-0.22	11.0	-11.22	Pass
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	0.60	11.0	-10.40	Pass
	5580	116	n (20MHz)	6.5/7.2 (MCS0)	0.57	11.0	-10.43	Pass
	5700	140	n (20MHz)	6.5/7.2 (MCS0)	-0.27	11.0	-11.27	Pass
	5510	102	n (40MHz)	13.5/15 (MCS0)	-5.68	11.0	-16.68	Pass
	5550	110	n (40MHz)	13.5/15 (MCS0)	-5.39	11.0	-16.39	Pass
	5670	134	n (40MHz)	13.5/15 (MCS0)	-6.66	11.0	-17.66	Pass
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-6.79	11.0	-17.79	Pass

Table 6-21. Conducted Power Spectral Density Measurements

FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 57 of 182

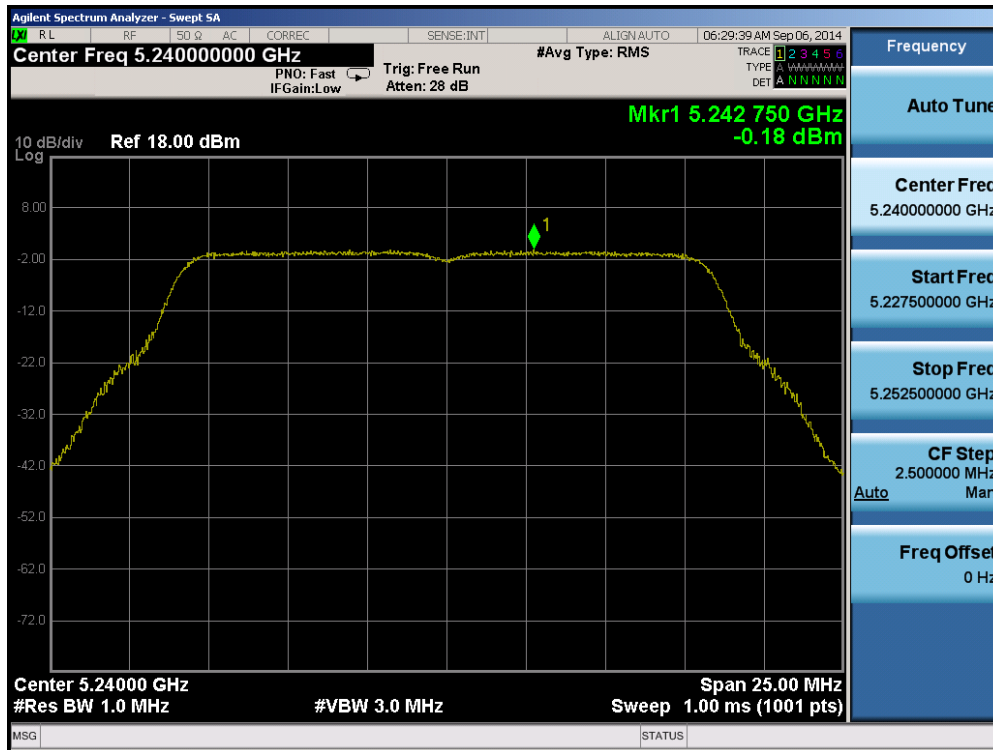


Plot 6-69. Peak Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 36)

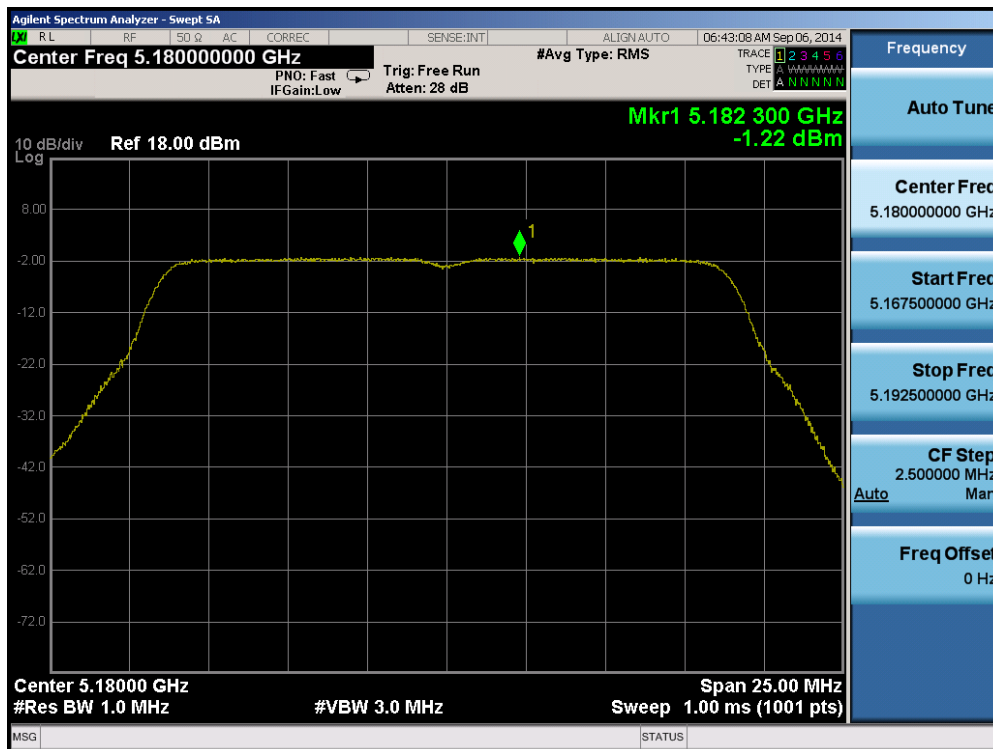


Plot 6-70. Peak Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 40)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 58 of 182

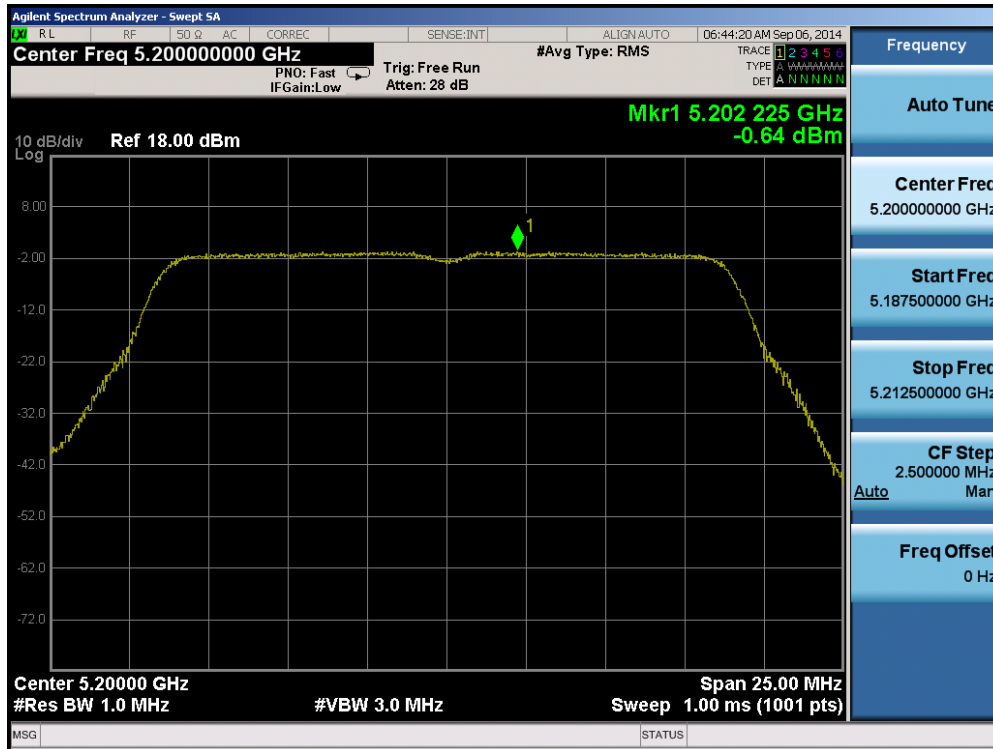


Plot 6-71. Peak Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 48)

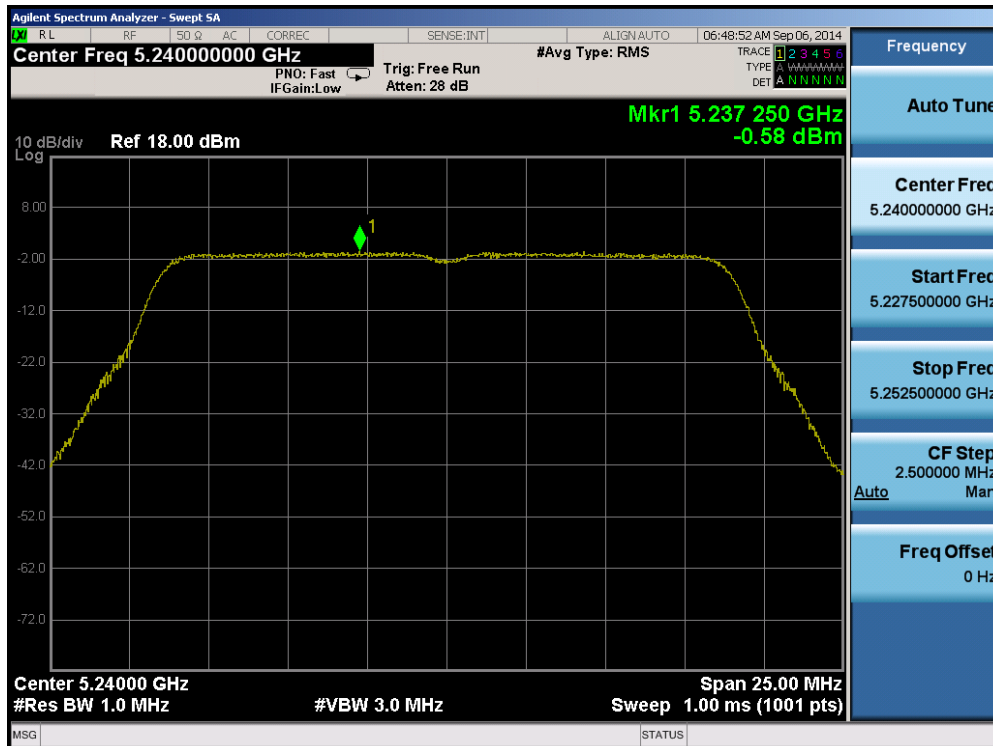


Plot 6-72. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 36)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 59 of 182

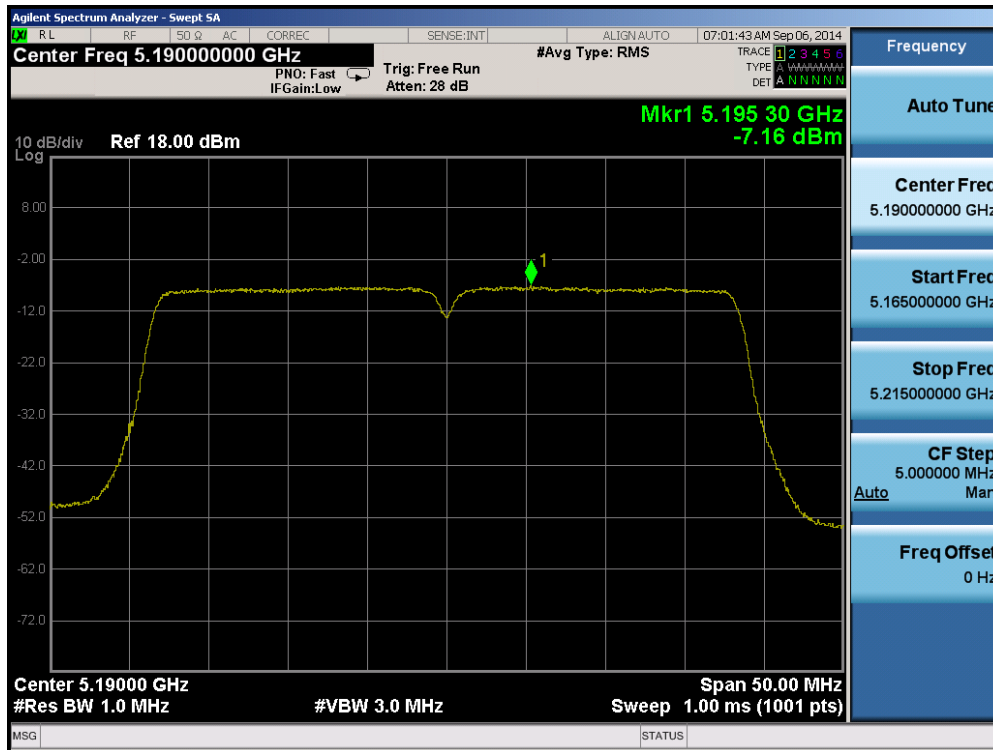


Plot 6-73. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 40)

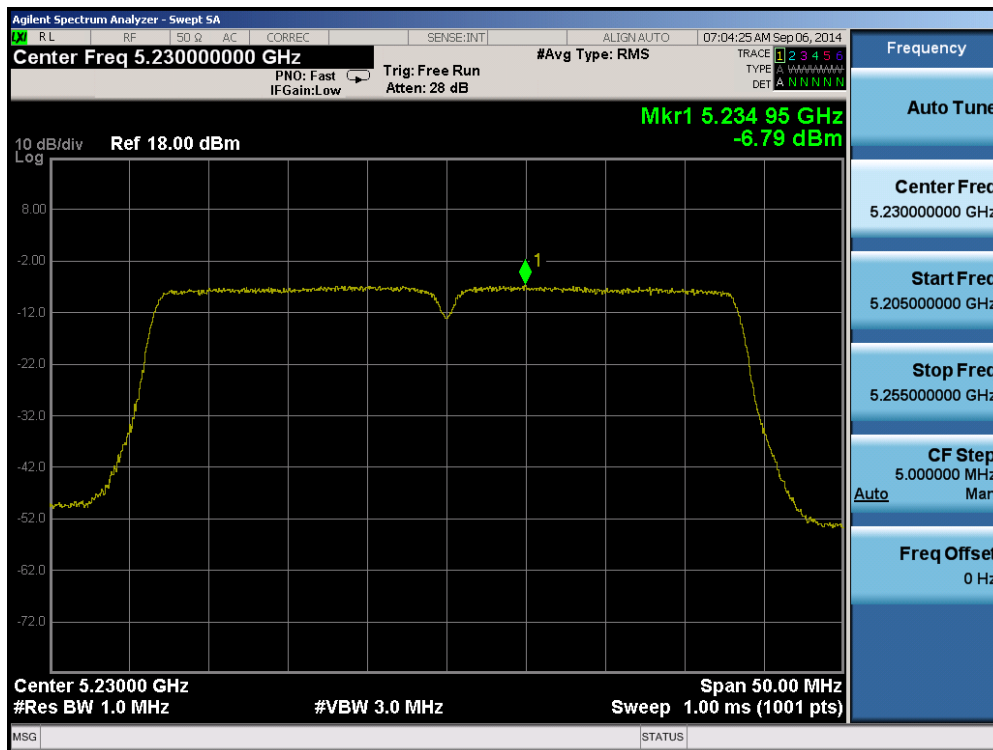


Plot 6-74. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 48)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 60 of 182

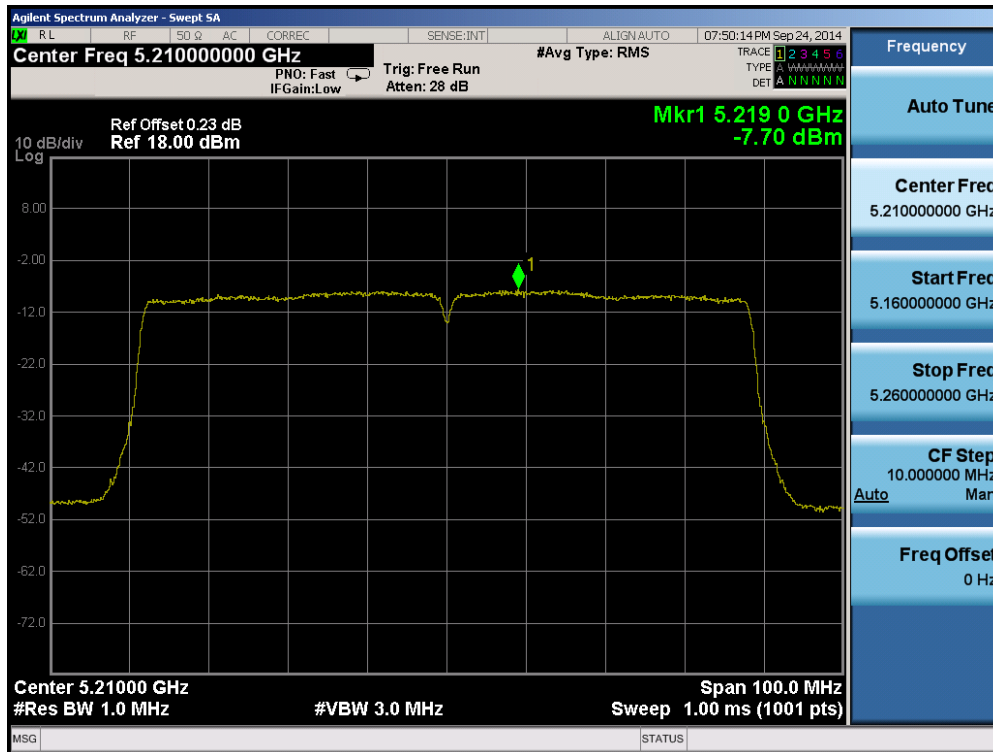


Plot 6-75. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 38)

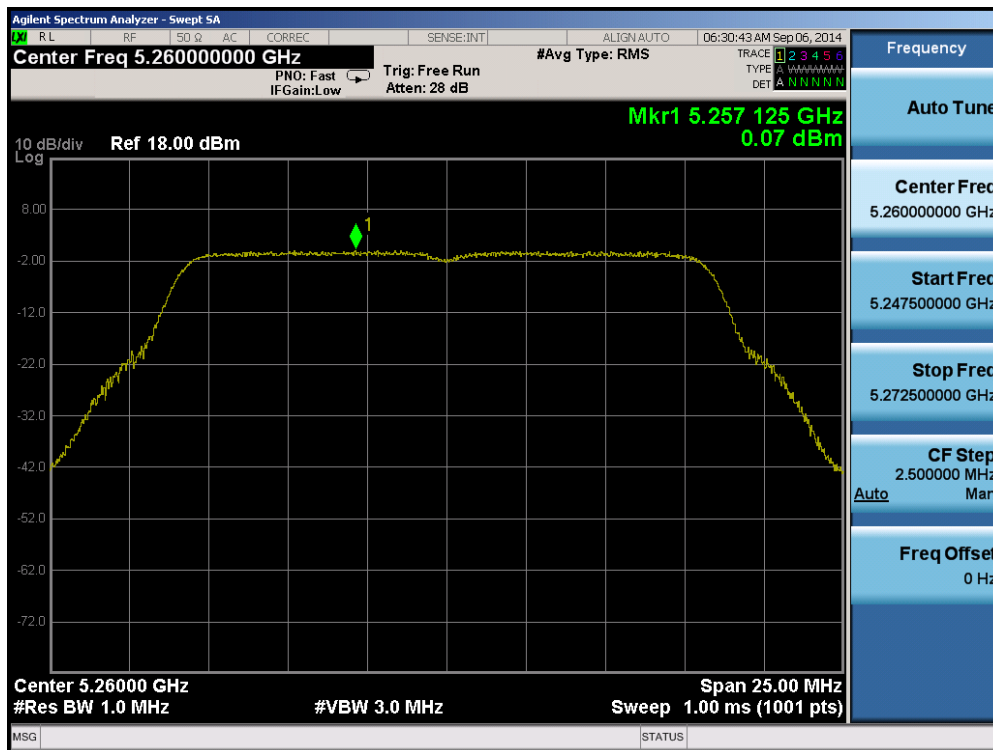


Plot 6-76. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 46)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 61 of 182

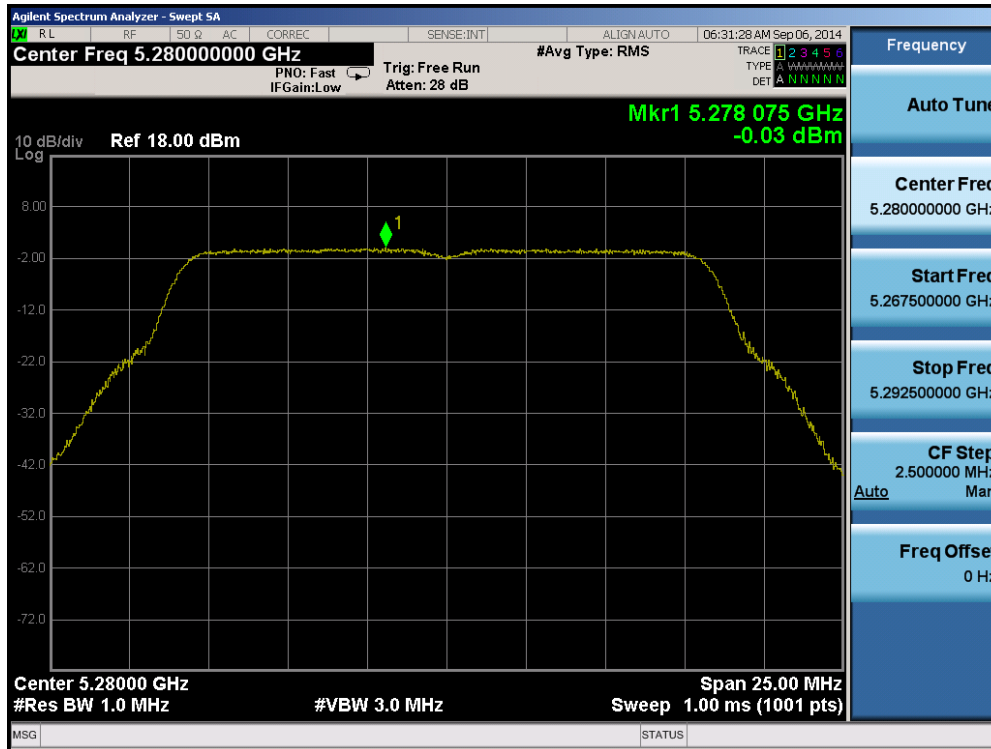


Plot 6-77. Peak Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 1) – Ch. 42)

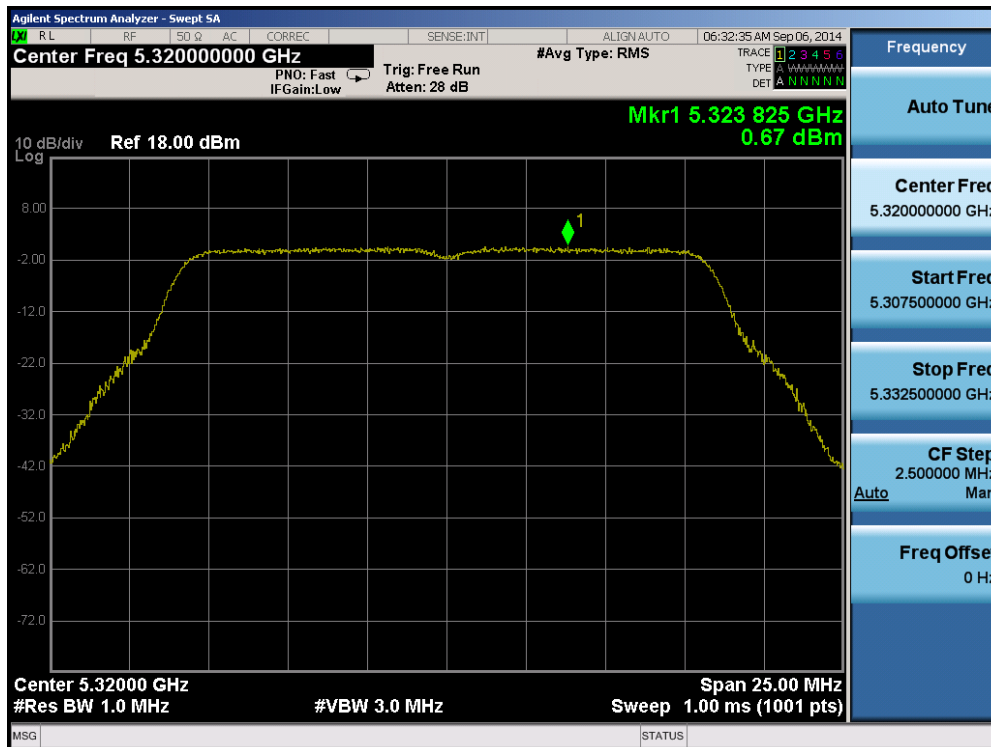


Plot 6-78. Peak Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 52)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 62 of 182

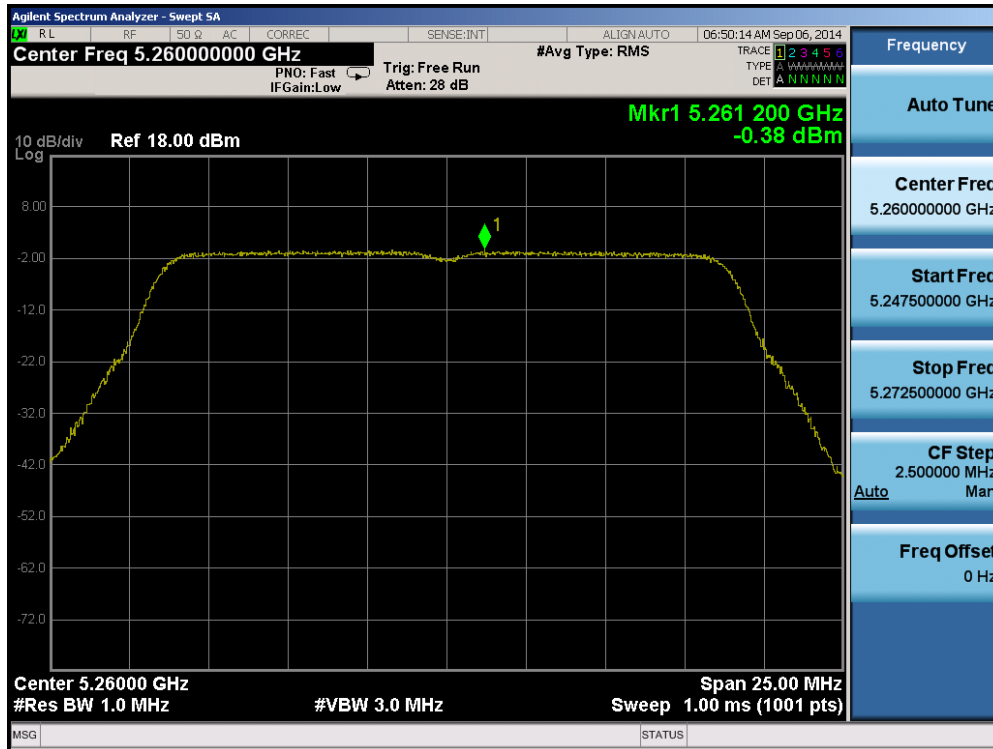


Plot 6-79. Peak Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 56)

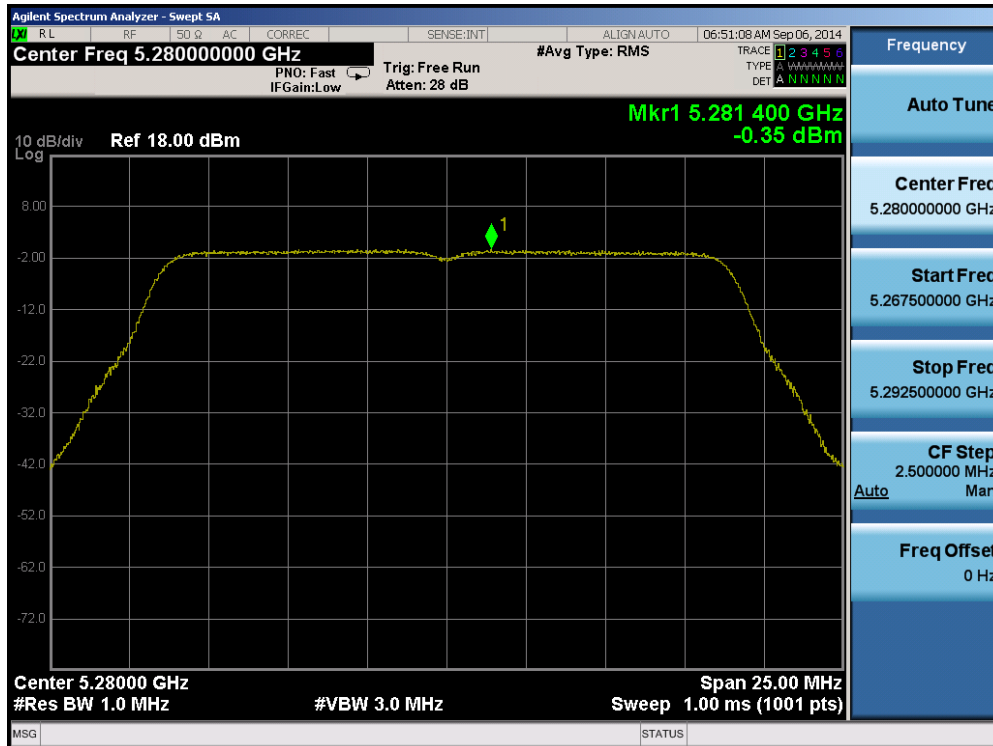


Plot 6-80. Peak Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 64)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 63 of 182

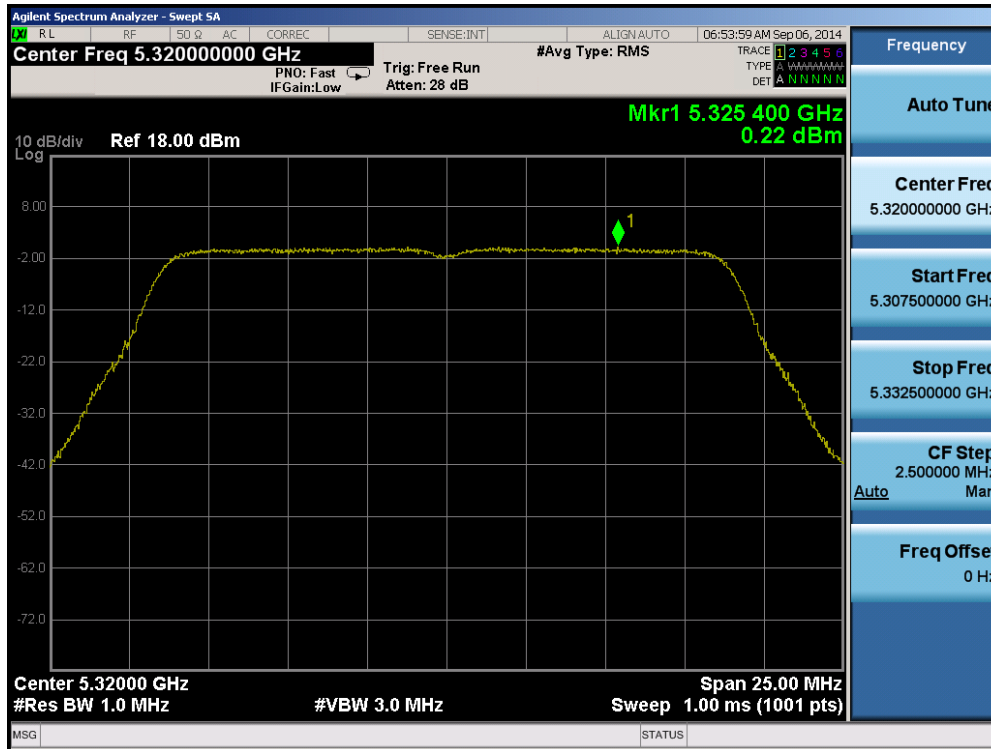


Plot 6-81. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 52)

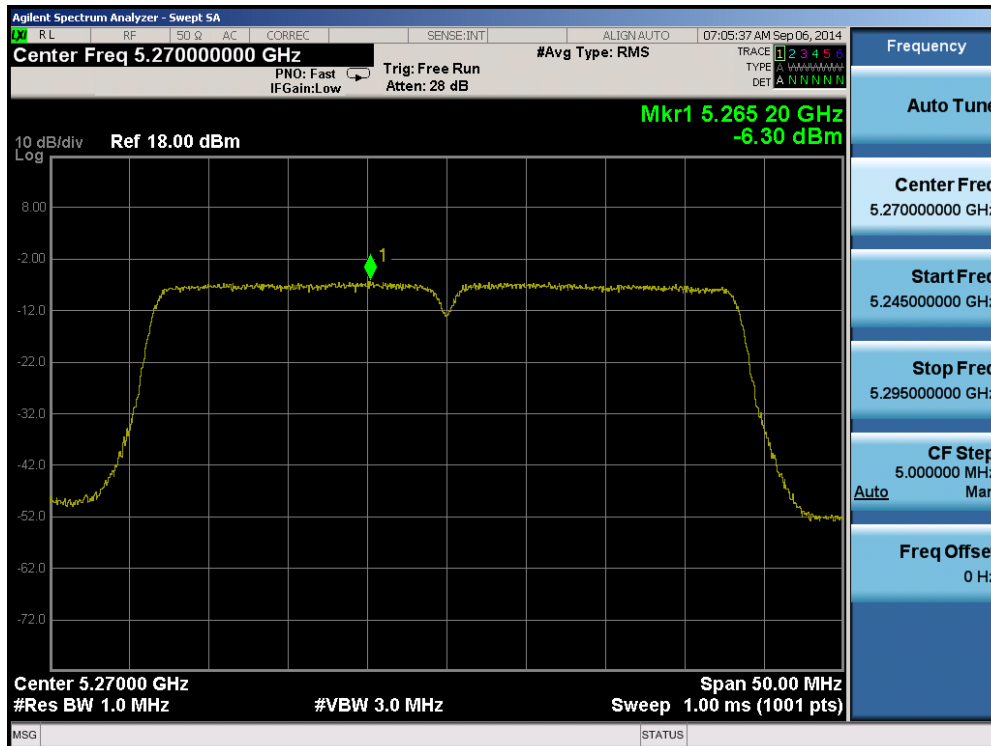


Plot 6-82. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 56)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 64 of 182

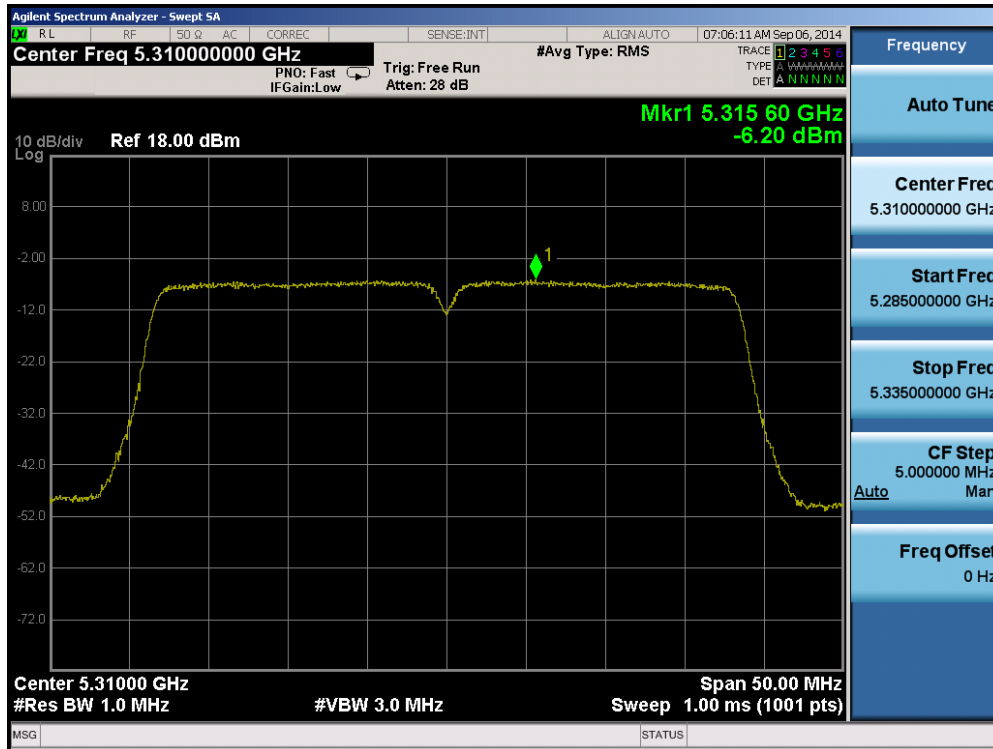


Plot 6-83. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 64)

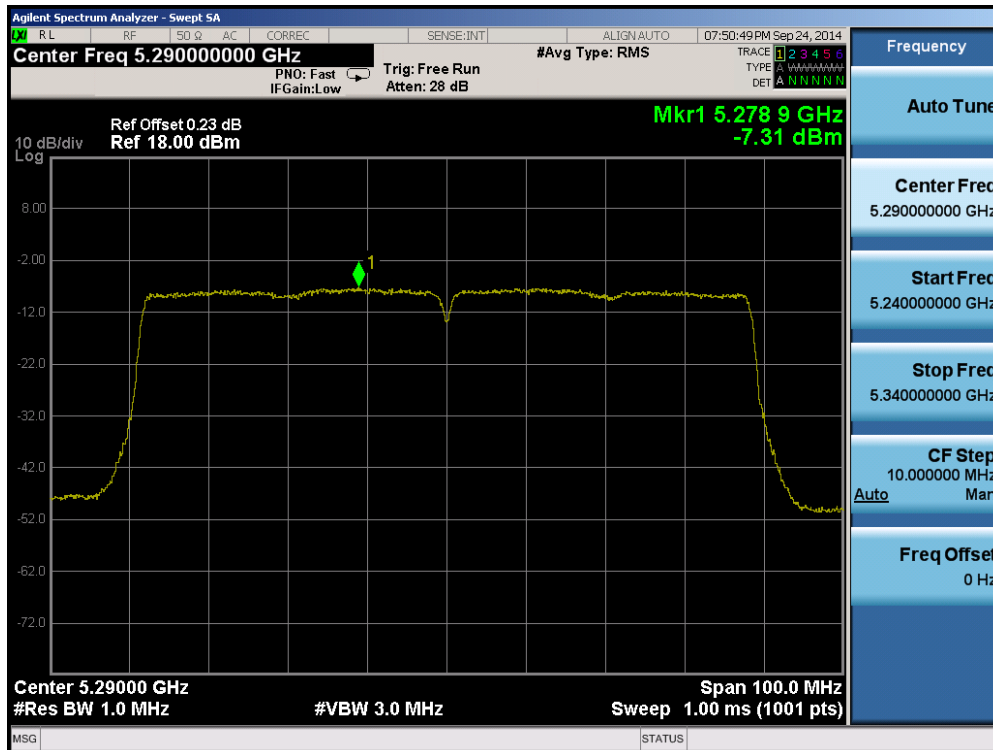


Plot 6-84. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 54)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 65 of 182

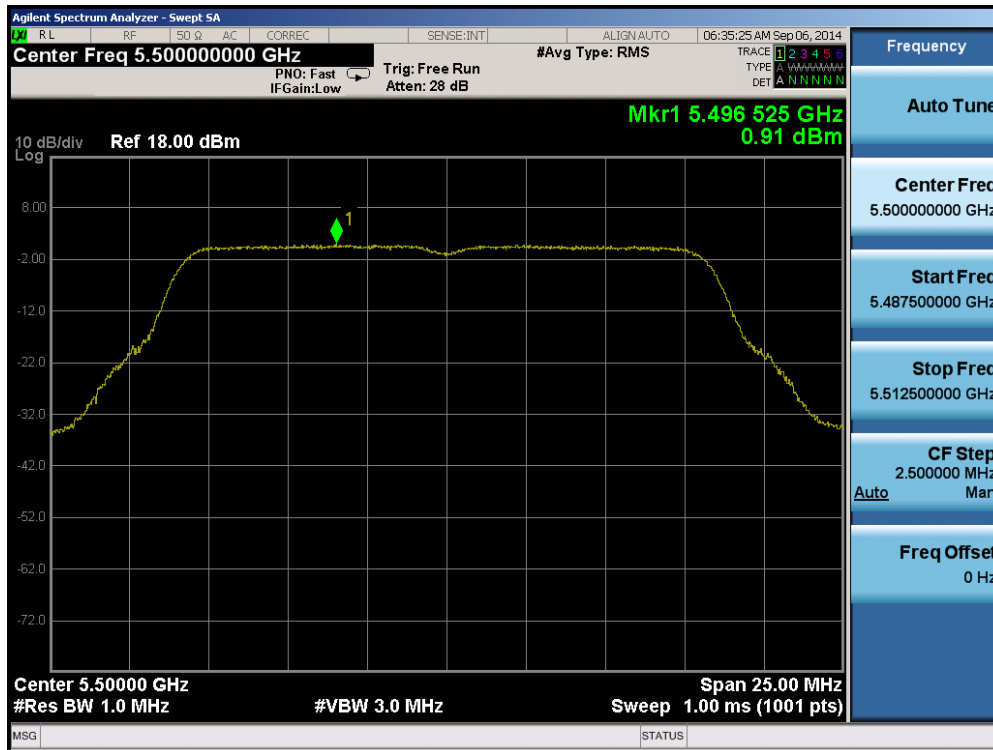


Plot 6-85. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 62)

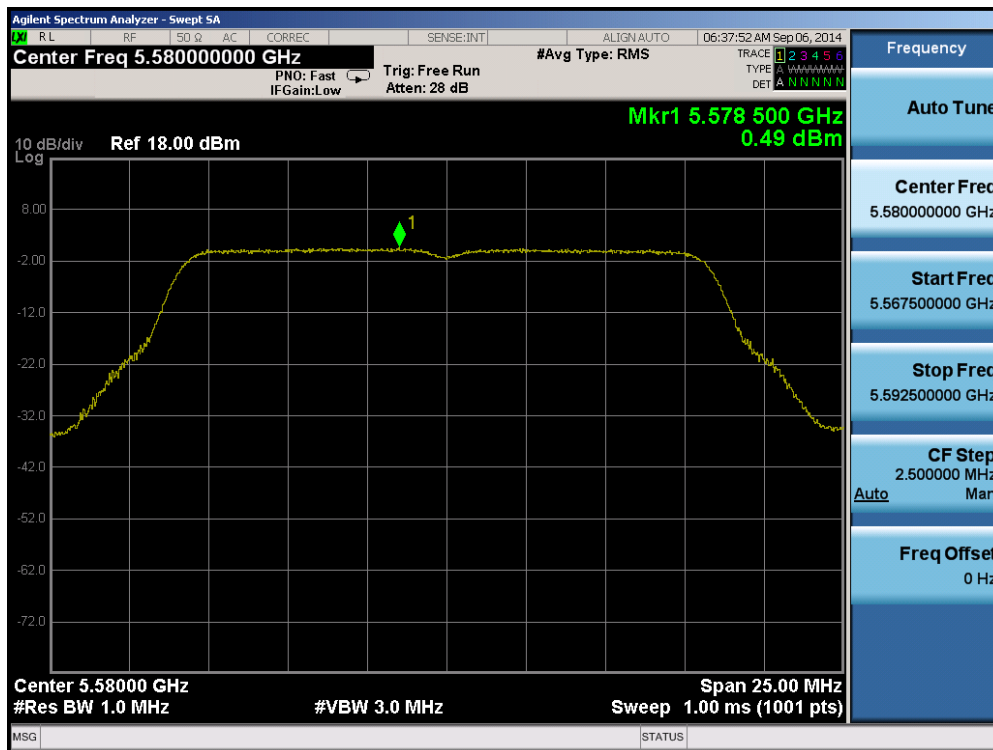


Plot 6-86. Peak Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 66 of 182

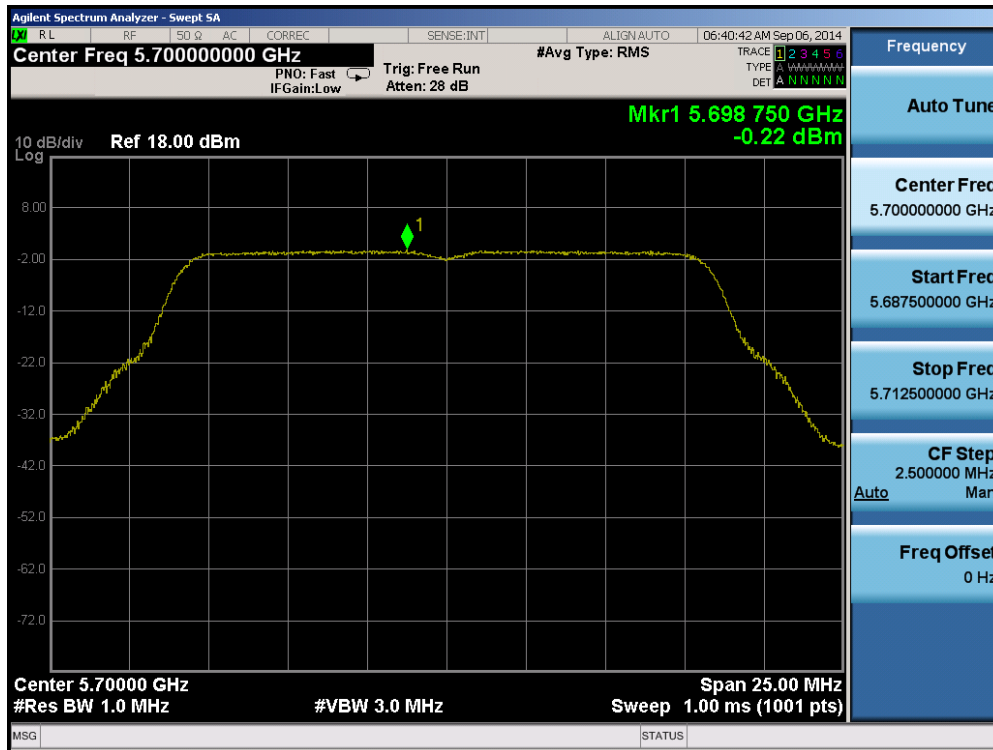


Plot 6-87. Peak Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 100)

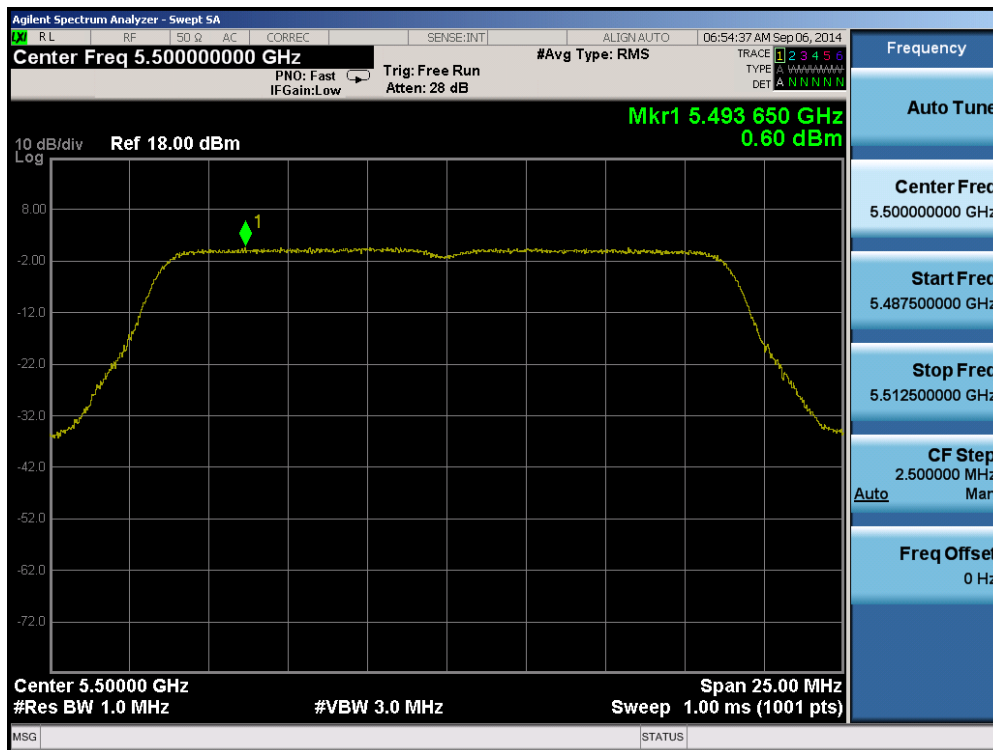


Plot 6-88. Peak Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 116)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 67 of 182

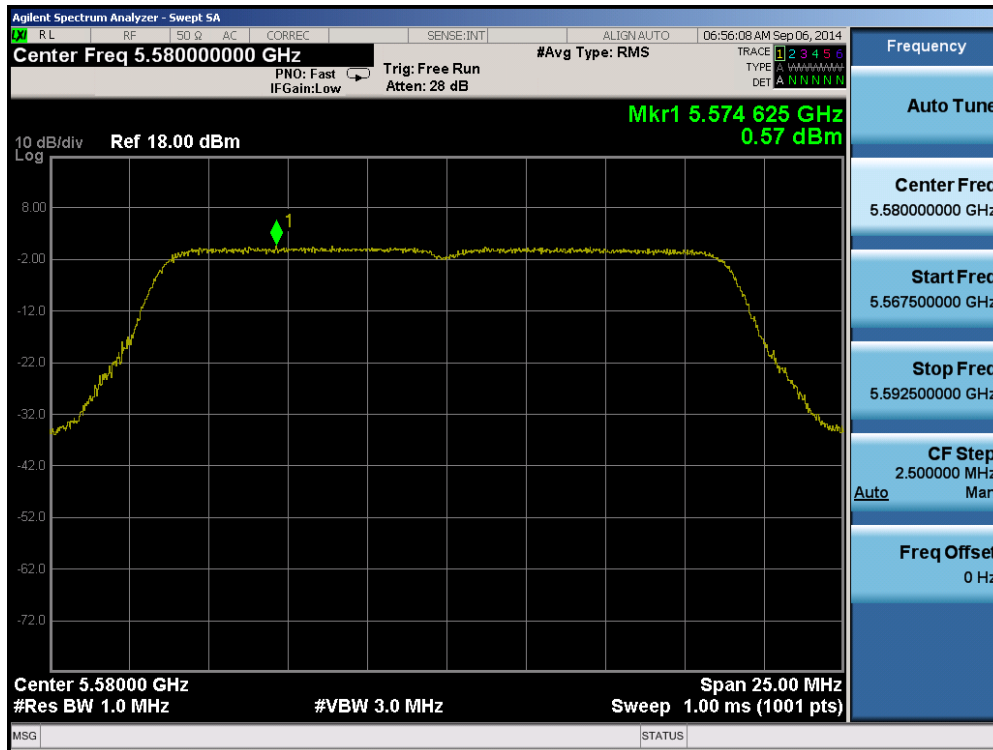


Plot 6-89. Peak Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 140)

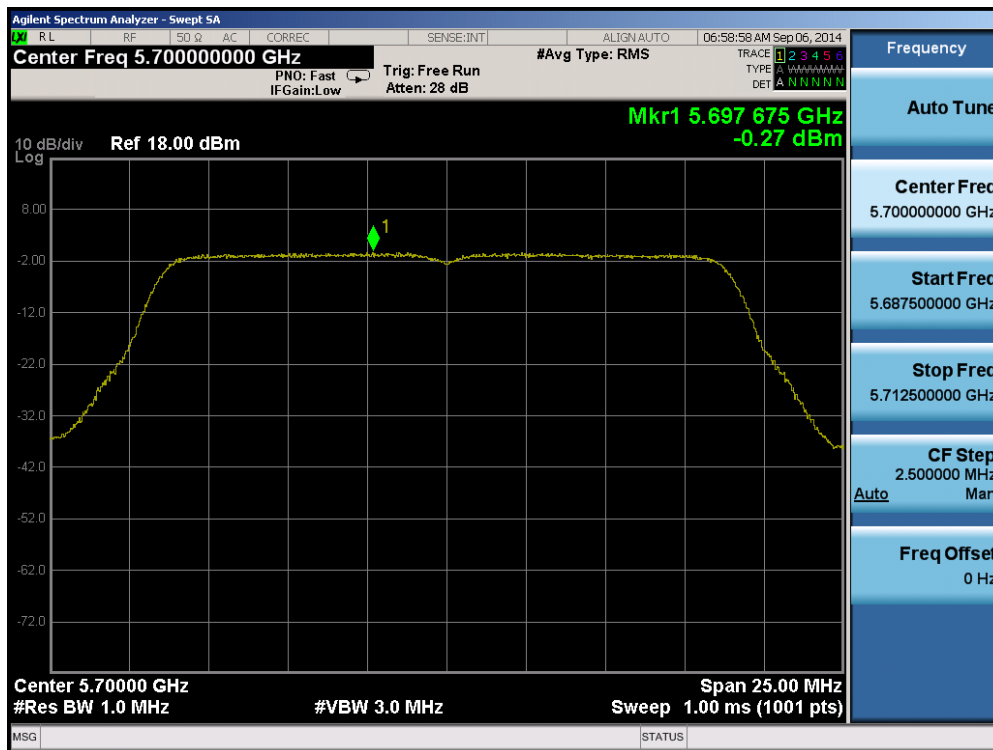


Plot 6-90. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 68 of 182

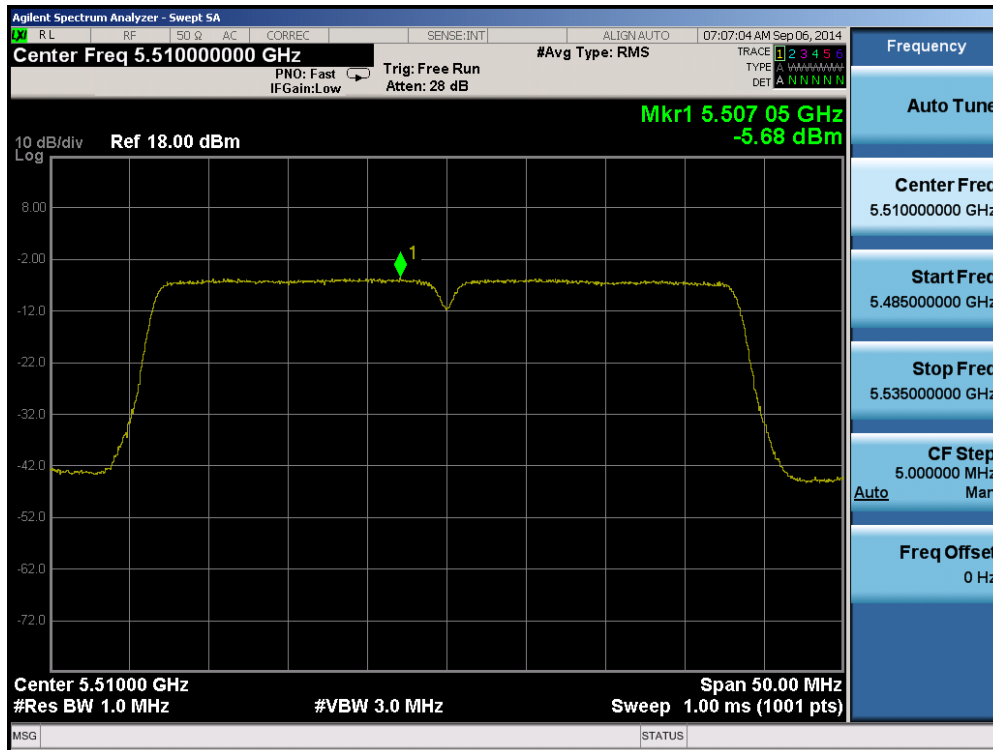


Plot 6-91. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 116)

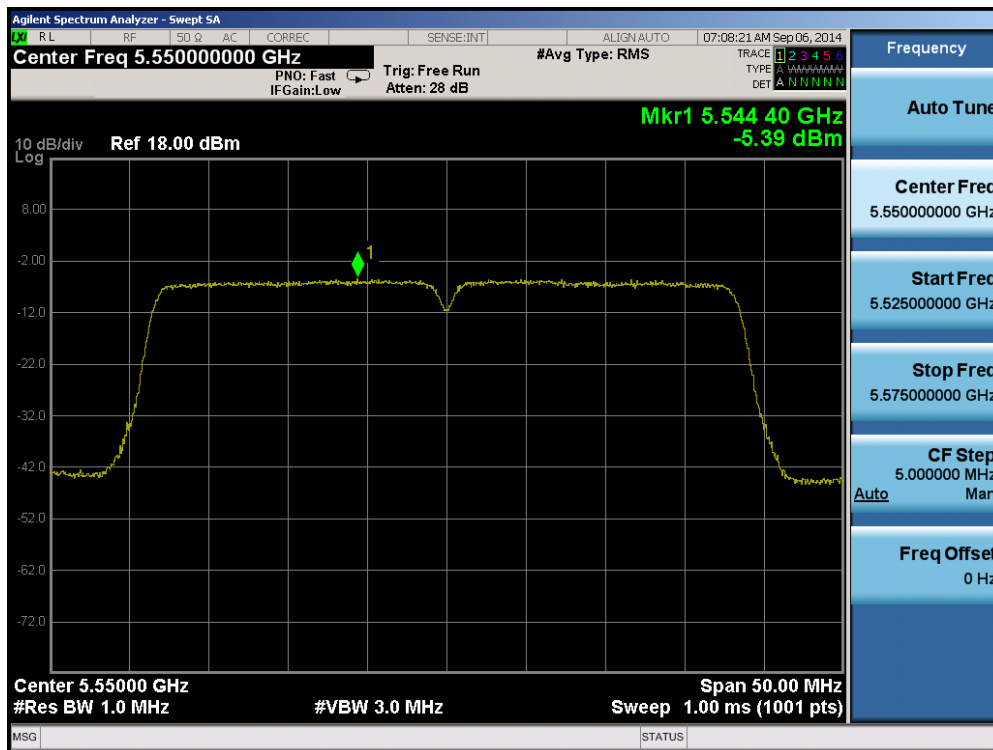


Plot 6-92. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 140)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 69 of 182

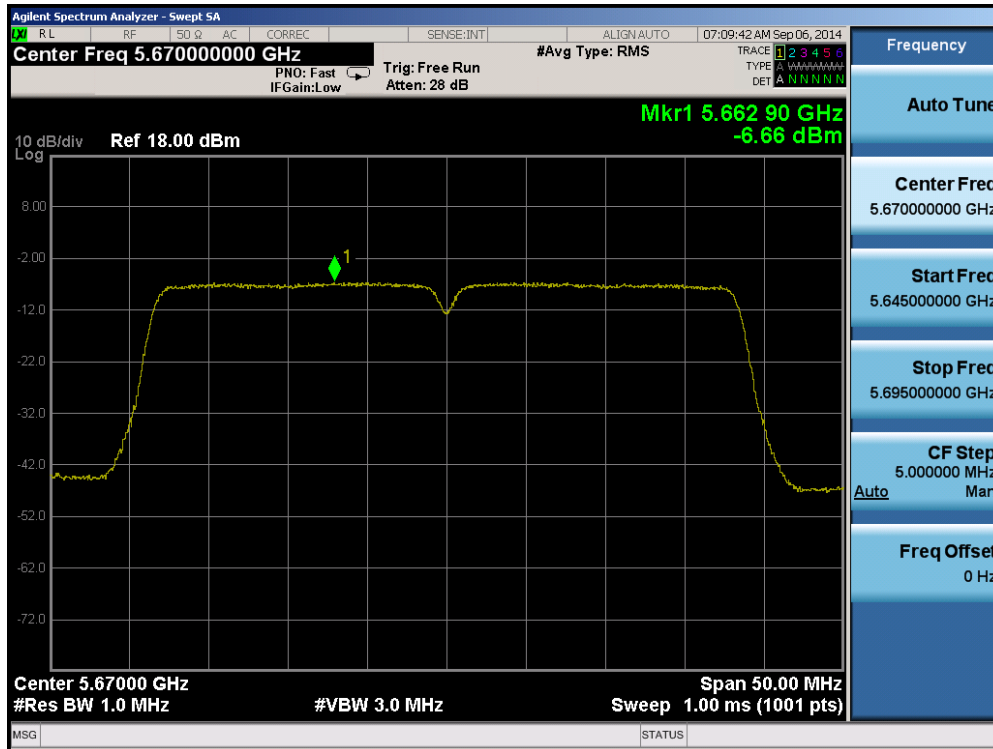


Plot 6-93. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 102)

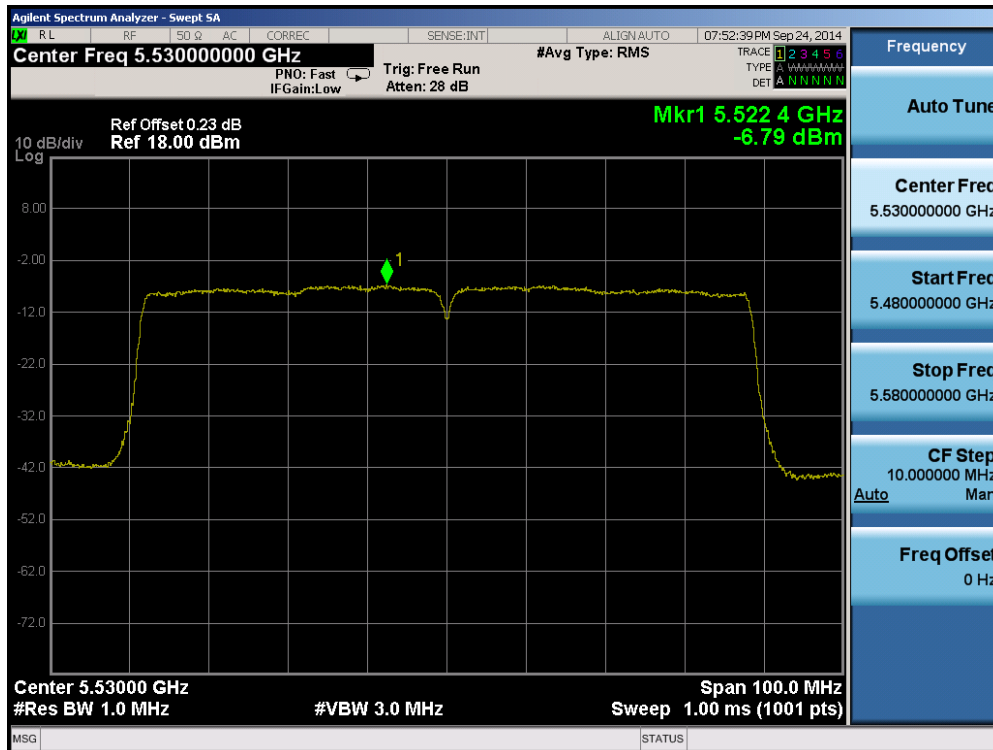


Plot 6-94. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 110)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 70 of 182



Plot 6-95. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 134)



Plot 6-96. Peak Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2C) – Ch. 106)

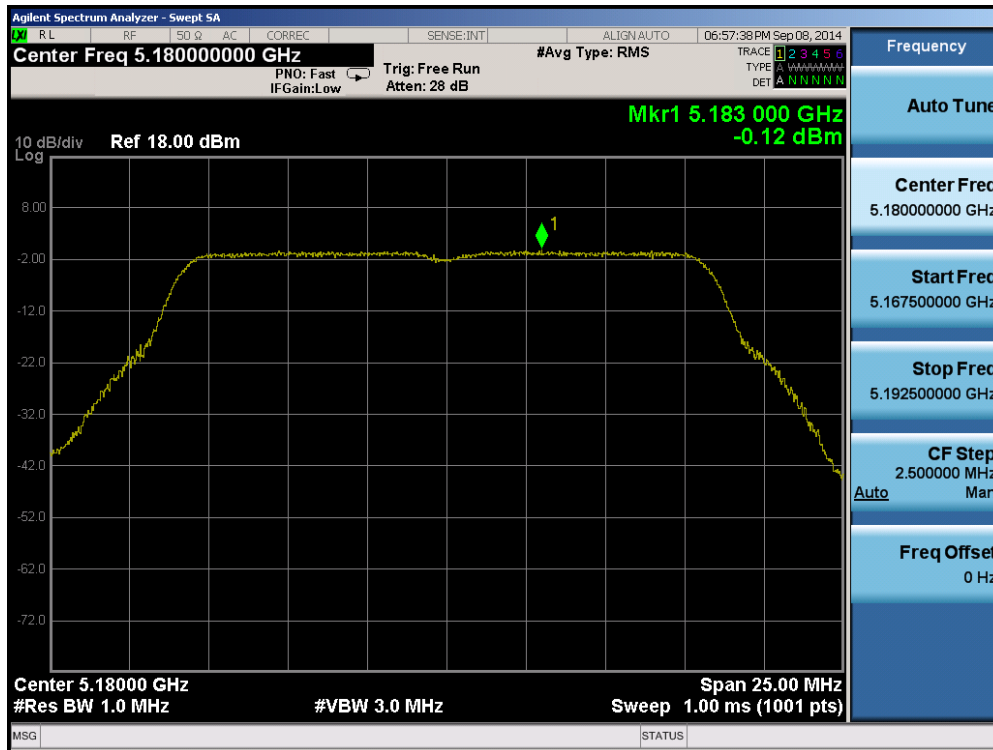
FCC ID: A3LSMN915R4	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 71 of 182

Antenna-2 Power Spectral Density Measurements

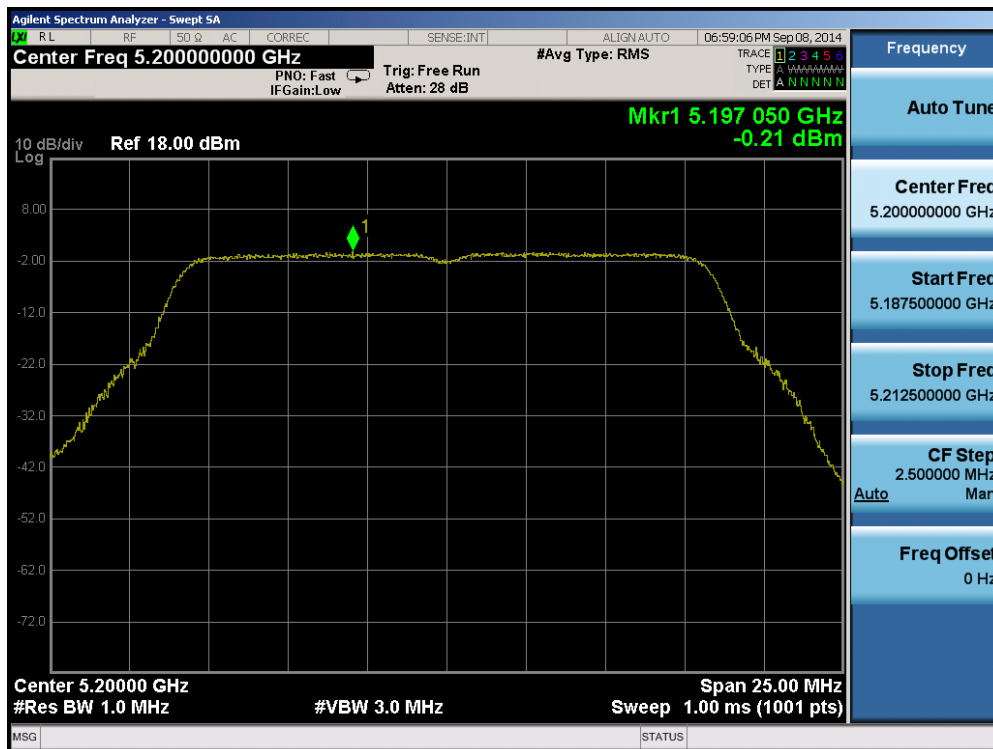
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density [dBm/MHz]	Margin [dB]	Pass / Fail
Band 1	5180	36	a	6	-0.12	4.0	-4.12	Pass
	5200	40	a	6	-0.21	4.0	-4.21	Pass
	5240	48	a	6	-0.36	4.0	-4.36	Pass
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	-0.60	4.0	-4.60	Pass
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	-0.75	4.0	-4.75	Pass
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	-0.50	4.0	-4.50	Pass
	5190	38	n (40MHz)	13.5/15 (MCS0)	-6.39	4.0	-10.39	Pass
	5230	46	n (40MHz)	13.5/15 (MCS0)	-5.90	4.0	-9.90	Pass
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-7.65	4.0	-11.65	Pass
Band 2A	5260	52	a	6	-0.63	11.0	-11.63	Pass
	5280	56	a	6	-0.84	11.0	-11.84	Pass
	5320	64	a	6	-0.55	11.0	-11.55	Pass
	5260	52	n (20MHz)	6.5/7.2 (MCS0)	-1.06	11.0	-12.06	Pass
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	-1.09	11.0	-12.09	Pass
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	-1.18	11.0	-12.18	Pass
	5270	54	n (40MHz)	13.5/15 (MCS0)	-6.23	11.0	-17.23	Pass
	5310	62	n (40MHz)	13.5/15 (MCS0)	-6.32	11.0	-17.32	Pass
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	-8.53	11.0	-19.53	Pass
Band 2C	5500	100	a	6	-0.54	11.0	-11.54	Pass
	5580	116	a	6	-0.32	11.0	-11.32	Pass
	5700	140	a	6	0.24	11.0	-10.76	Pass
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	-2.10	11.0	-13.10	Pass
	5580	116	n (20MHz)	6.5/7.2 (MCS0)	-1.85	11.0	-12.85	Pass
	5700	140	n (20MHz)	6.5/7.2 (MCS0)	-1.30	11.0	-12.30	Pass
	5510	102	n (40MHz)	13.5/15 (MCS0)	-6.26	11.0	-17.26	Pass
	5550	110	n (40MHz)	13.5/15 (MCS0)	-6.14	11.0	-17.14	Pass
	5670	134	n (40MHz)	13.5/15 (MCS0)	-5.87	11.0	-16.87	Pass
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-8.23	11.0	-19.23	Pass

Table 6-22. Conducted Power Spectral Density Measurements

FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset	Page 72 of 182	

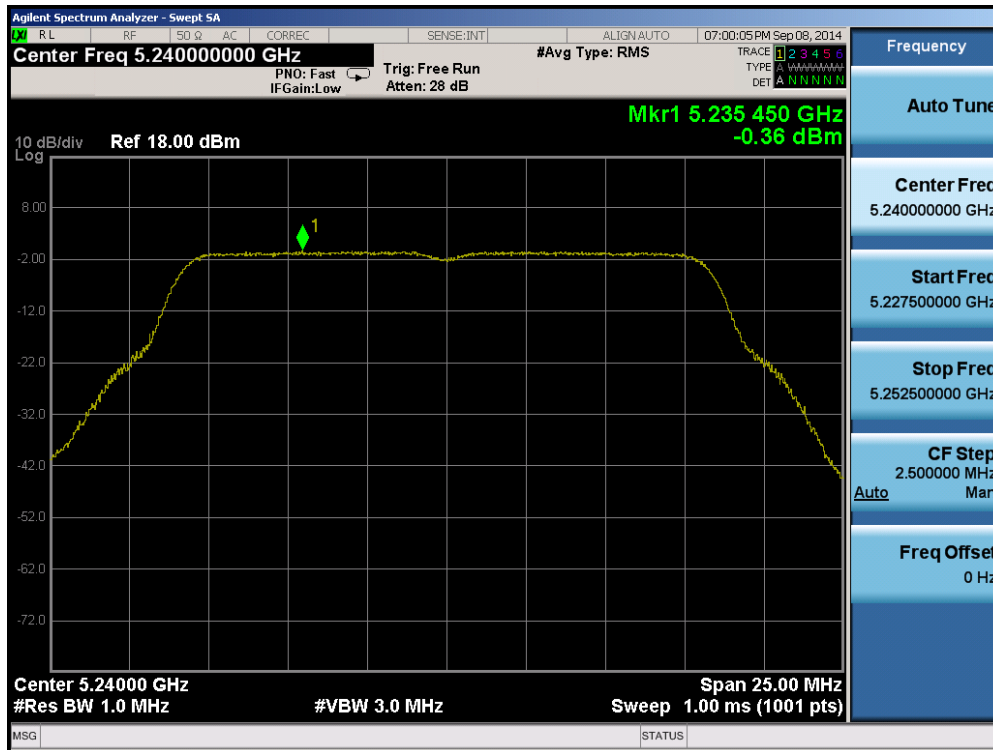


Plot 6-97. Peak Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 36)

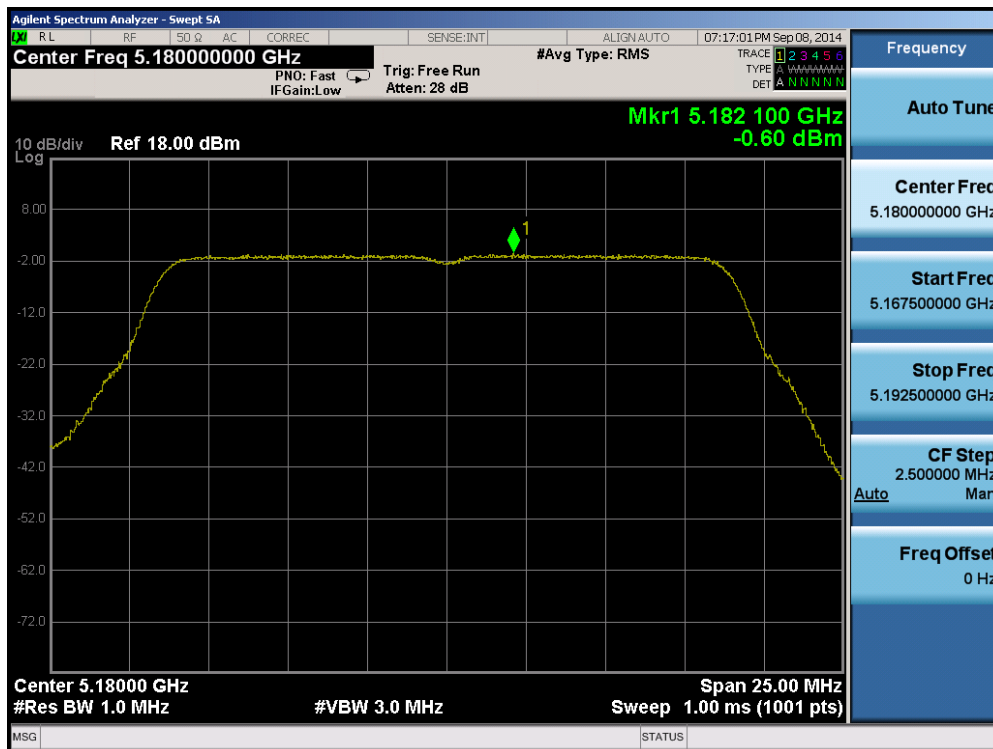


Plot 6-98. Peak Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 40)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 73 of 182

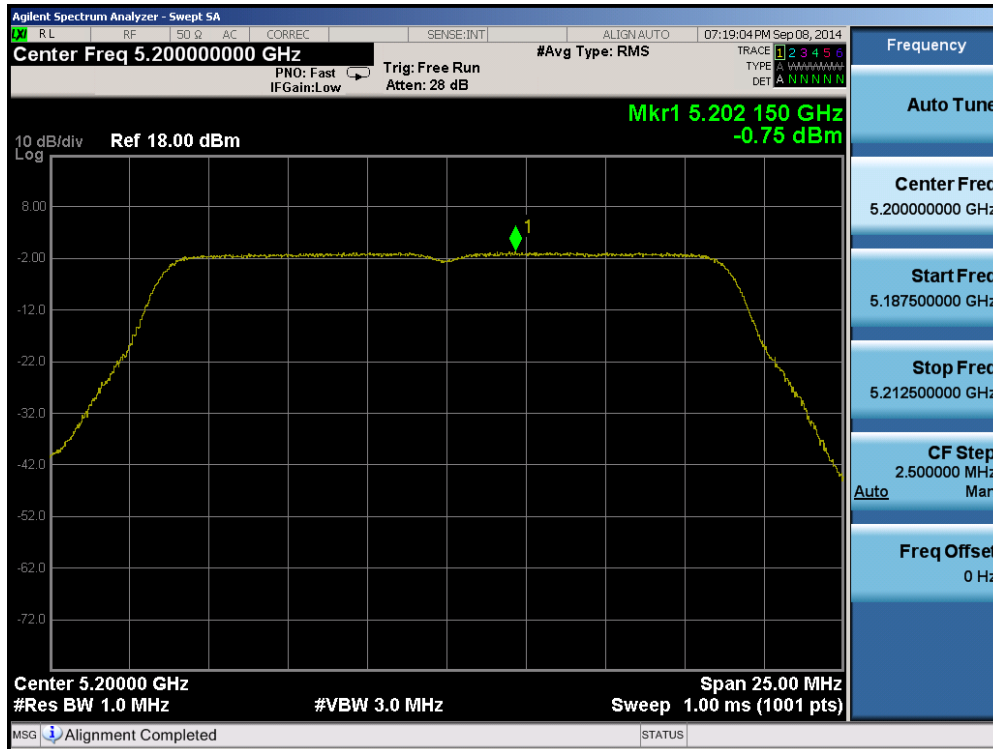


Plot 6-99. Peak Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 48)

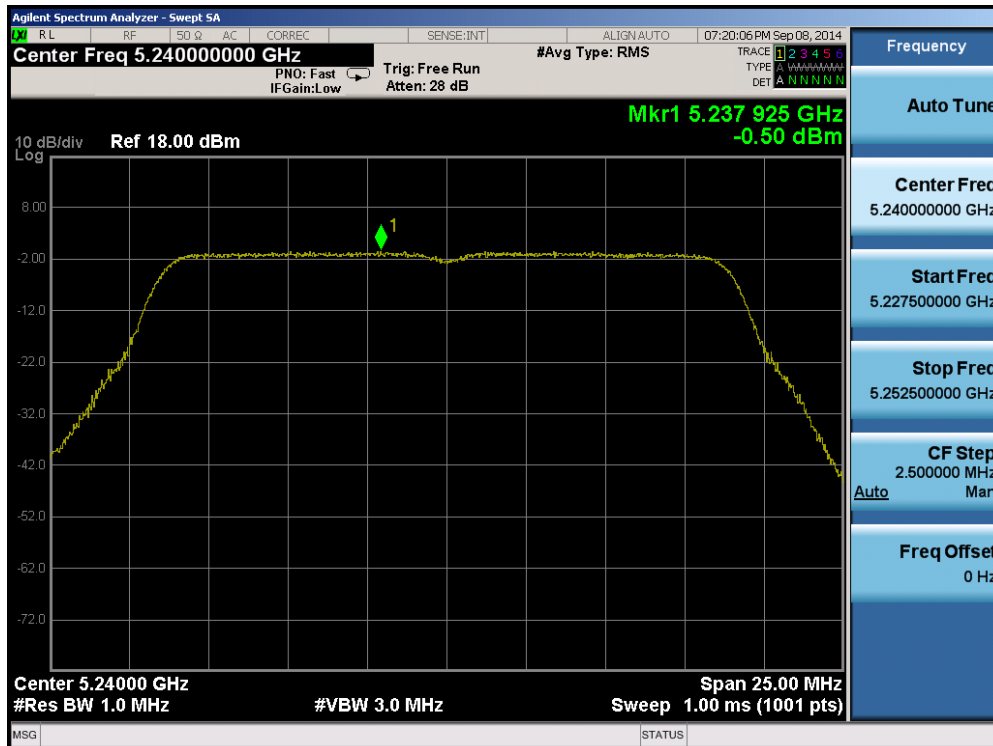


Plot 6-100. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 36)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 74 of 182

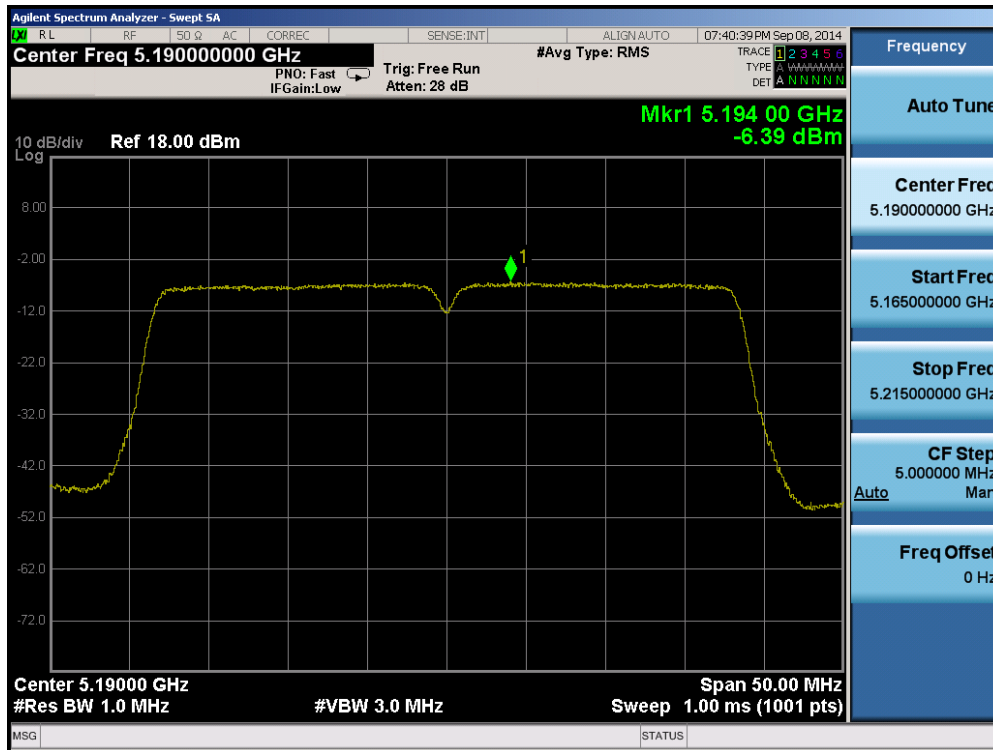


Plot 6-101. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 40)

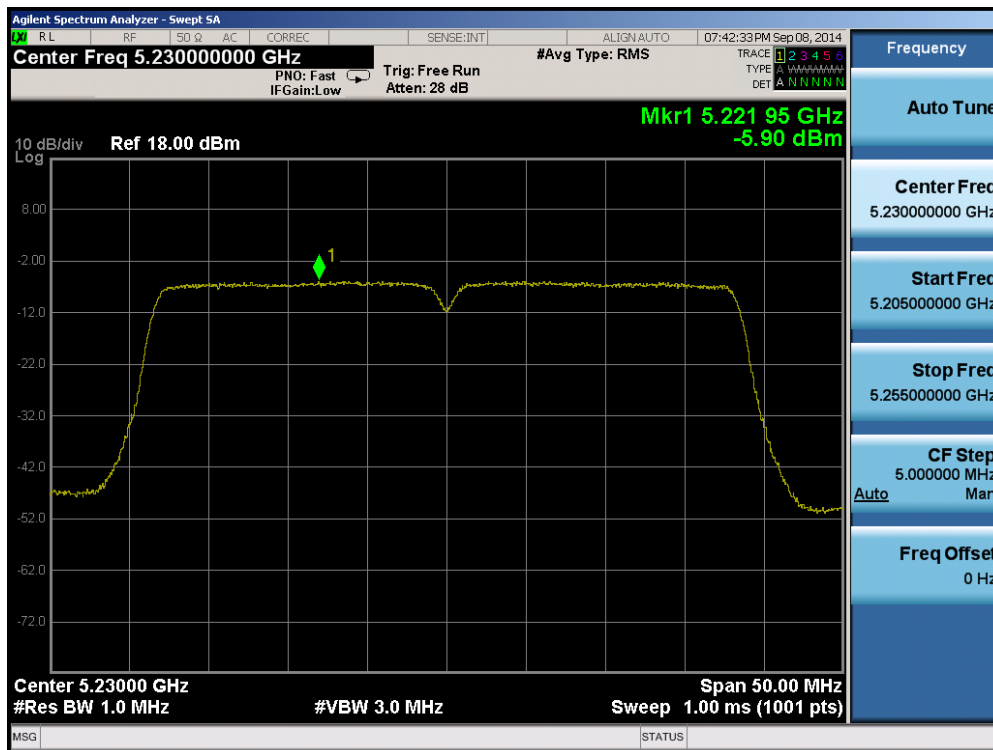


Plot 6-102. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 48)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 75 of 182



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

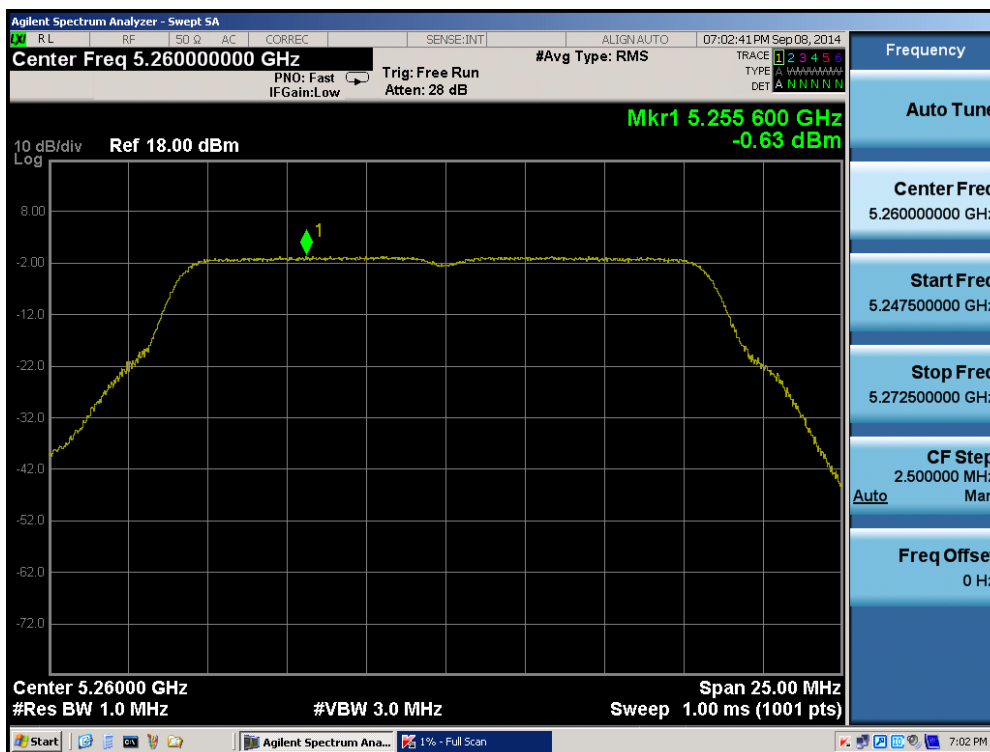


Plot 6-104. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 46)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 76 of 182

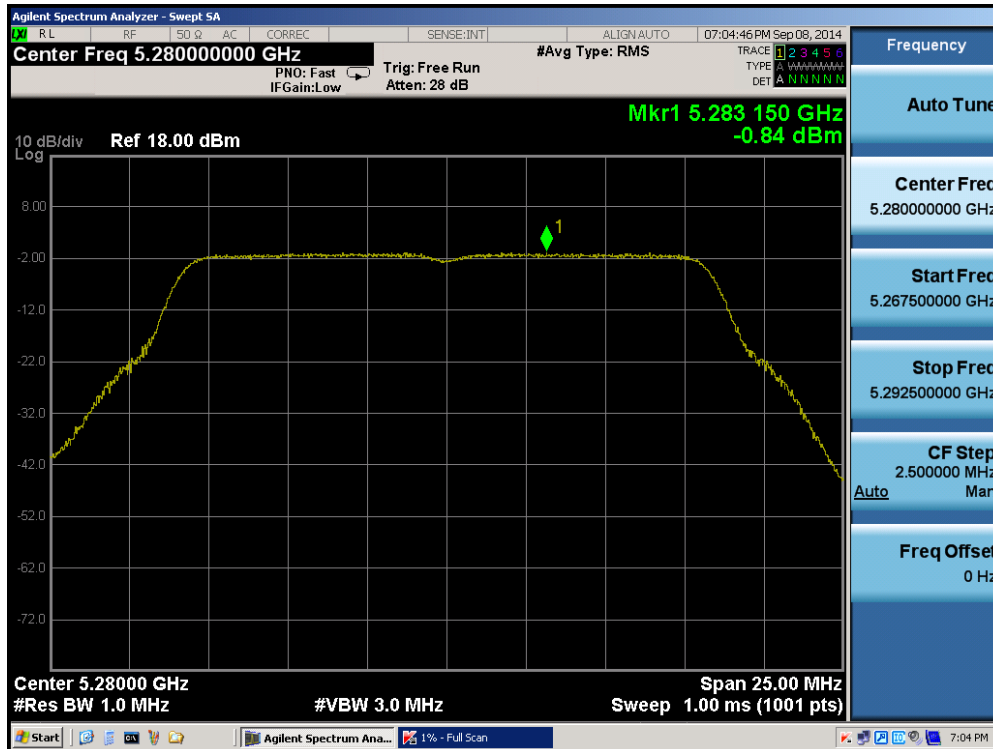


Plot 6-105. Peak Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 1) – Ch. 42)

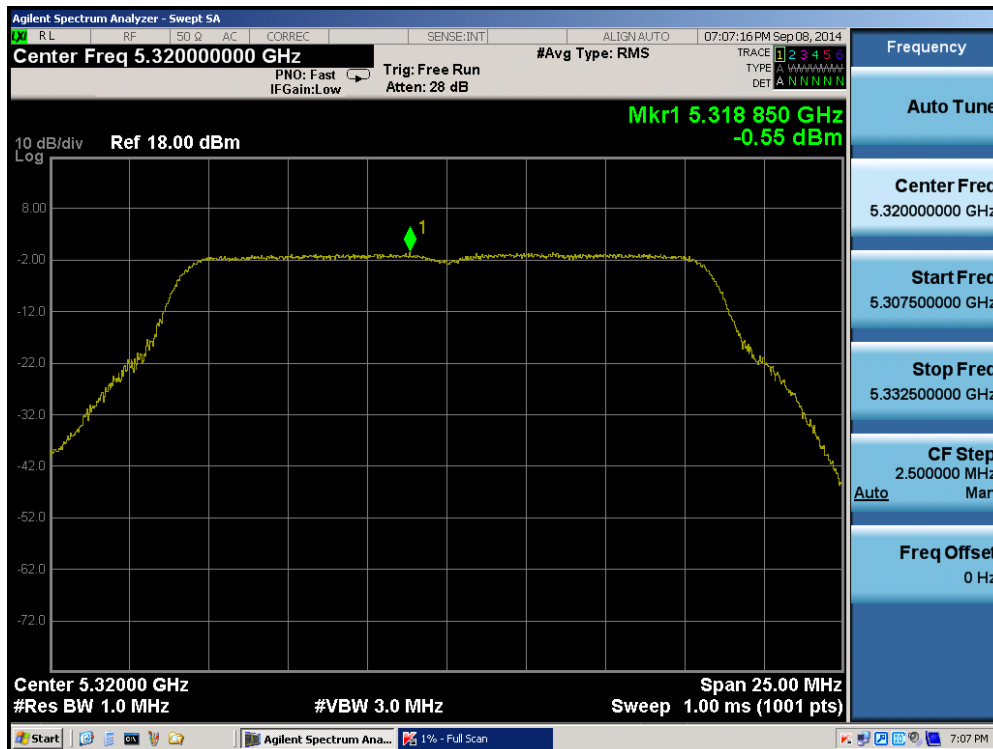


Plot 6-106. Peak Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 52)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 77 of 182

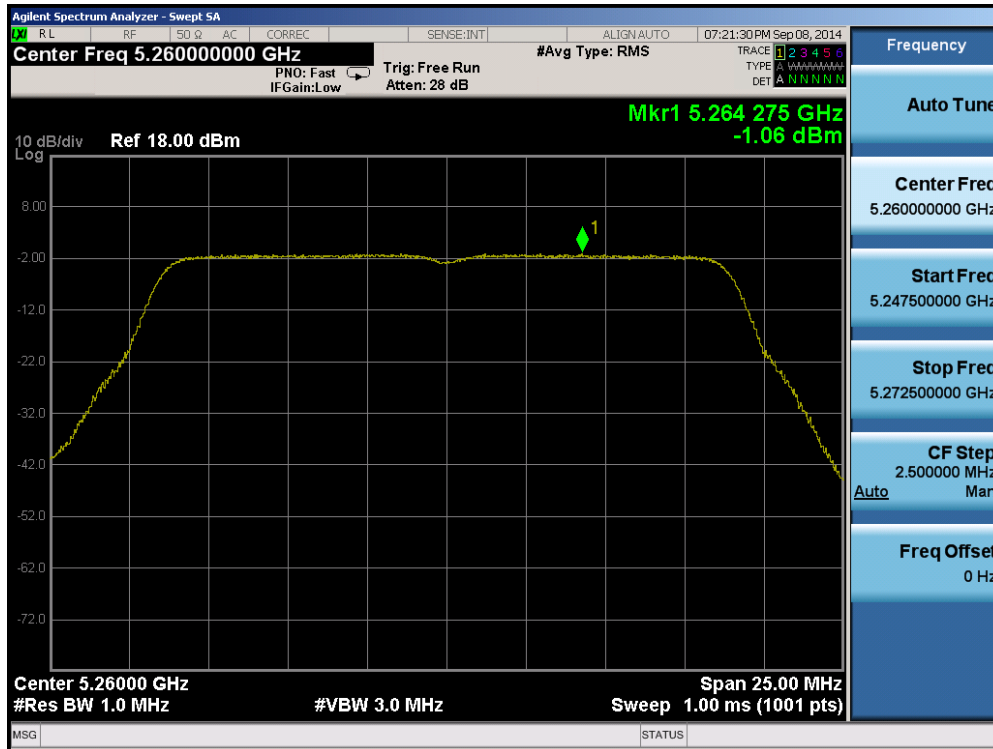


Plot 6-107. Peak Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 56)

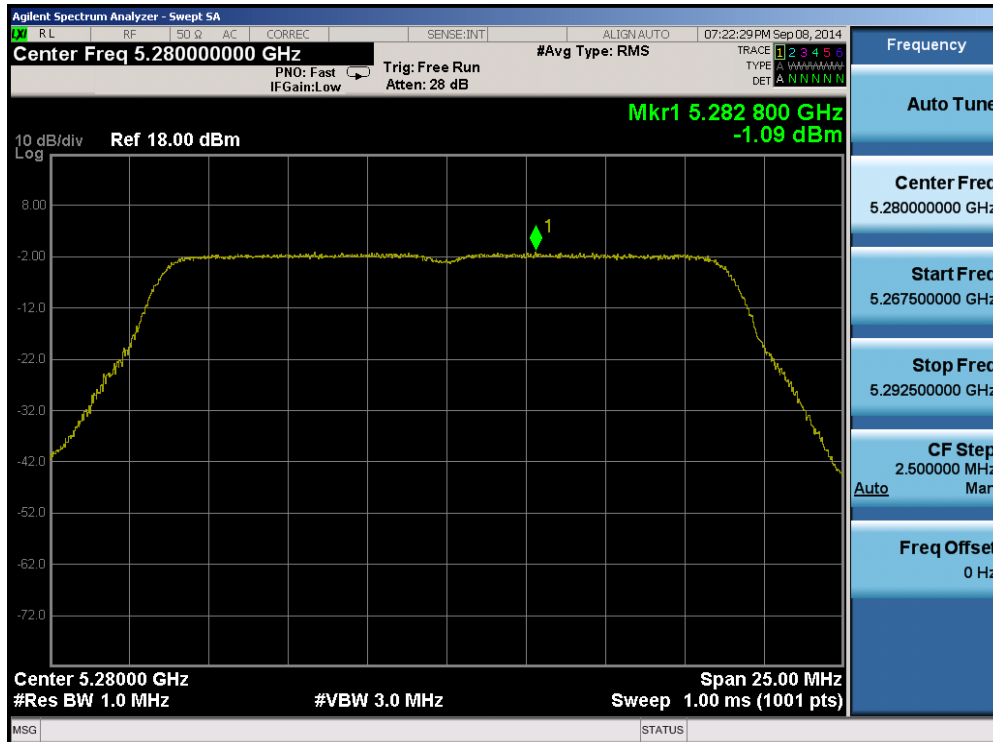


Plot 6-108. Peak Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 64)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 78 of 182

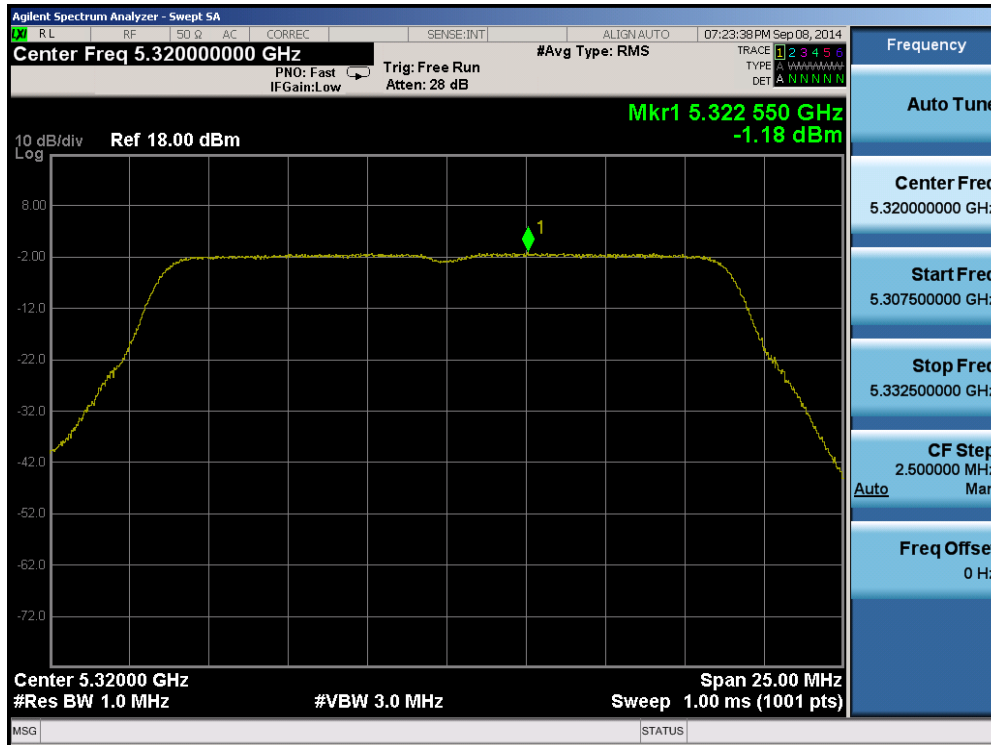


Plot 6-109. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 52)

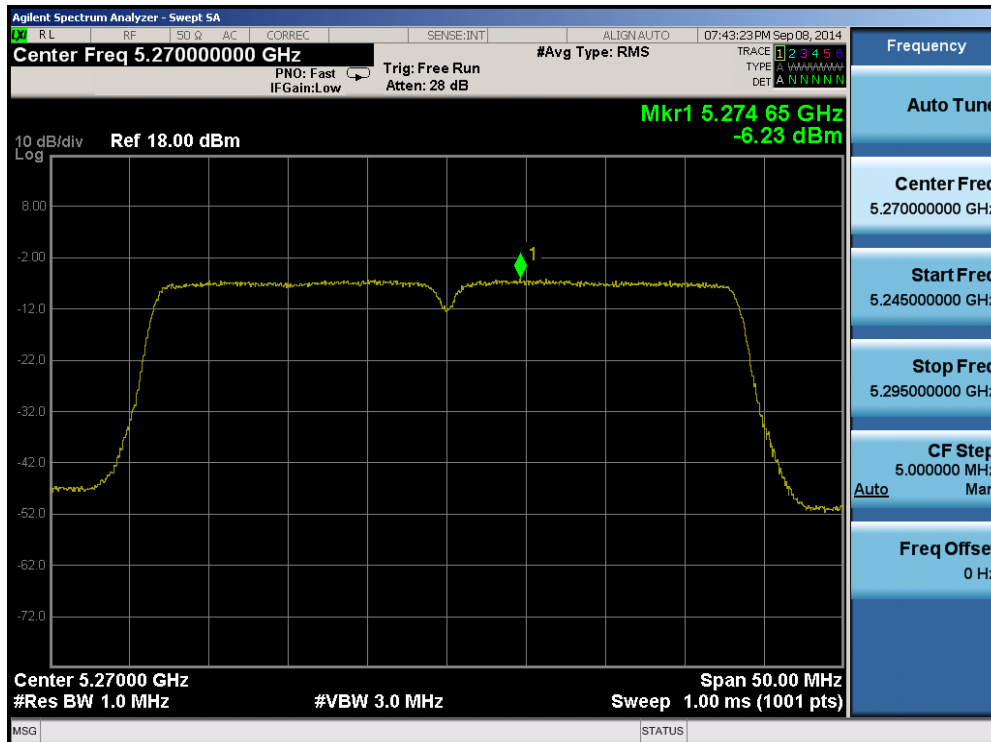


Plot 6-110. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 56)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 79 of 182

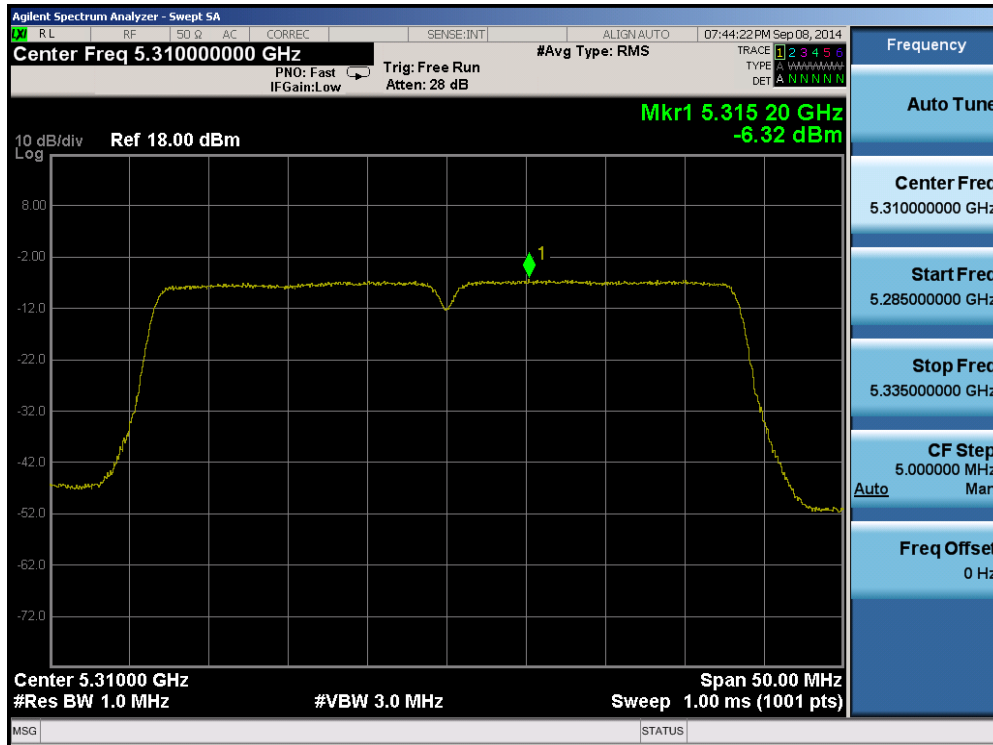


Plot 6-111. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 64)

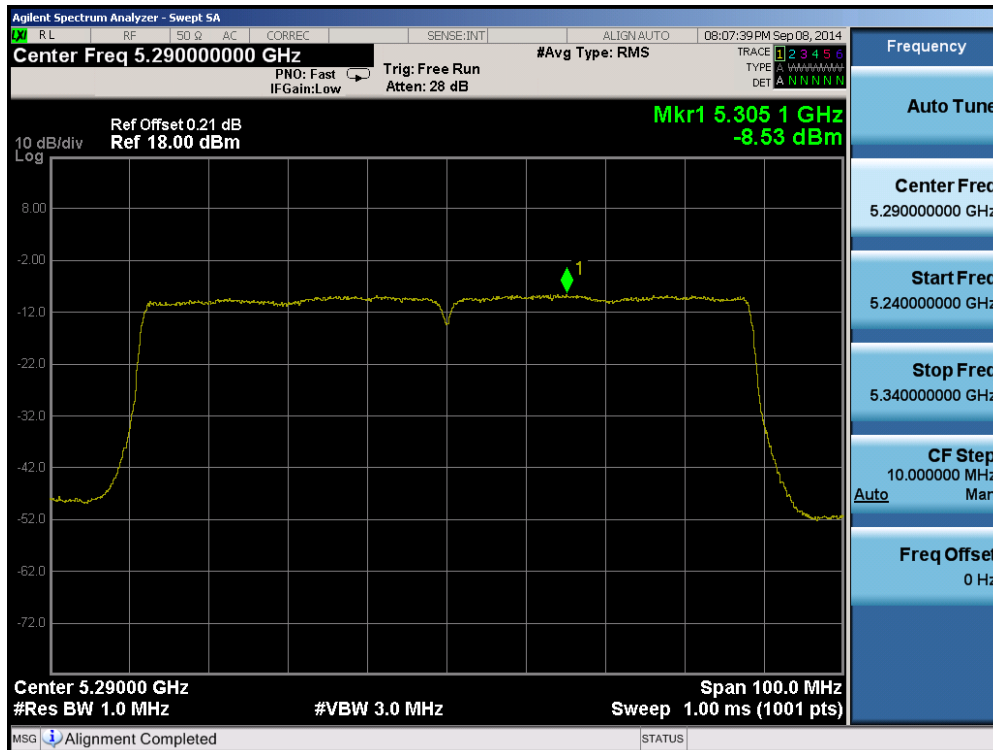


Plot 6-112. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 54)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 80 of 182

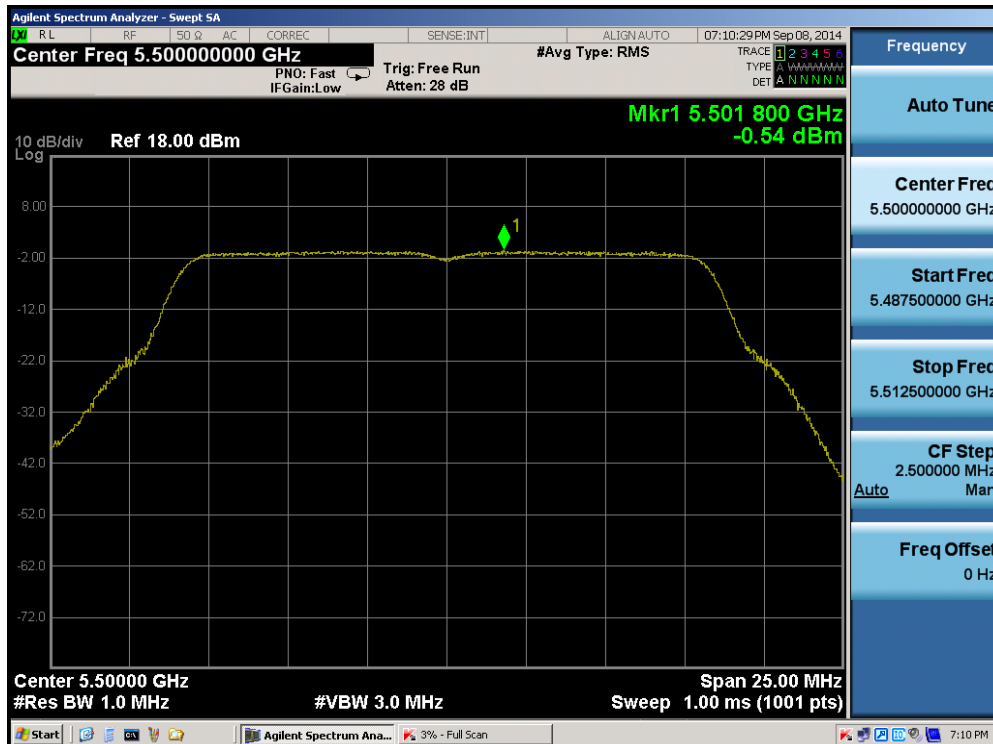


Plot 6-113. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 62)

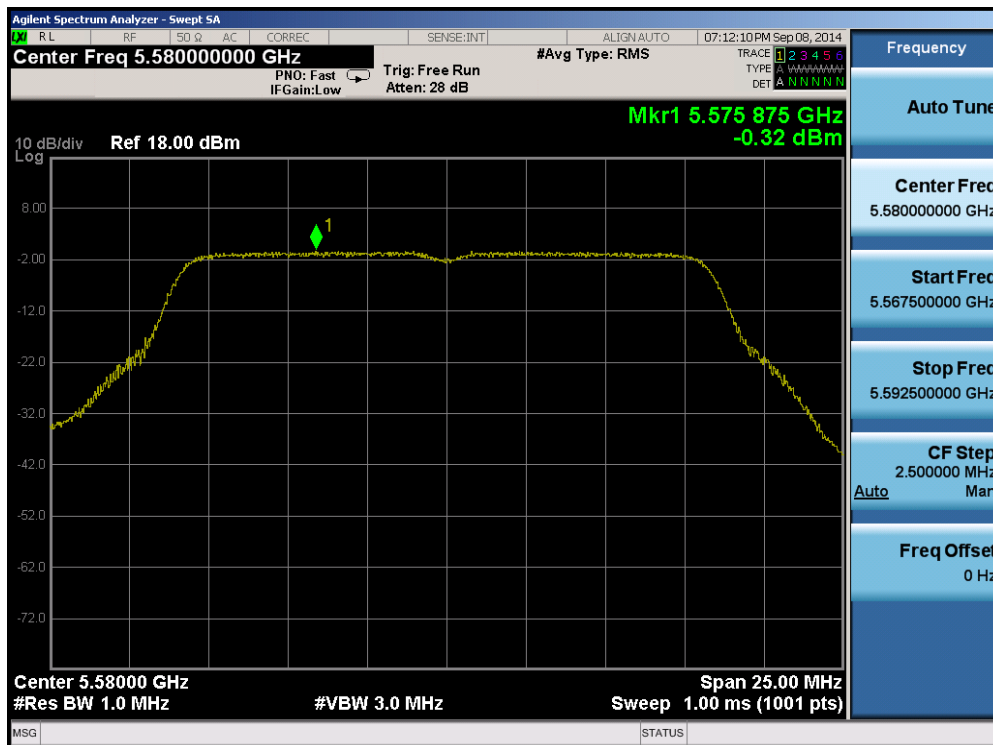


Plot 6-114. Peak Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 81 of 182

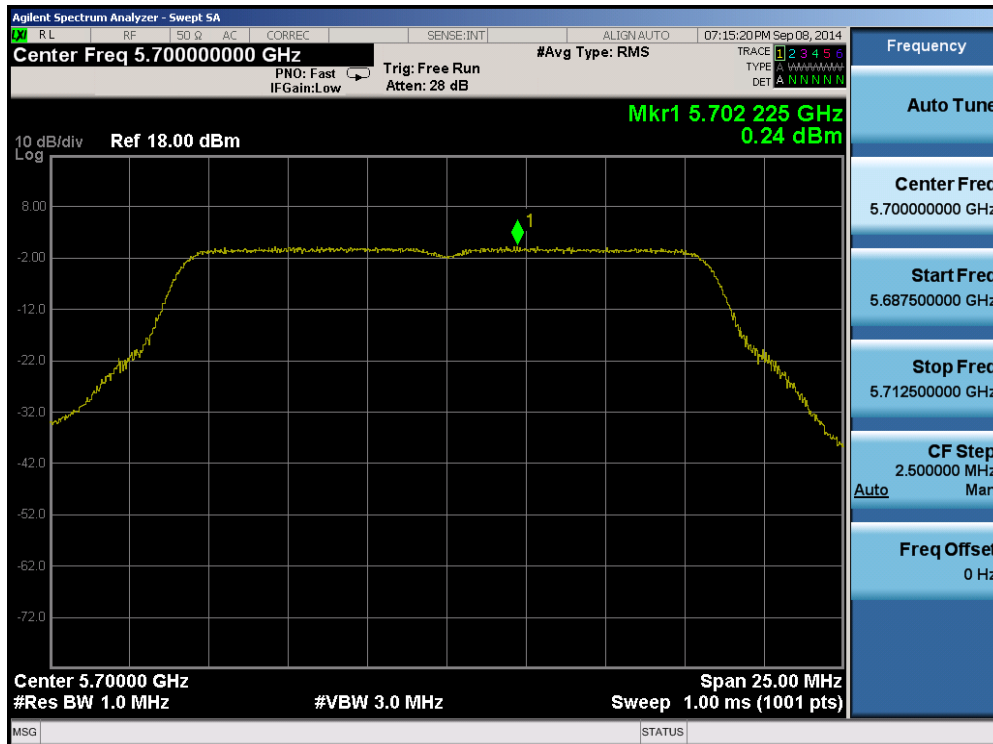


Plot 6-115. Peak Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 100)

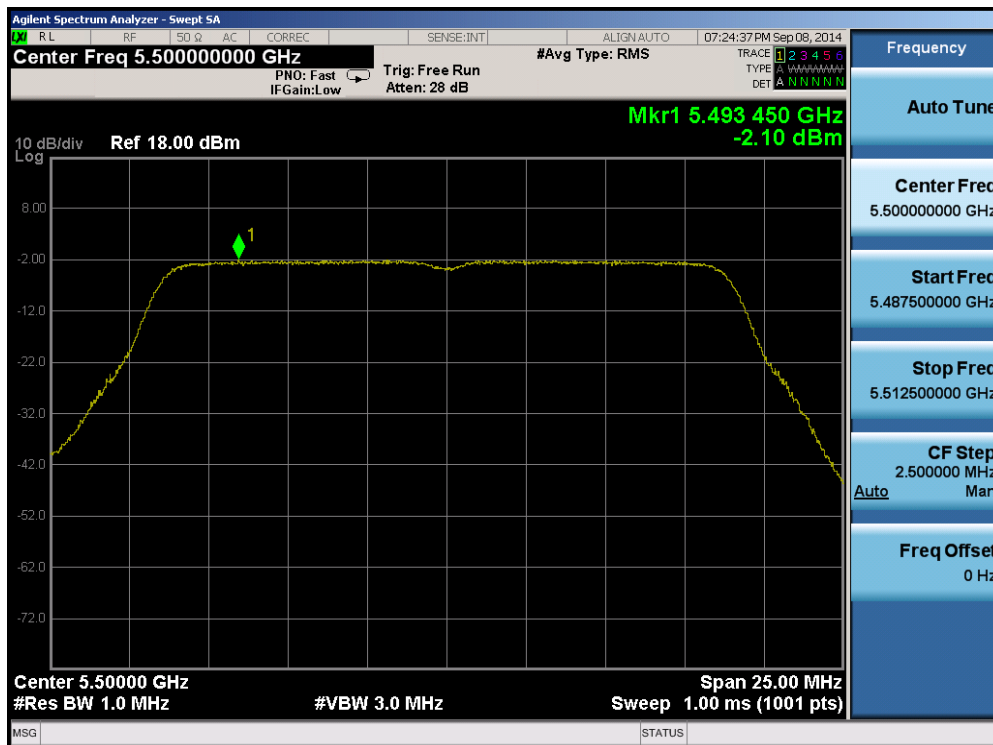


Plot 6-116. Peak Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 116)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 82 of 182

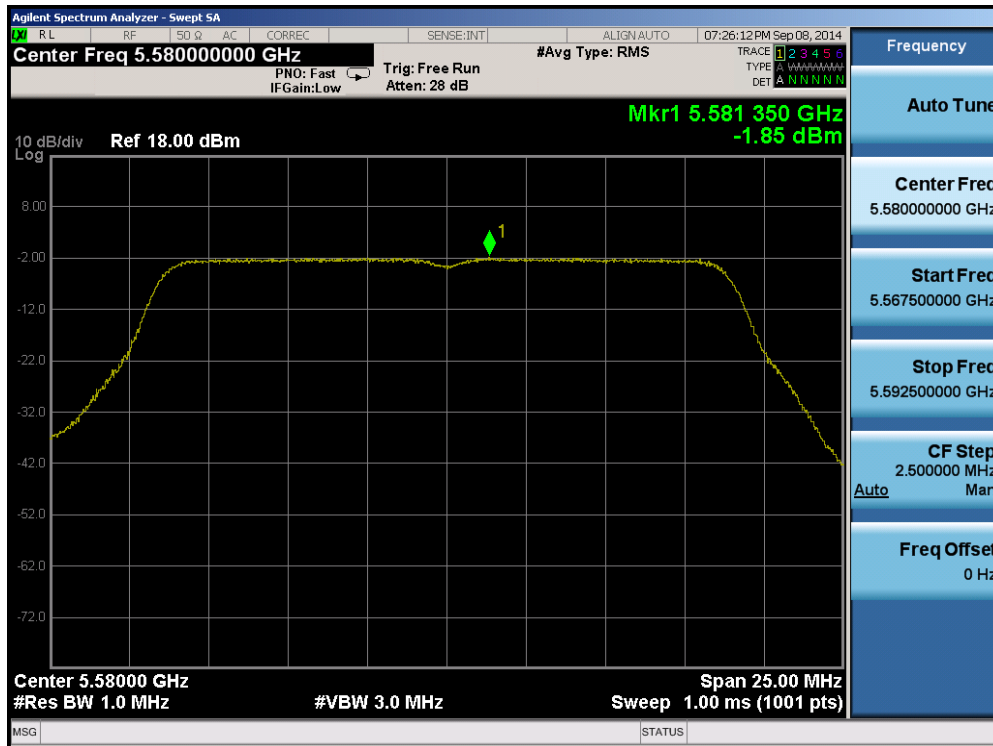


Plot 6-117. Peak Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 140)

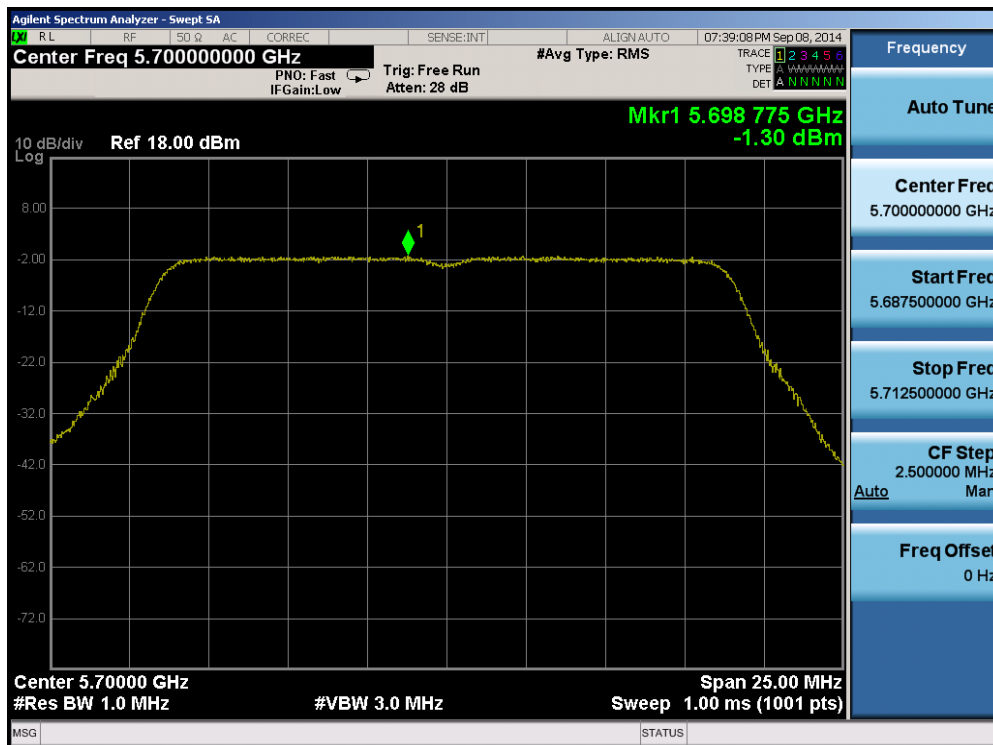


Plot 6-118. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 83 of 182

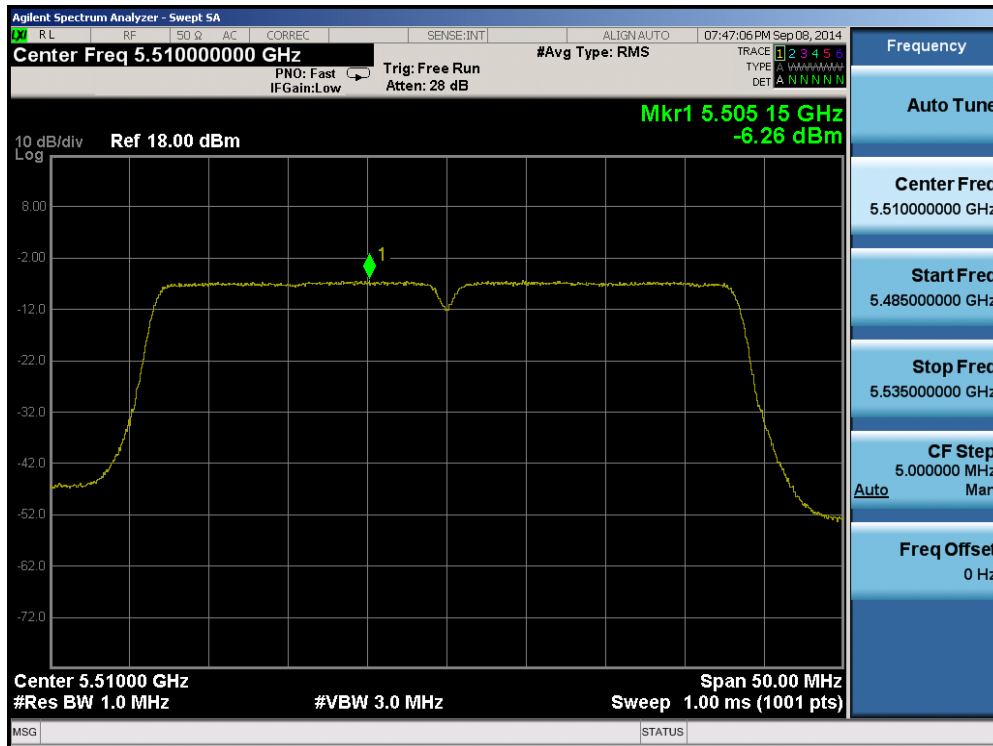


Plot 6-119. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 116)

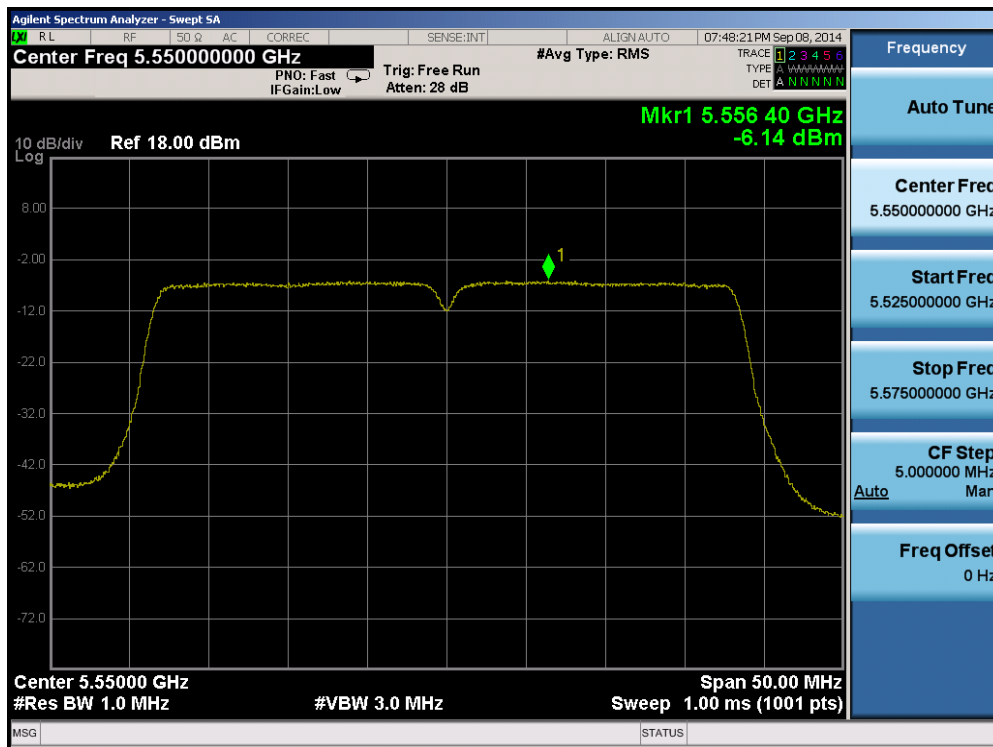


Plot 6-120. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 140)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 84 of 182

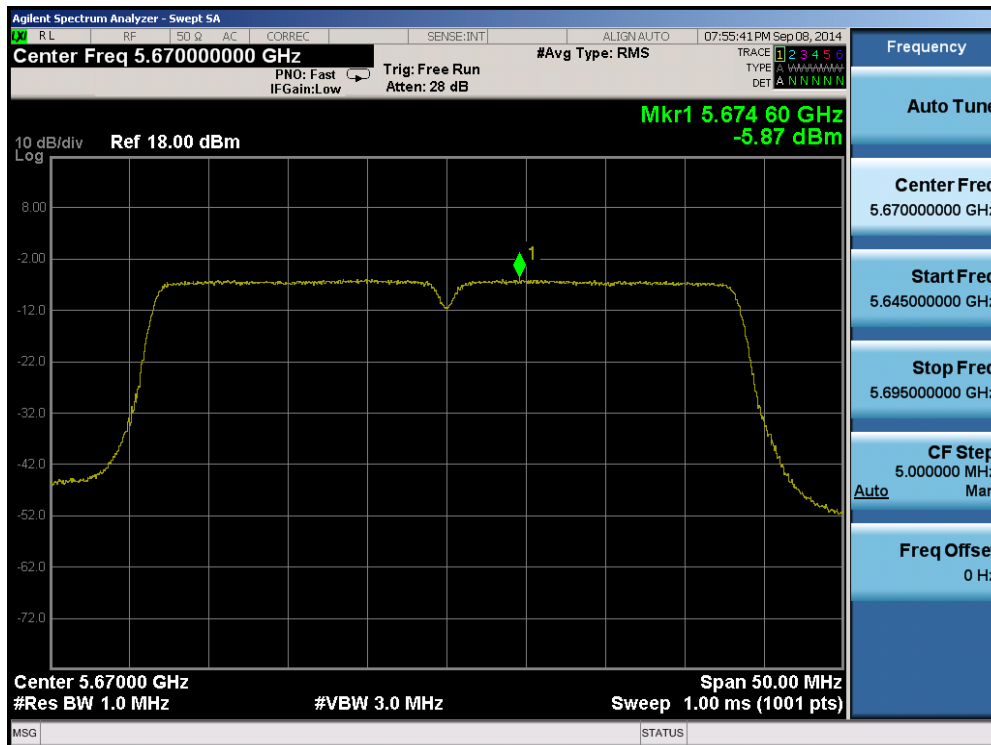


Plot 6-121. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 102)

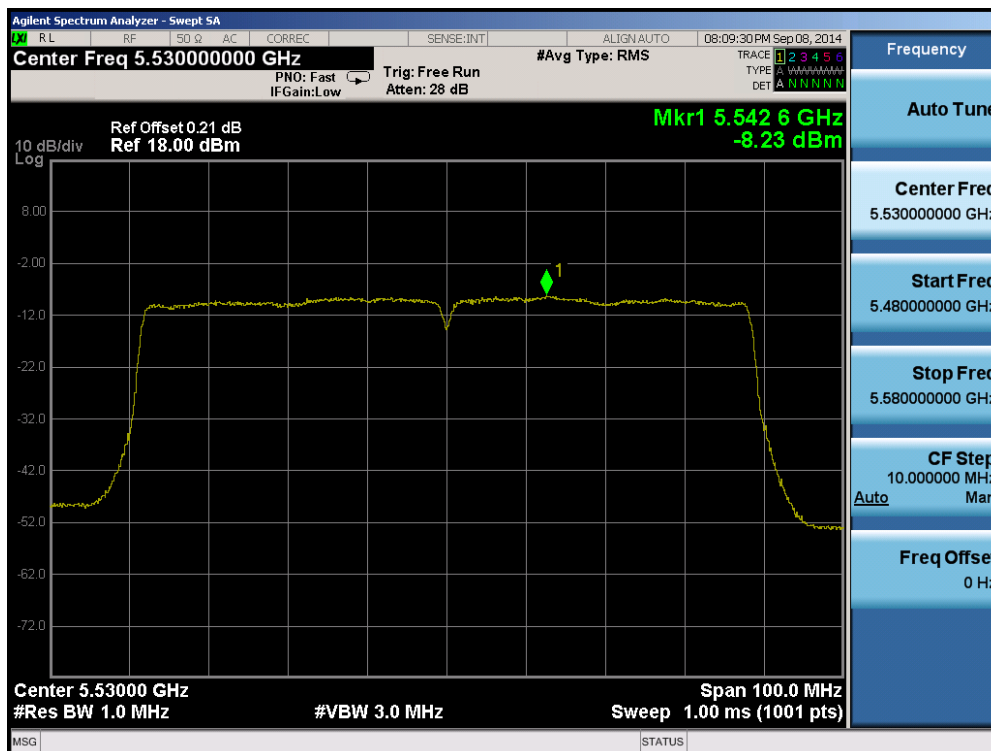


Plot 6-122. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 110)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 85 of 182



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 802.11ac (UNII Band 2C) – Ch. 106)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 86 of 182

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)	-1.22	-0.60	2.11	4.0	-1.89	Pass
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	-0.64	-0.75	2.32	4.0	-1.68	Pass
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	-0.58	-0.50	2.47	4.0	-1.53	Pass
	5190	38	n (40MHz)	13.5/15 (MCS0)	-7.16	-6.39	-3.75	4.0	-7.75	Pass
	5230	46	n (40MHz)	13.5/15 (MCS0)	-6.79	-5.90	-3.31	4.0	-7.31	Pass
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-7.70	-7.65	-4.67	4.0	-8.67	Pass
Band 2A	5260	52	n (20MHz)	6.5/7.2 (MCS0)	-0.38	-1.06	2.31	11.0	-8.69	Pass
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	-0.35	-1.09	2.31	11.0	-8.69	Pass
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	0.22	-1.18	2.59	11.0	-8.41	Pass
	5270	54	n (40MHz)	13.5/15 (MCS0)	-6.30	-6.23	-3.26	11.0	-14.26	Pass
	5310	62	n (40MHz)	13.5/15 (MCS0)	-6.20	-6.32	-3.25	11.0	-14.25	Pass
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	-7.31	-8.53	-4.87	11.0	-15.87	Pass
Band 2C	5500	100	n (20MHz)	6.5/7.2 (MCS0)	0.60	-2.10	2.47	11.0	-8.53	Pass
	5580	116	n (20MHz)	6.5/7.2 (MCS0)	0.57	-1.85	2.54	11.0	-8.46	Pass
	5700	140	n (20MHz)	6.5/7.2 (MCS0)	-0.27	-1.30	2.25	11.0	-8.75	Pass
	5510	102	n (40MHz)	13.5/15 (MCS0)	-5.68	-6.26	-2.95	11.0	-13.95	Pass
	5550	110	n (40MHz)	13.5/15 (MCS0)	-5.39	-6.14	-2.74	11.0	-13.74	Pass
	5670	134	n (40MHz)	13.5/15 (MCS0)	-6.66	-5.87	-3.24	11.0	-14.24	Pass
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-6.79	-8.23	-4.44	11.0	-15.44	Pass

Table 6-23. 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 -1.22 dBm for Antenna-1 and -0.60 dBm for Antenna-2.

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

$$(-1.22 \text{ dBm} + -0.60 \text{ dBm}) = (0.75 \text{ mW} + 0.87 \text{ mW}) = 1.63 \text{ mW} = 2.11 \text{ dBm}$$

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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.

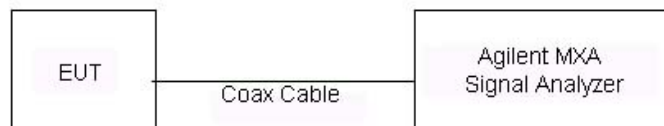


Figure 6-4. Test Instrument & Measurement Setup

Test Notes

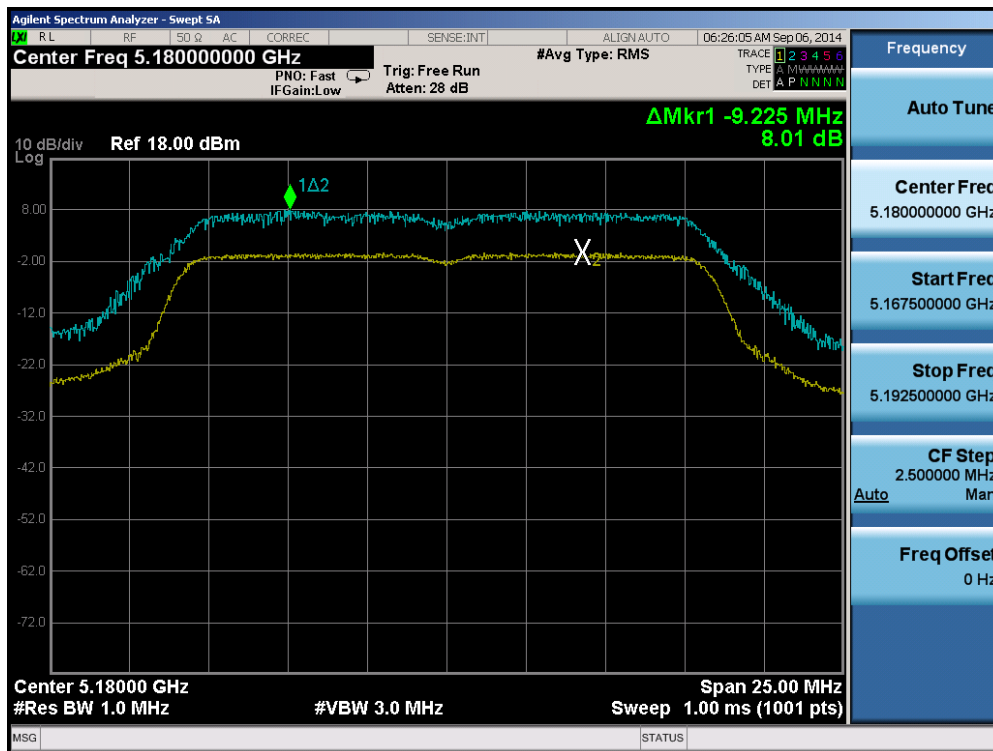
The peak excursion was investigated for all signal types, modulation types, channel bandwidths, and variations in signal parameters and the worst case data is shown below. Only the worst case modulation mode on a single channel among all bands is reported since that is sufficient to demonstrate compliance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

FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Antenna-1 Peak Excursion Ratio – 802.11a/n/ac

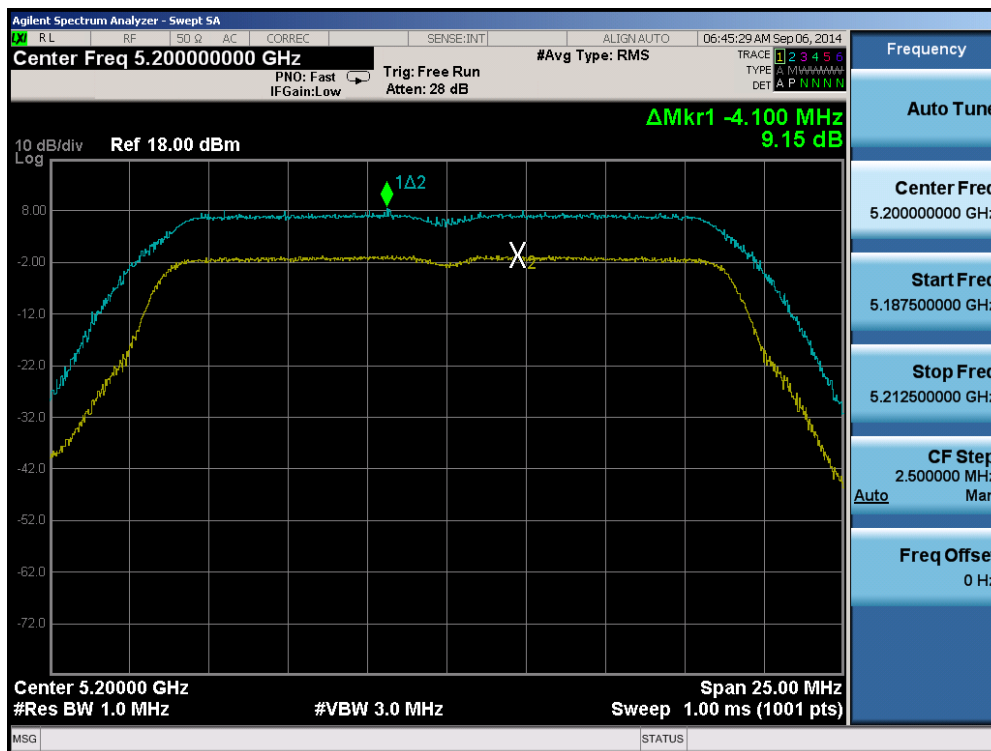
Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Peak Excursion Ratio [dBm]	Max Permissible Peak Excursion Ratio [dBm/MHz]	Margin [dB]	Pass / Fail
5180	36	a	6	8.01	13.0	-4.99	Pass
5200	40	n (20MHz)	6.5/7.2 (MCS0)	9.15	13.0	-3.85	Pass
5190	38	n (40MHz)	13.5/15 (MCS0)	8.99	13.0	-4.01	Pass
5290	58	ac (80MHz)	29.3/32.5 (MCS0)	9.11	13.0	-3.89	Pass

Table 6-24. Conducted Peak Excursion Ratio Measurements

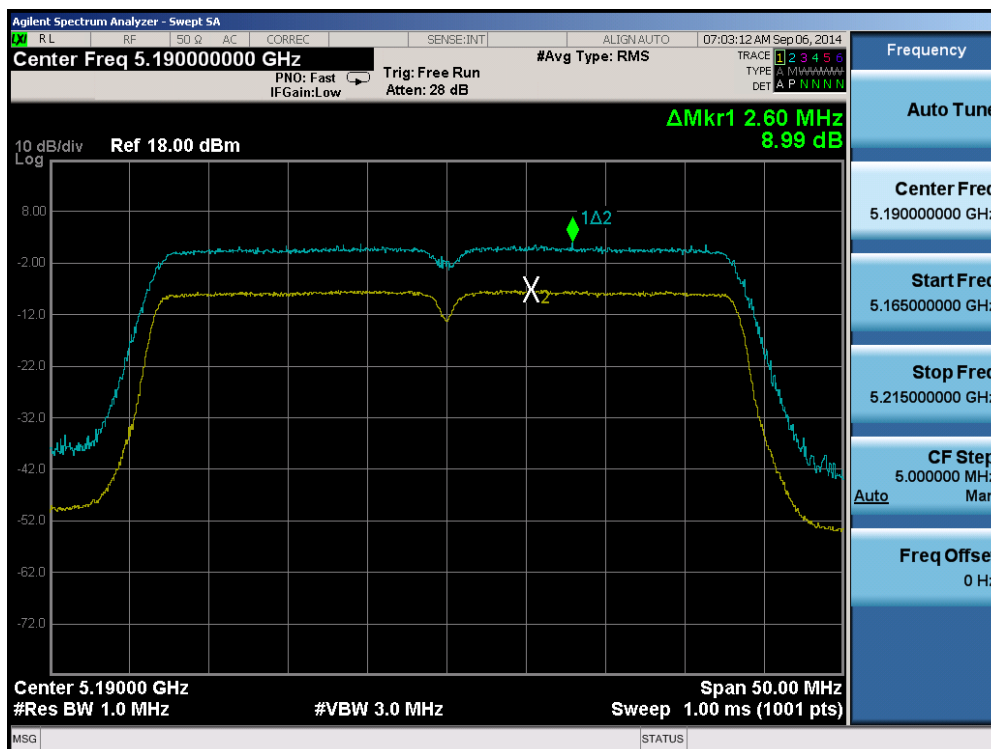


Plot 6-125. Peak Excursion Ratio Plot (802.11a (UNII Band 1) – Ch. 36)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 89 of 182

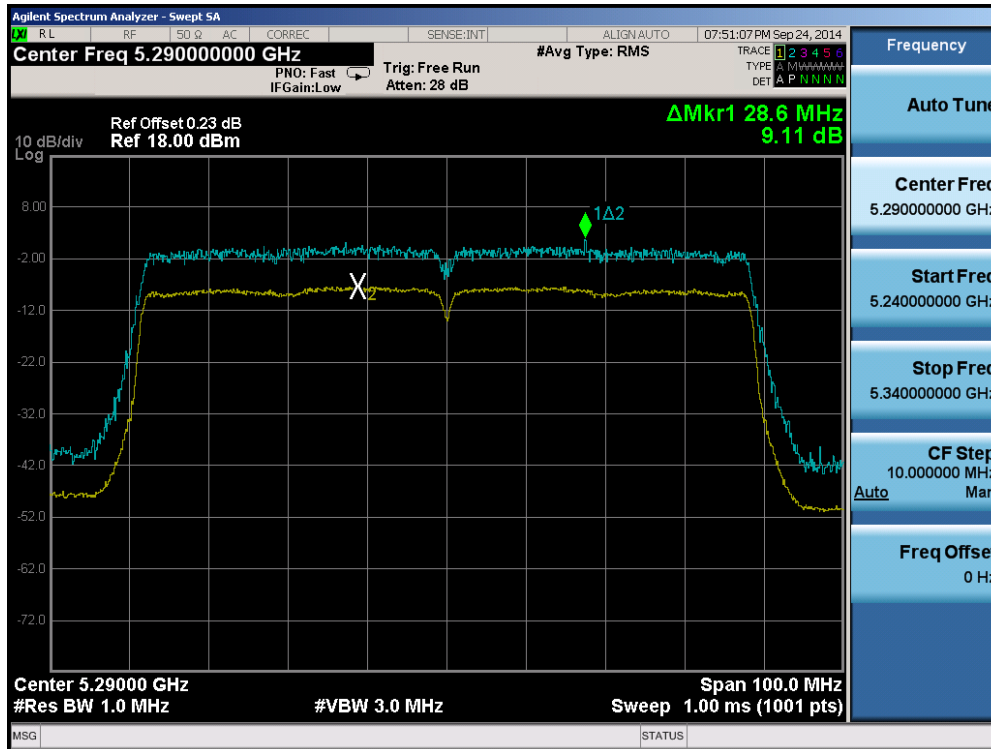


Plot 6-126. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 40)



Plot 6-127. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 38)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 90 of 182



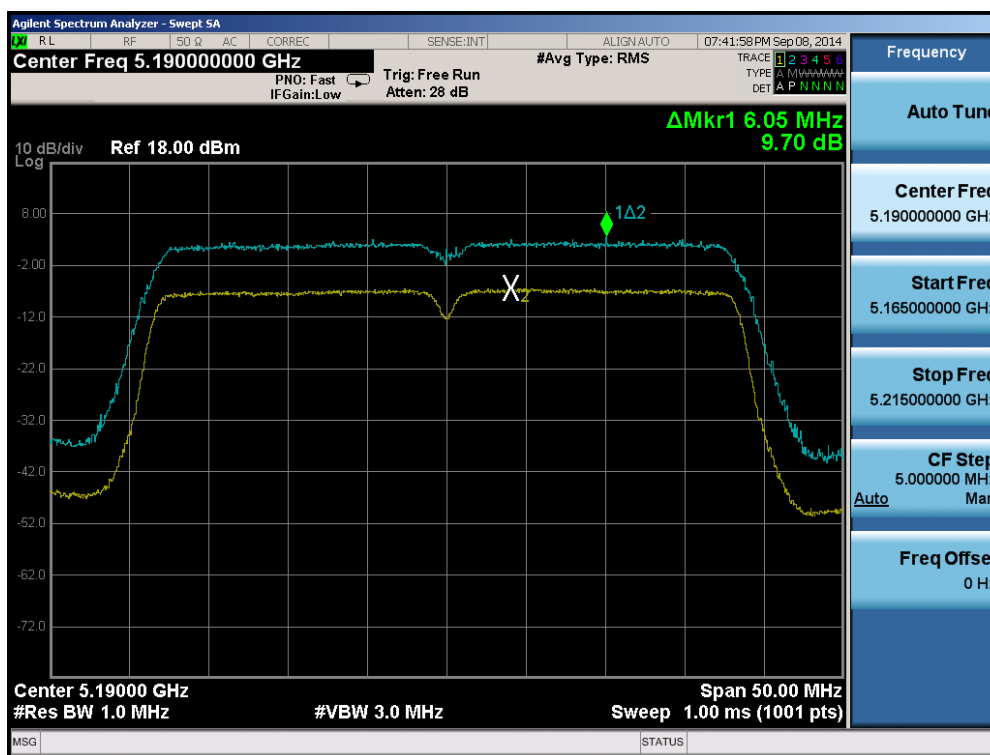
Plot 6-128. Peak Excursion Ratio Plot (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)

FCC ID: A3LSMN915R4	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Antenna-2 Peak Excursion Ratio – 802.11a/n/ac

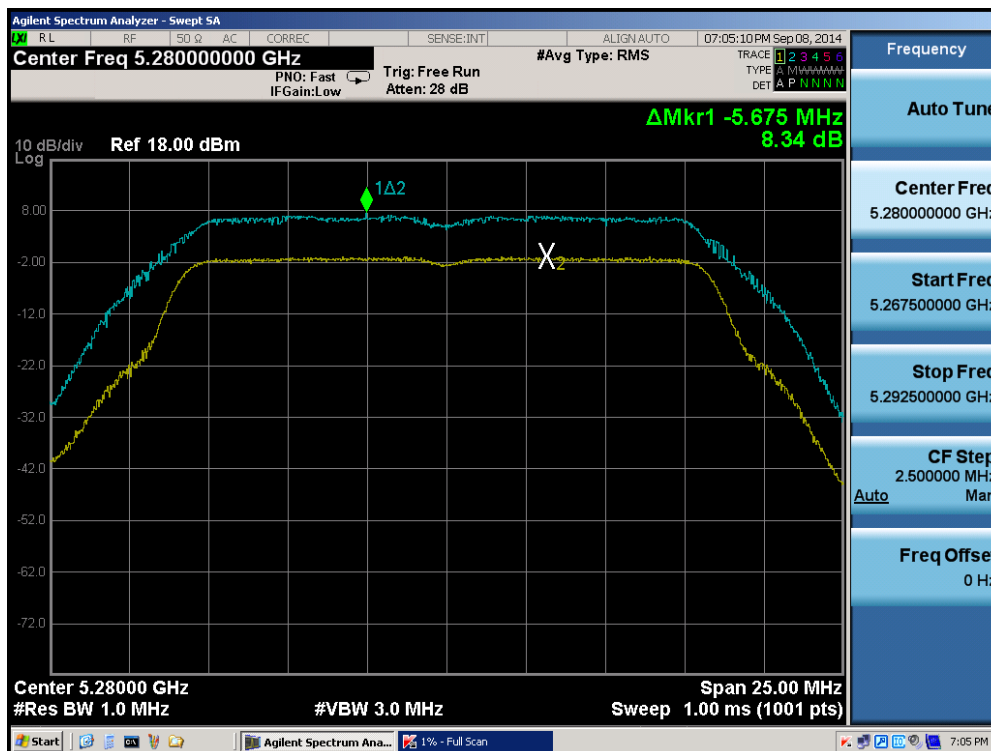
Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Peak Excursion Ratio [dBm]	Max Permissible Peak Excursion Ratio [dBm/MHz]	Margin [dB]	Pass / Fail
5190	38	n (40MHz)	13.5/15 (MCS0)	9.70	13.0	-3.30	Pass
5280	56	a	6	8.34	13.0	-4.67	Pass
5290	58	ac (80MHz)	29.3/32.5 (MCS0)	8.68	13.0	-4.32	Pass
5500	100	n (20MHz)	6.5/7.2 (MCS0)	9.35	13.0	-3.65	Pass

Table 6-25. Conducted Peak Excursion Ratio Measurements

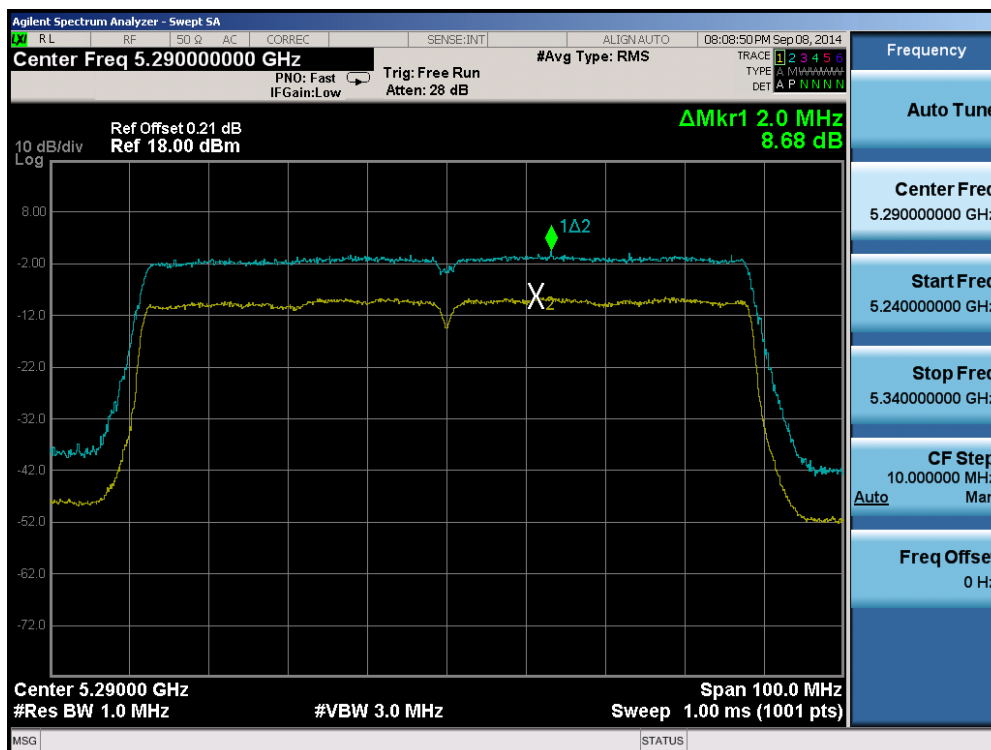


Plot 6-129. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 38)

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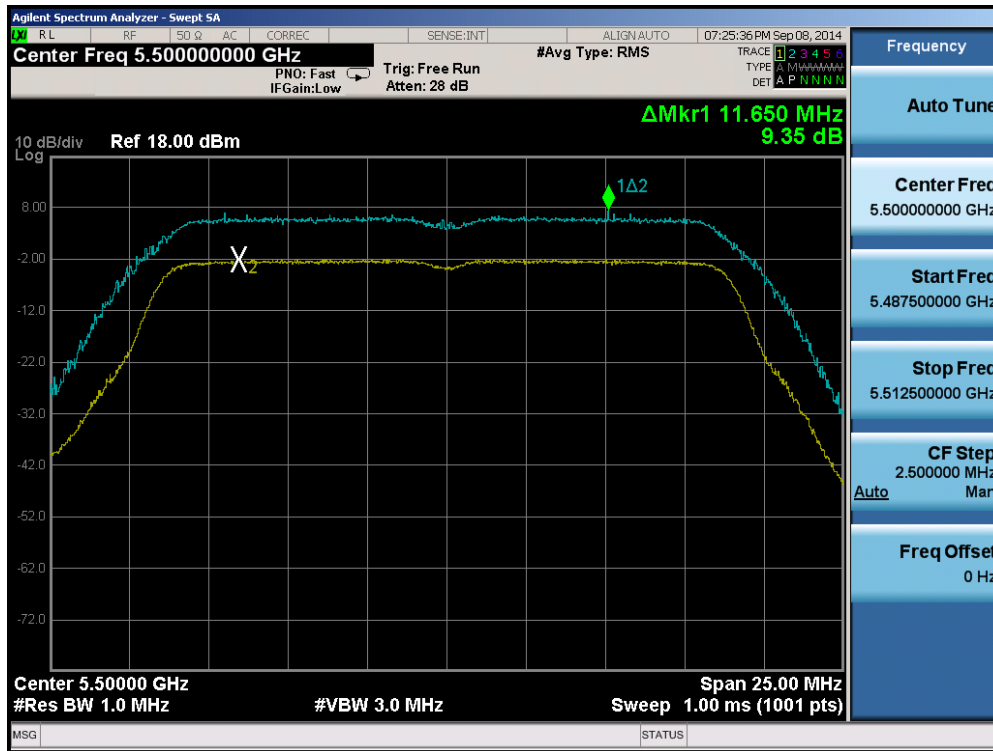


Plot 6-130. Peak Excursion Ratio Plot (802.11a (UNII Band 2A) – Ch. 56)



Plot 6-131. Peak Excursion Ratio Plot (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)

FCC ID: A3LSMN915R4	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Plot 6-132. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 94 of 182

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: 3.85 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	5,179,999,996	-4	-0.00000008
100 %		- 30	5,179,999,999	-1	-0.00000003
100 %		- 20	5,179,999,993	-7	-0.00000014
100 %		- 10	5,179,999,994	-6	-0.00000011
100 %		0	5,179,999,995	-5	-0.00000009
100 %		+ 10	5,179,999,983	-17	-0.00000033
100 %		+ 20	5,179,999,983	-17	-0.00000032
100 %		+ 30	5,179,999,993	-7	-0.00000014
100 %		+ 40	5,179,999,998	-2	-0.00000003
100 %		+ 50	5,179,999,992	-8	-0.00000016
BATT. ENDPOINT	3.40	+ 20	5,179,999,992	-8	-0.00000016

Table 6-26. Frequency Stability Measurements for UNII Band 1 (Ch. 36)

Note:

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

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Frequency Stability

§15.407(g)

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

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

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	5,259,999,980	-20	-0.00000037
100 %		- 30	5,259,999,983	-17	-0.00000033
100 %		- 20	5,259,999,986	-14	-0.00000026
100 %		- 10	5,259,999,996	-4	-0.00000007
100 %		0	5,259,999,996	-4	-0.00000007
100 %		+ 10	5,259,999,982	-18	-0.00000035
100 %		+ 20	5,259,999,988	-12	-0.00000023
100 %		+ 30	5,259,999,991	-9	-0.00000016
100 %		+ 40	5,259,999,986	-14	-0.00000026
100 %		+ 50	5,259,999,995	-5	-0.00000009
BATT. ENDPOINT	3.40	+ 20	5,259,999,992	-8	-0.00000015

Table 6-27. 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: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Frequency Stability

§15.407(g)

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

OPERATING FREQUENCY: 5,500,000,000 Hz
 CHANNEL: 100
 REFERENCE VOLTAGE: 3.85 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	5,499,999,981	-19	-0.00000035
100 %		- 30	5,499,999,981	-19	-0.00000034
100 %		- 20	5,499,999,981	-19	-0.00000034
100 %		- 10	5,499,999,984	-16	-0.00000029
100 %		0	5,499,999,988	-12	-0.00000022
100 %		+ 10	5,499,999,993	-7	-0.00000014
100 %		+ 20	5,499,999,980	-20	-0.00000036
100 %		+ 30	5,499,999,999	-1	-0.00000002
100 %		+ 40	5,499,999,999	-1	-0.00000002
100 %		+ 50	5,499,999,985	-15	-0.00000027
BATT. ENDPOINT	3.40	+ 20	5,499,999,989	-11	-0.00000021

Table 6-28. Frequency Stability Measurements for UNII Band 2C (Ch. 100)

Note:

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

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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 6-29 per Section 15.209.

Frequency	Field Strength [μV/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 6-29. 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

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Peak Measurements above 1GHz

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

Peak Measurements below 1GHz

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

Test Setup

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

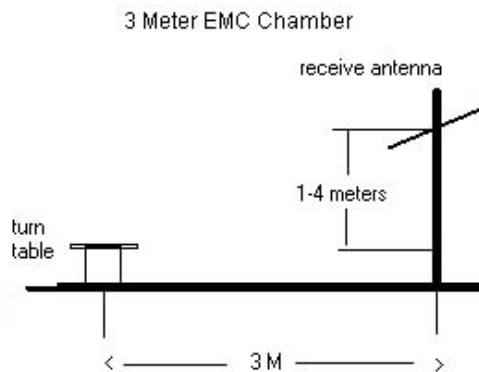


Figure 6-5. Test Instrument & Measurement Setup

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Test Notes

1. All radiated spurious emissions levels were measured in a radiated test setup per the guidance of KDB 789033 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 6-29.
3. All spurious emissions lying in restricted bands specified in §15.205 are below the limit shown in Table 6-11. All spurious emissions that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions of 68.2dB μ V/m.
4. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
5. The battery used with this device for testing (Model: EB-BN915BBI) 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

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

Radiated Band Edge Measurement Offset

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

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

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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	-97.51	Peak	H	H2	44.50	0.00	53.99	68.20	-14.21
* 15540.00	-108.27	Average	H	H2	48.84	0.00	47.57	53.98	-6.41
* 15540.00	-97.11	Peak	H	H2	48.84	0.00	58.73	73.98	-15.25
* 20720.00	-105.42	Average	H	H2	44.05	-9.54	36.09	53.98	-17.89
* 20720.00	-98.57	Peak	H	H2	44.05	-9.54	42.93	73.98	-31.05
25900.00	-100.77	Peak	H	H2	44.95	-9.54	41.64	68.20	-26.56

Table 6-30. 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	-97.20	Peak	H	H2	44.55	0.00	54.35	68.20	-13.85
* 15600.00	-108.36	Average	H	H2	48.84	0.00	47.47	53.98	-6.51
* 15600.00	-97.72	Peak	H	H2	48.84	0.00	58.11	73.98	-15.87
* 20800.00	-103.68	Average	H	H2	44.04	-9.54	37.81	53.98	-16.17
* 20800.00	-96.32	Peak	H	H2	44.04	-9.54	45.17	73.98	-28.81
26000.00	-100.39	Peak	H	H2	45.00	-9.54	42.07	68.20	-26.13

Table 6-31. Radiated Measurements

FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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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	-97.45	Peak	H	H2	44.67	0.00	54.22	68.20	-13.98
* 15720.00	-108.27	Average	H	H2	48.87	0.00	47.60	53.98	-6.38
* 15720.00	-97.43	Peak	H	H2	48.87	0.00	58.44	73.98	-15.54
* 20960.00	-108.14	Average	H	H2	43.96	-9.54	33.28	53.98	-20.70
* 20960.00	-100.08	Peak	H	H2	43.96	-9.54	41.34	73.98	-32.64
26200.00	-100.74	Peak	H	H2	44.84	-9.54	41.55	68.20	-26.65

Table 6-32. 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	-97.28	Peak	H	H2	44.70	0.00	54.42	68.20	-13.78
* 15780.00	-108.22	Average	H	H2	48.90	0.00	47.68	53.98	-6.30
* 15780.00	-97.39	Peak	H	H2	48.90	0.00	58.51	73.98	-15.47
* 21040.00	-107.16	Average	H	H2	43.89	-9.54	34.19	53.98	-19.79
* 21040.00	-100.21	Peak	H	H2	43.89	-9.54	41.14	73.98	-32.84
26300.00	-99.24	Peak	H	H2	44.80	-9.54	43.02	68.20	-25.18

Table 6-33. Radiated Measurements

FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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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	-97.31	Peak	H	H2	44.72	0.00	54.40	68.20	-13.80
* 15840.00	-108.44	Average	H	H2	48.98	0.00	47.54	53.98	-6.44
* 15840.00	-97.00	Peak	H	H2	48.98	0.00	58.98	73.98	-15.00
* 21120.00	-108.53	Average	H	H2	43.79	-9.54	32.72	53.98	-21.26
* 21120.00	-101.46	Peak	H	H2	43.79	-9.54	39.79	73.98	-34.19
26400.00	-98.08	Peak	H	H2	44.80	-9.54	44.17	68.20	-24.03

Table 6-34. Radiated Measurements

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

Frequency [MHz]	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	-108.13	Average	H	H2	44.78	0.00	43.65	53.98	-10.33
* 10640.00	-96.65	Peak	H	H2	44.78	0.00	55.13	73.98	-18.85
* 15960.00	-108.16	Average	H	H2	49.16	0.00	47.99	53.98	-5.99
* 15960.00	-97.57	Peak	H	H2	49.16	0.00	58.58	73.98	-15.40
* 21280.00	-106.30	Average	H	H2	43.66	-9.54	34.82	53.98	-19.16
* 21280.00	-100.45	Peak	H	H2	43.66	-9.54	40.67	73.98	-33.31
26600.00	-104.72	Peak	H	H2	47.32	-9.54	40.06	68.20	-28.14

Table 6-35. Radiated Measurements

FCC ID: A3LSMN915R4	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)			Reviewed by: Quality Manager
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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	-108.23	Average	H	H2	44.63	0.00	43.40	53.98	-10.58
* 11000.00	-97.40	Peak	H	H2	44.63	0.00	54.23	73.98	-19.75
16500.00	-97.71	Peak	H	H2	50.51	0.00	59.80	68.20	-8.40
22000.00	-90.75	Peak	H	H2	43.97	-9.54	50.67	68.20	-17.53
27500.00	-106.89	Peak	H	H2	48.36	-9.54	38.93	68.20	-29.27

Table 6-36. Radiated Measurements

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

Frequency [MHz]	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	-108.11	Average	H	H2	44.72	0.00	43.62	53.98	-10.36
* 11160.00	-97.37	Peak	H	H2	44.72	0.00	54.36	73.98	-19.62
16740.00	-98.28	Peak	H	H2	50.00	0.00	58.72	68.20	-9.48
* 22320.00	-101.15	Average	H	H2	44.45	-9.54	40.76	53.98	-13.22
* 22320.00	-96.30	Peak	H	H2	44.45	-9.54	45.61	73.98	-28.37
27900.00	-104.26	Peak	H	H2	48.05	-9.54	41.25	68.20	-26.95

Table 6-37. Radiated Measurements

FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 104 of 182

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	-107.91	Average	H	H2	45.03	0.00	44.12	53.98	-9.86
* 11400.00	-96.79	Peak	H	H2	45.03	0.00	55.24	73.98	-18.74
17100.00	-97.52	Peak	H	H2	49.99	0.00	59.46	68.20	-8.74
* 22800.00	-100.89	Average	H	H2	44.45	-9.54	41.02	53.98	-12.95
* 22800.00	-94.05	Peak	H	H2	44.45	-9.54	47.86	73.98	-26.12
28500.00	-103.87	Peak	H	H2	48.01	-9.54	41.60	68.20	-26.60

Table 6-38. Radiated Measurements

FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 105 of 182

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	-97.16	Peak	H	H	44.50	0.00	54.34	68.20	-13.86
* 15540.00	-108.27	Average	H	H	48.84	0.00	47.57	53.98	-6.41
* 15540.00	-97.37	Peak	H	H	48.84	0.00	58.47	73.98	-15.51
* 20720.00	-102.81	Average	H	H	44.05	-9.54	38.69	53.98	-15.29
* 20720.00	-98.16	Peak	H	H	44.05	-9.54	43.34	73.98	-30.64
25900.00	-100.07	Peak	H	H	44.95	-9.54	42.34	68.20	-25.86

Table 6-39. 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	-97.07	Peak	H	H	44.55	0.00	54.48	68.20	-13.72
* 15600.00	-108.44	Average	H	H	48.84	0.00	47.39	53.98	-6.59
* 15600.00	-97.02	Peak	H	H	48.84	0.00	58.81	73.98	-15.17
* 20800.00	-103.19	Average	H	H	44.04	-9.54	38.30	53.98	-15.68
* 20800.00	-97.89	Peak	H	H	44.04	-9.54	43.60	73.98	-30.38
26000.00	-100.25	Peak	H	H	45.00	-9.54	42.21	68.20	-25.99

Table 6-40. Radiated Measurements

FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 106 of 182

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	-97.02	Peak	H	H	44.67	0.00	54.65	68.20	-13.55
* 15720.00	-108.43	Average	H	H	48.87	0.00	47.44	53.98	-6.54
* 15720.00	-97.43	Peak	H	H	48.87	0.00	58.44	73.98	-15.54
* 20960.00	-103.69	Average	H	H	43.96	-9.54	37.73	53.98	-16.25
* 20960.00	-98.41	Peak	H	H	43.96	-9.54	43.01	73.98	-30.97
26200.00	-99.33	Peak	H	H	44.84	-9.54	42.96	68.20	-25.24

Table 6-41. 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	-97.41	Peak	H	H	44.70	0.00	54.29	68.20	-13.91
* 15780.00	-108.37	Average	H	H	48.90	0.00	47.53	53.98	-6.45
* 15780.00	-97.48	Peak	H	H	48.90	0.00	58.42	73.98	-15.56
* 21040.00	-104.84	Average	H	H	43.89	-9.54	36.51	53.98	-17.47
* 21040.00	-99.16	Peak	H	H	43.89	-9.54	42.19	73.98	-31.79
26300.00	-98.82	Peak	H	H	44.80	-9.54	43.44	68.20	-24.76

Table 6-42. Radiated Measurements

FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 107 of 182

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	-97.10	Peak	H	H	44.72	0.00	54.61	68.20	-13.59
* 15840.00	-108.43	Average	H	H	48.98	0.00	47.55	53.98	-6.43
* 15840.00	-97.40	Peak	H	H	48.98	0.00	58.58	73.98	-15.40
* 21120.00	-104.90	Average	H	H	43.79	-9.54	36.35	53.98	-17.63
* 21120.00	-98.78	Peak	H	H	43.79	-9.54	42.47	73.98	-31.51
26400.00	-97.32	Peak	H	H	44.80	-9.54	44.93	68.20	-23.27

Table 6-43. 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	-108.32	Average	H	H	44.78	0.00	43.46	53.98	-10.52
* 10640.00	-98.03	Peak	H	H	44.78	0.00	53.75	73.98	-20.23
* 15960.00	-108.22	Average	H	H	49.16	0.00	47.93	53.98	-6.05
* 15960.00	-97.36	Peak	H	H	49.16	0.00	58.79	73.98	-15.19
* 21280.00	-103.97	Average	H	H	43.66	-9.54	37.14	53.98	-16.84
* 21280.00	-98.57	Peak	H	H	43.66	-9.54	42.55	73.98	-31.43
26600.00	-105.27	Peak	H	H	47.32	-9.54	39.51	68.20	-28.69

Table 6-44. Radiated Measurements

FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 108 of 182

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	-108.14	Average	H	H	44.63	0.00	43.49	53.98	-10.49
* 11000.00	-97.02	Peak	H	H	44.63	0.00	54.61	73.98	-19.37
16500.00	-97.64	Peak	H	H	50.51	0.00	59.87	68.20	-8.33
22000.00	-97.32	Peak	H	H	43.97	-9.54	44.10	68.20	-24.10
27500.00	-106.10	Peak	H	H	48.36	-9.54	39.72	68.20	-28.48

Table 6-45. 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	-108.21	Average	H	H	44.72	0.00	43.52	53.98	-10.46
* 11160.00	-97.25	Peak	H	H	44.72	0.00	54.48	73.98	-19.50
16740.00	-97.48	Peak	H	H	50.00	0.00	59.52	68.20	-8.68
* 22320.00	-102.14	Average	H	H	44.45	-9.54	39.77	53.98	-14.21
* 22320.00	-97.03	Peak	H	H	44.45	-9.54	44.88	73.98	-29.10
27900.00	-104.22	Peak	H	H	48.05	-9.54	41.29	68.20	-26.91

Table 6-46. Radiated Measurements

FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 109 of 182

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	-107.96	Average	H	H	45.03	0.00	44.07	53.98	-9.91
* 11400.00	-96.77	Peak	H	H	45.03	0.00	55.26	73.98	-18.72
17100.00	-98.09	Peak	H	H	49.99	0.00	58.89	68.20	-9.31
* 22800.00	-103.82	Average	H	H	44.45	-9.54	38.09	53.98	-15.89
* 22800.00	-98.45	Peak	H	H	44.45	-9.54	43.46	73.98	-30.52
28500.00	-107.36	Peak	H	H	48.01	-9.54	38.11	68.20	-30.09

Table 6-47. Radiated Measurements

FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 110 of 182

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	-97.27	Peak	V	H2	44.50	0.00	54.23	68.20	-13.97
* 15540.00	-108.70	Average	V	H2	48.84	0.00	47.14	53.98	-6.84
* 15540.00	-96.67	Peak	V	H2	48.84	0.00	59.17	73.98	-14.81
* 20720.00	-101.88	Average	V	H2	44.05	-9.54	39.62	53.98	-14.36
* 20720.00	-96.73	Peak	V	H2	44.05	-9.54	44.77	73.98	-29.21
25900.00	-98.65	Peak	V	H2	44.95	-9.54	43.76	68.20	-24.44

Table 6-48. 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	-96.81	Peak	V	H2	44.55	0.00	54.74	68.20	-13.46
* 15600.00	-108.21	Average	V	H2	48.84	0.00	47.62	53.98	-6.36
* 15600.00	-96.99	Peak	V	H2	48.84	0.00	58.84	73.98	-15.14
* 20800.00	-102.64	Average	V	H2	44.04	-9.54	38.85	53.98	-15.13
* 20800.00	-97.88	Peak	V	H2	44.04	-9.54	43.61	73.98	-30.37
26000.00	-99.79	Peak	V	H2	45.00	-9.54	42.67	68.20	-25.53

Table 6-49. Radiated Measurements

FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 111 of 182

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	-96.07	Peak	V	H2	44.67	0.00	55.60	68.20	-12.60
* 15720.00	-108.14	Average	V	H2	48.87	0.00	47.73	53.98	-6.25
* 15720.00	-96.89	Peak	V	H2	48.87	0.00	58.98	73.98	-15.00
* 20960.00	-102.56	Average	V	H2	43.96	-9.54	38.86	53.98	-15.12
* 20960.00	-97.68	Peak	V	H2	43.96	-9.54	43.74	73.98	-30.24
26200.00	-99.78	Peak	V	H2	44.84	-9.54	42.51	68.20	-25.69

Table 6-50. 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	-97.63	Peak	V	H2	44.70	0.00	54.07	68.20	-14.13
* 15780.00	-108.40	Average	V	H2	48.90	0.00	47.50	53.98	-6.48
* 15780.00	-97.30	Peak	V	H2	48.90	0.00	58.60	73.98	-15.38
* 21040.00	-103.02	Average	V	H2	43.89	-9.54	38.33	53.98	-15.65
* 21040.00	-98.06	Peak	V	H2	43.89	-9.54	43.29	73.98	-30.69
26300.00	-98.04	Peak	V	H2	44.80	-9.54	44.22	68.20	-23.98

Table 6-51. Radiated Measurements

FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 112 of 182

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	-96.63	Peak	V	H2	44.72	0.00	55.08	68.20	-13.12
* 15840.00	-108.49	Average	V	H2	48.98	0.00	47.49	53.98	-6.49
* 15840.00	-98.18	Peak	V	H2	48.98	0.00	57.80	73.98	-16.18
* 21120.00	-102.34	Average	V	H2	43.79	-9.54	38.90	53.98	-15.07
* 21120.00	-98.13	Peak	V	H2	43.79	-9.54	43.12	73.98	-30.86
26400.00	-96.46	Peak	V	H2	44.80	-9.54	45.79	68.20	-22.41

Table 6-52. 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	-108.19	Average	V	H2	44.78	0.00	43.59	53.98	-10.39
* 10640.00	-96.88	Peak	V	H2	44.78	0.00	54.90	73.98	-19.08
* 15960.00	-108.36	Average	V	H2	49.16	0.00	47.79	53.98	-6.19
* 15960.00	-98.00	Peak	V	H2	49.16	0.00	58.15	73.98	-15.83
* 21280.00	-101.36	Average	V	H2	43.66	-9.54	39.75	53.98	-14.22
* 21280.00	-97.11	Peak	V	H2	43.66	-9.54	44.01	73.98	-29.97
26600.00	-104.54	Peak	V	H2	47.32	-9.54	40.24	68.20	-27.96

Table 6-53. Radiated Measurements

FCC ID: A3LSMN915R4	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)			Reviewed by: Quality Manager
Test Report S/N: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 113 of 182

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	-108.03	Average	V	H2	44.63	0.00	43.60	53.98	-10.38
* 11000.00	-98.19	Peak	V	H2	44.63	0.00	53.44	73.98	-20.54
16500.00	-98.19	Peak	V	H2	50.51	0.00	59.32	68.20	-8.88
22000.00	-93.05	Peak	V	H2	43.97	-9.54	48.37	68.20	-19.83
27500.00	-105.25	Peak	V	H2	48.36	-9.54	40.57	68.20	-27.63

Table 6-54. 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	-108.03	Average	V	H2	44.72	0.00	43.70	53.98	-10.28
* 11160.00	-98.06	Peak	V	H2	44.72	0.00	53.67	73.98	-20.31
16740.00	-98.36	Peak	V	H2	50.00	0.00	58.64	68.20	-9.56
* 22320.00	-98.75	Average	V	H2	44.45	-9.54	43.16	53.98	-10.82
* 22320.00	-94.62	Peak	V	H2	44.45	-9.54	47.29	73.98	-26.69
27900.00	-105.23	Peak	V	H2	48.05	-9.54	40.28	68.20	-27.92

Table 6-55. Radiated Measurements

FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 114 of 182

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	-104.28	Average	V	H2	45.03	0.00	47.75	53.98	-6.23
* 11400.00	-96.93	Peak	V	H2	45.03	0.00	55.10	73.98	-18.88
17100.00	-92.51	Peak	V	H2	49.99	0.00	64.47	68.20	-3.73
* 22800.00	-103.75	Average	V	H2	44.45	-9.54	38.16	53.98	-15.82
* 22800.00	-93.84	Peak	V	H2	44.45	-9.54	48.07	73.98	-25.91
28500.00	-106.19	Peak	V	H2	48.01	-9.54	39.28	68.20	-28.92

Table 6-56. Radiated Measurements

FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 115 of 182

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

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

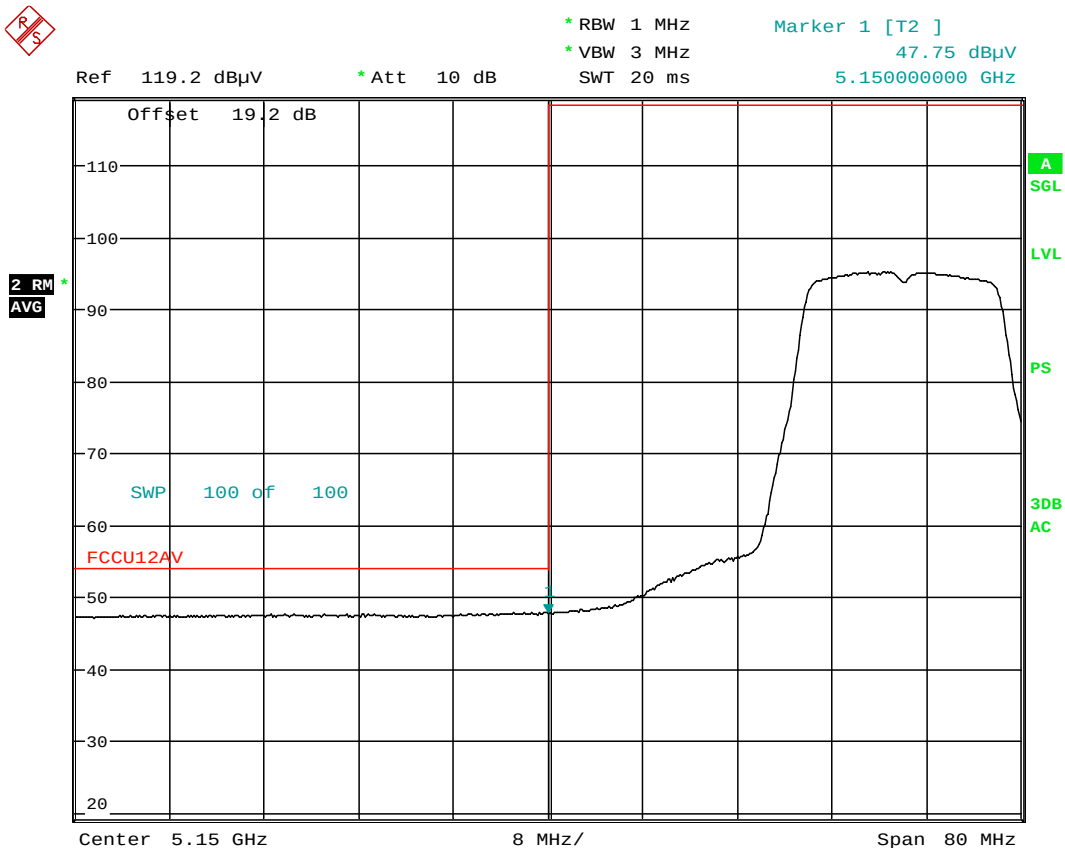
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36

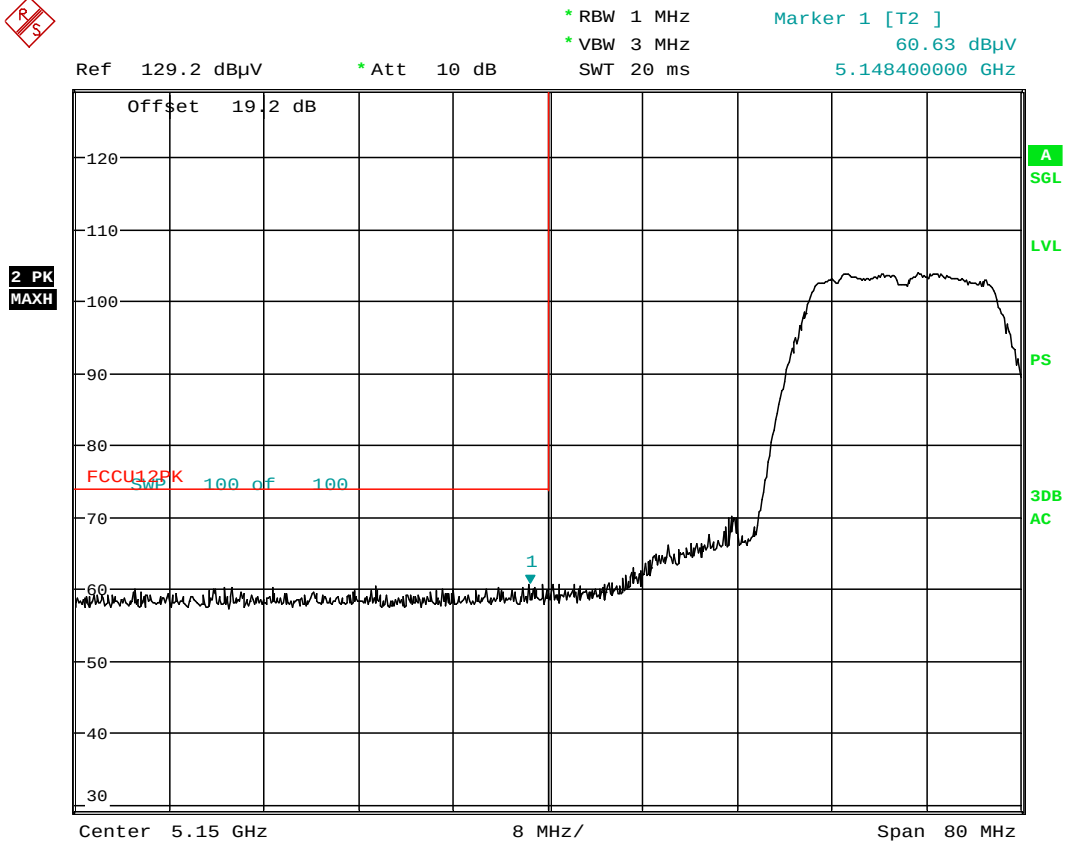


Date: 1.OCT.2014 01:53:38

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 116 of 182

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



Date: 1.OCT.2014 01:54:18

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 117 of 182

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

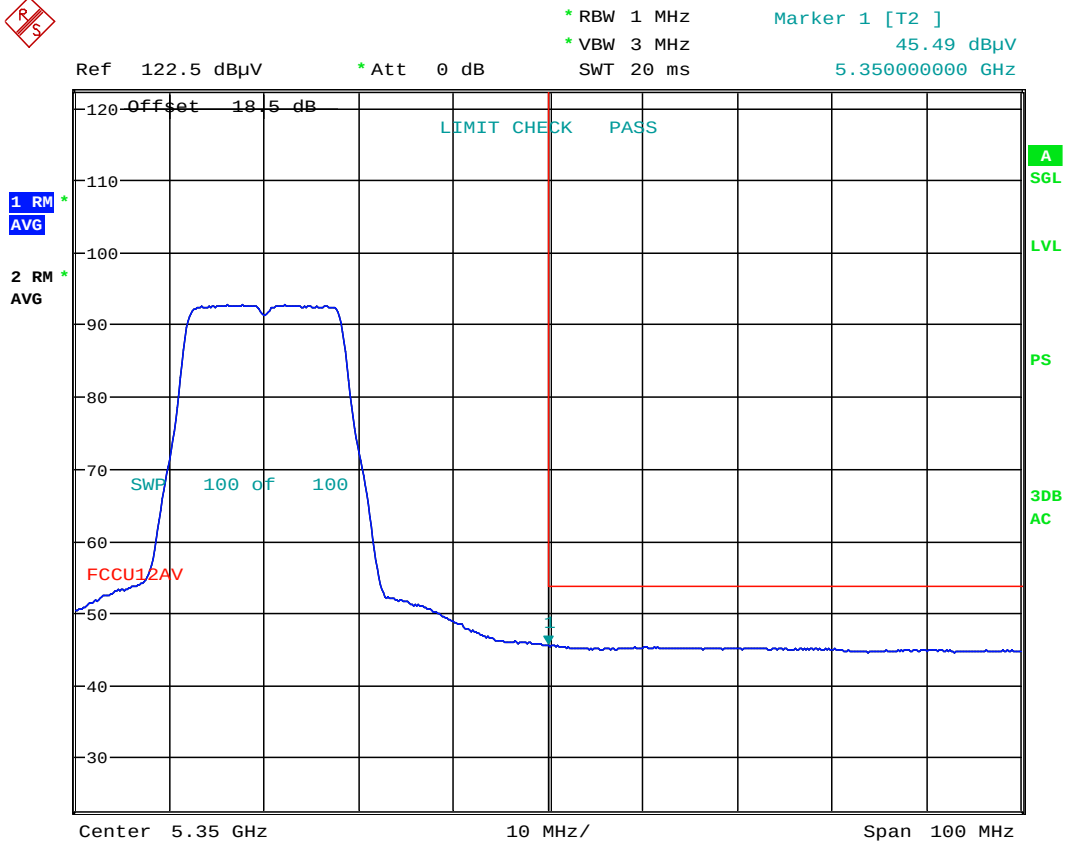
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5320MHz

Channel: 64

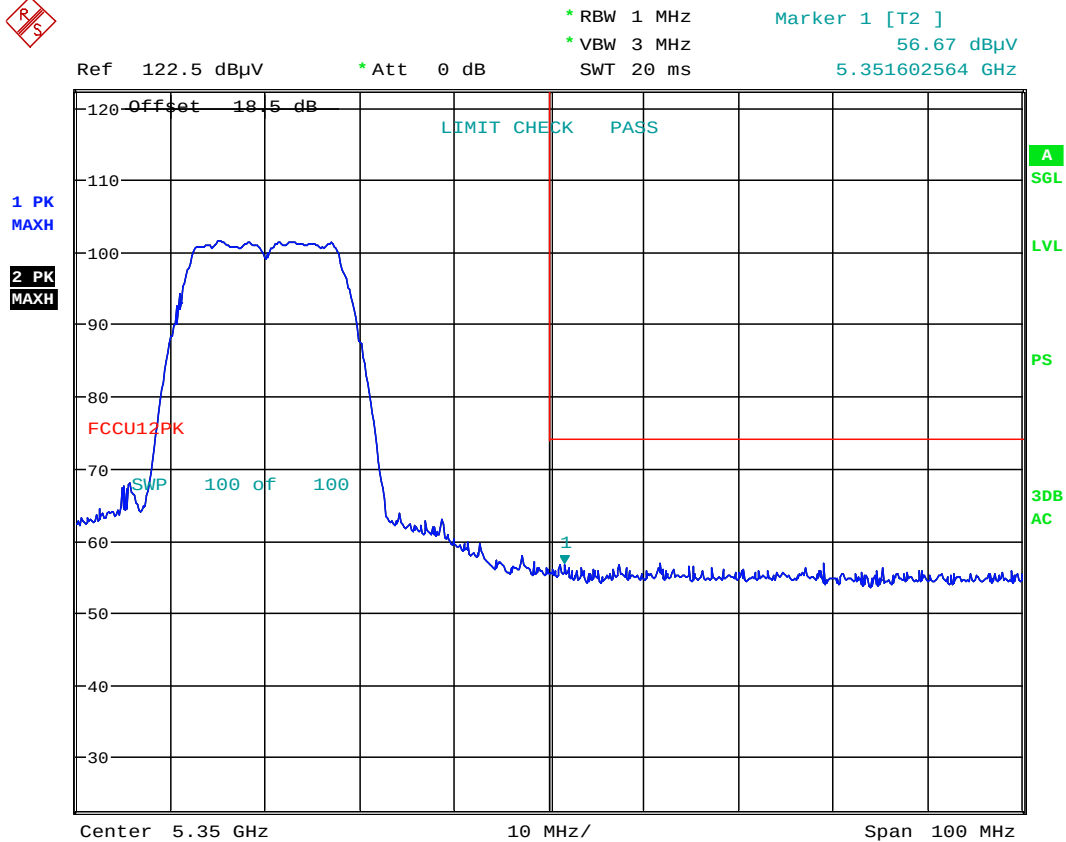


Date: 8.OCT.2014 19:28:37

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 118 of 182

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

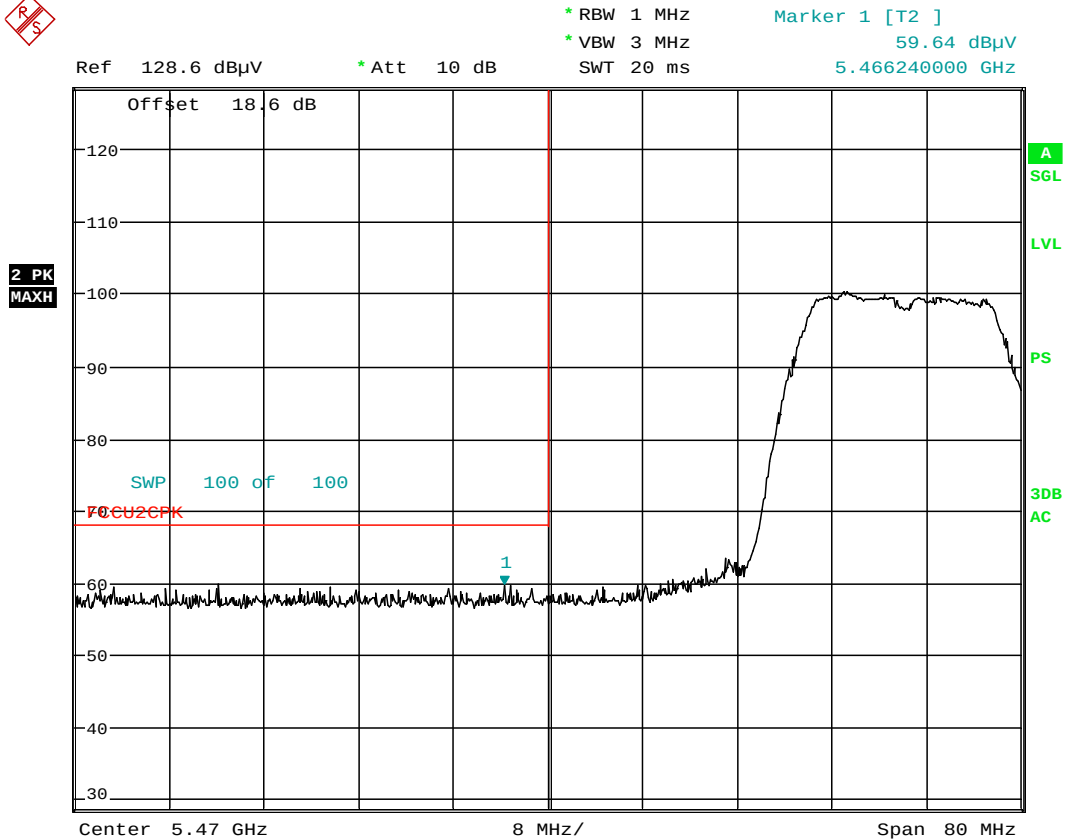


Date: 8.OCT.2014 19:29:16

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 119 of 182

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



Date: 1.OCT.2014 02:40:31

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

FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 121 of 182

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

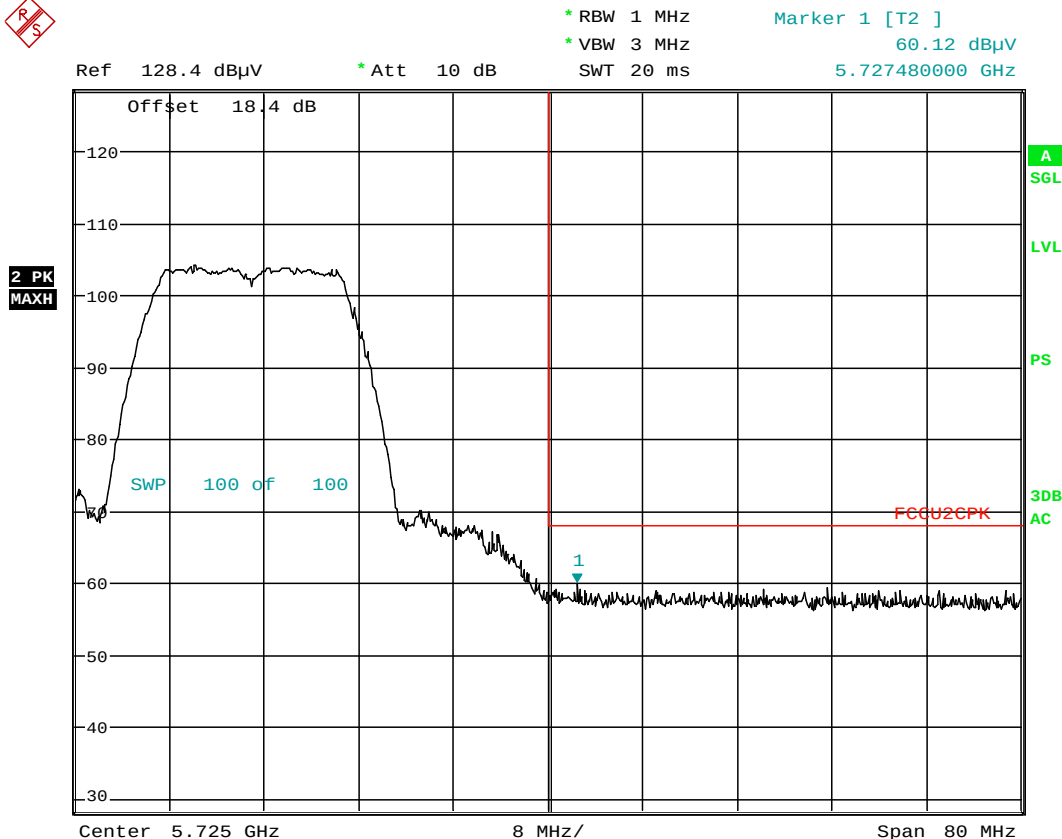
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5700MHz

Channel: 140



Date: 1.OCT.2014 03:06:41

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 122 of 182

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

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

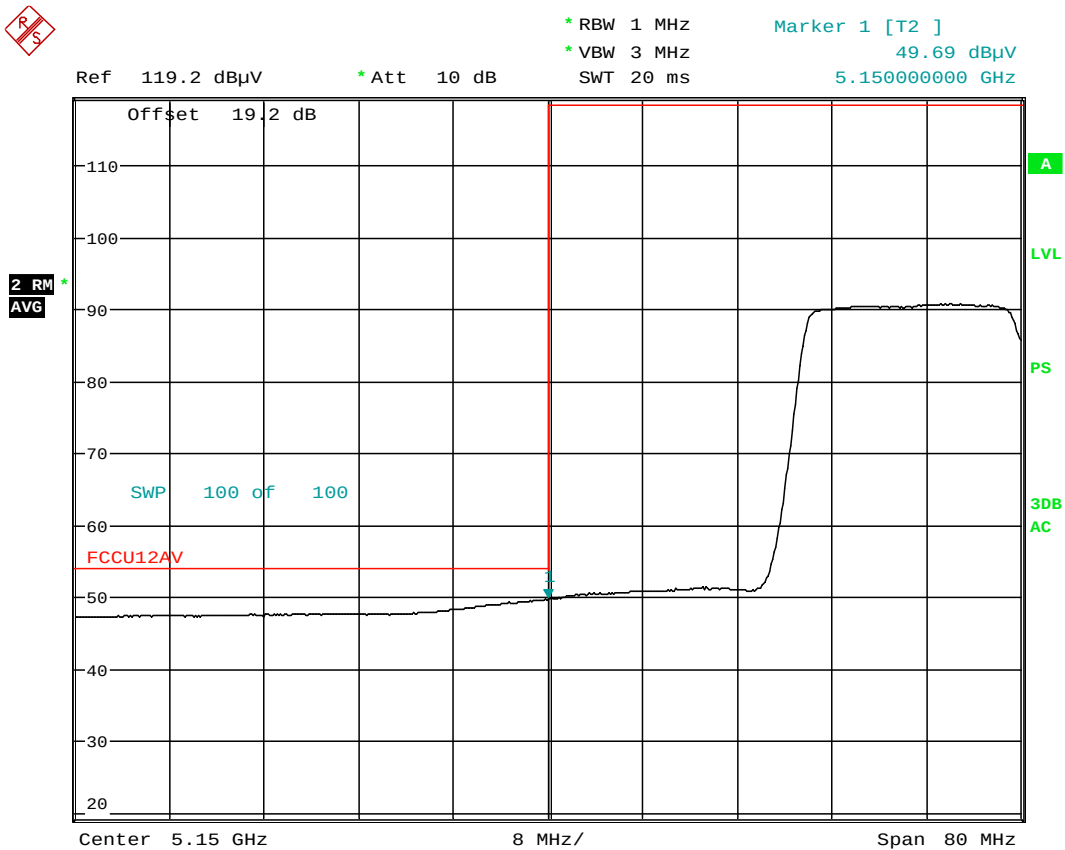
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5190MHz

Channel: 38

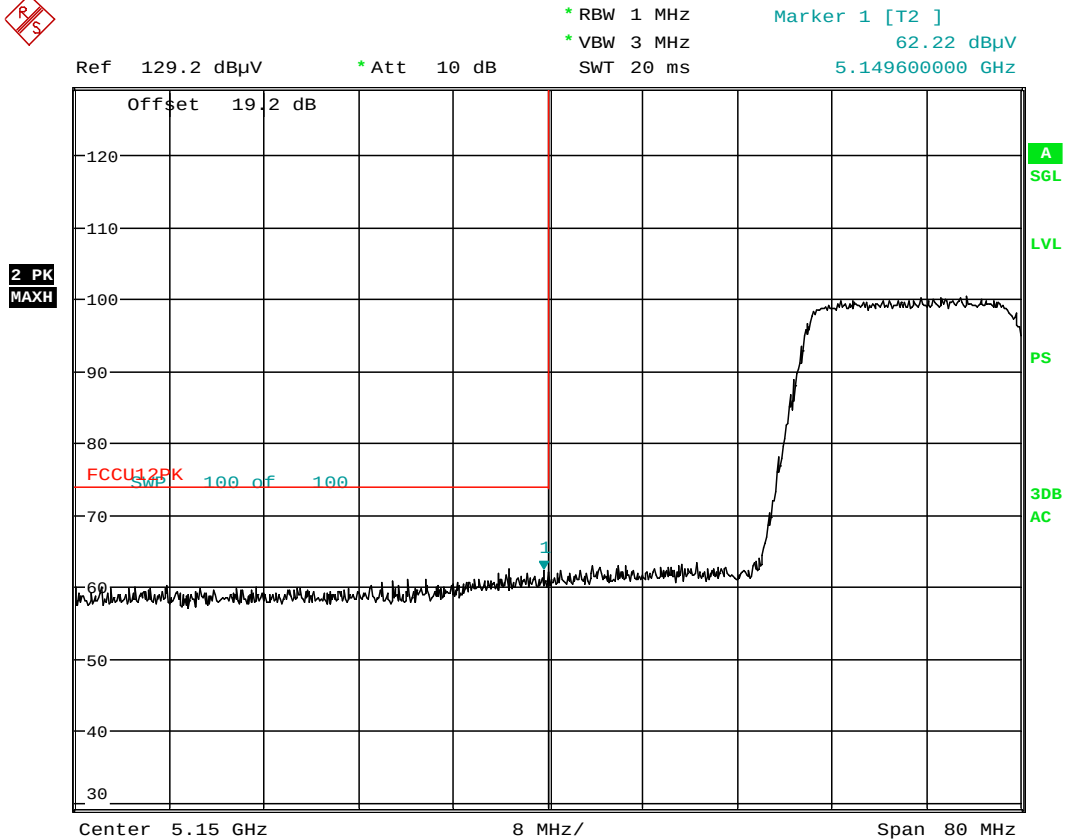


Date: 1.OCT.2014 02:01:49

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 123 of 182

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



Date: 1.OCT.2014 02:02:57

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 124 of 182

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

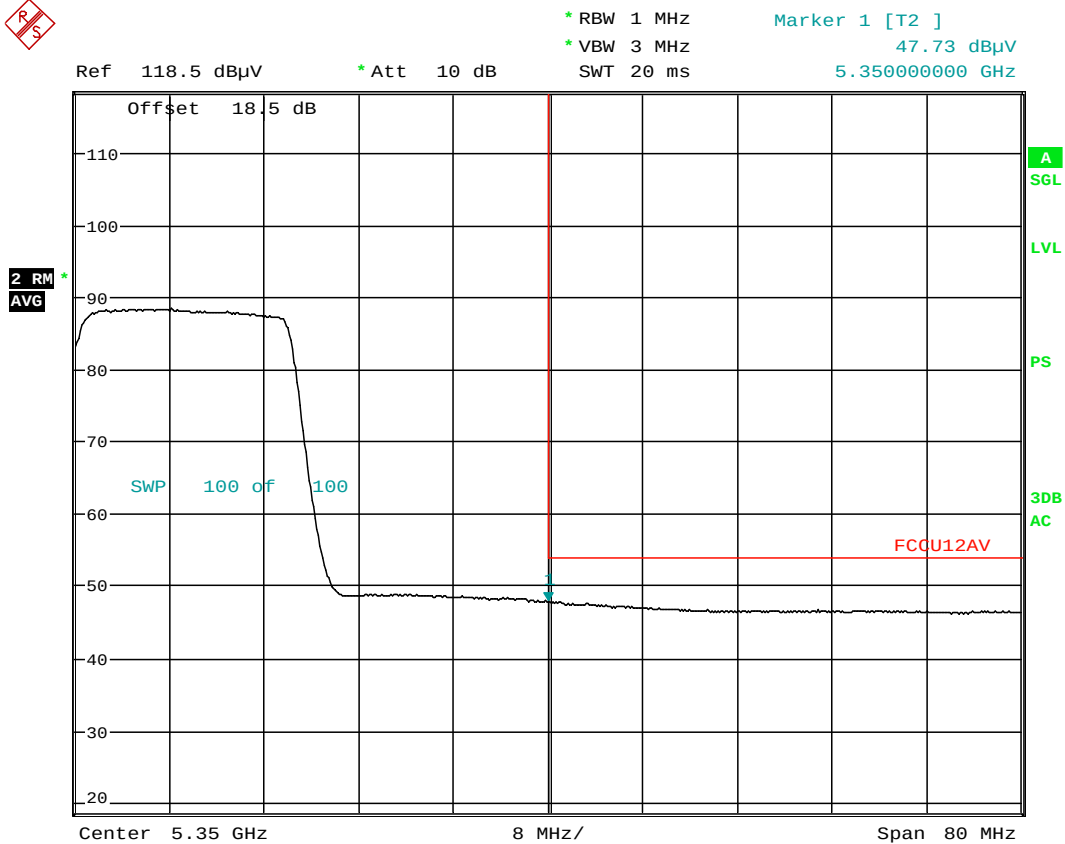
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5310MHz

Channel: 62

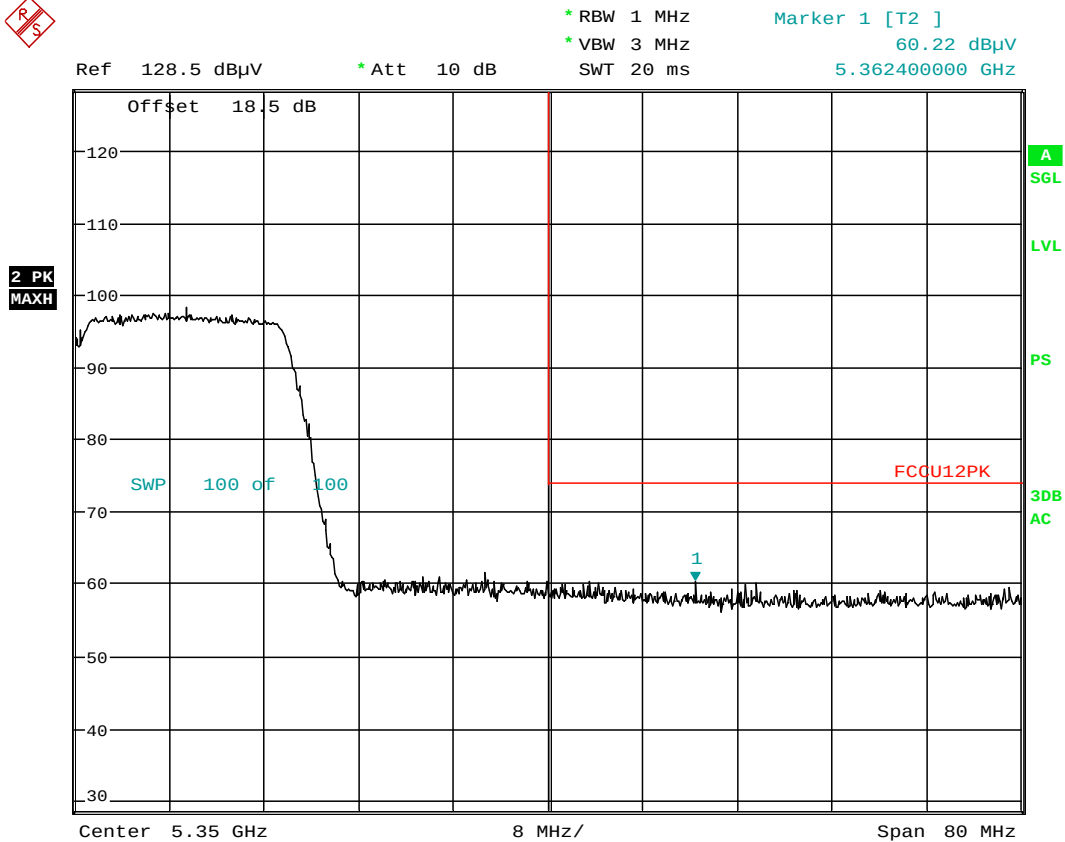


Date: 1.OCT.2014 02:27:59

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 125 of 182

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



Date: 1.OCT.2014 02:28:39

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 126 of 182

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

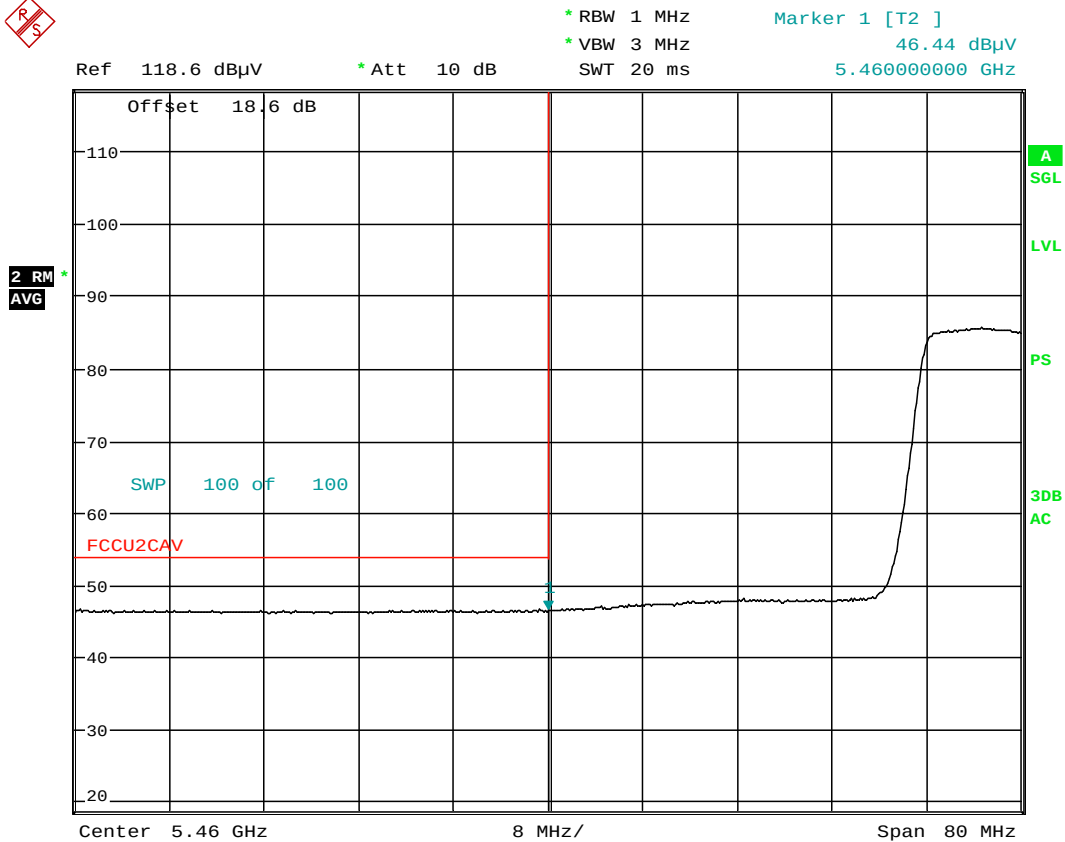
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5510MHz

Channel: 102

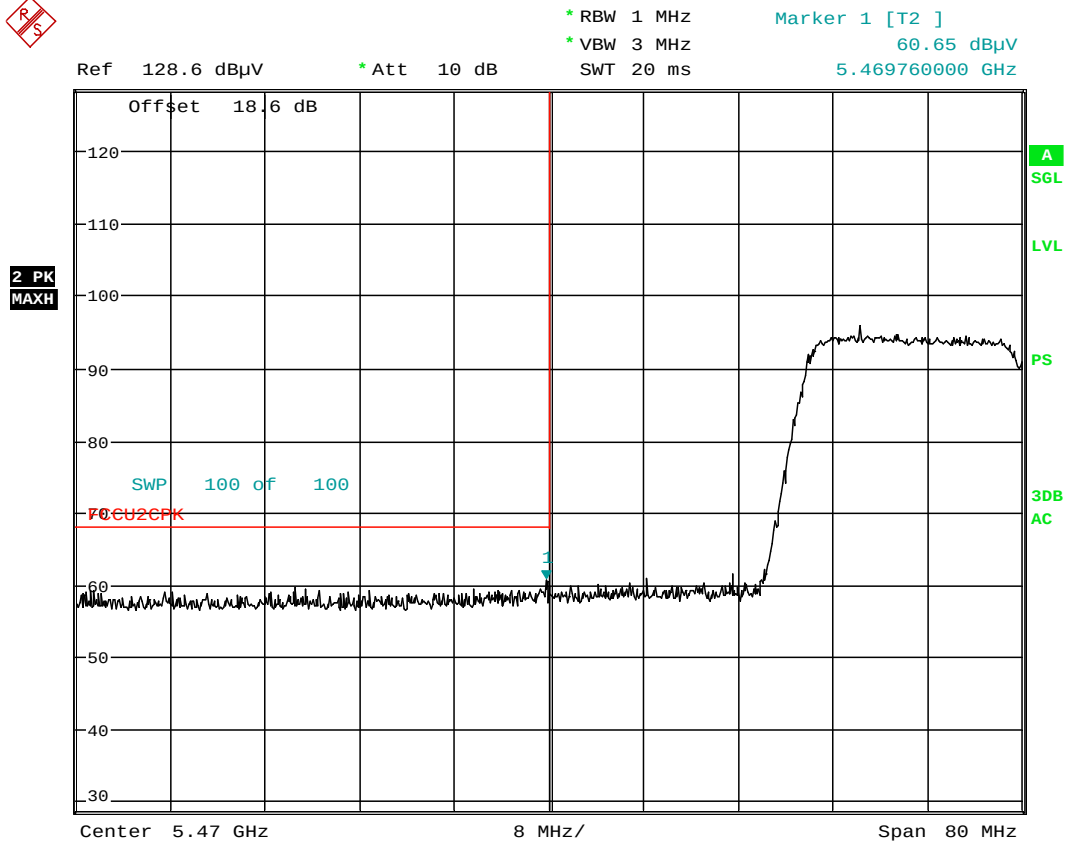


Date: 1.OCT.2014 02:42:49

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 127 of 182

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



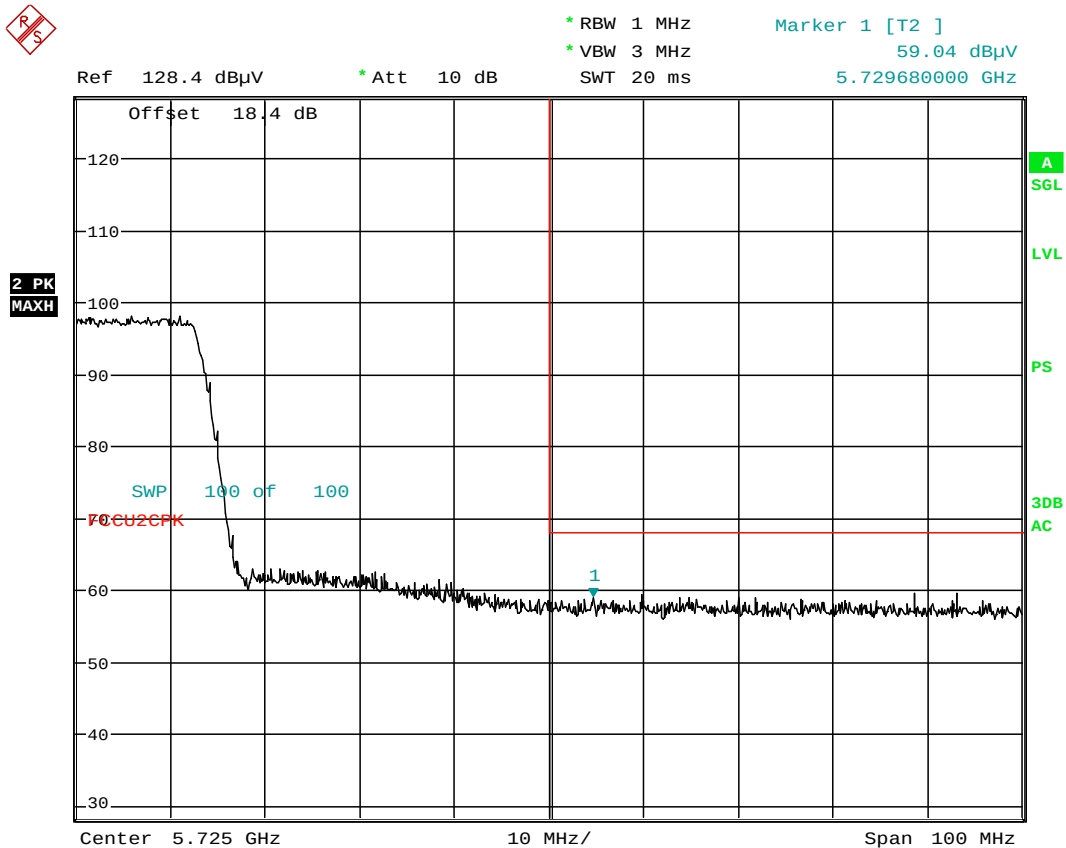
Date: 1.OCT.2014 02:44:20

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

FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 128 of 182

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: 1.OCT.2014 03:08:48

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 129 of 182

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

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

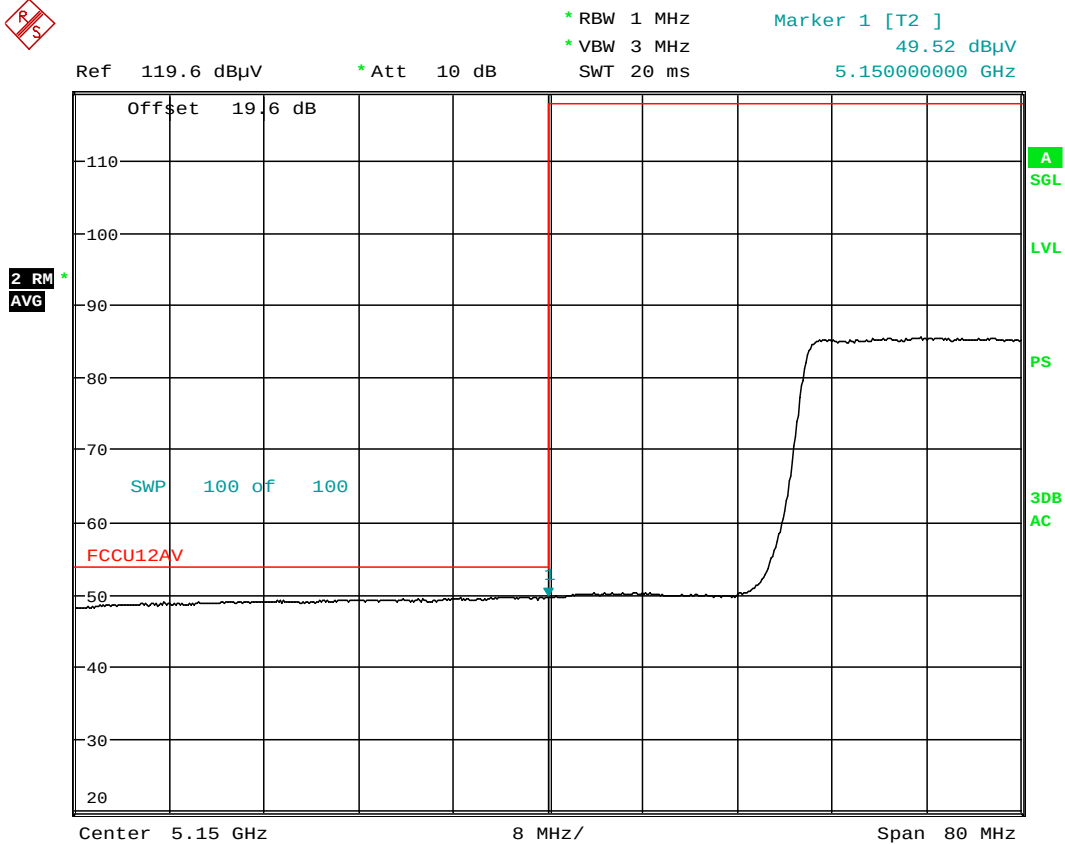
Worst Case Mode: 802.11n (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5210MHz

Channel: 42

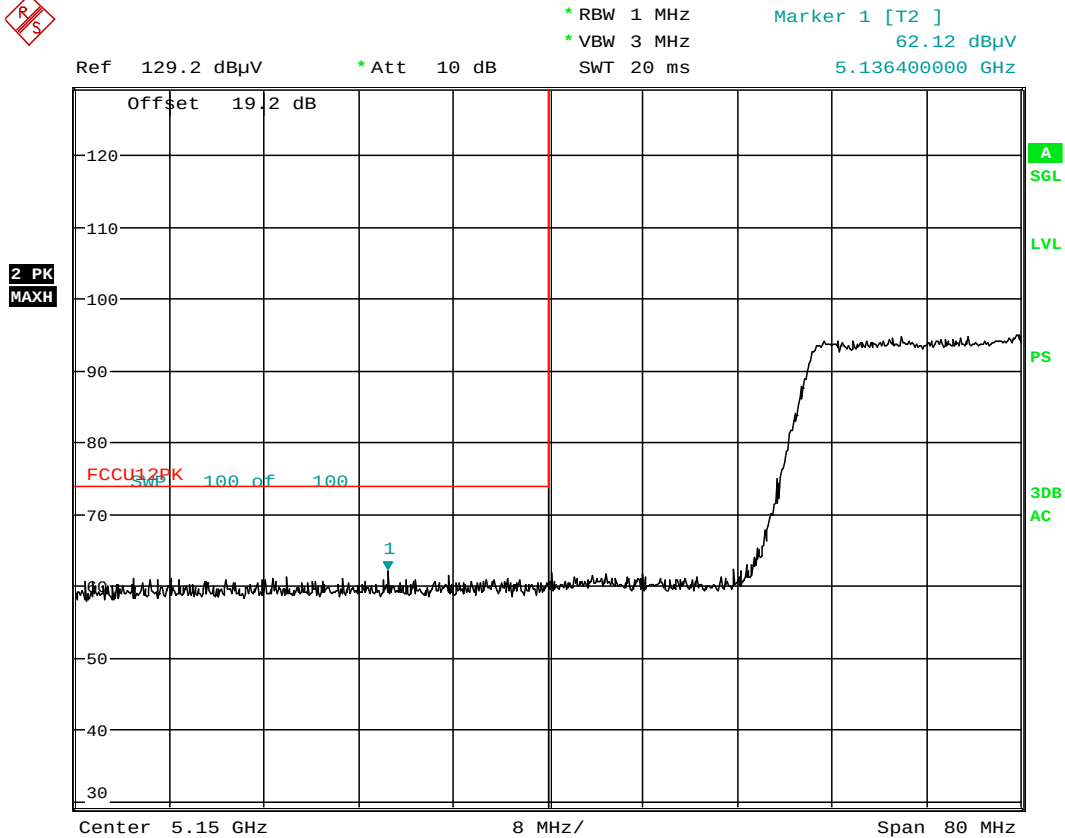


Date: 1.OCT.2014 02:15:24

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 130 of 182

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



Date: 1.OCT.2014 02:16:08

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 131 of 182

Radiated Band Edge Measurements (80MHz BW)

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

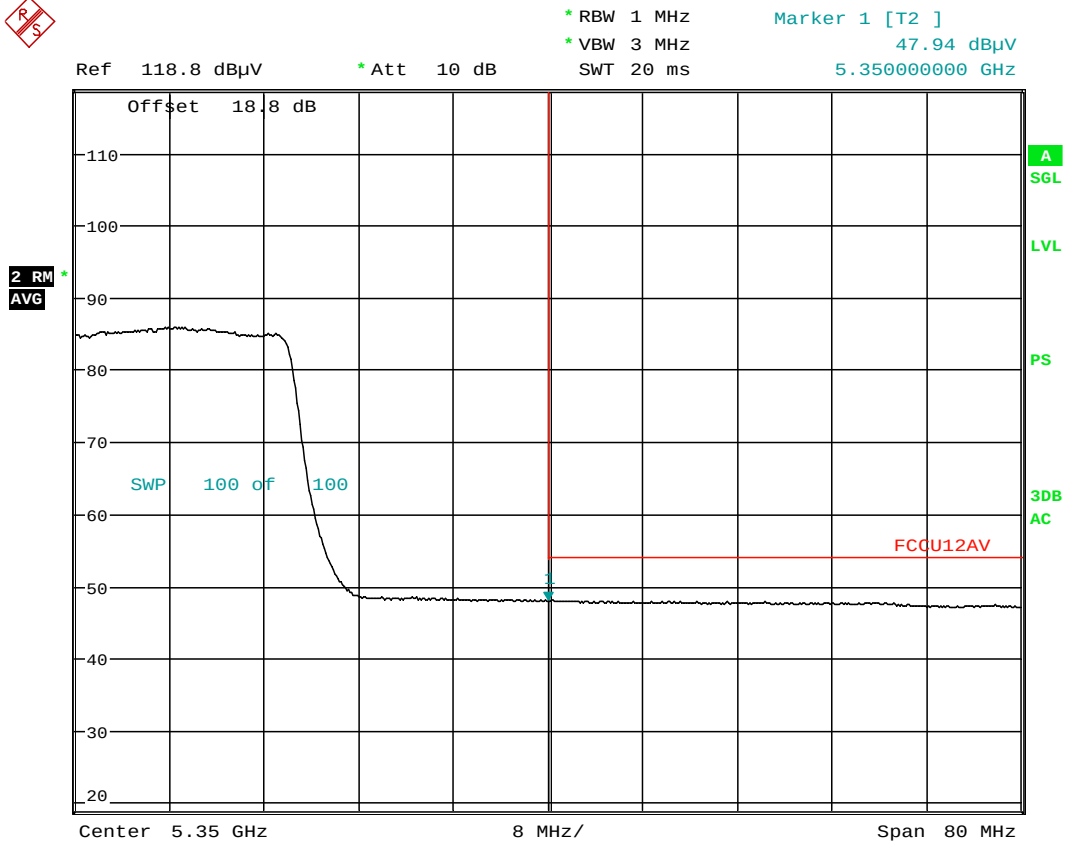
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5290MHz

Channel: 58

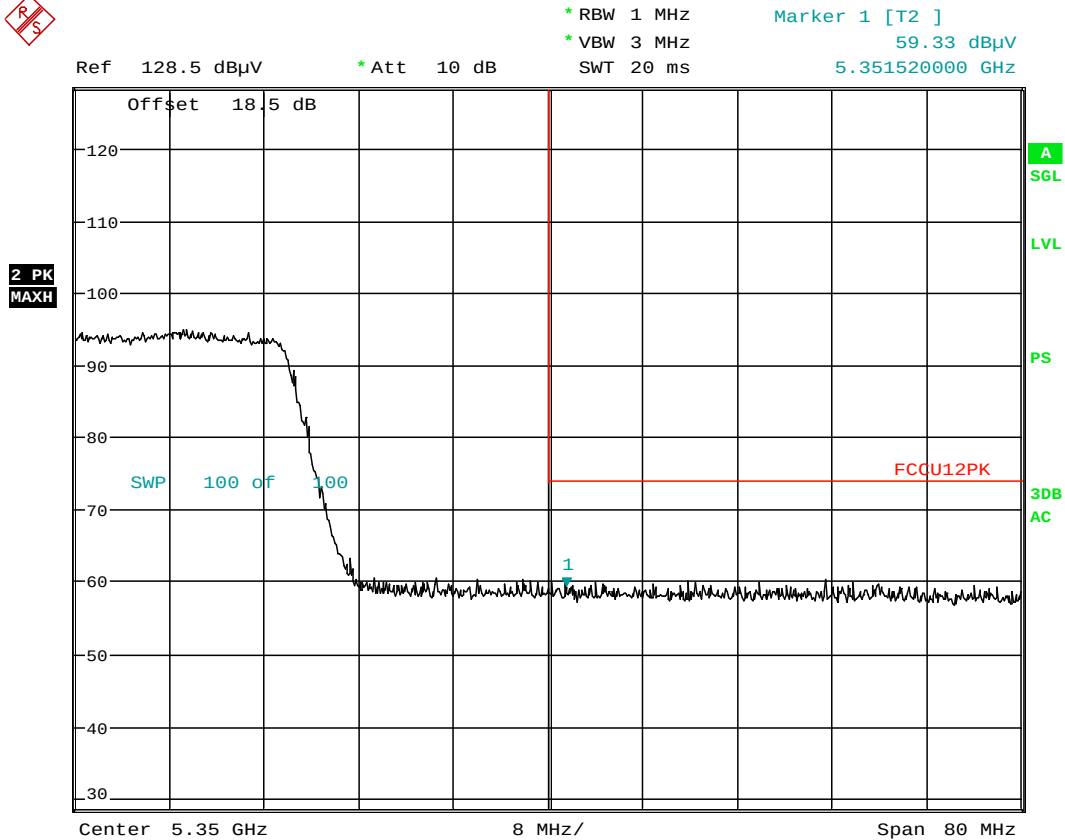


Date: 1.OCT.2014 02:34:14

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 132 of 182

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



Date: 1.OCT.2014 02:35:26

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 133 of 182

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

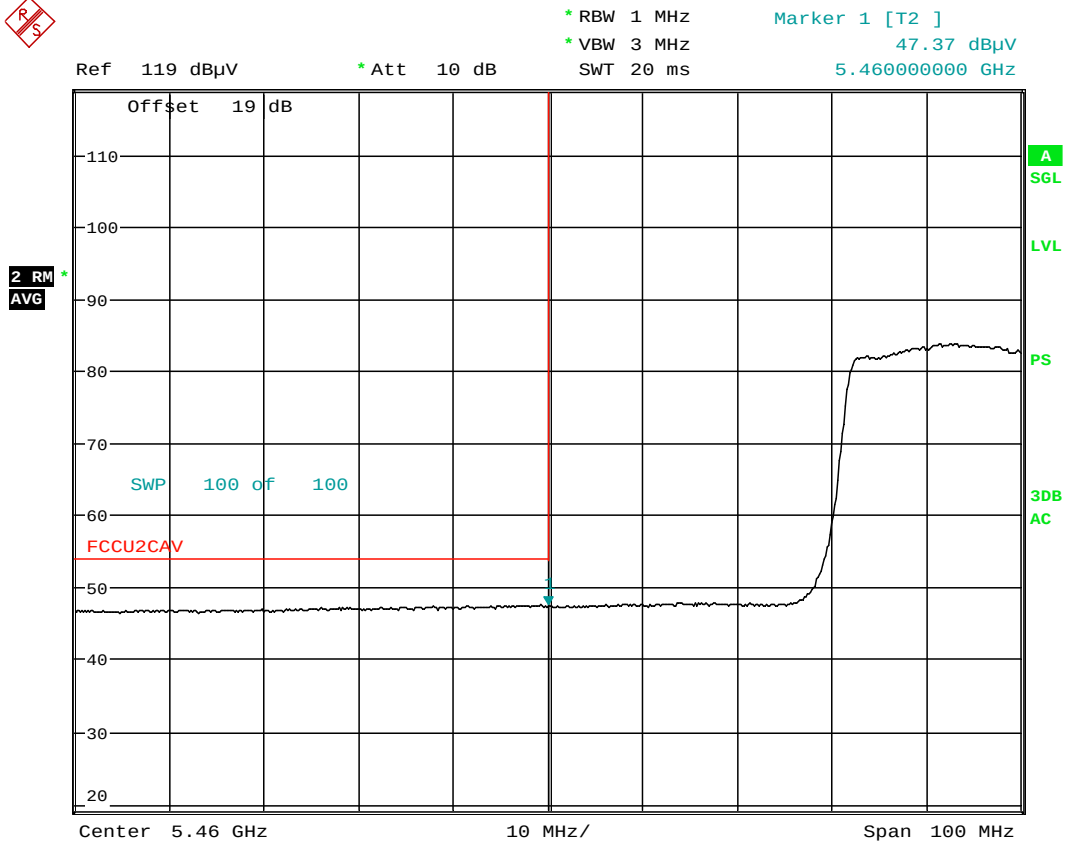
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5530MHz

Channel: 106

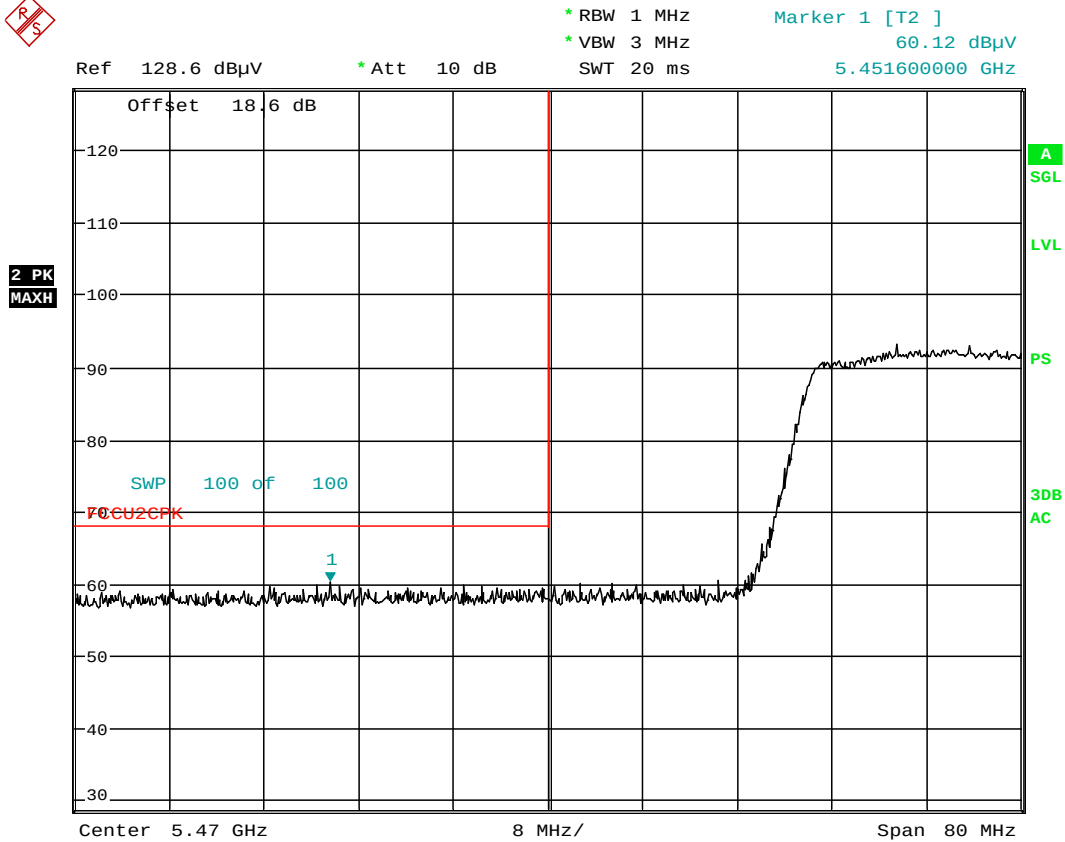


Date: 1.OCT.2014 02:49:07

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 134 of 182

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



Date: 1.OCT.2014 02:49:58

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 135 of 182

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

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

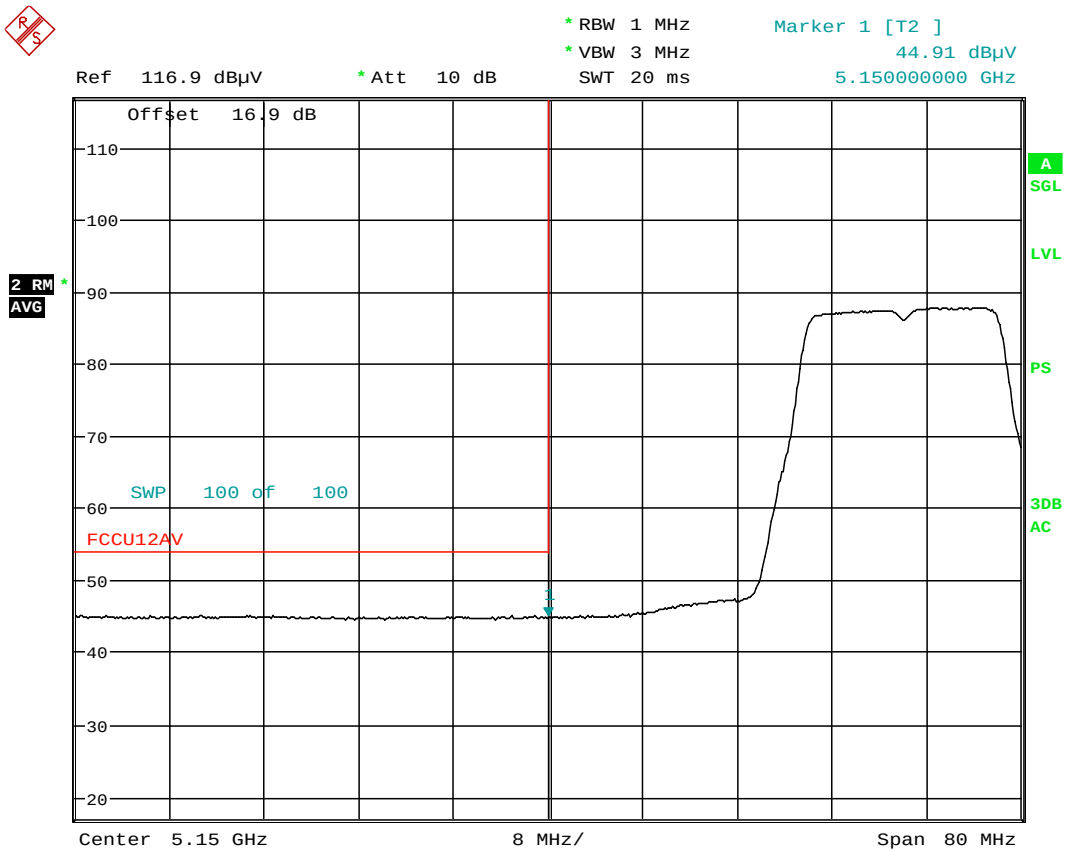
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36

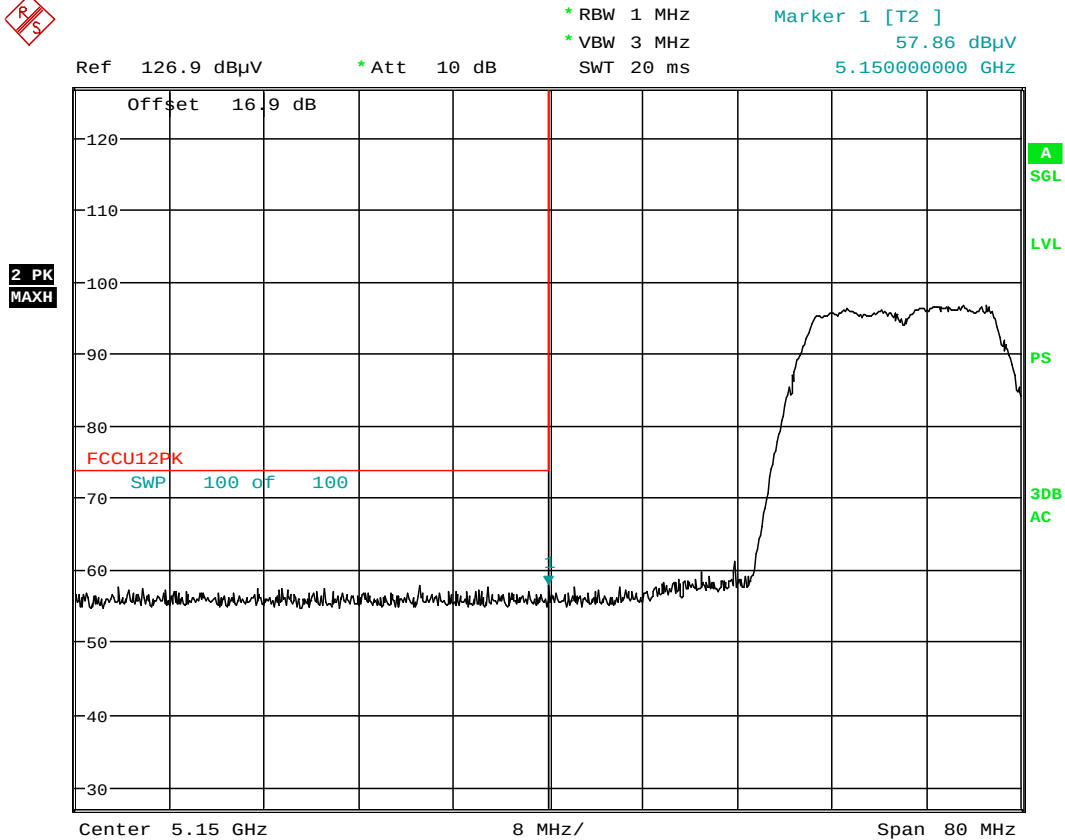


Date: 2.OCT.2014 03:10:41

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 136 of 182

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



Date: 2.OCT.2014 03:11:15

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

FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 137 of 182

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

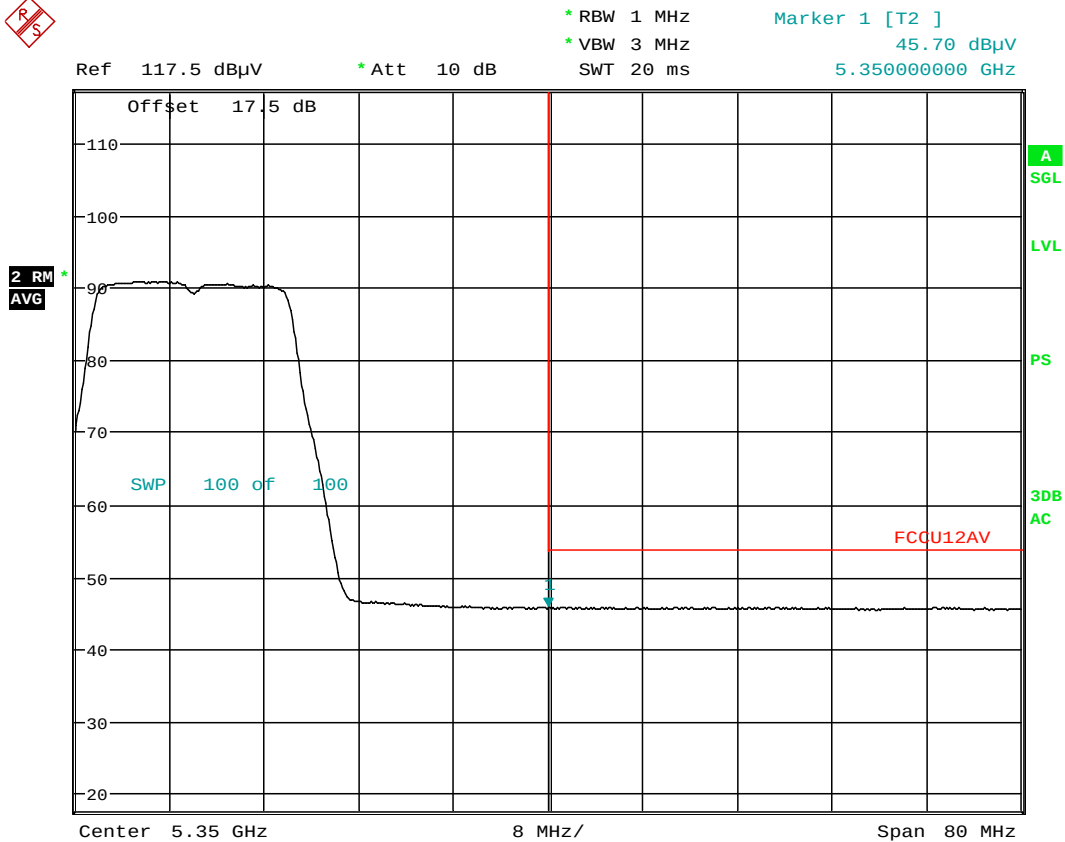
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5320MHz

Channel: 64

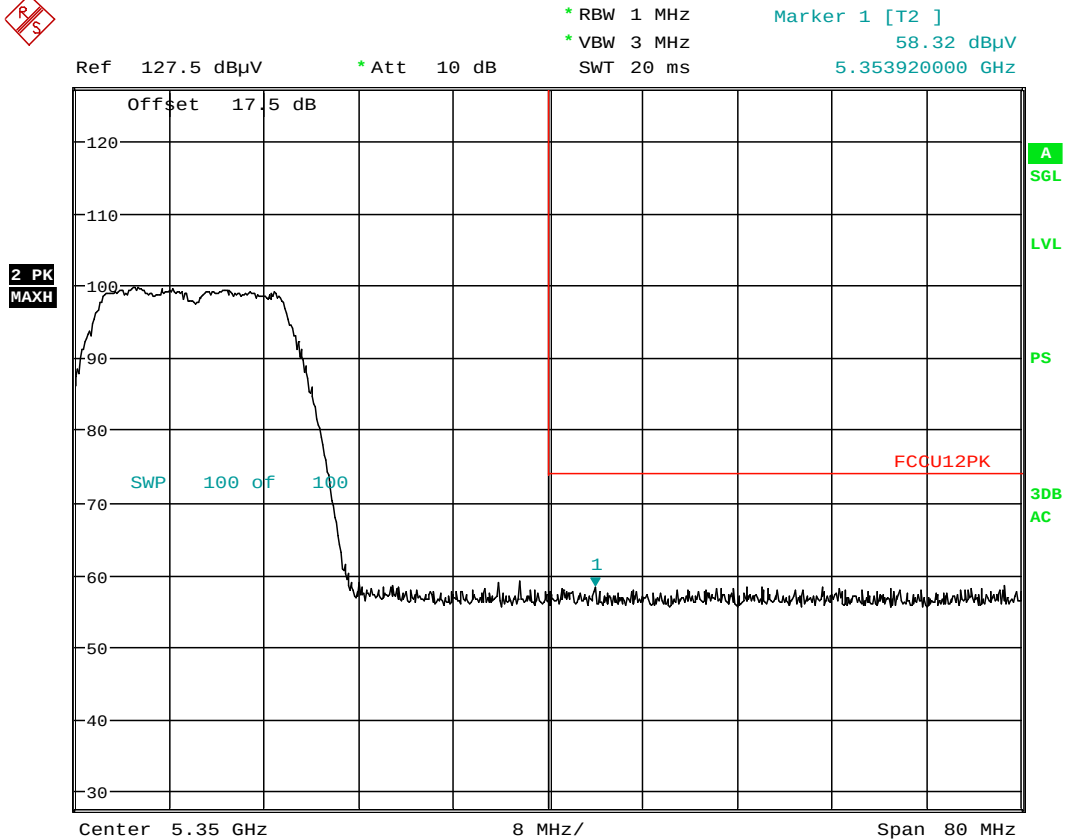


Date: 2.OCT.2014 04:16:59

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 138 of 182

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



Date: 2.OCT.2014 04:17:43

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 139 of 182

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

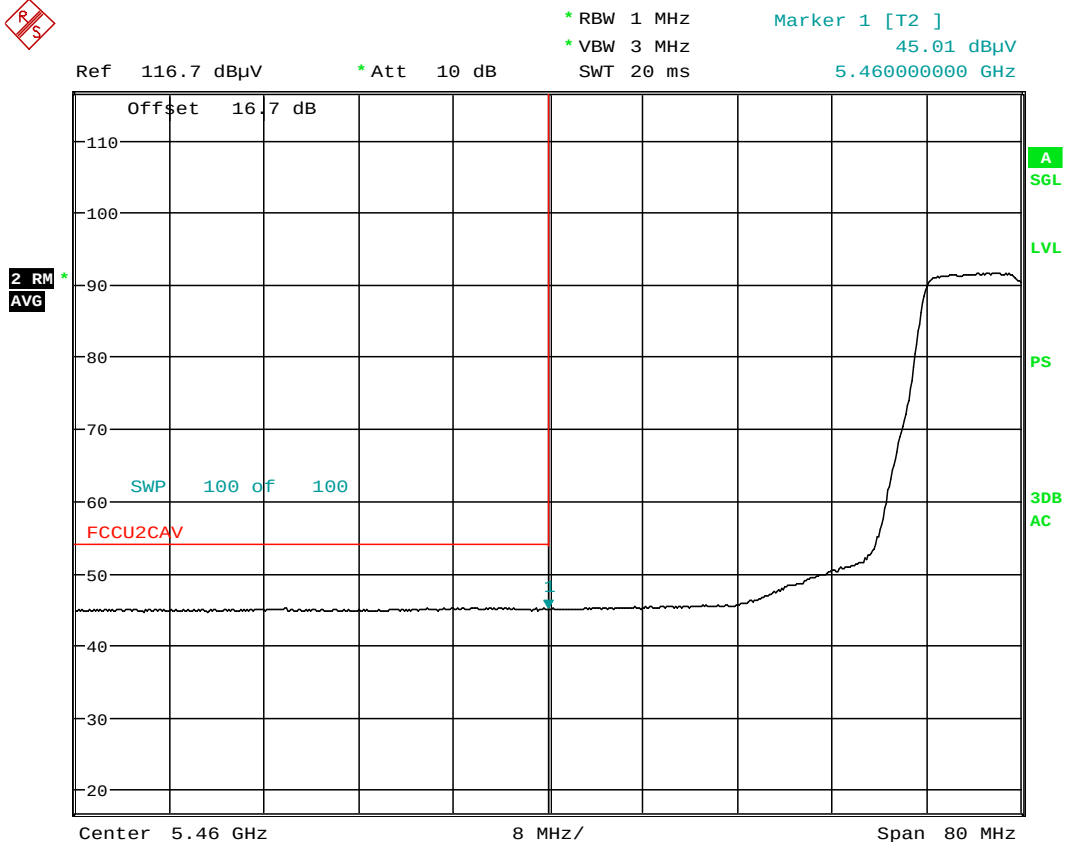
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5500MHz

Channel: 100

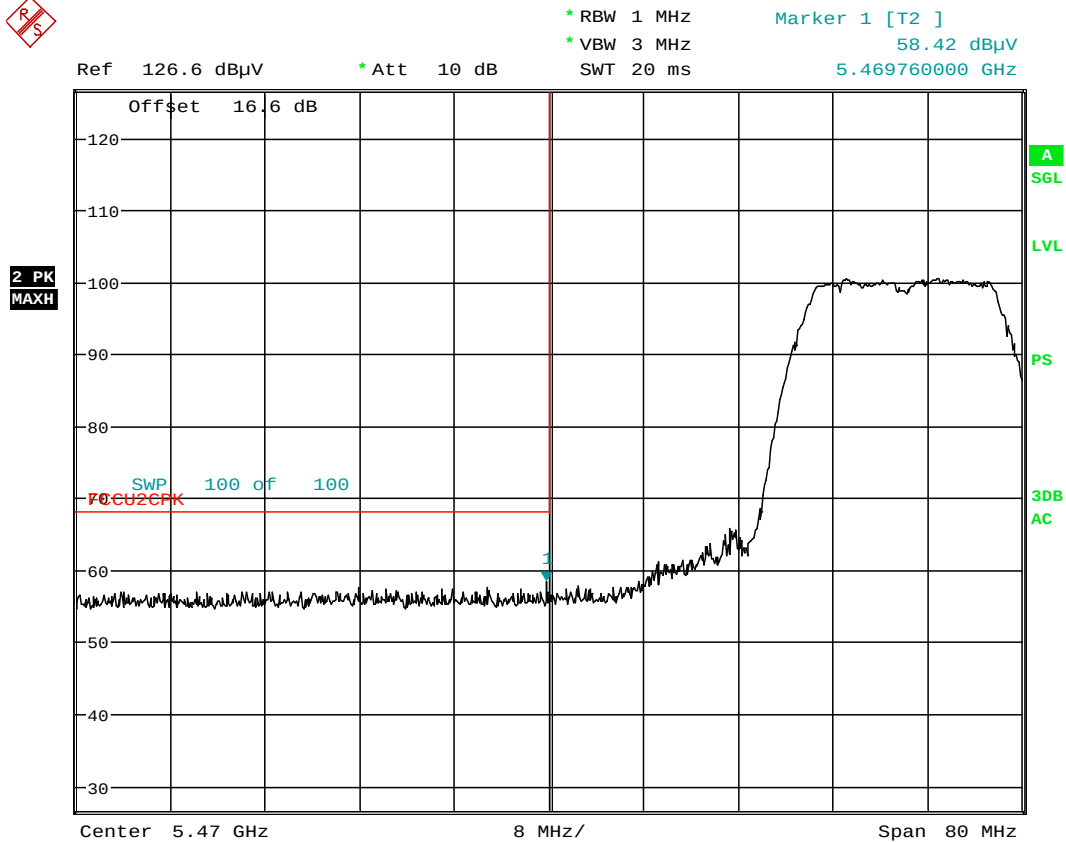


Date: 2.OCT.2014 04:33:06

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 140 of 182

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



Date: 2.OCT.2014 04:33:44

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

FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 141 of 182

Radiated Band Edge Measurements (20MHz BW)

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

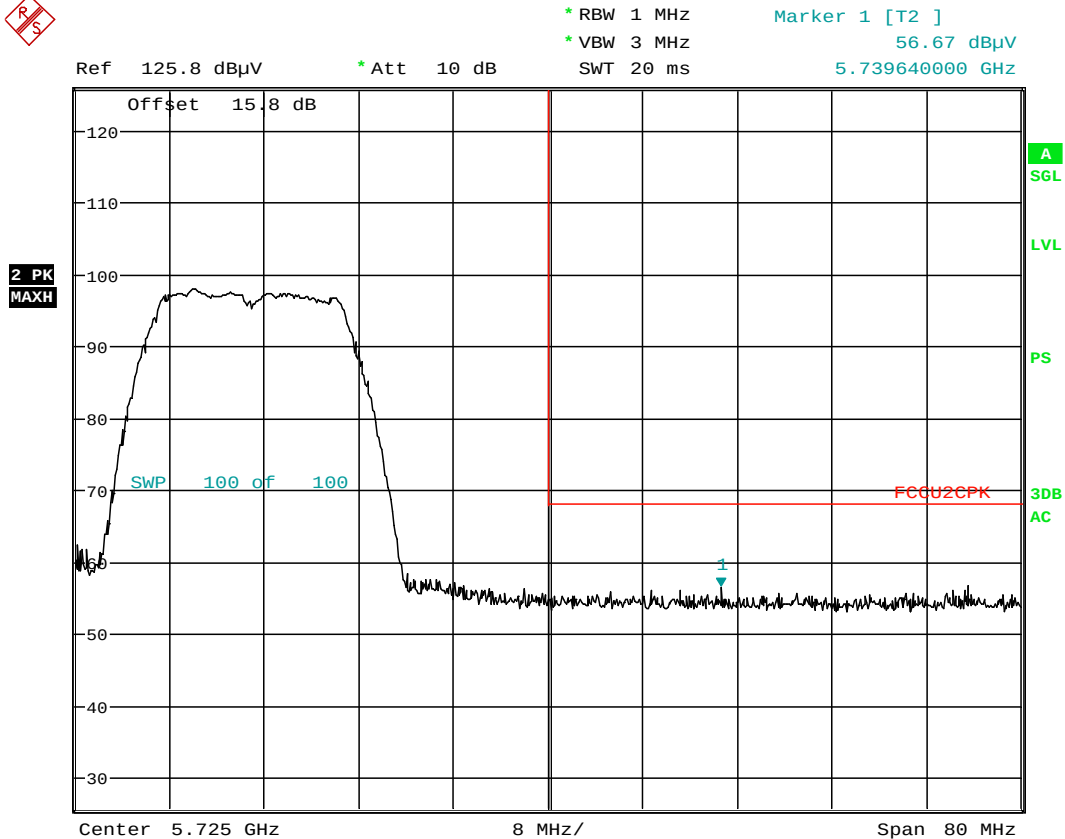
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5700MHz

Channel: 140



Date: 2.OCT.2014 05:13:50

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 142 of 182

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

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

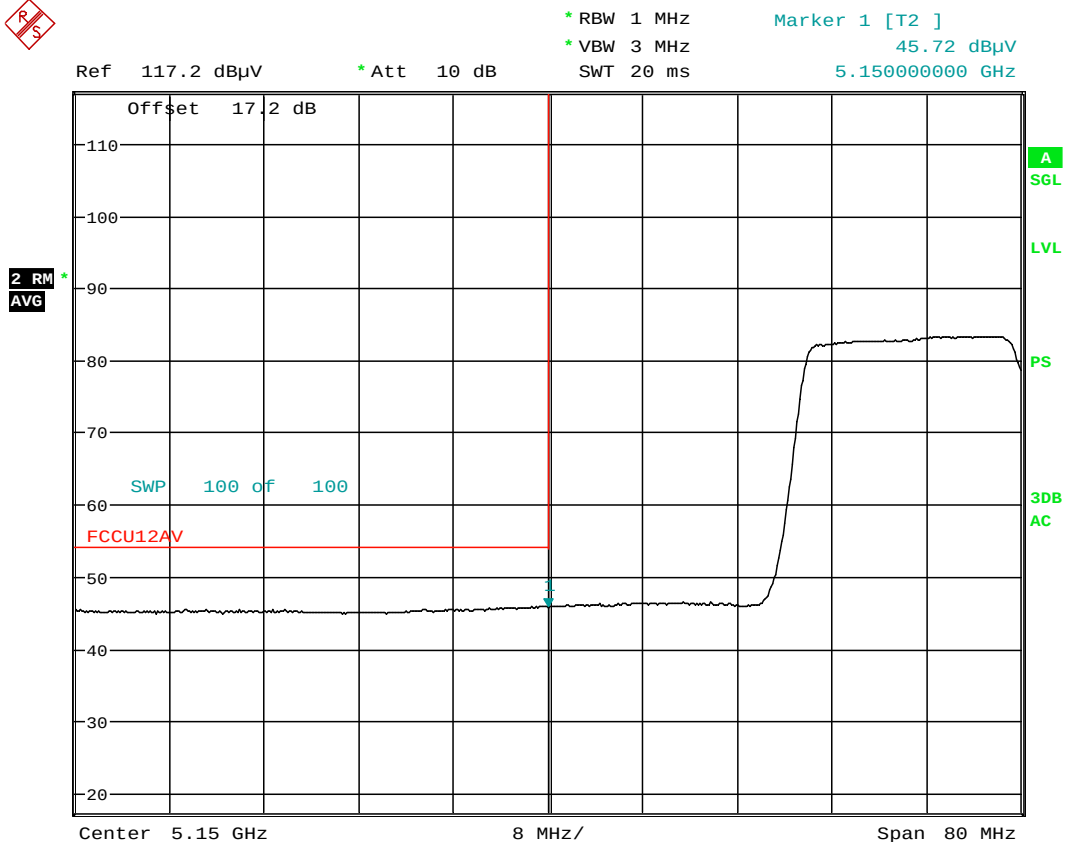
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5190MHz

Channel: 38

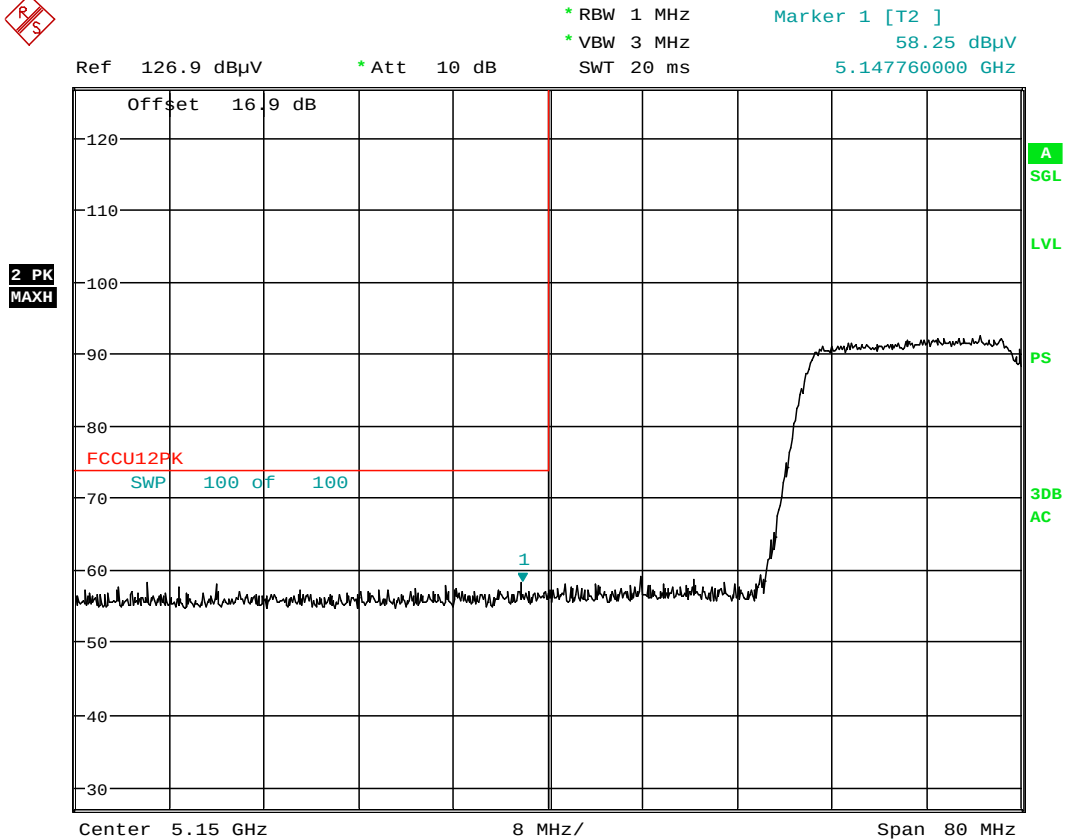


Date: 2.OCT.2014 04:02:31

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 143 of 182

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



Date: 2.OCT.2014 04:03:06

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

FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 144 of 182

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

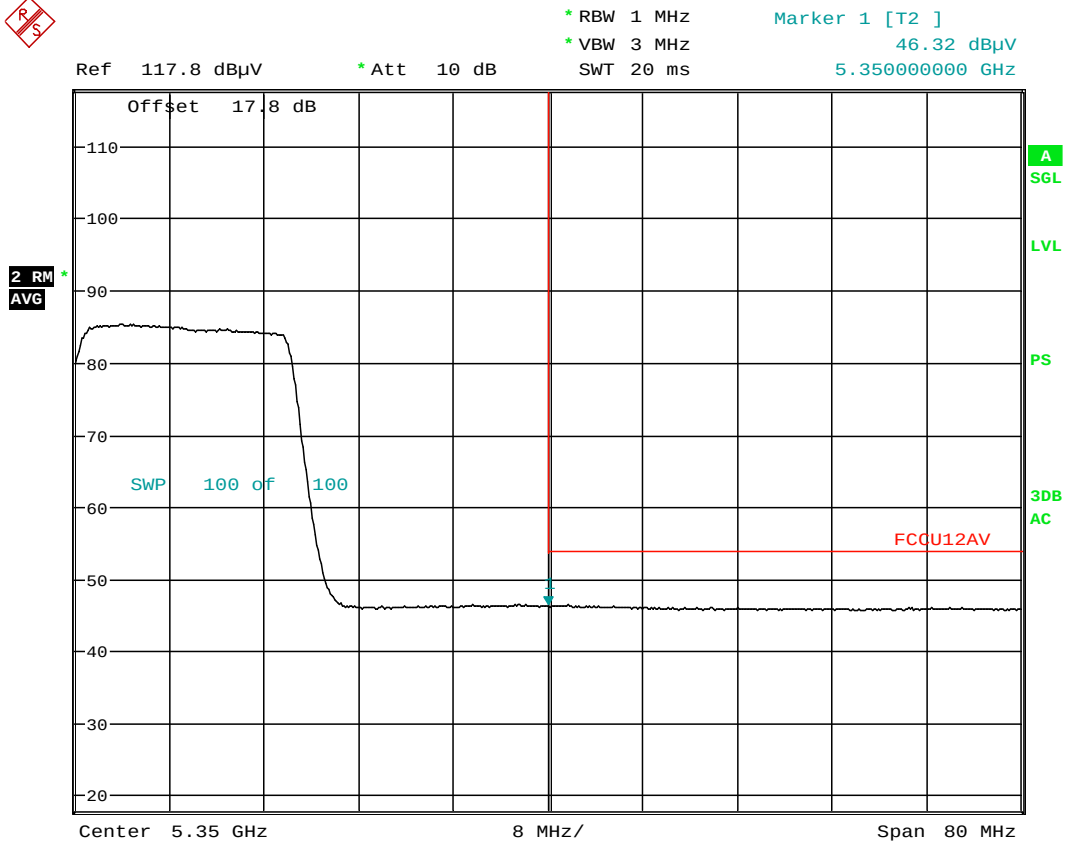
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5310MHz

Channel: 62

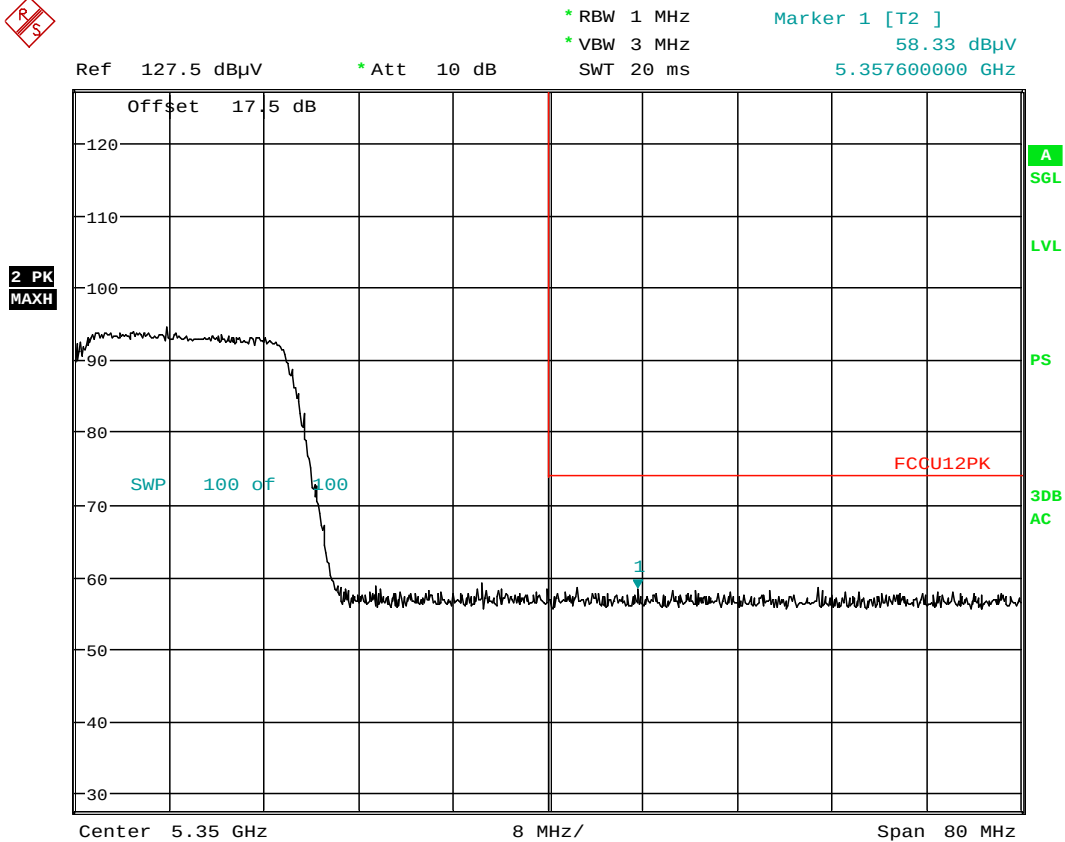


Date: 2.OCT.2014 04:19:31

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 145 of 182

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



Date: 2.OCT.2014 04:20:15

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 146 of 182

Radiated Band Edge Measurements (40MHz BW)

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

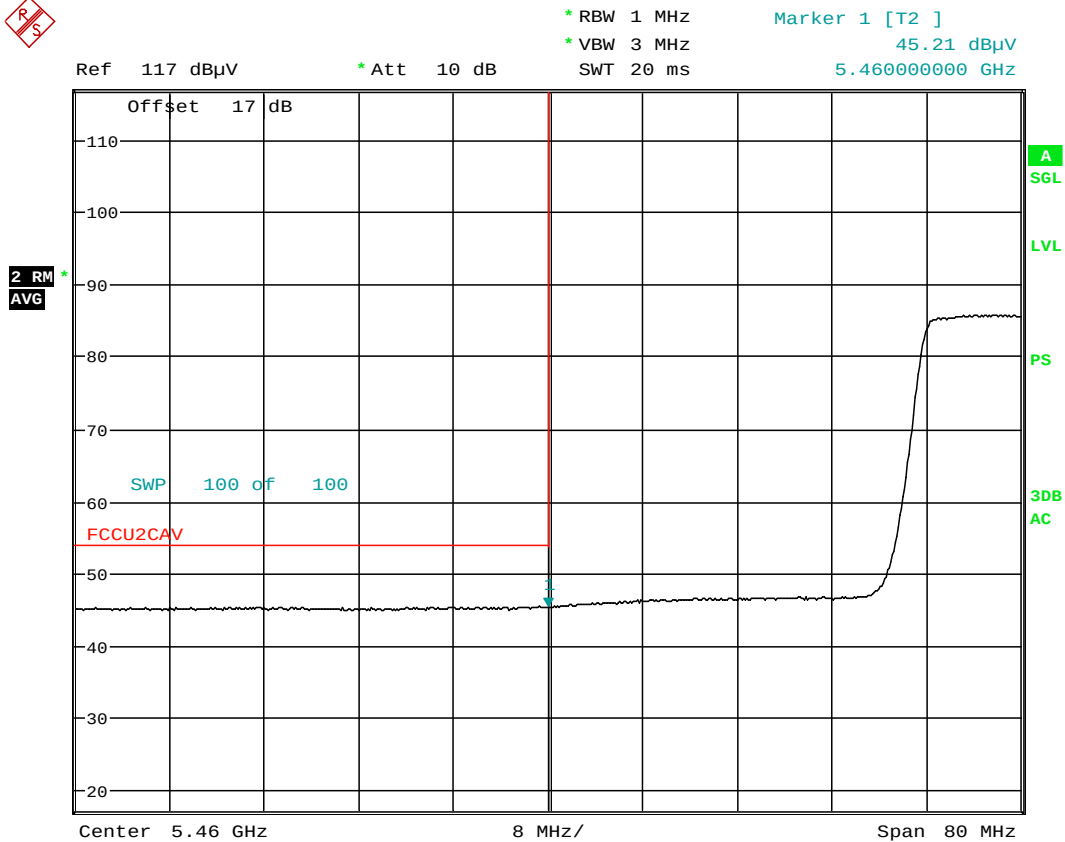
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5510MHz

Channel: 102

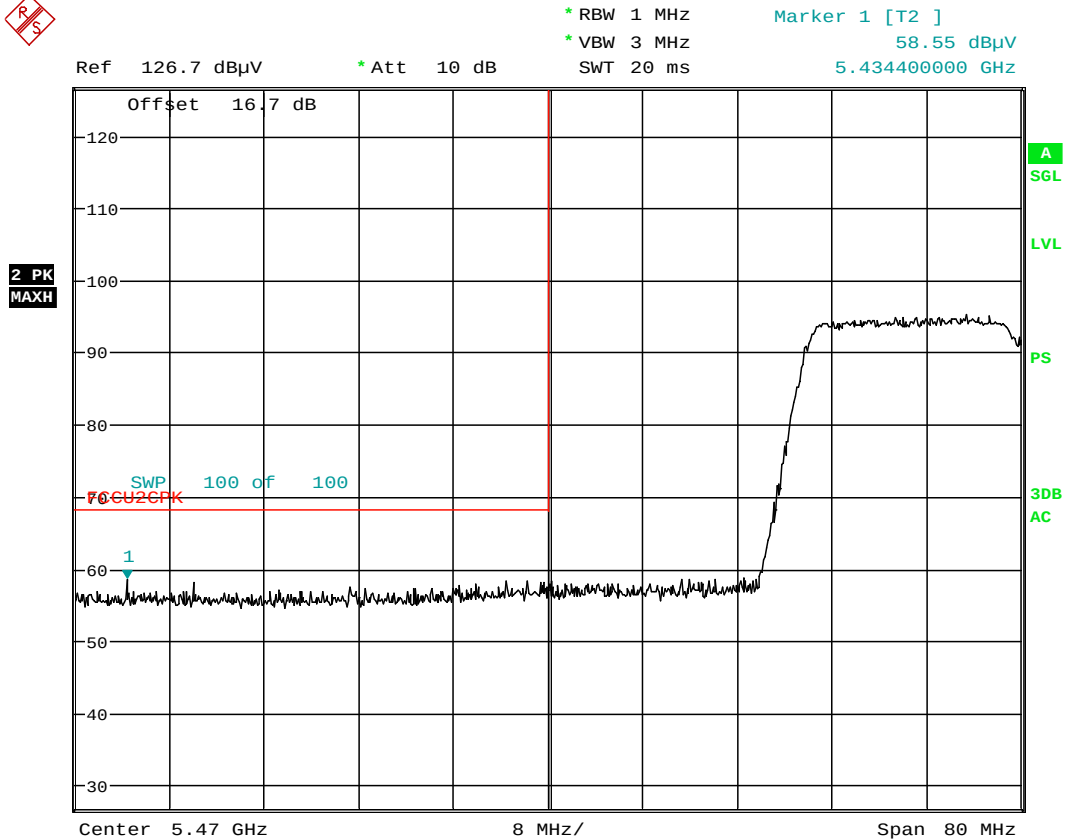


Date: 2.OCT.2014 04:38:08

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 147 of 182

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



Date: 2.OCT.2014 04:38:48

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 148 of 182

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

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

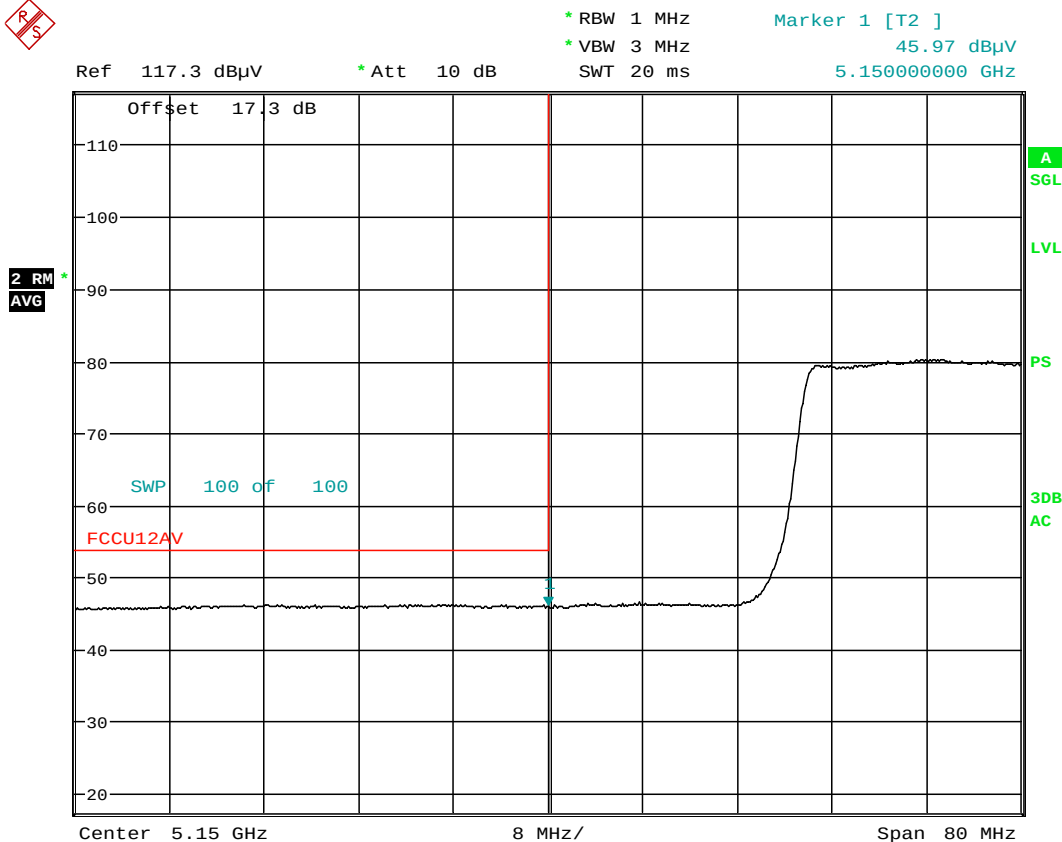
Worst Case Mode: 802.11n (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5210MHz

Channel: 42

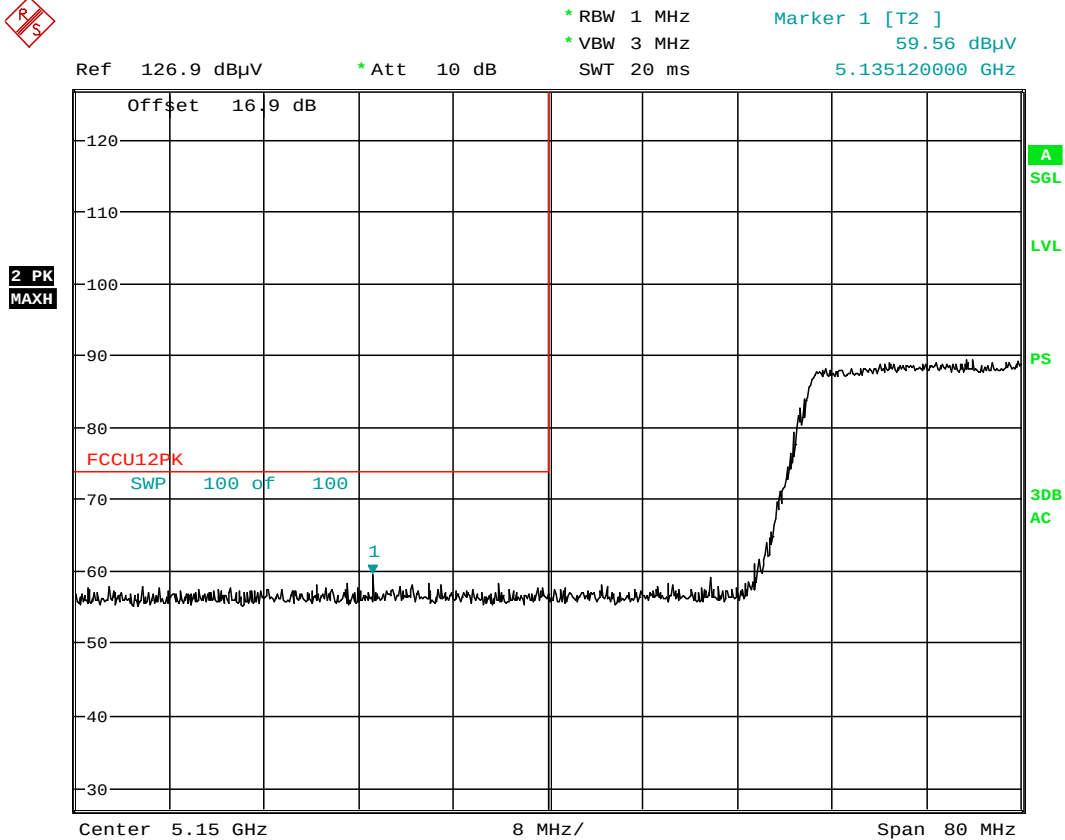


Date: 2.OCT.2014 04:12:06

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 150 of 182

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



Date: 2.OCT.2014 04:12:43

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

FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 151 of 182

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

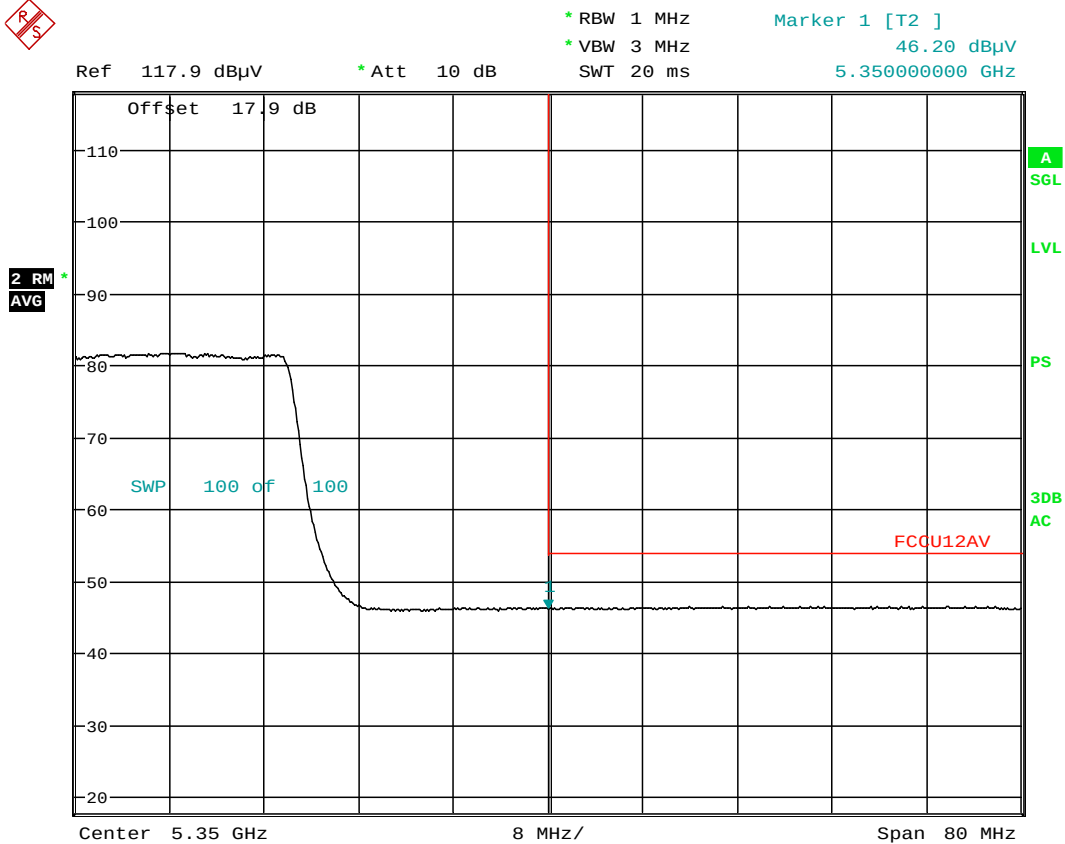
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5290MHz

Channel: 58

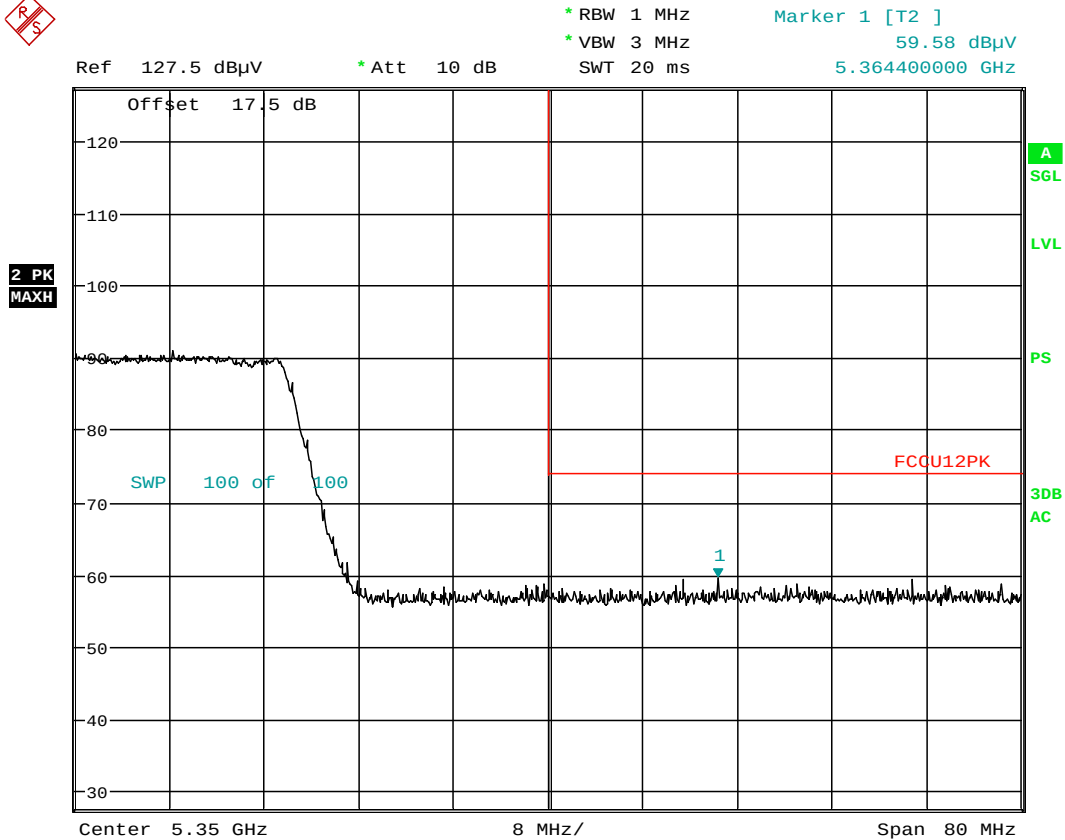


Date: 2.OCT.2014 04:25:26

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 152 of 182

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



Date: 2.OCT.2014 04:26:05

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 153 of 182

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

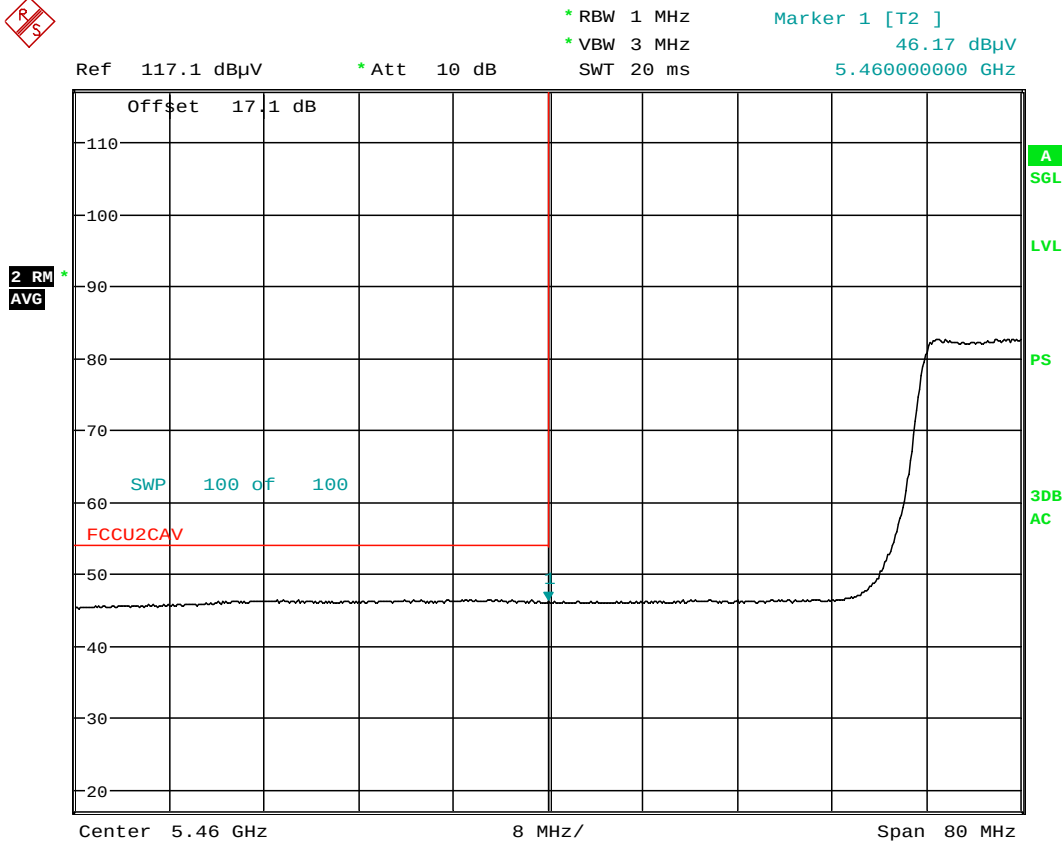
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5530MHz

Channel: 106

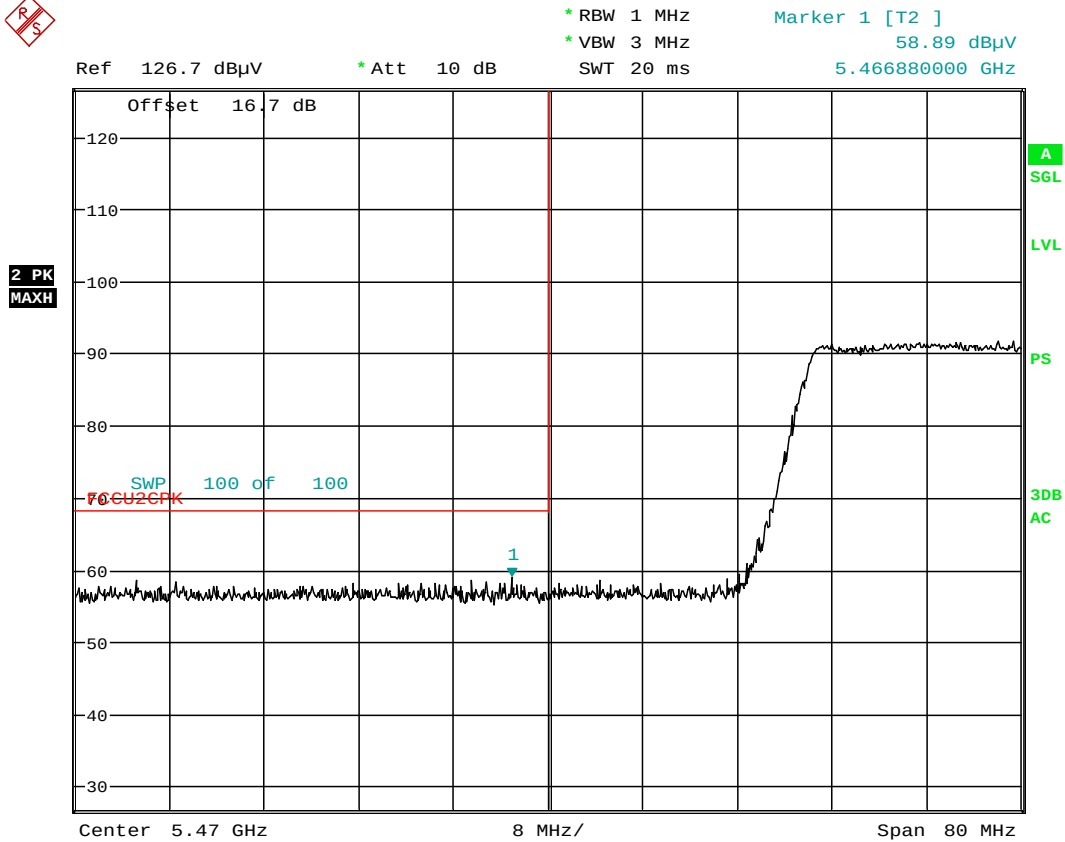


Date: 2.OCT.2014 04:44:31

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 154 of 182

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



Date: 2.OCT.2014 04:45:14

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 155 of 182

6.14 MIMO Radiated Band Edge Measurements (20MHz BW)

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

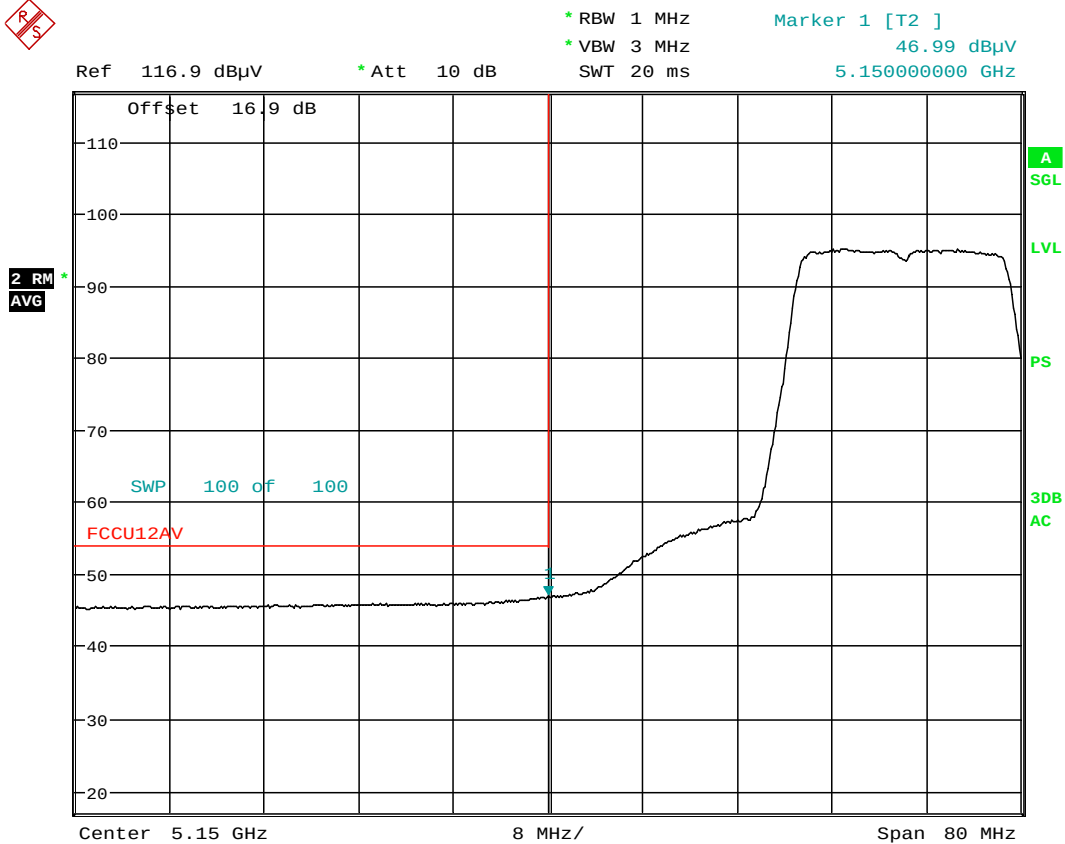
Worst Case Mode: 802.11n (20MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36

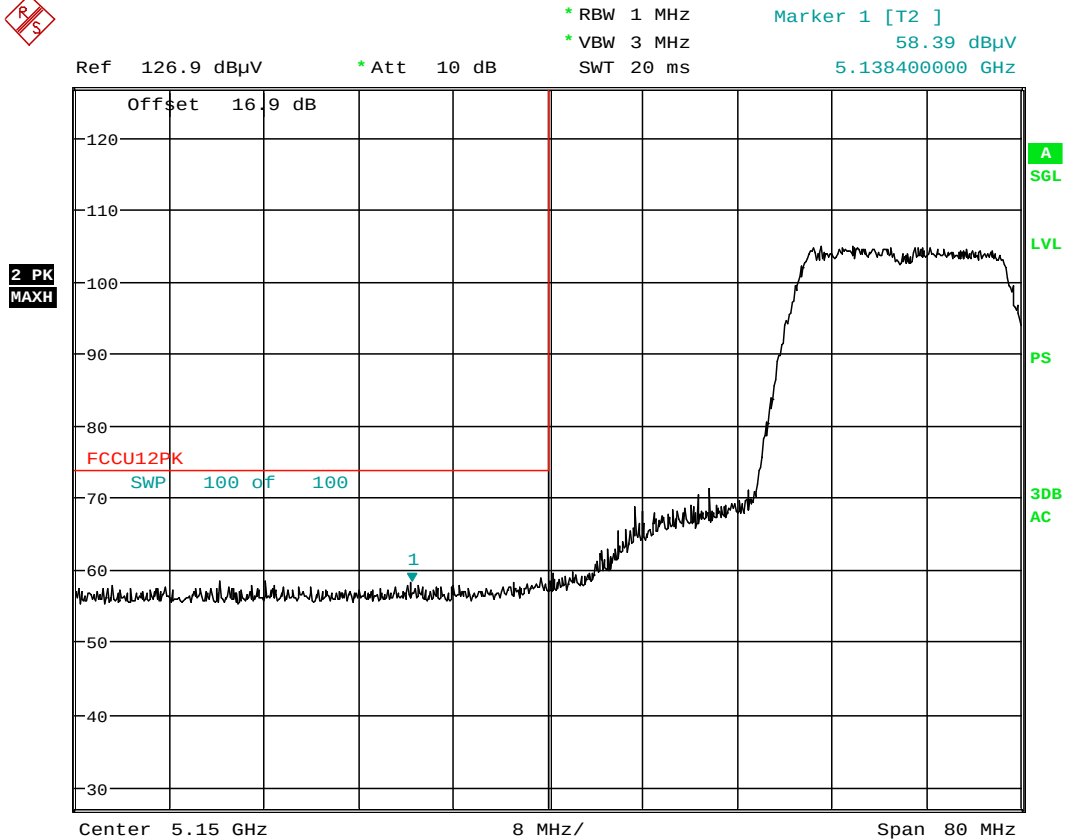


Date: 2.OCT.2014 05:46:02

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 156 of 182

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



Date: 2.OCT.2014 05:46:41

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 157 of 182

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

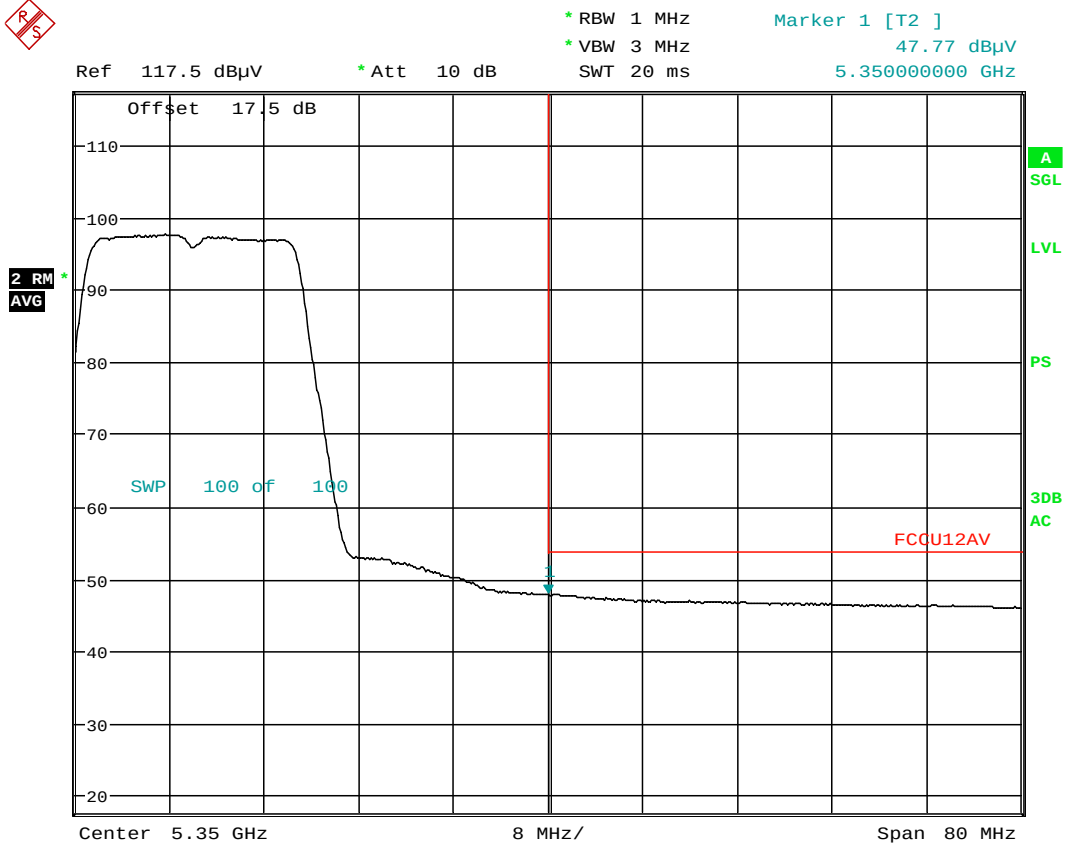
Worst Case Mode: 802.11n (20MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5320MHz

Channel: 64

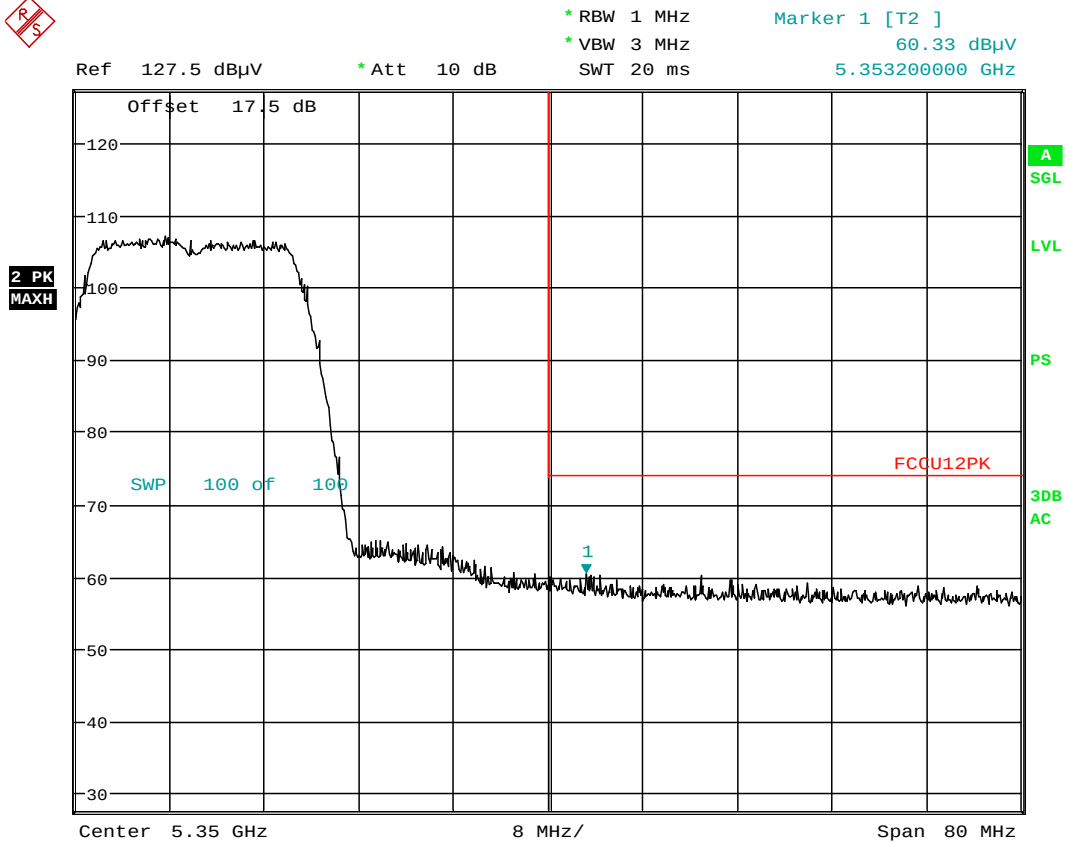


Date: 2.OCT.2014 06:28:41

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 158 of 182

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



Date: 2.OCT.2014 06:29:59

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 159 of 182

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

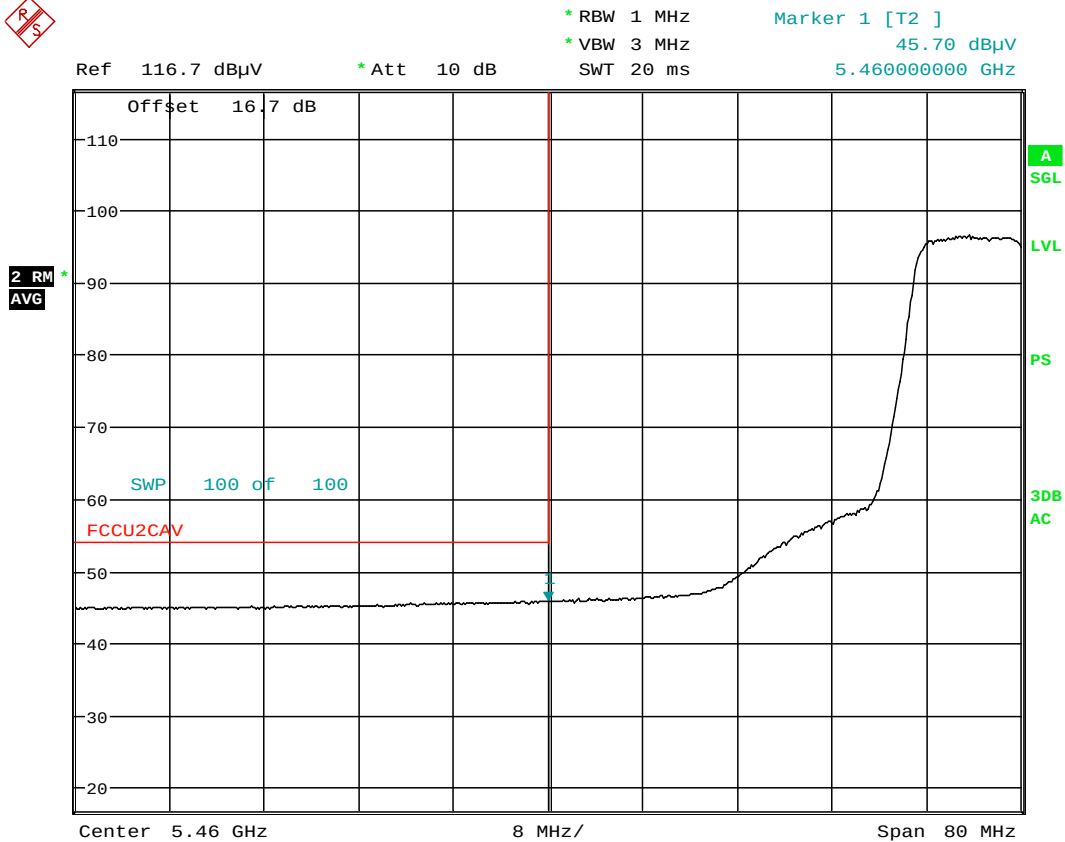
Worst Case Mode: 802.11n (20MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5500MHz

Channel: 100

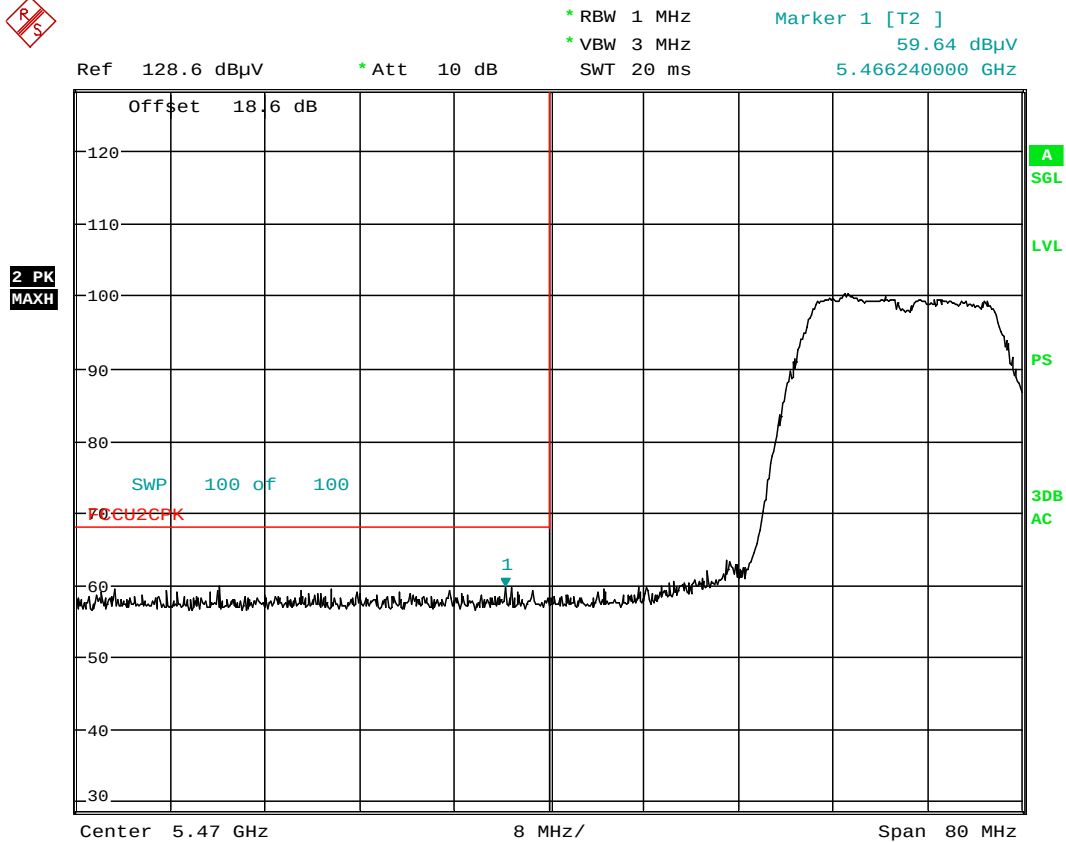


Date: 2.OCT.2014 06:50:48

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 160 of 182

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



Date: 1.OCT.2014 02:40:31

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 161 of 182

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

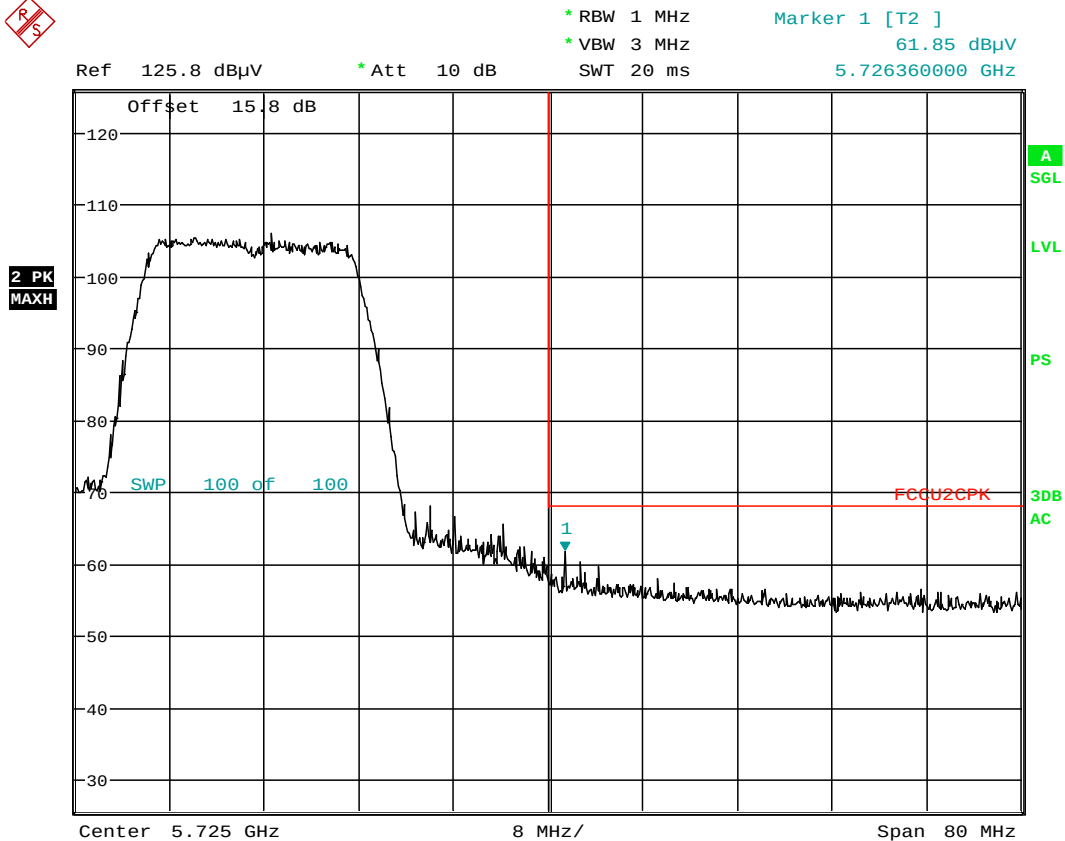
Worst Case Mode: 802.11n (20MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5700MHz

Channel: 140



Date: 2.OCT.2014 07:13:29

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 162 of 182

6.15 MIMO Radiated Band Edge Measurements (40MHz BW)

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

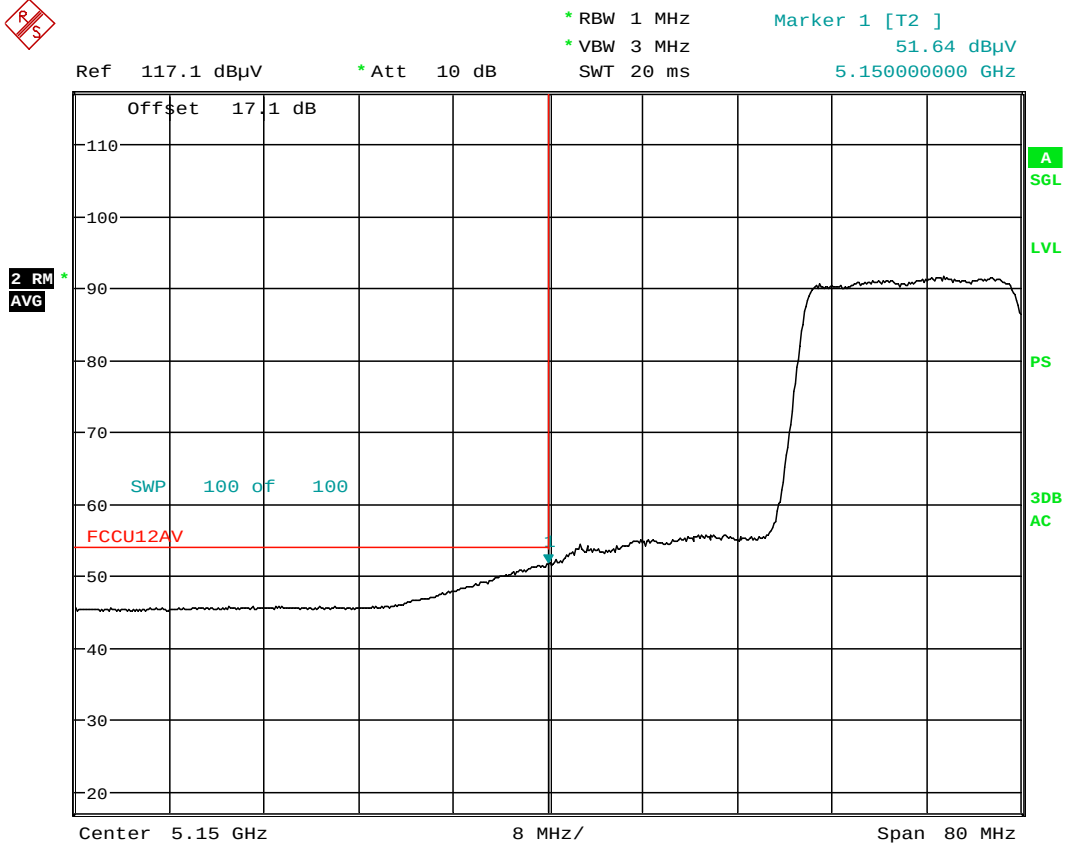
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5190MHz

Channel: 38

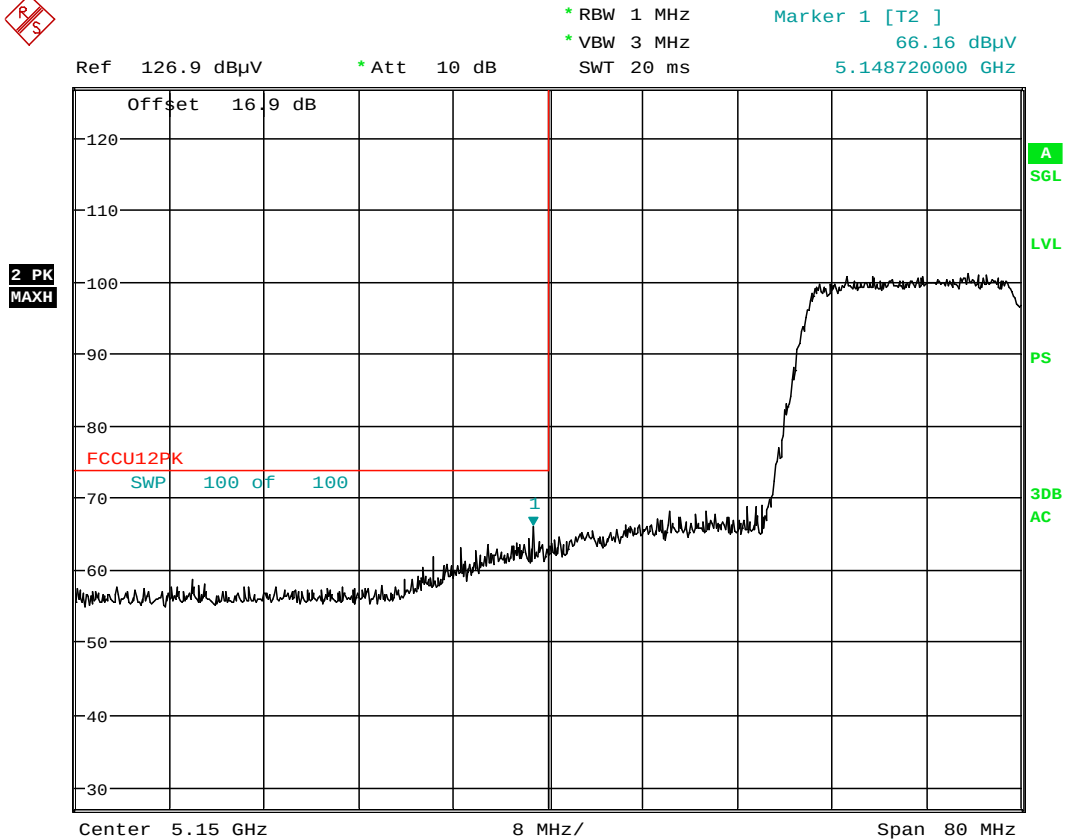


Date: 2.OCT.2014 05:57:40

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 163 of 182

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



Date: 2.OCT.2014 05:58:15

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 164 of 182

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

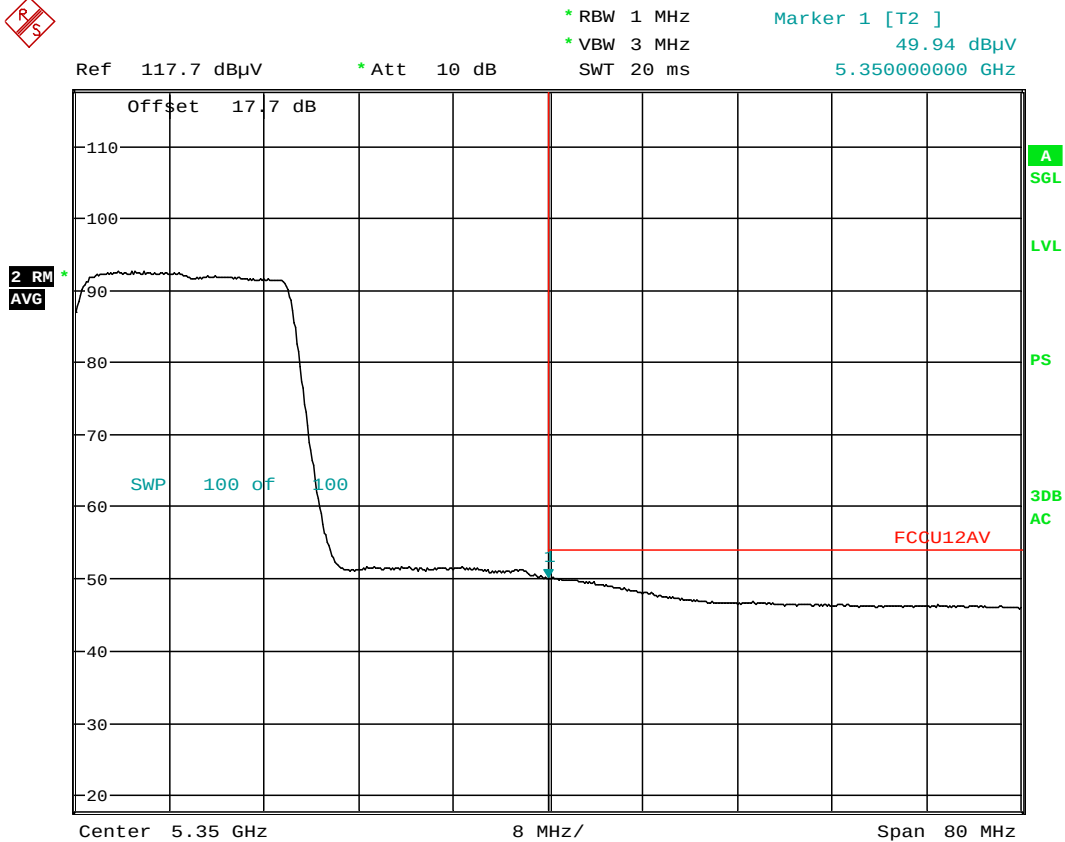
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5310MHz

Channel: 62

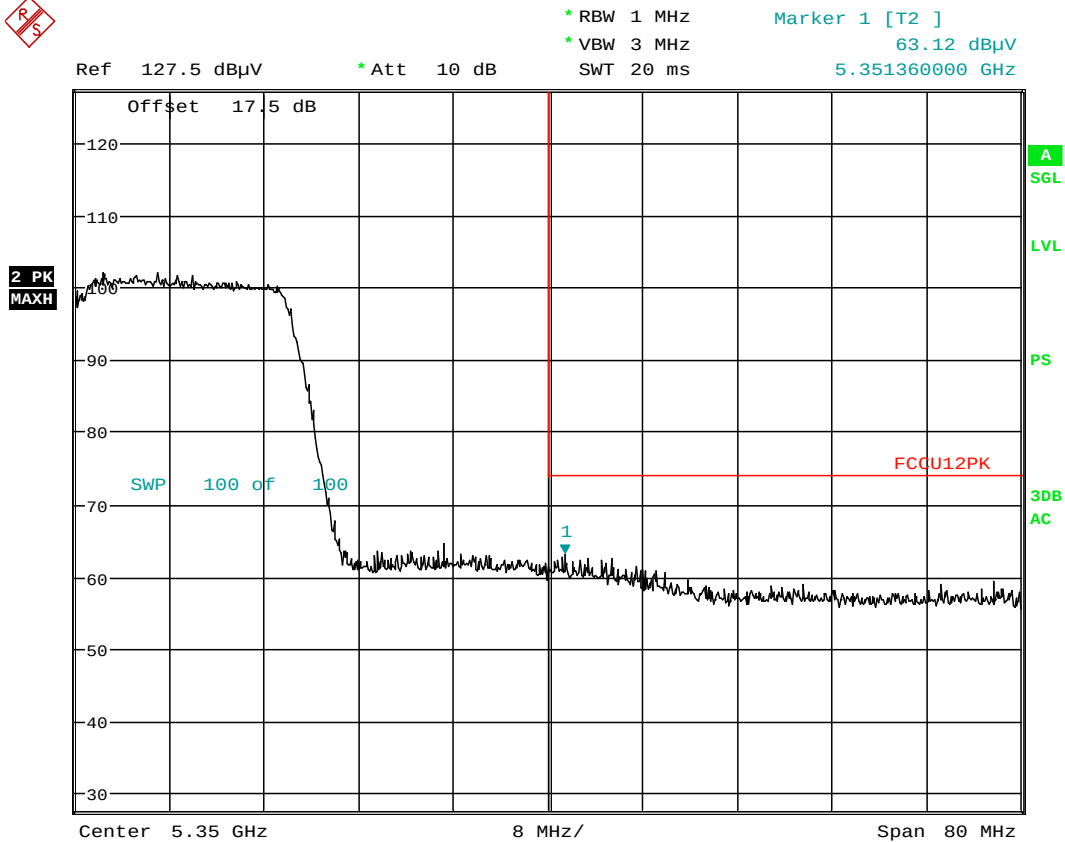


Date: 2.OCT.2014 06:32:59

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 165 of 182

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



Date: 2.OCT.2014 06:33:39

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 166 of 182

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

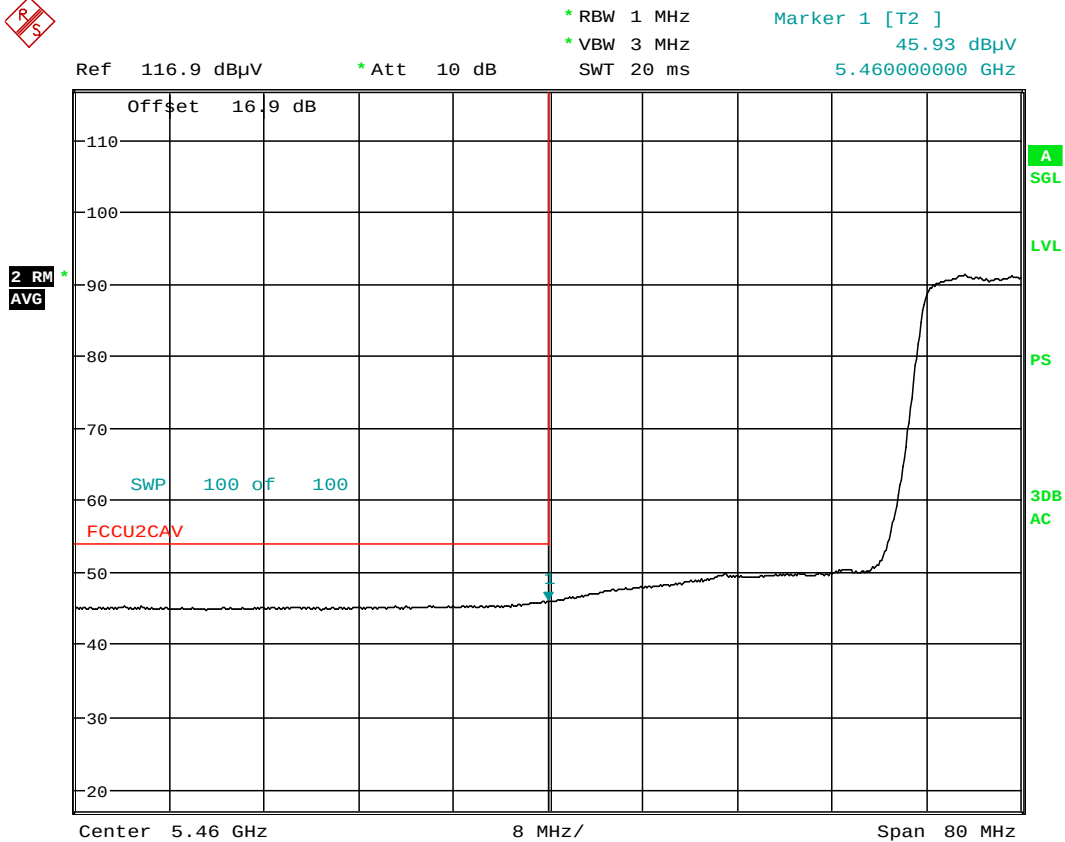
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5510MHz

Channel: 102

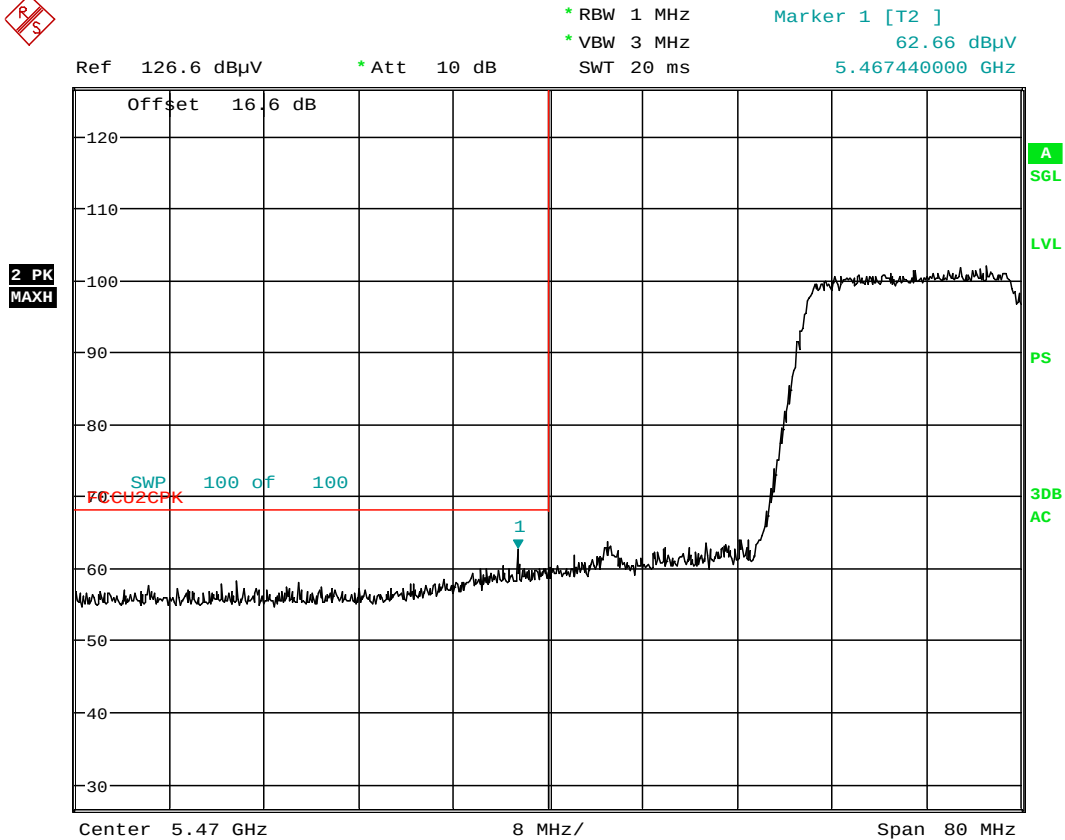


Date: 2.OCT.2014 06:55:15

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 167 of 182

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



Date: 2.OCT.2014 06:56:11

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 168 of 182

Radiated Band Edge Measurements (40MHz BW)

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

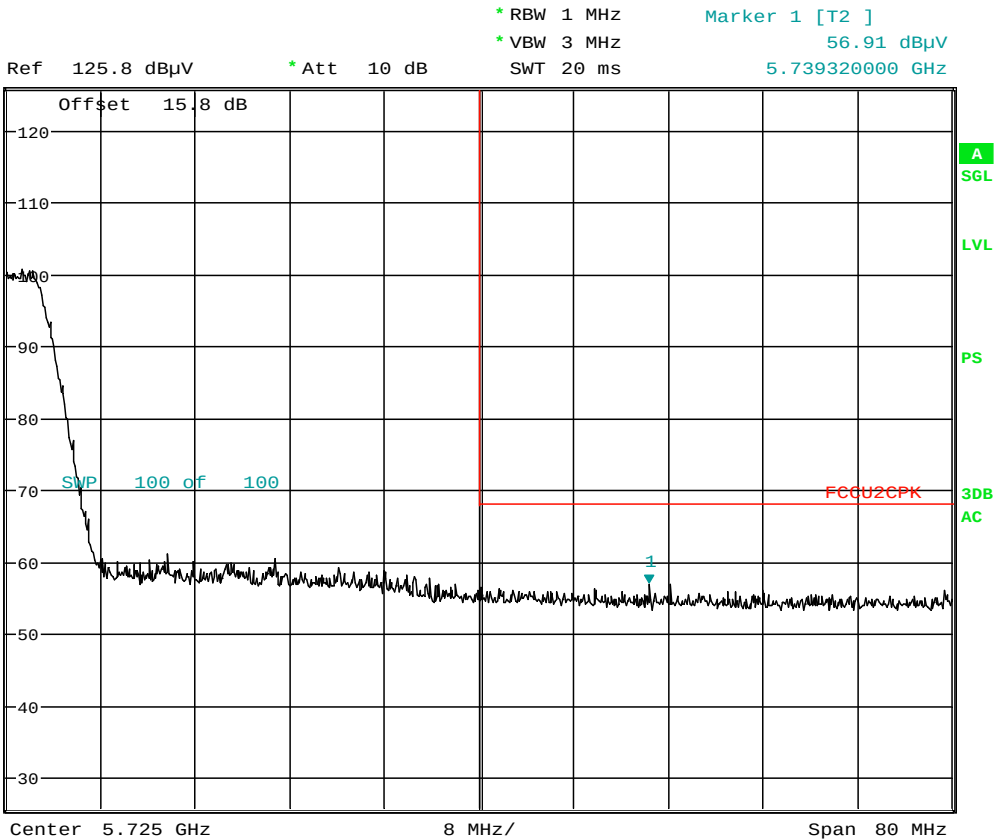
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5670MHz

Channel: 134



Date: 2.OCT.2014 07:18:41

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 169 of 182

6.16 MIMO Radiated Band Edge Measurements (80MHz BW)

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

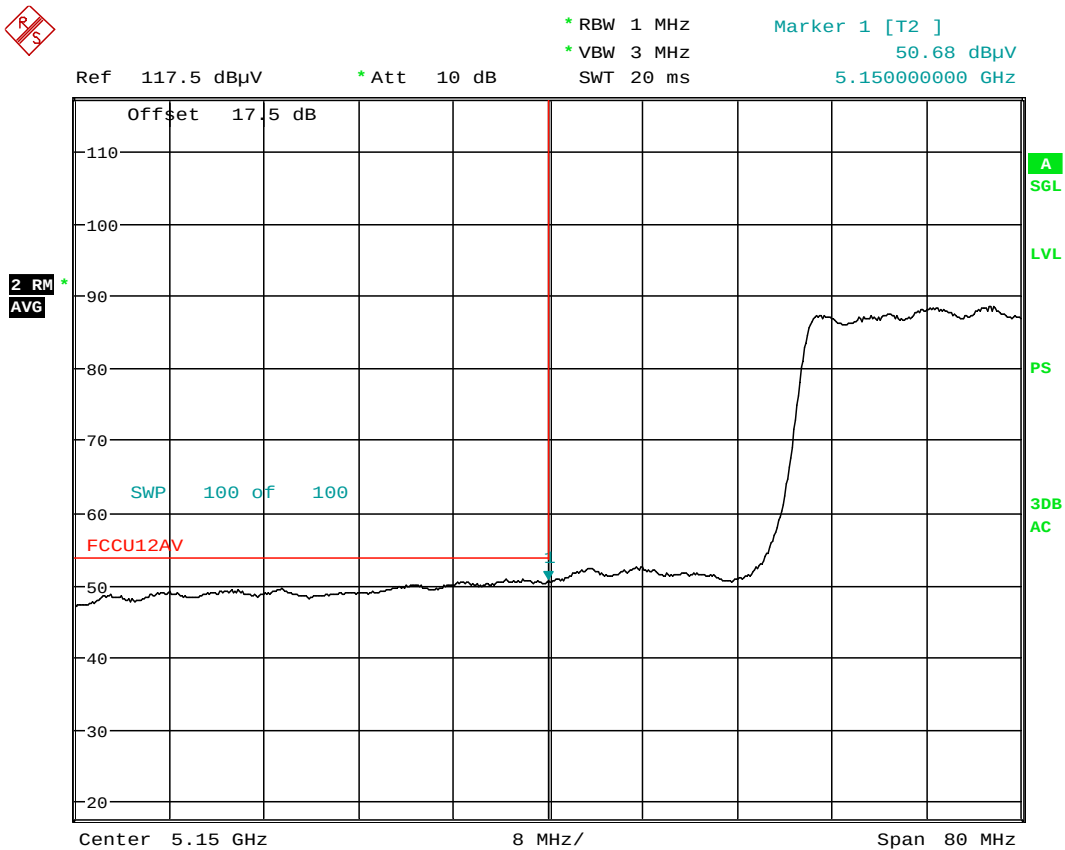
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5210MHz

Channel: 42

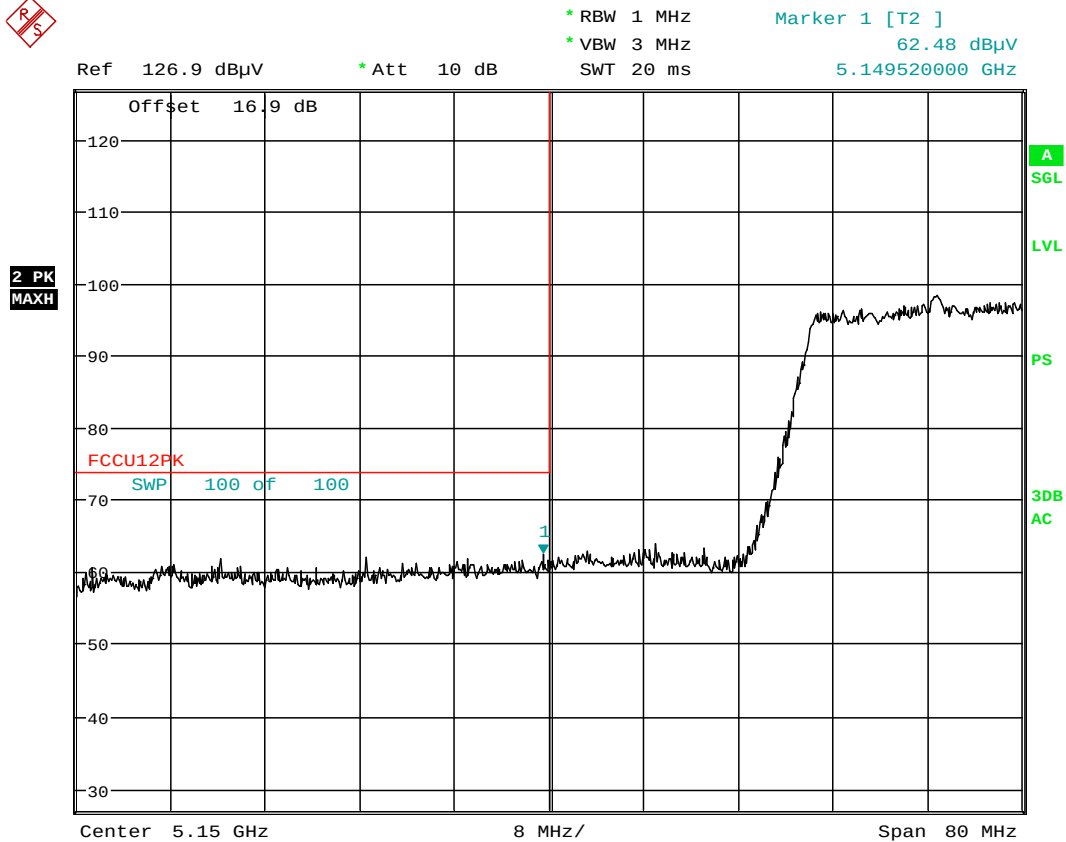


Date: 2.OCT.2014 06:08:27

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 170 of 182

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



Date: 2.OCT.2014 06:09:03

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

FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Radiated Band Edge Measurements (80MHz BW) \$15.407(b.1)(b.2) \$15.205 \$15.209

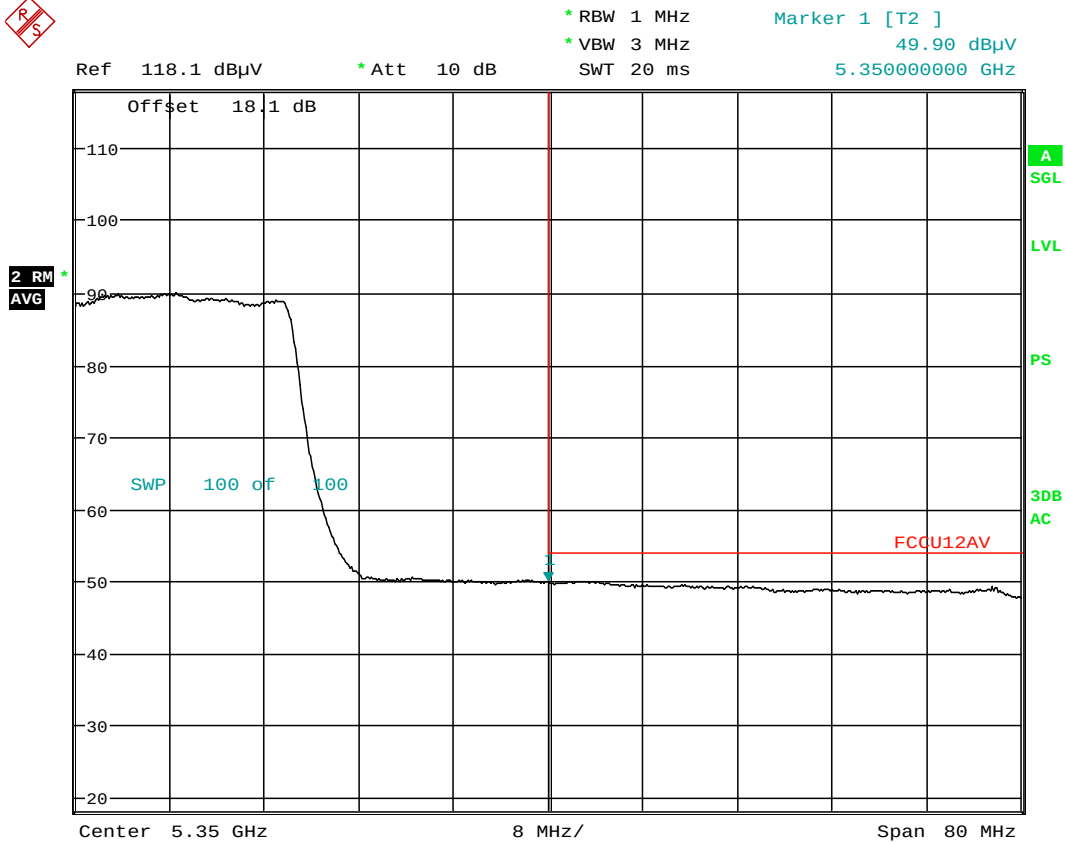
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5290MHz

Channel: 58

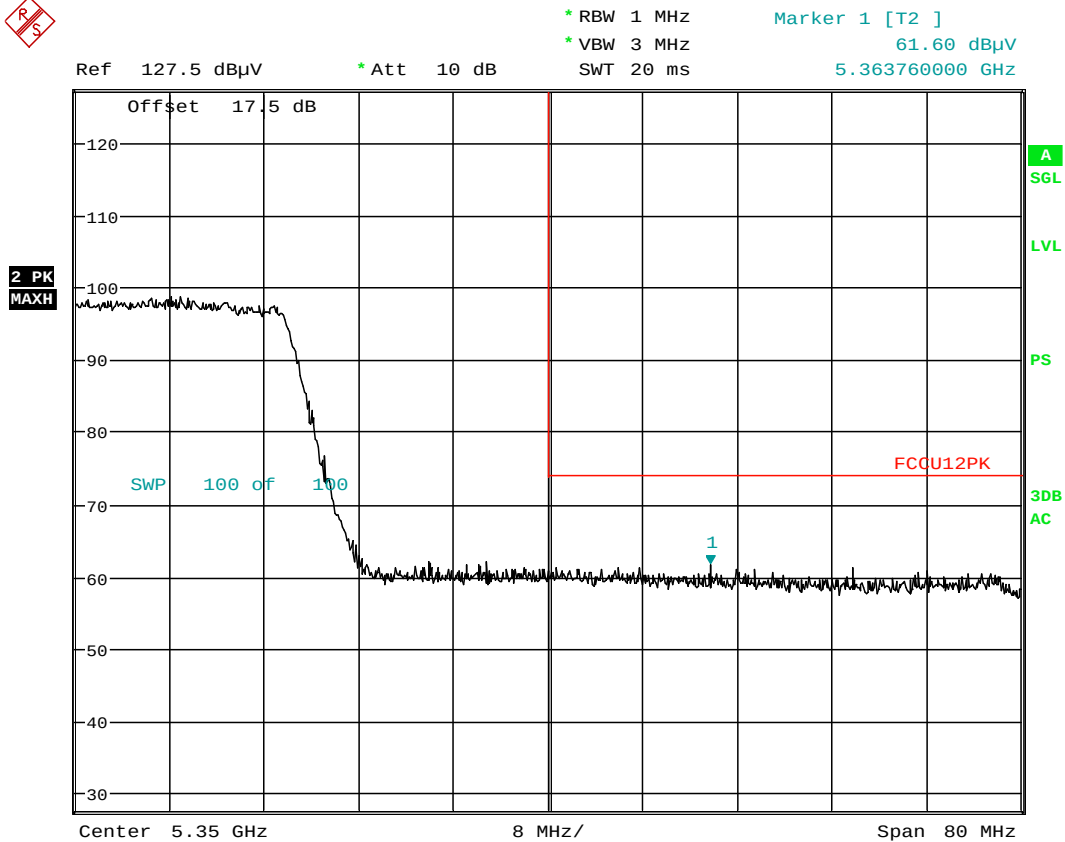


Date: 2.OCT.2014 06:38:44

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 172 of 182

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



Date: 2.OCT.2014 06:39:22

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

FCC ID: A3LSMN915R4		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 173 of 182

Radiated Band Edge Measurements (80MHz BW)

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

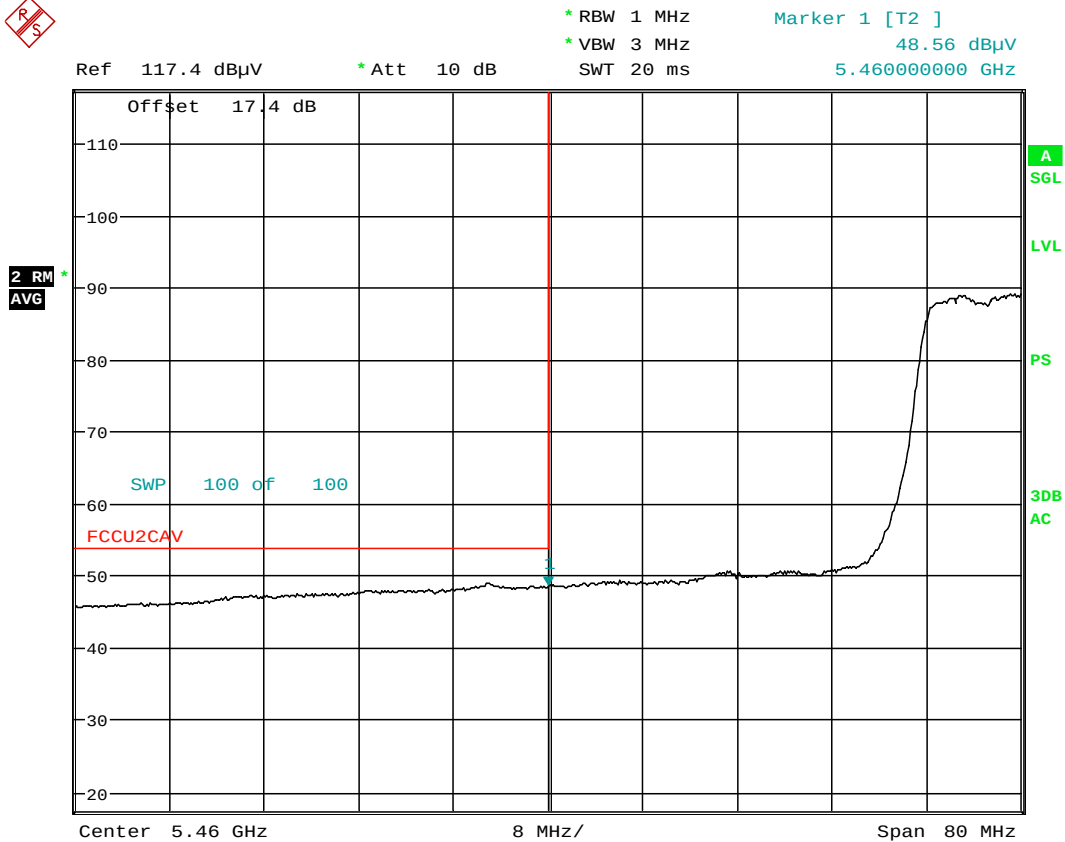
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5530MHz

Channel: 106

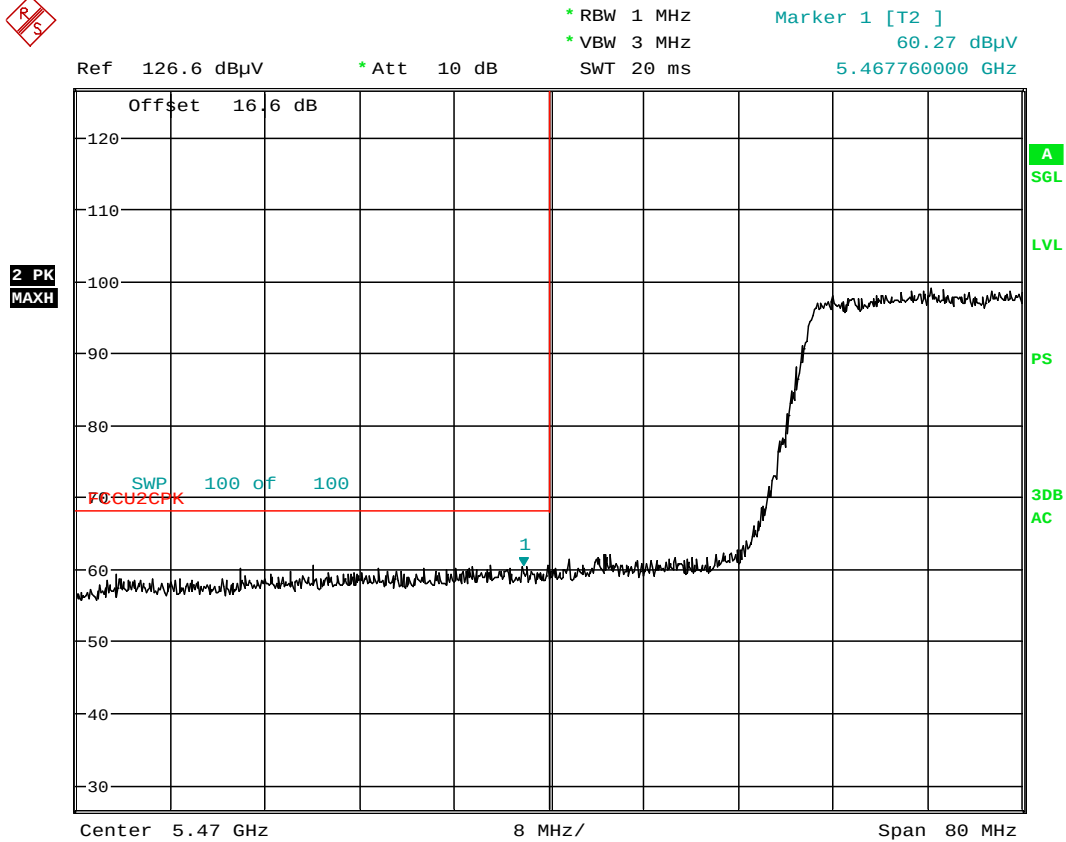


Date: 2.OCT.2014 07:05:53

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 174 of 182

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



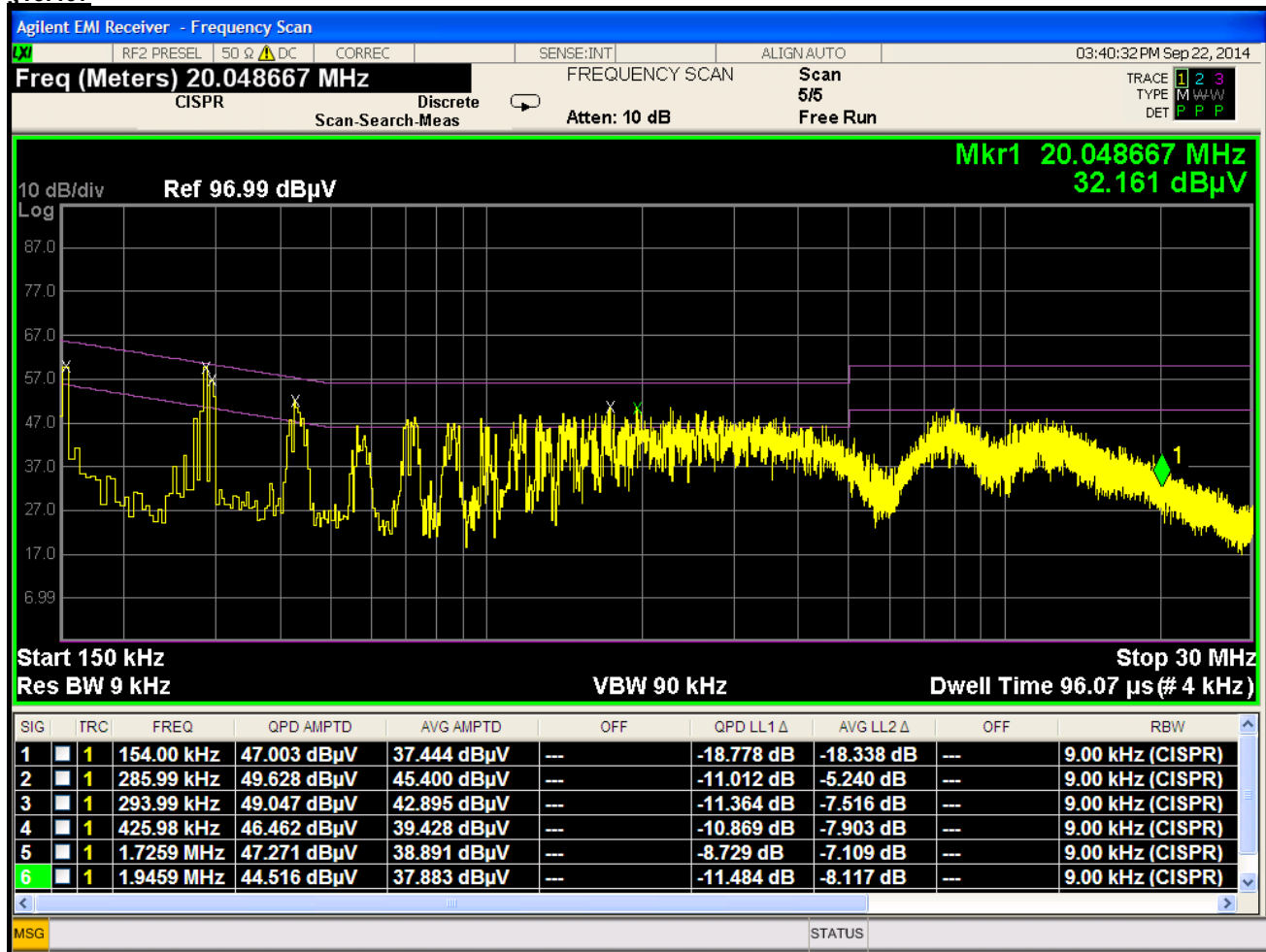
Date: 2.OCT.2014 07:06:35

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

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 175 of 182

6.17 Line-Conducted Test Data

\$15.407



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

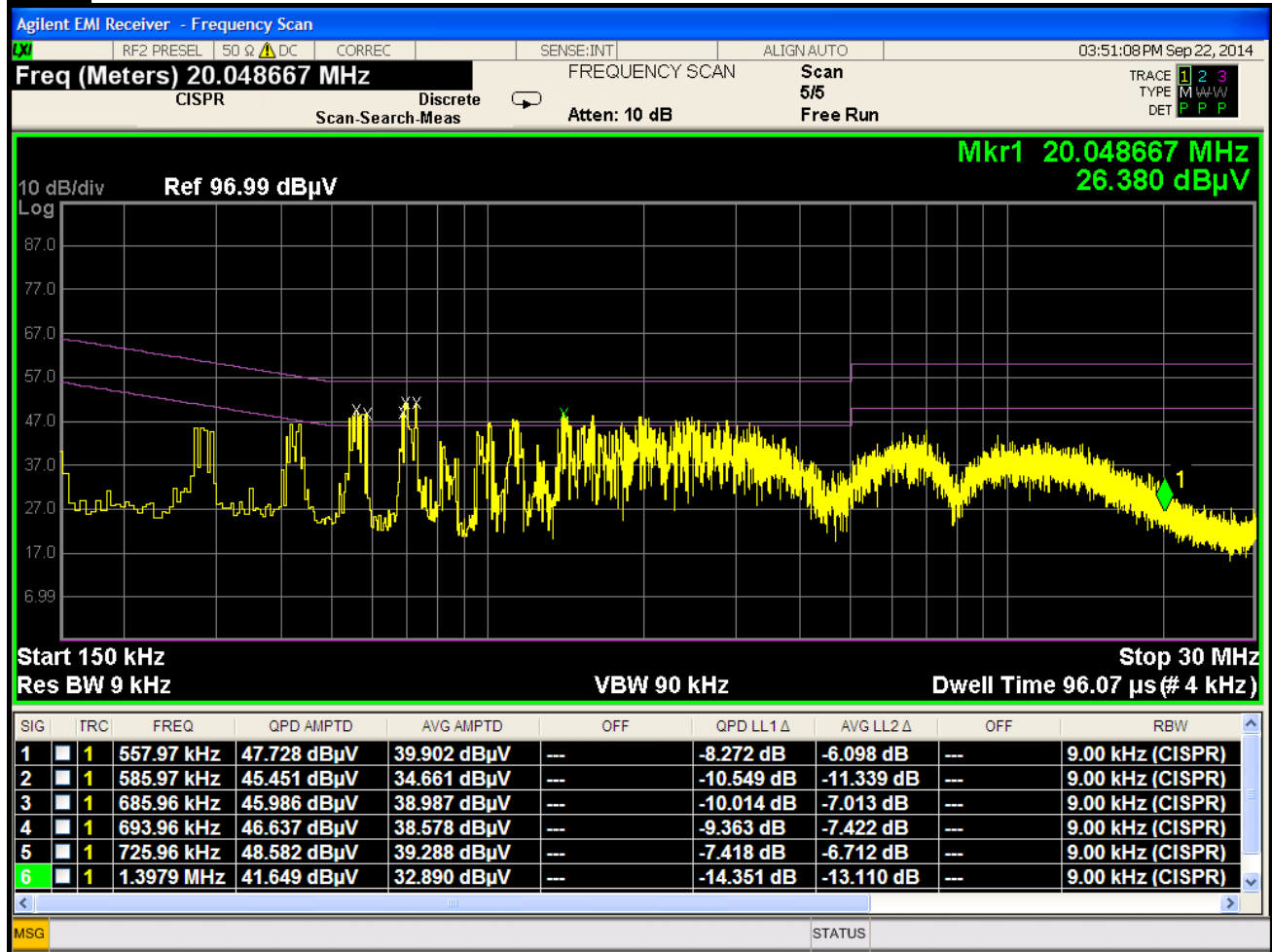
Notes:

1. 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.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. L1 = Phase; N = Neutral
4. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
5. QP/AV Level (dBμV) = QP/AV Analyzer/Receiver Level (dBμV) + Corr. (dB)
6. Margin (dB) = QP/AV Limit (dBμV) - QP/AV Level (dBμV)
7. Traces shown in plot are made using a peak detector.
8. Deviations to the Specifications: None.

FCC ID: A3LSMN915R4	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: 0Y1409291969.A3L	Test Dates: 9/3 - 9/24/2014, 9/29 - 10/8/2014	EUT Type: Portable Handset		Page 176 of 182

Line-Conducted Test Data

\$15.407



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

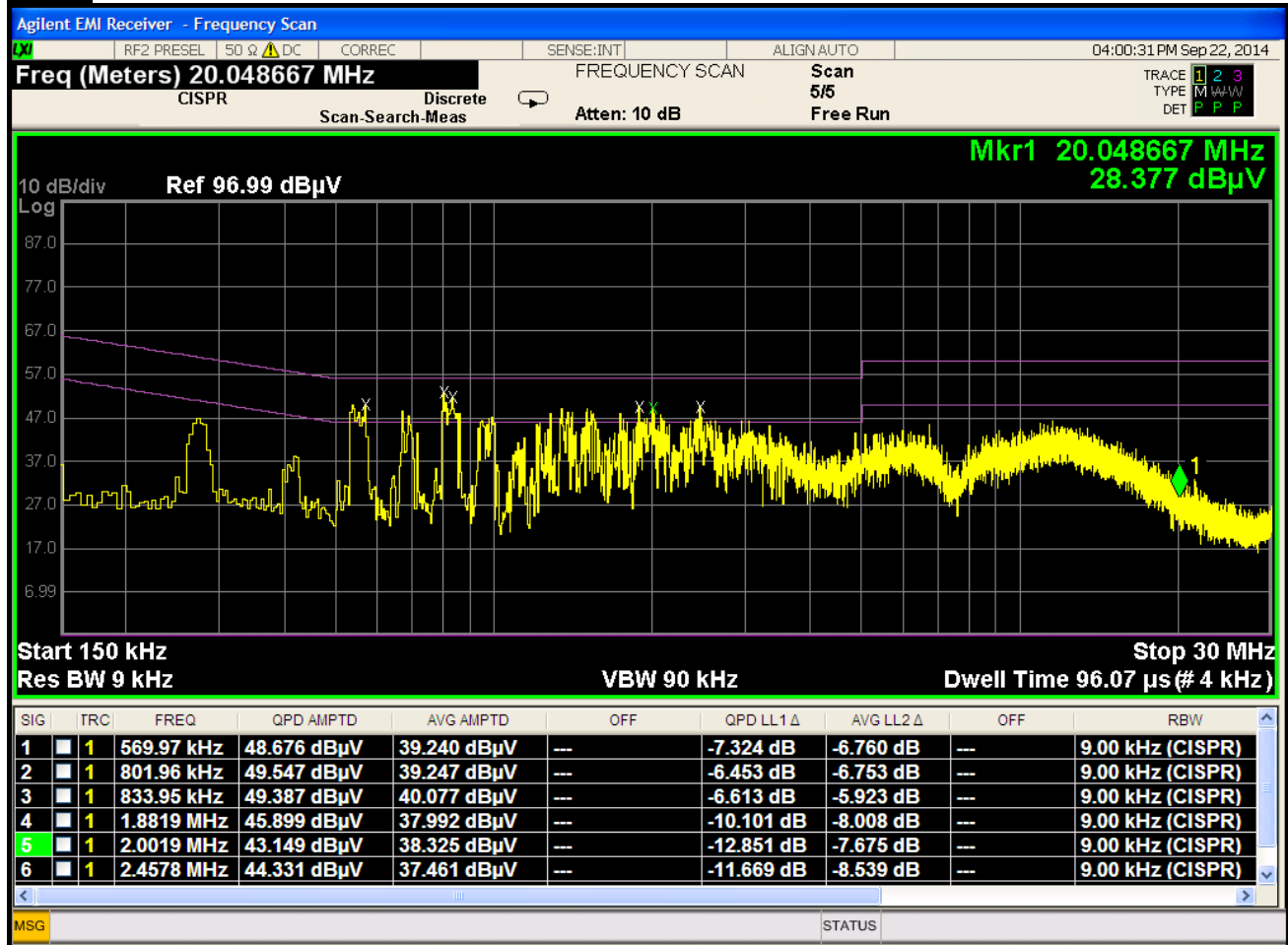
Notes:

1. 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.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. L1 = Phase; N = Neutral
4. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
5. QP/AV Level (dBμV) = QP/AV Analyzer/Receiver Level (dBμV) + Corr. (dB)
6. Margin (dB) = QP/AV Limit (dBμV) - QP/AV Level (dBμV)
7. Traces shown in plot are made using a peak detector.
8. Deviations to the Specifications: None.

FCC ID: A3LSMN915R4	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Line-Conducted Test Data

\$15.407



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

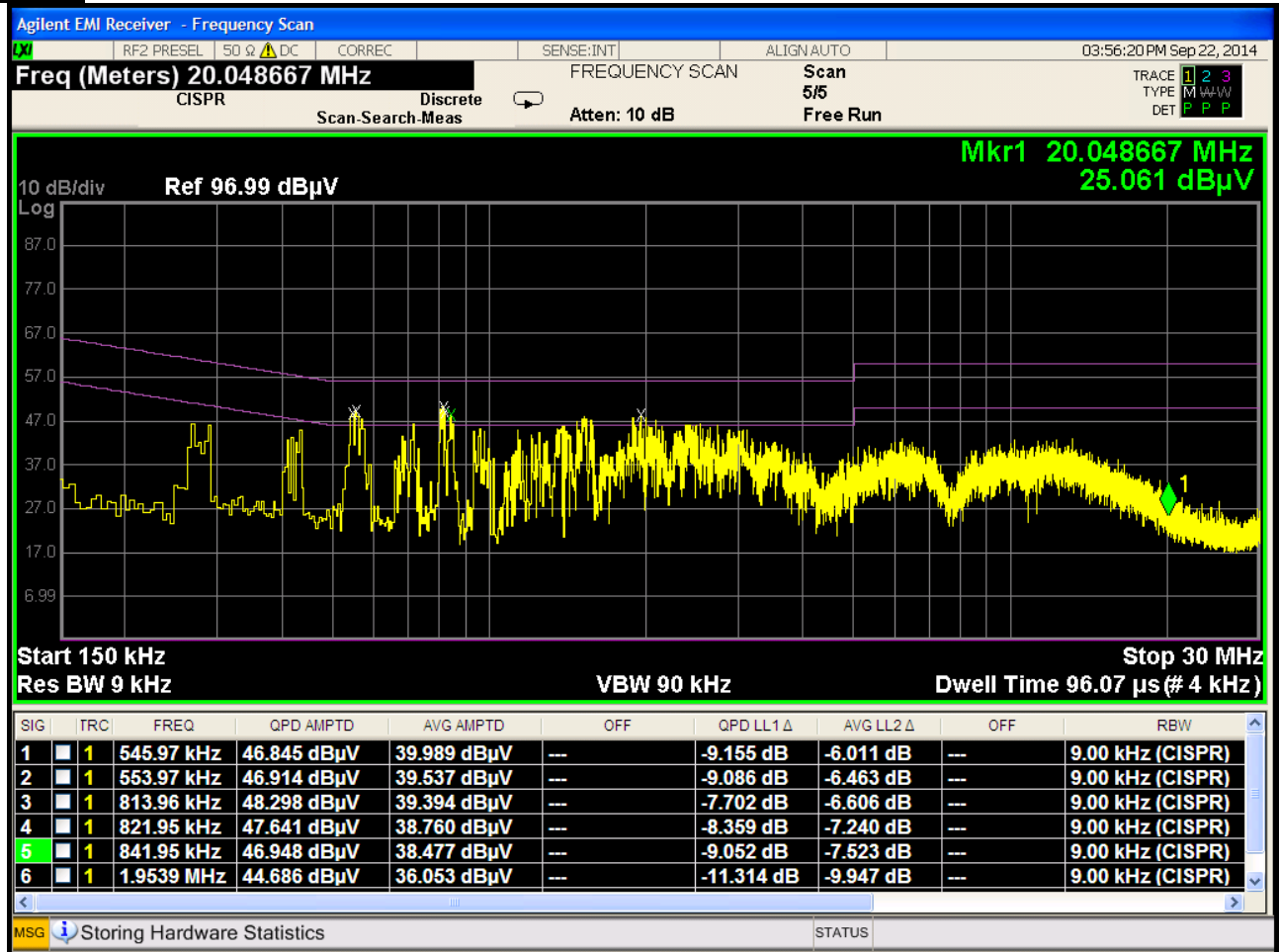
Notes:

1. 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.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. L1 = Phase; N = Neutral
4. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
5. QP/AV Level (dBμV) = QP/AV Analyzer/Receiver Level (dBμV) + Corr. (dB)
6. Margin (dB) = QP/AV Limit (dBμV) - QP/AV Level (dBμV)
7. Traces shown in plot are made using a peak detector.
8. Deviations to the Specifications: None.

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Line-Conducted Test Data

\$15.407



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

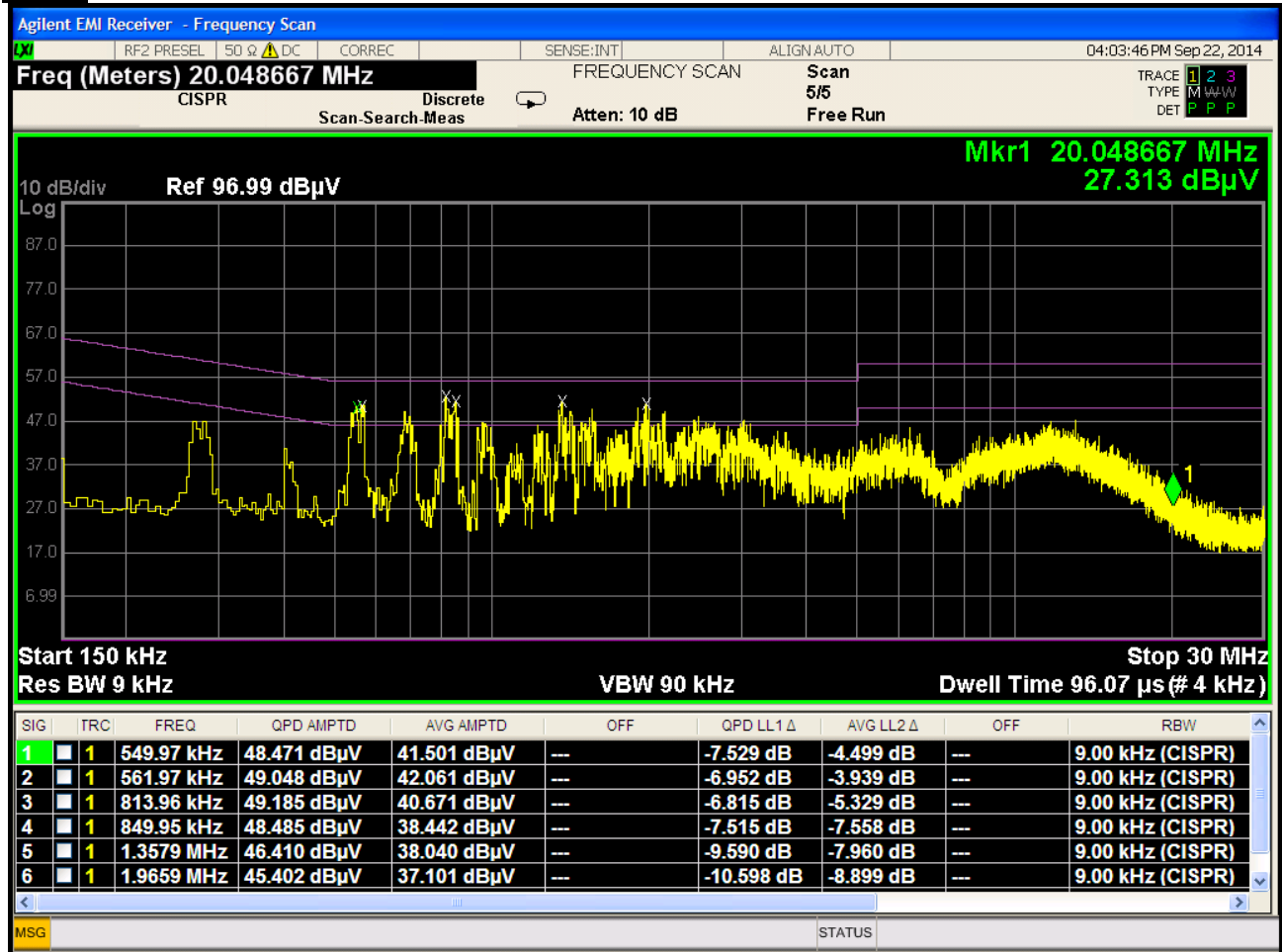
Notes:

- 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/AV Limit (dBμV) - QP/AV Level (dBμV)
- Traces shown in plot are made using a peak detector.
- Deviations to the Specifications: None.

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Line-Conducted Test Data

\$15.407



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

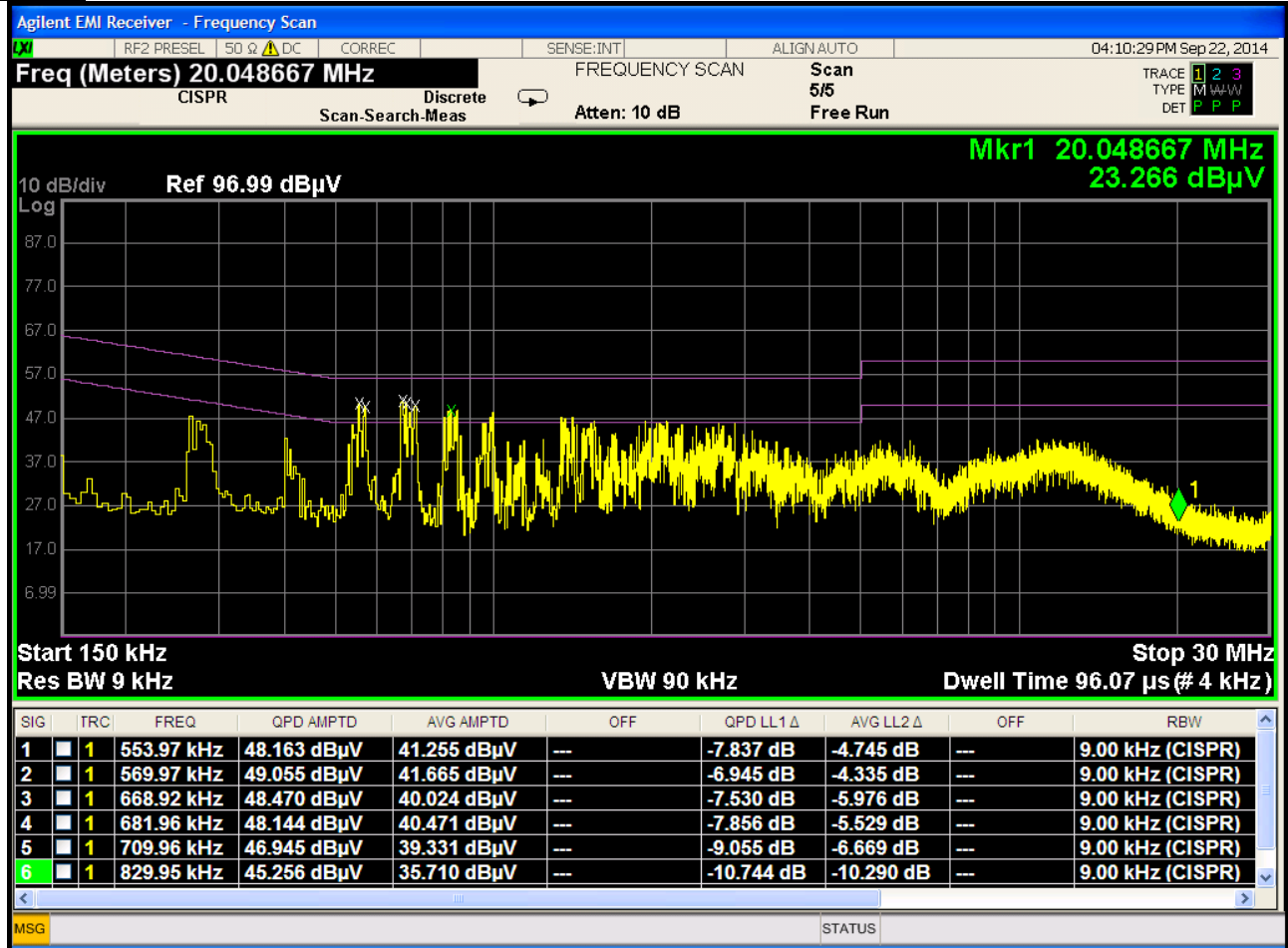
Notes:

- 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/AV Limit (dBμV) - QP/AV Level (dBμV)
- Traces shown in plot are made using a peak detector.
- Deviations to the Specifications: None.

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Line-Conducted Test Data

\$15.407



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

Notes:

1. 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.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. L1 = Phase; N = Neutral
4. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
5. QP/AV Level (dBμV) = QP/AV Analyzer/Receiver Level (dBμV) + Corr. (dB)
6. Margin (dB) = QP/AV Limit (dBμV) - QP/AV Level (dBμV)
7. Traces shown in plot are made using a peak detector.
8. Deviations to the Specifications: None.

FCC ID: A3LSMN915R4	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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7.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMN915R4** is in compliance with Part 15E of the FCC Rules.

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