

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.

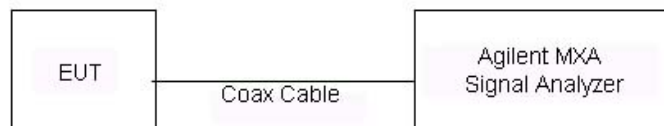


Figure 6-4. Test Instrument & Measurement Setup

Test Notes

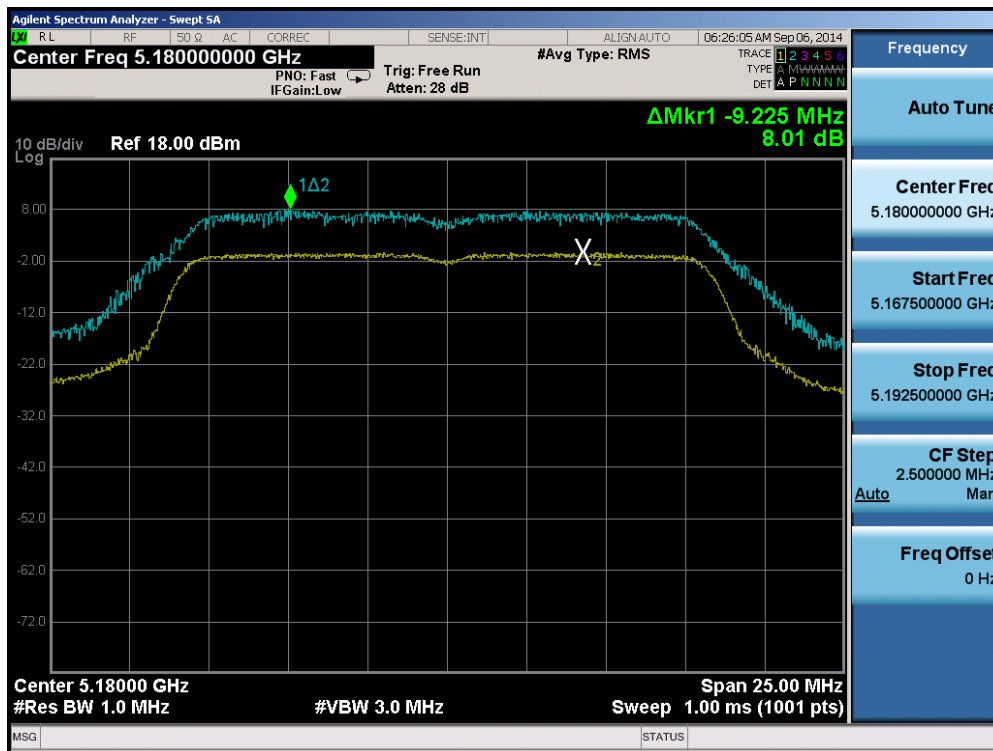
The peak excursion was investigated for all signal types, modulation types, channel bandwidths, and variations in signal parameters and the worst case data is shown below. Only the worst case modulation mode on a single channel among all bands is reported since that is sufficient to demonstrate compliance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

FCC ID: A3LSMN915A		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

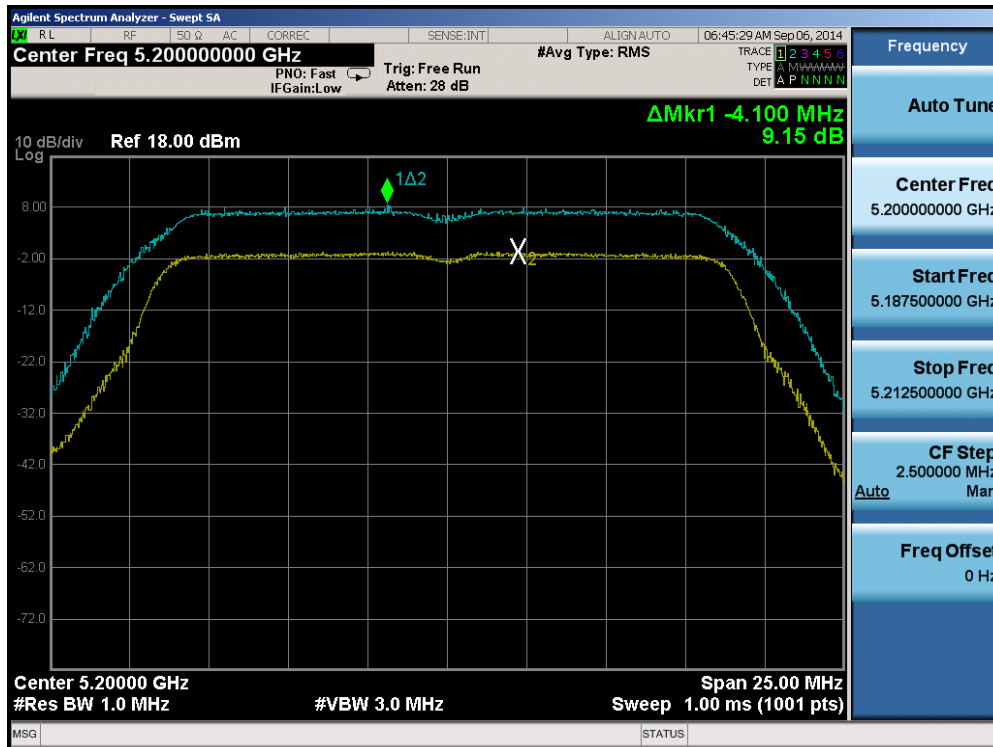
Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Peak Excursion Ratio [dBm]	Max Permissible Peak Excursion Ratio [dBm/MHz]	Margin [dB]	Pass / Fail
5180	36	a	6	8.01	13.0	-4.99	Pass
5200	40	n (20MHz)	6.5/7.2 (MCS0)	9.15	13.0	-3.85	Pass
5190	38	n (40MHz)	13.5/15 (MCS0)	8.99	13.0	-4.01	Pass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

Table 6-24. Conducted Peak Excursion Ratio Measurements

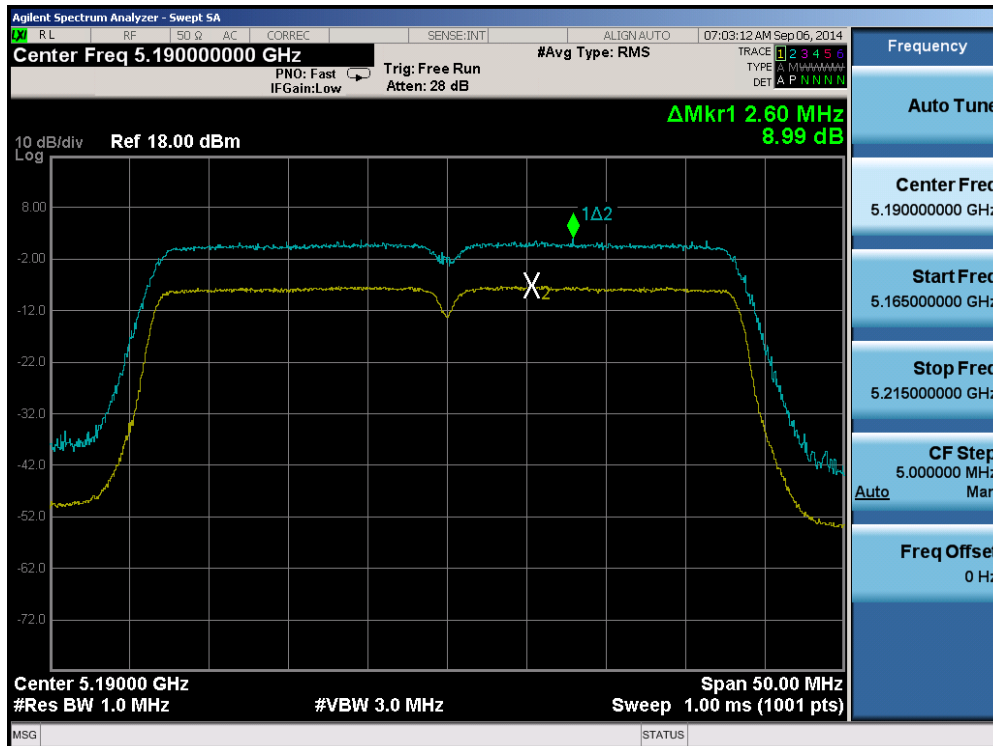


Plot 6-125. Peak Excursion Ratio Plot (802.11a (UNII Band 1) – Ch. 36)

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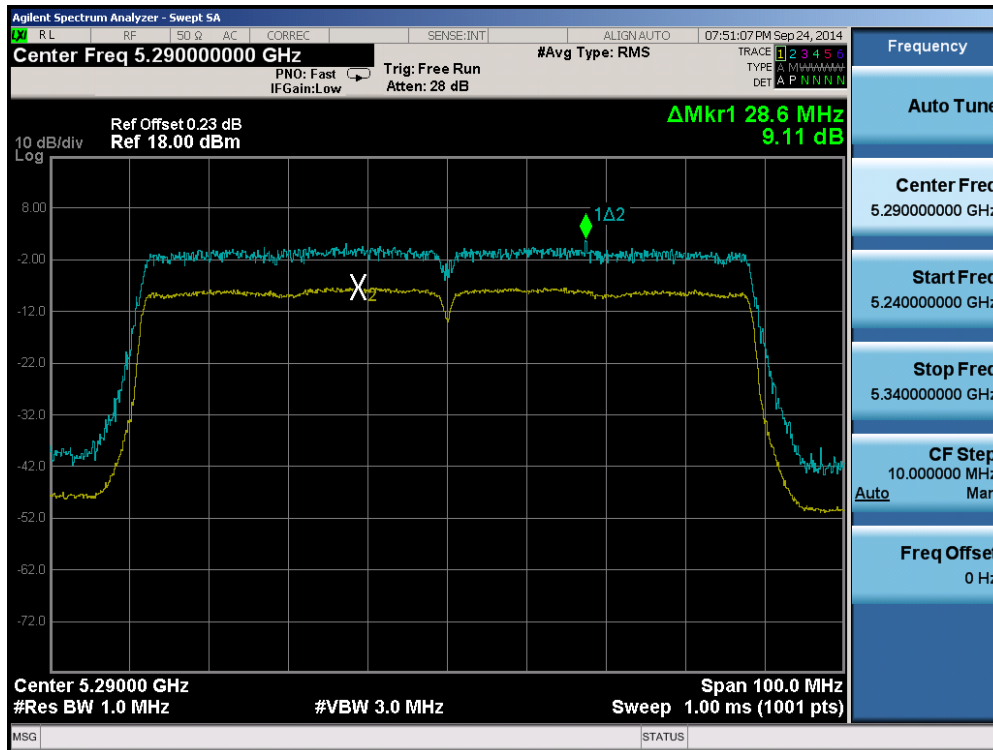


Plot 6-126. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 40)



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

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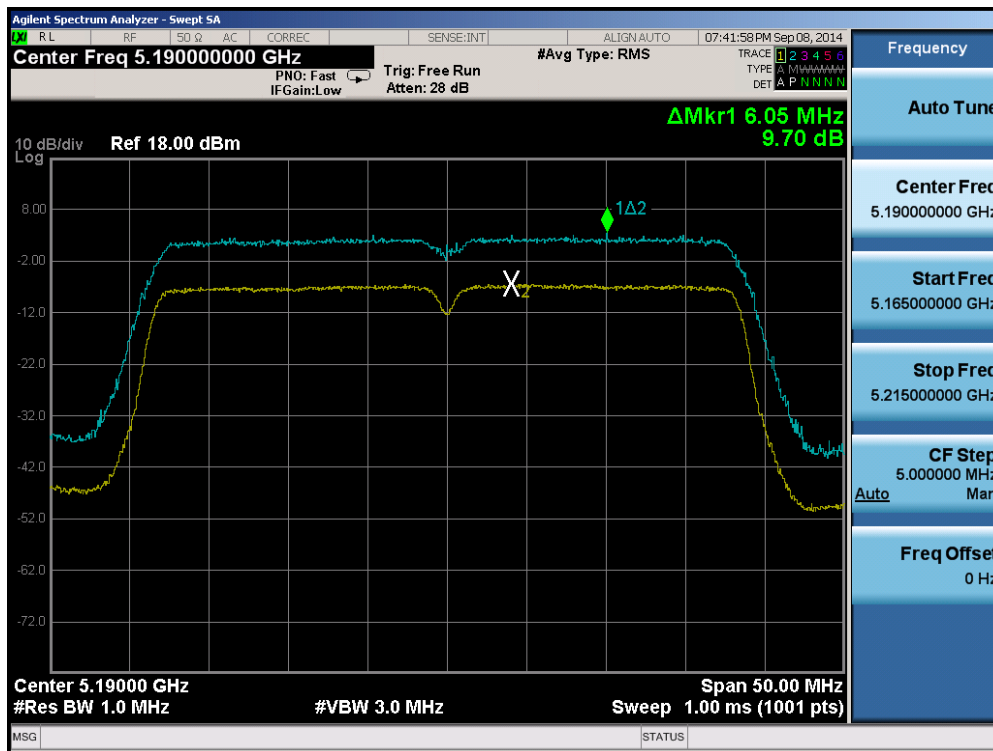
Plot 6-128. Peak Excursion Ratio Plot (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)

FCC ID: A3LSMN915A	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

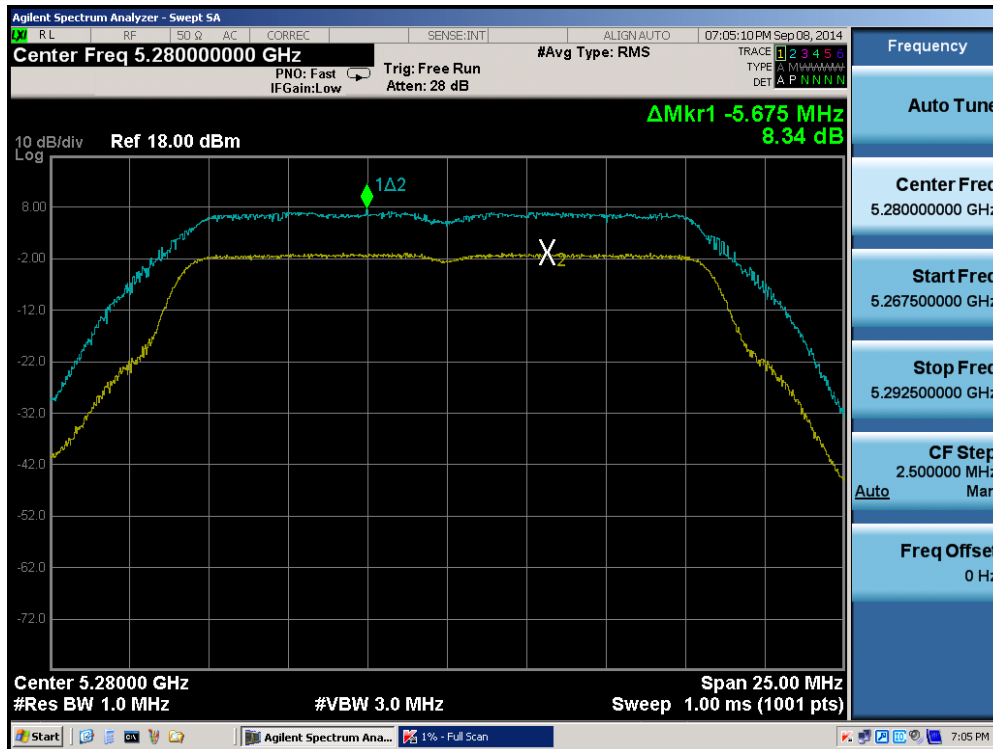
Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Peak Excursion Ratio [dBm]	Max Permissible Peak Excursion Ratio [dBm/MHz]	Margin [dB]	Pass / Fail
5190	38	n (40MHz)	13.5/15 (MCS0)	9.70	13.0	-3.30	Pass
5280	56	a	6	8.34	13.0	-4.67	Pass
5290	58	ac (80MHz)	29.3/32.5 (MCS0)	8.68	13.0	-4.32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

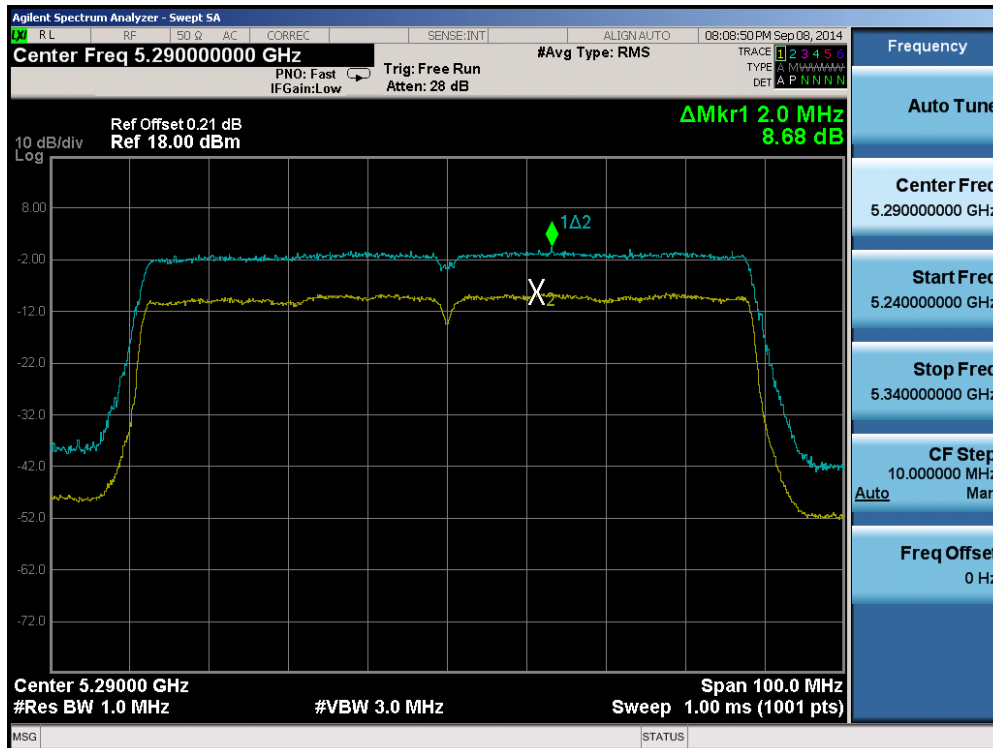


Plot 6-129. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 38)

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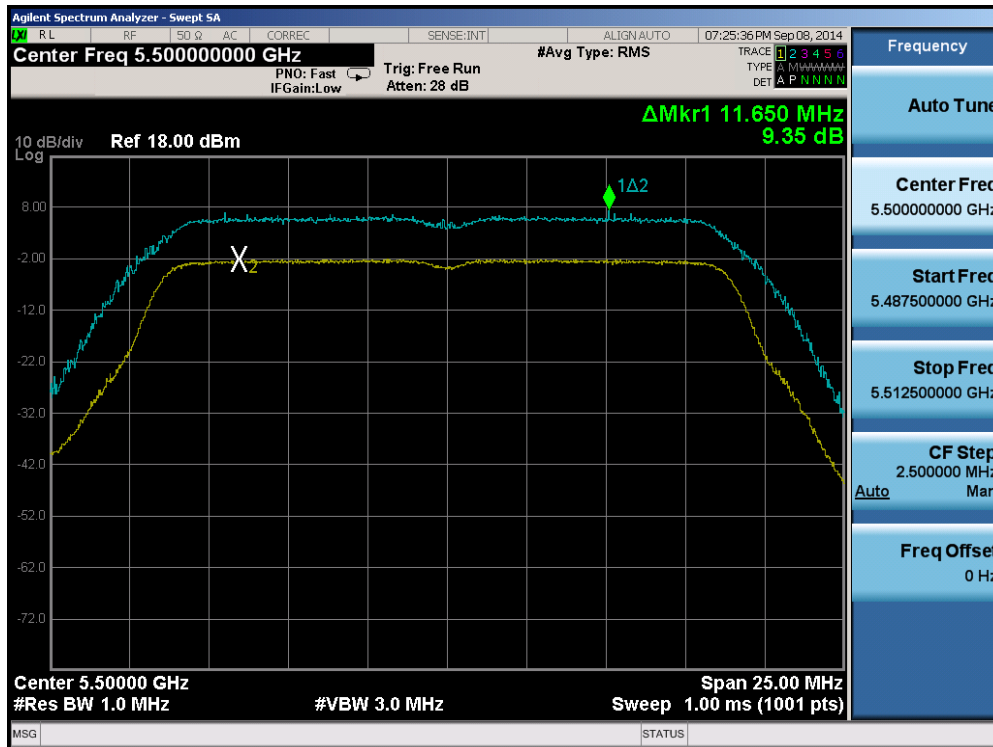


Plot 6-130. Peak Excursion Ratio Plot (802.11a (UNII Band 2A) – Ch. 56)



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

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Plot 6-132. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)

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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)	5,180,000,021	21	0.00000041
100 %		- 30	5,179,999,991	-9	-0.00000017
100 %		- 20	5,179,999,996	-4	-0.00000008
100 %		- 10	5,179,999,977	-23	-0.00000044
100 %		0	5,179,999,987	-13	-0.00000025
100 %		+ 10	5,179,999,982	-18	-0.00000035
100 %		+ 20	5,180,000,027	27	0.00000052
100 %		+ 30	5,179,999,991	-9	-0.00000017
100 %		+ 40	5,179,999,995	-5	-0.00000010
100 %		+ 50	5,180,000,019	19	0.00000037
BATT. ENDPOINT	3.55	+ 20	5,179,999,989	-11	-0.00000021

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)	5,260,000,007	7	0.00000013
100 %		- 30	5,260,000,027	27	0.00000051
100 %		- 20	5,260,000,011	11	0.00000021
100 %		- 10	5,259,999,988	-12	-0.00000023
100 %		0	5,259,999,984	-16	-0.00000030
100 %		+ 10	5,259,999,979	-21	-0.00000040
100 %		+ 20	5,260,000,029	29	0.00000055
100 %		+ 30	5,260,000,009	9	0.00000017
100 %		+ 40	5,260,000,011	11	0.00000021
100 %		+ 50	5,259,999,997	-3	-0.00000006
BATT. ENDPOINT	3.55	+ 20	5,259,999,983	-17	-0.00000032

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.

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Frequency Stability

\$15.407(g)

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

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

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	5,500,000,014	14	0.00000025
100 %		- 30	5,499,999,986	-14	-0.00000025
100 %		- 20	5,499,999,978	-22	-0.00000040
100 %		- 10	5,499,999,988	-12	-0.00000022
100 %		0	5,500,000,013	13	0.00000024
100 %		+ 10	5,500,000,010	10	0.00000018
100 %		+ 20	5,499,999,996	-4	-0.00000007
100 %		+ 30	5,500,000,015	15	0.00000027
100 %		+ 40	5,499,999,978	-22	-0.00000040
100 %		+ 50	5,499,999,984	-16	-0.00000029
BATT. ENDPOINT	3.55	+ 20	5,500,000,011	11	0.00000020

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), 802.11n (40MHz BW), and 802.11ac (80MHz 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.

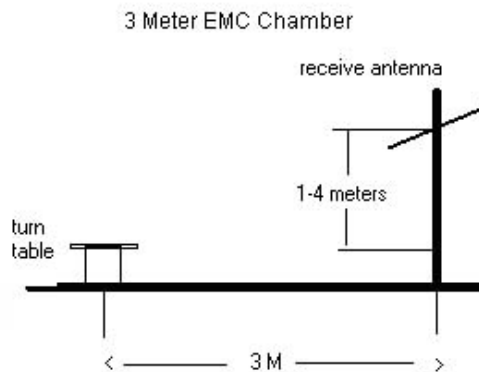


Figure 6-5. Test Instrument & Measurement Setup

FCC ID: A3LSMN915A	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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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 dBμV/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions of 68.2dBμV/m.
4. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
5. The battery used with this device for testing (Model: EB-BN915BBU) 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.
8. MIMO radiated spurious emissions levels were found to be less than those of the individual antennas and therefore not reported herein.

Sample Calculations

Determining Spurious Emissions Levels

- o Field Strength Level $_{[dB\mu V/m]} = \text{Analyzer Level}_{[dBm]} + 107 + AFCL_{[dB/m]}$
- o $AFCL_{[dB/m]} = \text{Antenna Factor}_{[dB/m]} + \text{Cable Loss}_{[dB]}$
- 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	-100.95	Peak	V	H2	44.49	0.00	50.54	68.20	-17.66
* 15540.00	-112.02	Average	V	H2	48.82	0.00	43.80	53.98	-10.18
* 15540.00	-99.80	Peak	V	H2	48.82	0.00	56.02	73.98	-17.96
* 20720.00	-99.99	Average	V	H	44.05	-9.54	41.51	53.98	-12.47
* 20720.00	-95.19	Peak	V	H	44.05	-9.54	46.31	73.98	-27.67
25900.00	-101.19	Peak	V	H	44.95	-9.54	41.22	68.20	-26.98

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	-102.11	Peak	V	H2	44.55	0.00	49.44	68.20	-18.76
* 15600.00	-113.42	Average	V	H2	48.82	0.00	42.39	53.98	-11.59
* 15600.00	-101.04	Peak	V	H2	48.82	0.00	54.77	73.98	-19.21
* 20800.00	-102.64	Average	V	H	44.04	-9.54	38.85	53.98	-15.13
* 20800.00	-97.14	Peak	V	H	44.04	-9.54	44.35	73.98	-29.63
26000.00	-101.87	Peak	V	H	45.00	-9.54	40.59	68.20	-27.61

Table 6-31. Radiated Measurements

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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	-100.71	Peak	V	H2	44.67	0.00	50.96	68.20	-17.24
* 15720.00	-113.41	Average	V	H2	48.87	0.00	42.46	53.98	-11.52
* 15720.00	-100.13	Peak	V	H2	48.87	0.00	55.74	73.98	-18.24
* 20960.00	-107.62	Average	V	H	43.96	-9.54	33.80	53.98	-20.18
* 20960.00	-98.60	Peak	V	H	43.96	-9.54	42.82	73.98	-31.16
26200.00	-102.01	Peak	V	H	44.84	-9.54	40.28	68.20	-27.92

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	-101.58	Peak	V	H2	44.71	0.00	50.13	68.20	-18.07
* 15780.00	-115.05	Average	V	H2	48.90	0.00	40.85	53.98	-13.13
* 15780.00	-101.81	Peak	V	H2	48.90	0.00	54.09	73.98	-19.89
* 21040.00	-108.79	Average	V	H	43.89	-9.54	32.56	53.98	-21.42
* 21040.00	-99.80	Peak	V	H	43.89	-9.54	41.55	73.98	-32.43
26300.00	-101.67	Peak	V	H	44.80	-9.54	40.59	68.20	-27.61

Table 6-33. Radiated Measurements

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

Frequency [MHz]	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	-102.75	Peak	V	H2	44.72	0.00	48.97	68.20	-19.23
* 15840.00	-115.80	Average	V	H2	48.97	0.00	40.17	53.98	-13.81
* 15840.00	-102.17	Peak	V	H2	48.97	0.00	53.80	73.98	-20.18
* 21120.00	-110.01	Average	V	H	43.79	-9.54	31.24	53.98	-22.74
* 21120.00	-101.55	Peak	V	H	43.79	-9.54	39.70	73.98	-34.28
26400.00	-99.52	Peak	V	H	44.80	-9.54	42.73	68.20	-25.47

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	-114.48	Average	V	H2	44.79	0.00	37.31	53.98	-16.67
* 10640.00	-103.19	Peak	V	H2	44.79	0.00	48.60	73.98	-25.38
* 15960.00	-115.89	Average	V	H2	49.13	0.00	40.23	53.98	-13.75
* 15960.00	-104.36	Peak	V	H2	49.13	0.00	51.76	73.98	-22.22
* 21280.00	-110.79	Average	V	H	43.66	-9.54	30.33	53.98	-23.65
* 21280.00	-99.74	Peak	V	H	43.66	-9.54	41.38	73.98	-32.60
26600.00	-123.20	Peak	V	H	47.32	-9.54	21.58	68.20	-46.62

Table 6-35. Radiated Measurements

FCC ID: A3LSMN915A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 103 of 177

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	-114.23	Average	V	H2	44.63	0.00	37.40	53.98	-16.58
* 11000.00	-100.75	Peak	V	H2	44.63	0.00	50.88	73.98	-23.10
16500.00	-99.74	Peak	V	H2	50.51	0.00	57.77	68.20	-10.43
22000.00	-94.71	Peak	V	H2	43.97	-9.54	46.71	68.20	-21.49
27500.00	-127.92	Peak	V	H2	48.36	-9.54	17.90	68.20	-50.30

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	-114.21	Average	V	H2	44.72	0.00	37.51	53.98	-16.47
* 11160.00	-99.14	Peak	V	H2	44.72	0.00	52.58	73.98	-21.40
16740.00	-97.61	Peak	V	H2	49.96	0.00	59.36	68.20	-8.84
* 22320.00	-103.45	Average	V	H2	44.45	-9.54	38.46	53.98	-15.52
* 22320.00	-92.44	Peak	V	H2	44.45	-9.54	49.47	73.98	-24.51
27900.00	-128.60	Peak	V	H2	48.05	-9.54	16.91	68.20	-51.29

Table 6-37. Radiated Measurements

FCC ID: A3LSMN915A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 104 of 177

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	-114.14	Average	V	H2	45.02	0.00	37.88	53.98	-16.10
* 11400.00	-101.65	Peak	V	H2	45.02	0.00	50.37	73.98	-23.61
17100.00	-101.14	Peak	V	H2	50.06	0.00	55.92	68.20	-12.28
* 22800.00	-103.78	Average	V	H2	44.45	-9.54	38.13	53.98	-15.84
* 22800.00	-92.57	Peak	V	H2	44.45	-9.54	49.34	73.98	-24.64
28500.00	-129.69	Peak	V	H2	48.01	-9.54	15.78	68.20	-52.42

Table 6-38. Radiated Measurements

Antenna-2 Radiated Spurious Emission Measurements

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

Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10360.00	-102.44	Peak	V	H2	44.49	0.00	49.05	68.20	-19.15
* 15540.00	-114.29	Average	V	H2	48.82	0.00	41.53	53.98	-12.45
* 15540.00	-102.69	Peak	V	H2	48.82	0.00	53.13	73.98	-20.85
* 20720.00	-102.56	Average	H	H2	44.05	-9.54	38.94	53.98	-15.04
* 20720.00	-87.93	Peak	H	H2	44.05	-9.54	53.57	73.98	-20.41
25900.00	-101.14	Peak	H	H2	44.95	-9.54	41.27	68.20	-26.93

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	-102.92	Peak	V	H2	44.55	0.00	48.63	68.20	-19.57
* 15600.00	-115.67	Average	V	H2	48.82	0.00	40.14	53.98	-13.84
* 15600.00	-103.18	Peak	V	H2	48.82	0.00	52.63	73.98	-21.35
* 20800.00	-102.68	Average	H	H2	44.04	-9.54	38.81	53.98	-15.17
* 20800.00	-90.53	Peak	H	H2	44.04	-9.54	50.96	73.98	-23.02
26000.00	-101.00	Peak	H	H2	45.00	-9.54	41.46	68.20	-26.74

Table 6-40. Radiated Measurements

FCC ID: A3LSMN915A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 106 of 177

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

Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10480.00	-103.12	Peak	V	H2	44.67	0.00	48.55	68.20	-19.65
* 15720.00	-115.21	Average	V	H2	48.87	0.00	40.66	53.98	-13.32
* 15720.00	-103.98	Peak	V	H2	48.87	0.00	51.89	73.98	-22.09
* 20960.00	-104.44	Average	H	H2	43.96	-9.54	36.98	53.98	-17.00
* 20960.00	-92.92	Peak	H	H2	43.96	-9.54	48.50	73.98	-25.48
26200.00	-100.38	Peak	H	H2	44.84	-9.54	41.91	68.20	-26.29

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	-103.16	Peak	V	H2	44.71	0.00	48.55	68.20	-19.65
* 15780.00	-114.61	Average	V	H2	48.90	0.00	41.29	53.98	-12.69
* 15780.00	-103.38	Peak	V	H2	48.90	0.00	52.52	73.98	-21.46
* 21040.00	-106.45	Average	V	H2	43.89	-9.54	34.90	53.98	-19.08
* 21040.00	-96.98	Peak	V	H2	43.89	-9.54	44.37	73.98	-29.61
26300.00	-102.23	Peak	V	H2	44.80	-9.54	40.03	68.20	-28.17

Table 6-42. Radiated Measurements

FCC ID: A3LSMN915A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 107 of 177

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	-102.87	Peak	V	H2	44.72	0.00	48.85	68.20	-19.35
* 15840.00	-114.81	Average	V	H2	48.97	0.00	41.16	53.98	-12.82
* 15840.00	-103.26	Peak	V	H2	48.97	0.00	52.71	73.98	-21.27
* 21120.00	-103.37	Average	V	H2	43.79	-9.54	37.88	53.98	-16.10
* 21120.00	-95.76	Peak	V	H2	43.79	-9.54	45.49	73.98	-28.49
26400.00	-100.62	Peak	V	H2	44.80	-9.54	41.63	68.20	-26.57

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	-113.38	Average	V	H2	44.79	0.00	38.41	53.98	-15.57
* 10640.00	-102.89	Peak	V	H2	44.79	0.00	48.90	73.98	-25.08
* 15960.00	-115.38	Average	V	H2	49.13	0.00	40.74	53.98	-13.24
* 15960.00	-103.49	Peak	V	H2	49.13	0.00	52.63	73.98	-21.35
* 21280.00	-106.58	Average	V	H2	43.66	-9.54	34.54	53.98	-19.44
* 21280.00	-97.11	Peak	V	H2	43.66	-9.54	44.01	73.98	-29.97
26600.00	-124.83	Peak	V	H2	47.32	-9.54	19.95	68.20	-48.25

Table 6-44. Radiated Measurements

FCC ID: A3LSMN915A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 108 of 177

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	-114.67	Average	V	H2	44.63	0.00	36.96	53.98	-17.02
* 11000.00	-101.59	Peak	V	H2	44.63	0.00	50.04	73.98	-23.94
16500.00	-98.90	Peak	V	H2	50.51	0.00	58.61	68.20	-9.59
22000.00	-98.88	Peak	V	H2	43.97	-9.54	42.54	68.20	-25.66
27500.00	-128.79	Peak	V	H2	48.36	-9.54	17.03	68.20	-51.17

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	-114.57	Average	V	H2	44.72	0.00	37.15	53.98	-16.83
* 11160.00	-101.93	Peak	V	H2	44.72	0.00	49.79	73.98	-24.19
16740.00	-98.29	Peak	V	H2	49.96	0.00	58.68	68.20	-9.52
* 22320.00	-105.62	Average	V	H2	44.45	-9.54	36.29	53.98	-17.69
* 22320.00	-93.08	Peak	V	H2	44.45	-9.54	48.83	73.98	-25.15
27900.00	-128.17	Peak	V	H2	48.05	-9.54	17.34	68.20	-50.86

Table 6-46. Radiated Measurements

FCC ID: A3LSMN915A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 109 of 177

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	-113.78	Average	V	H2	45.02	0.00	38.24	53.98	-15.74
* 11400.00	-101.55	Peak	V	H2	45.02	0.00	50.47	73.98	-23.51
17100.00	-100.19	Peak	V	H2	50.06	0.00	56.87	68.20	-11.33
* 22800.00	-104.39	Average	V	H2	44.45	-9.54	37.52	53.98	-16.46
* 22800.00	-95.17	Peak	V	H2	44.45	-9.54	46.74	73.98	-27.24
28500.00	-128.90	Peak	V	H2	48.01	-9.54	16.57	68.20	-51.63

Table 6-47. Radiated Measurements

FCC ID: A3LSMN915A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 110 of 177

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

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

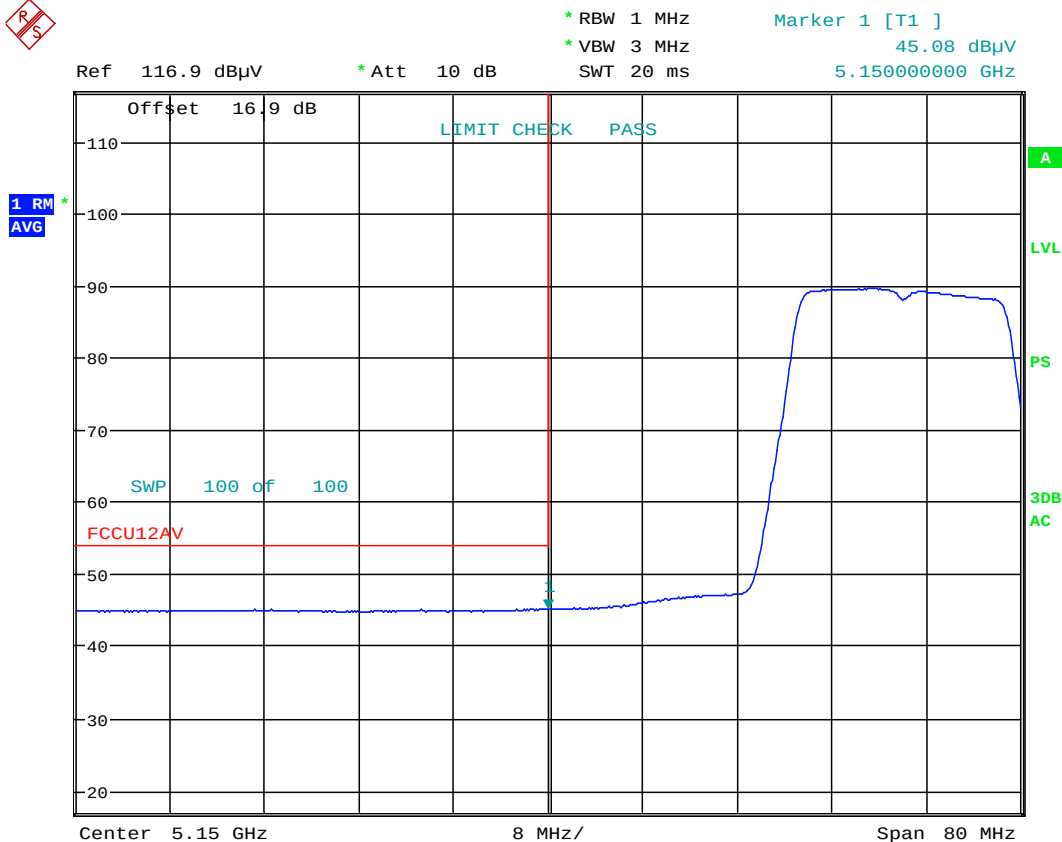
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36

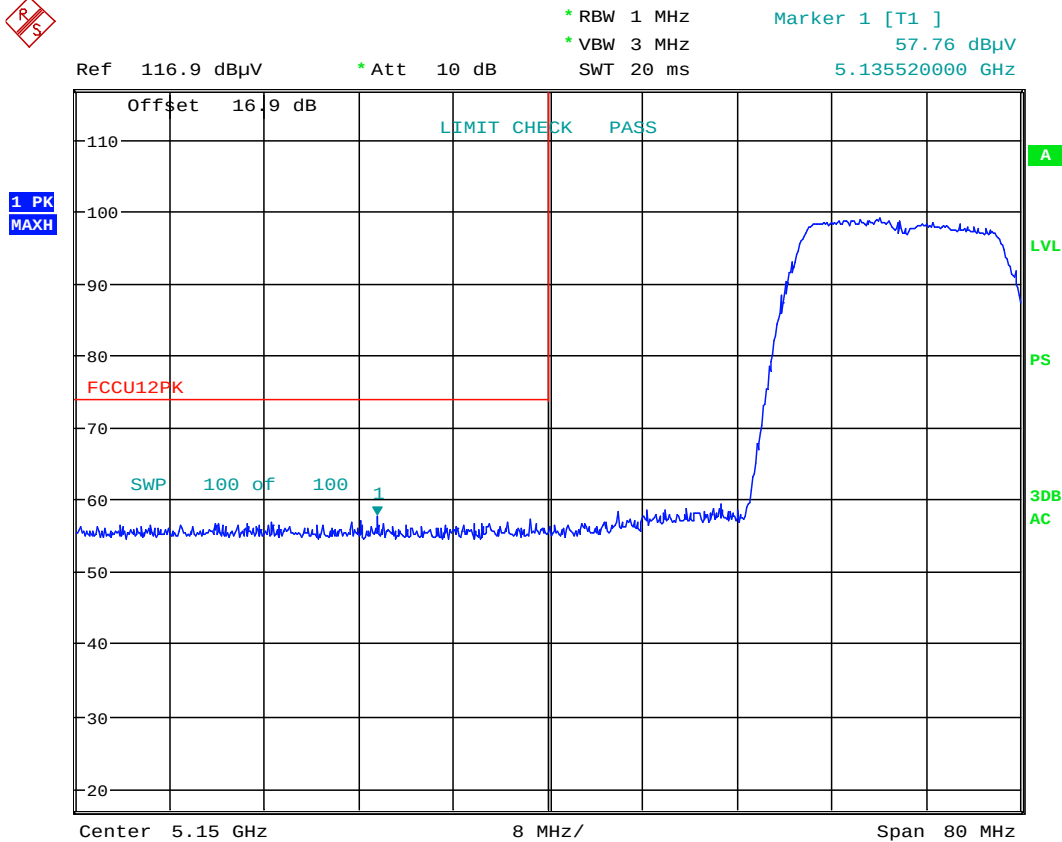


Date: 15.SEP.2014 22:07:38

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 111 of 177

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



Date: 15.SEP.2014 22:08:28

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 112 of 177

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

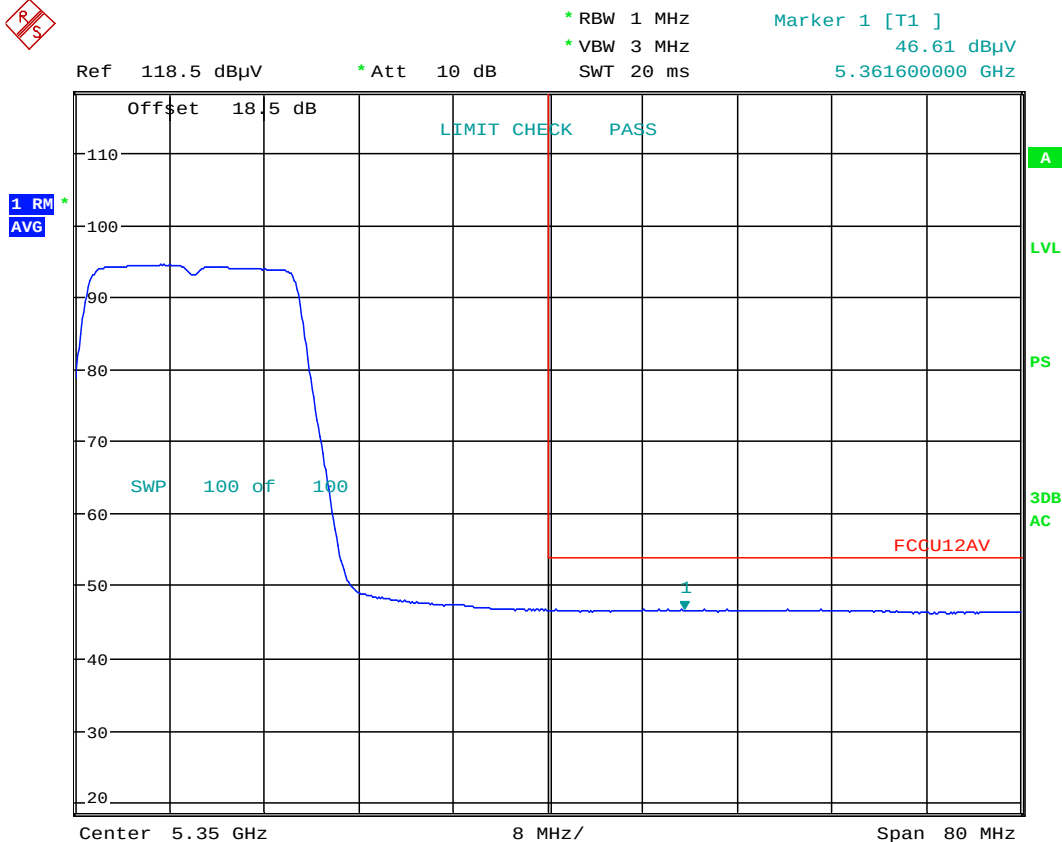
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5320MHz

Channel: 64

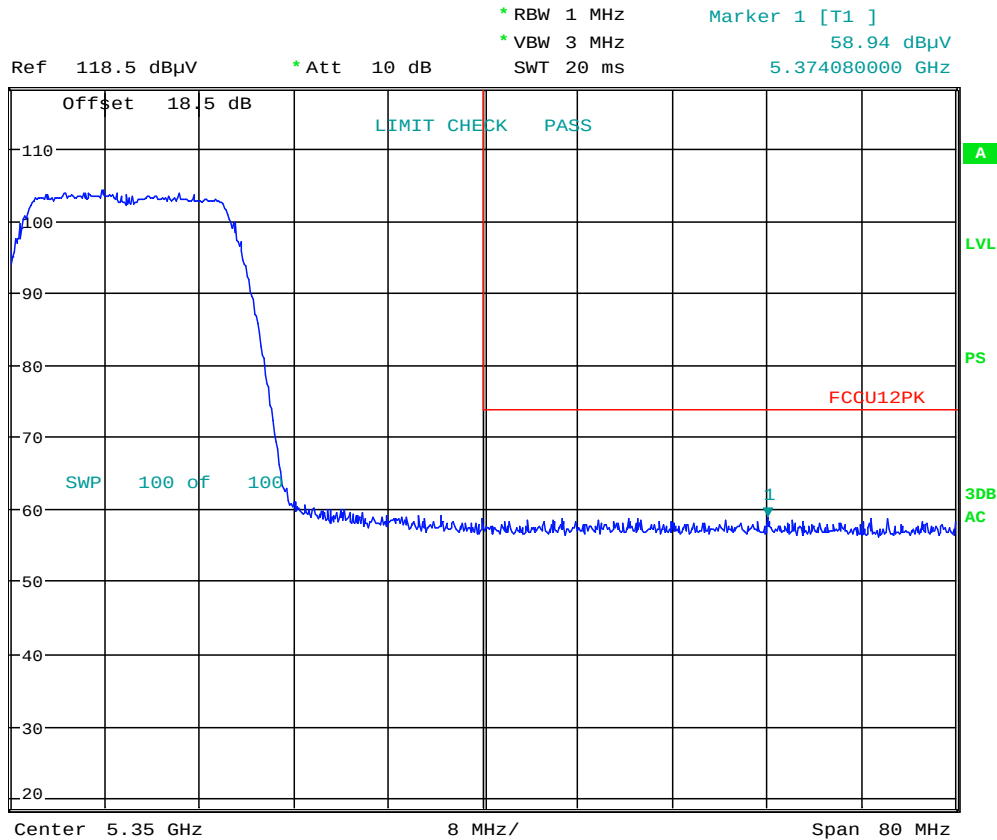


Date: 16.SEP.2014 09:19:17

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 113 of 177

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



Date: 16.SEP.2014 09:20:29

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 114 of 177

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

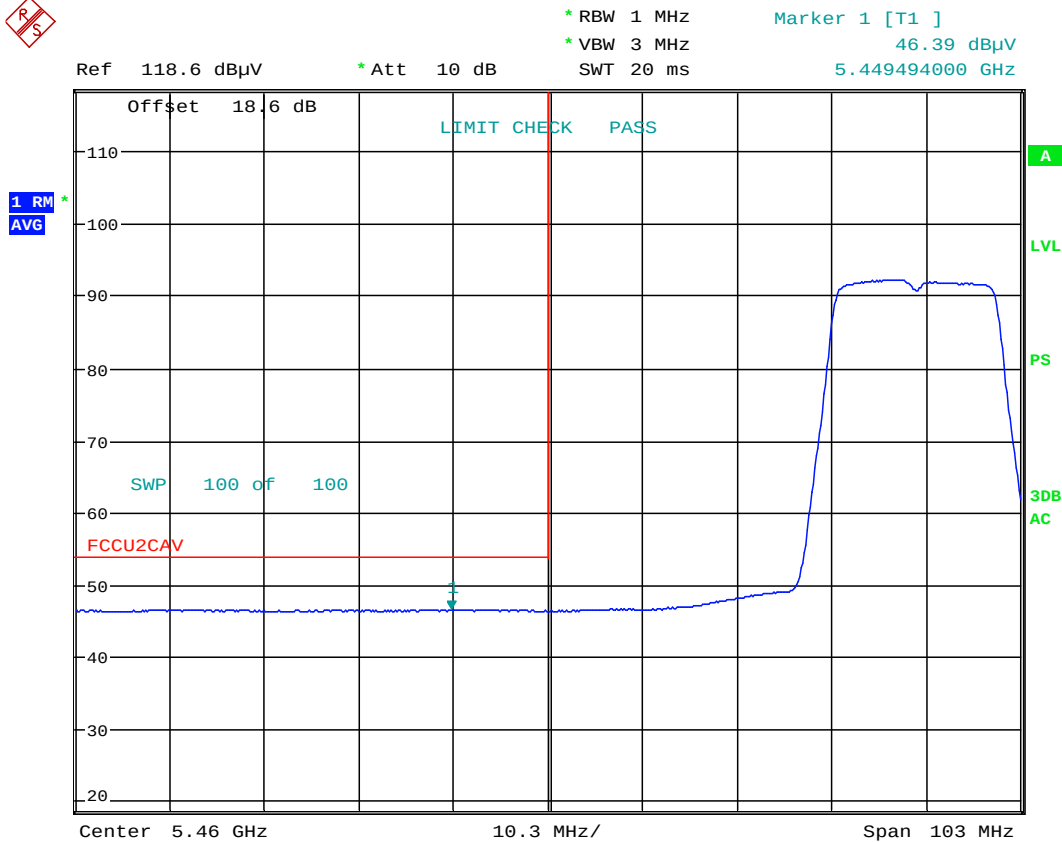
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5500MHz

Channel: 100

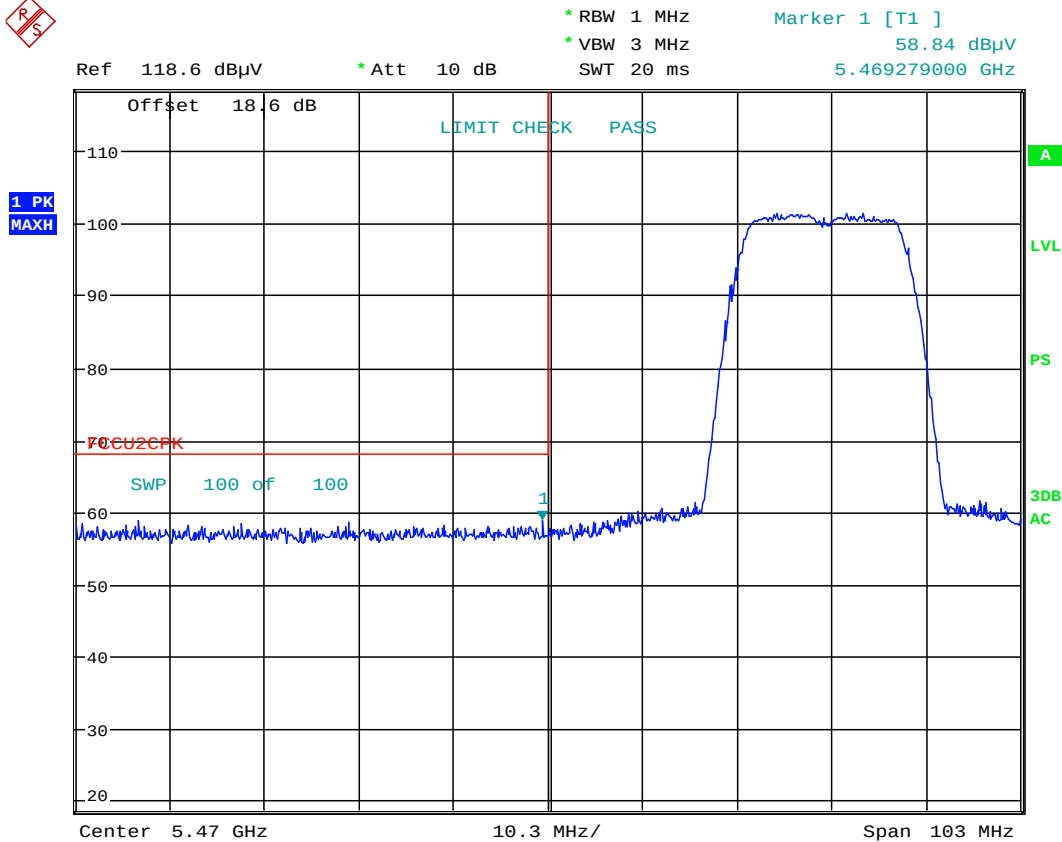


Date: 16.SEP.2014 10:15:04

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 115 of 177

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



Date: 16.SEP.2014 10:16:13

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

FCC ID: A3LSMN915A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 116 of 177

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

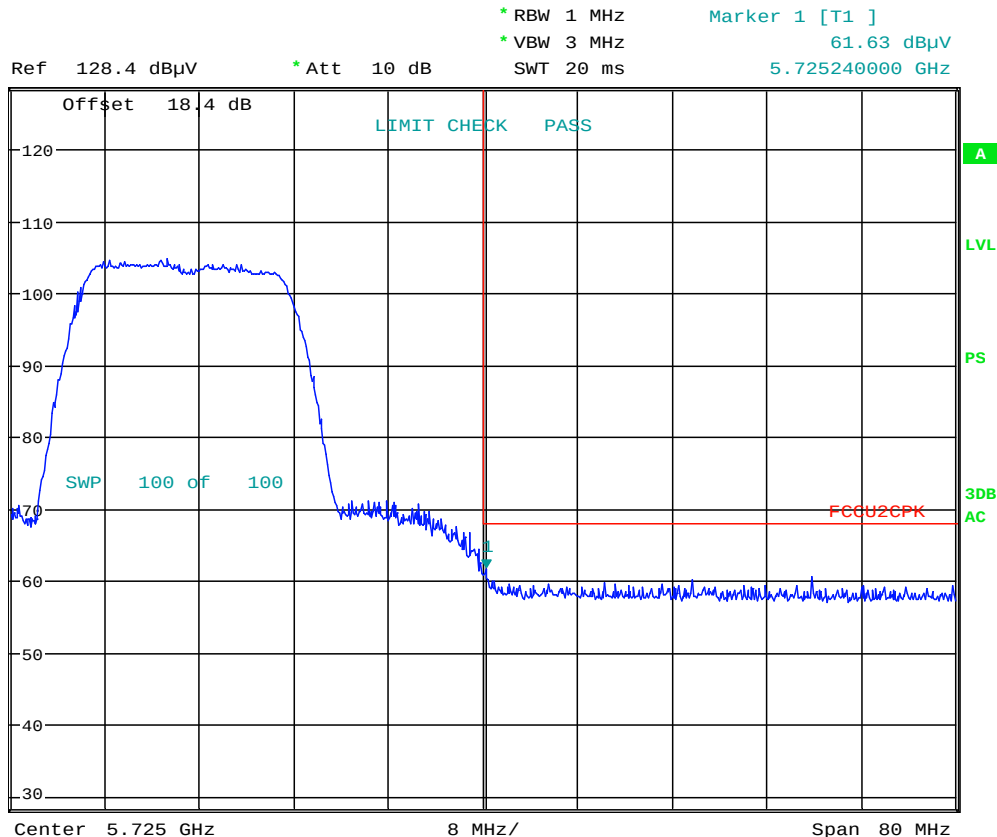
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5700MHz

Channel: 140



Date: 16.SEP.2014 10:53:55

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 117 of 177

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

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

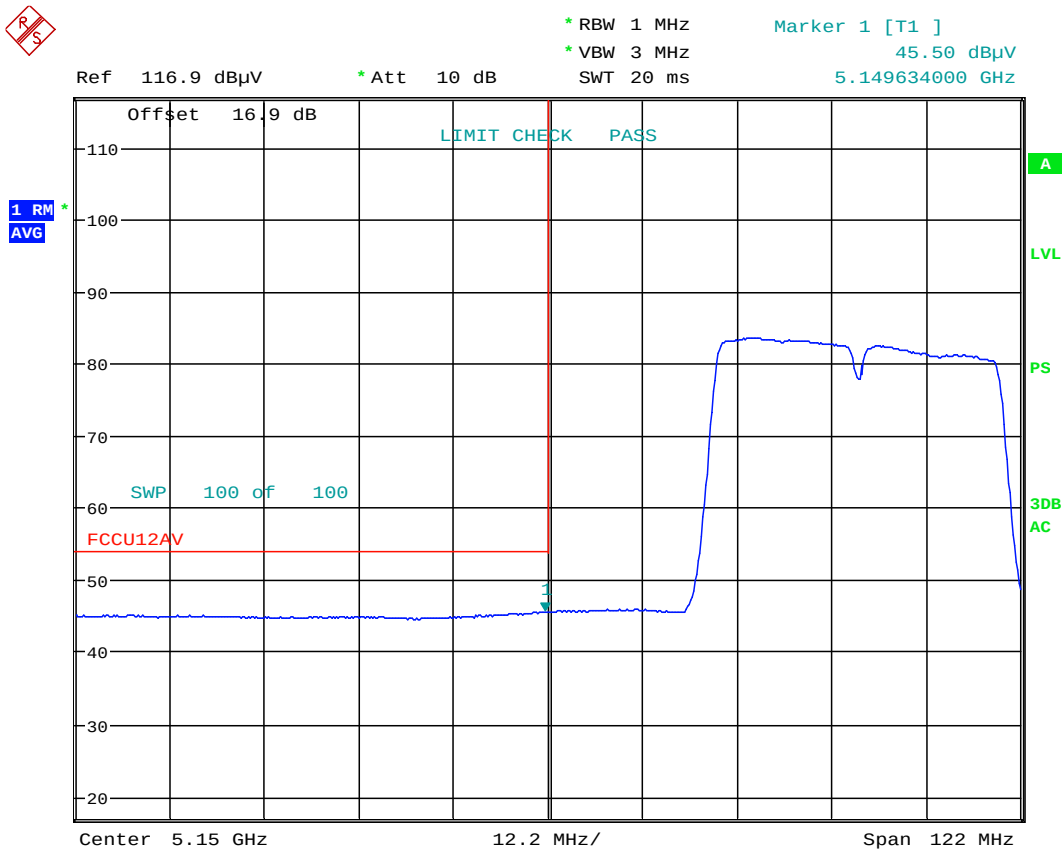
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5190MHz

Channel: 38



Date: 15.SEP.2014 22:16:12

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 118 of 177

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

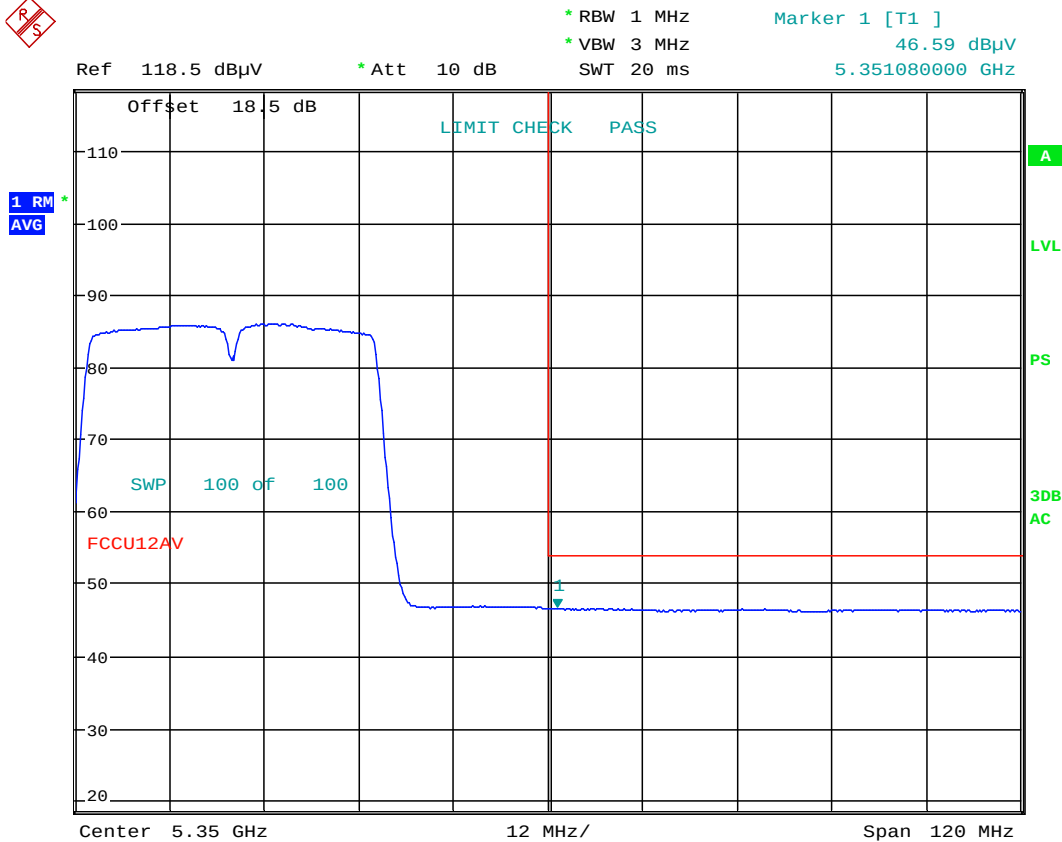
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5310MHz

Channel: 62

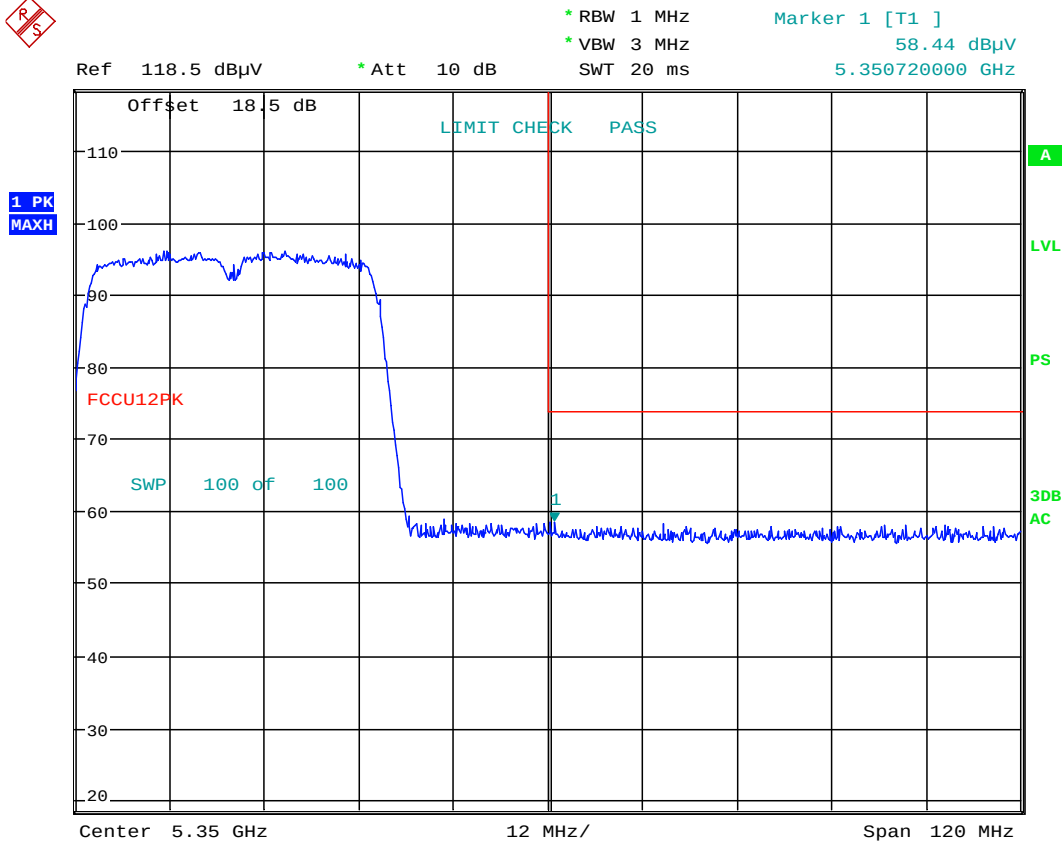


Date: 16.SEP.2014 09:45:37

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 120 of 177

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



Date: 16.SEP.2014 09:46:06

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 121 of 177

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

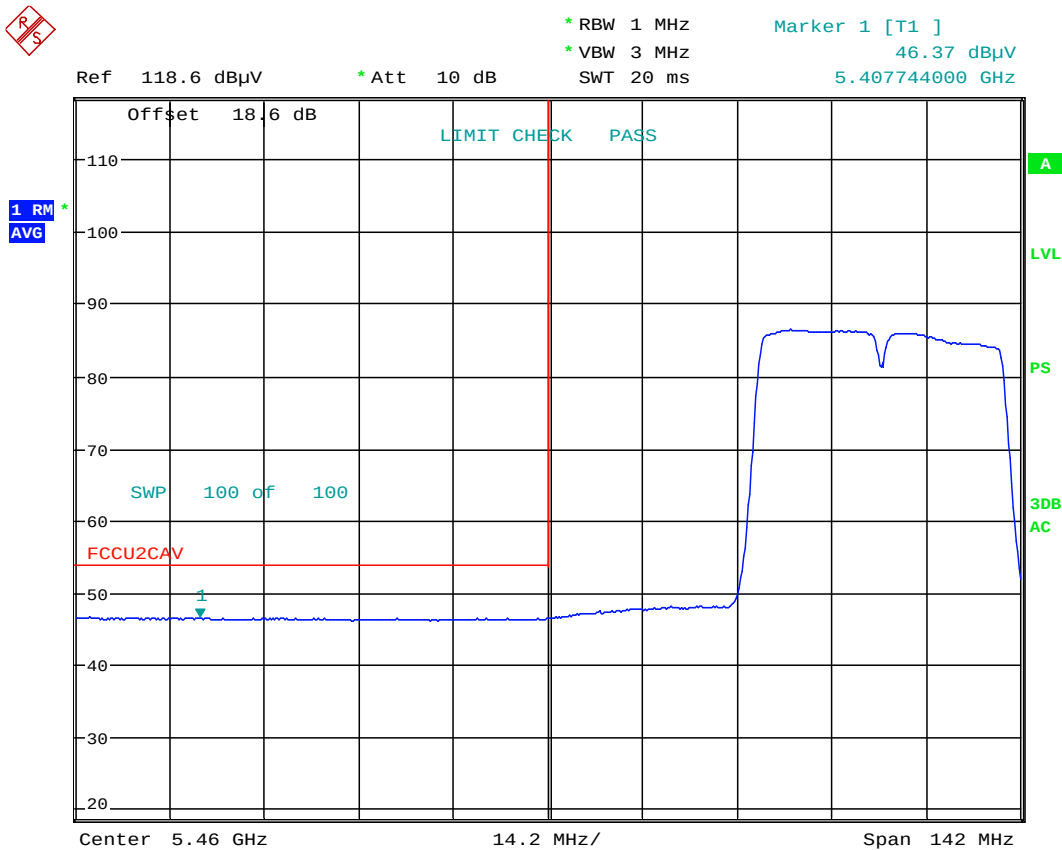
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5510MHz

Channel: 102

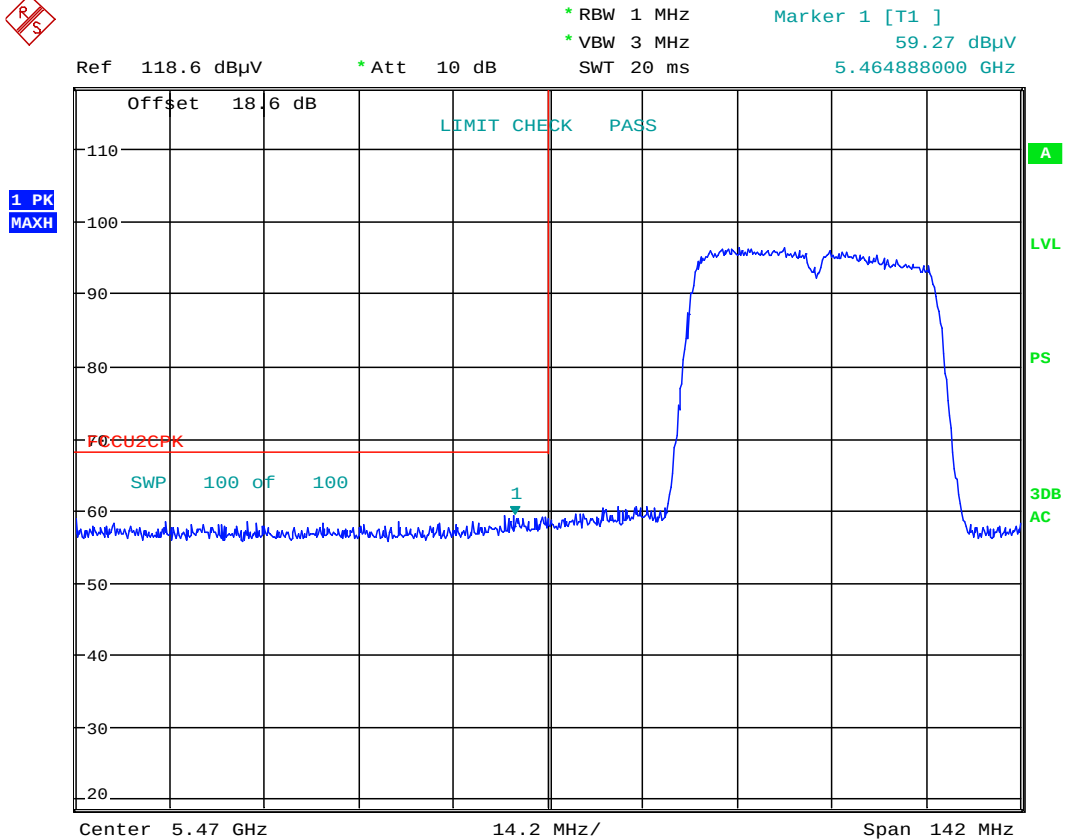


Date: 16.SEP.2014 10:18:57

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 122 of 177

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



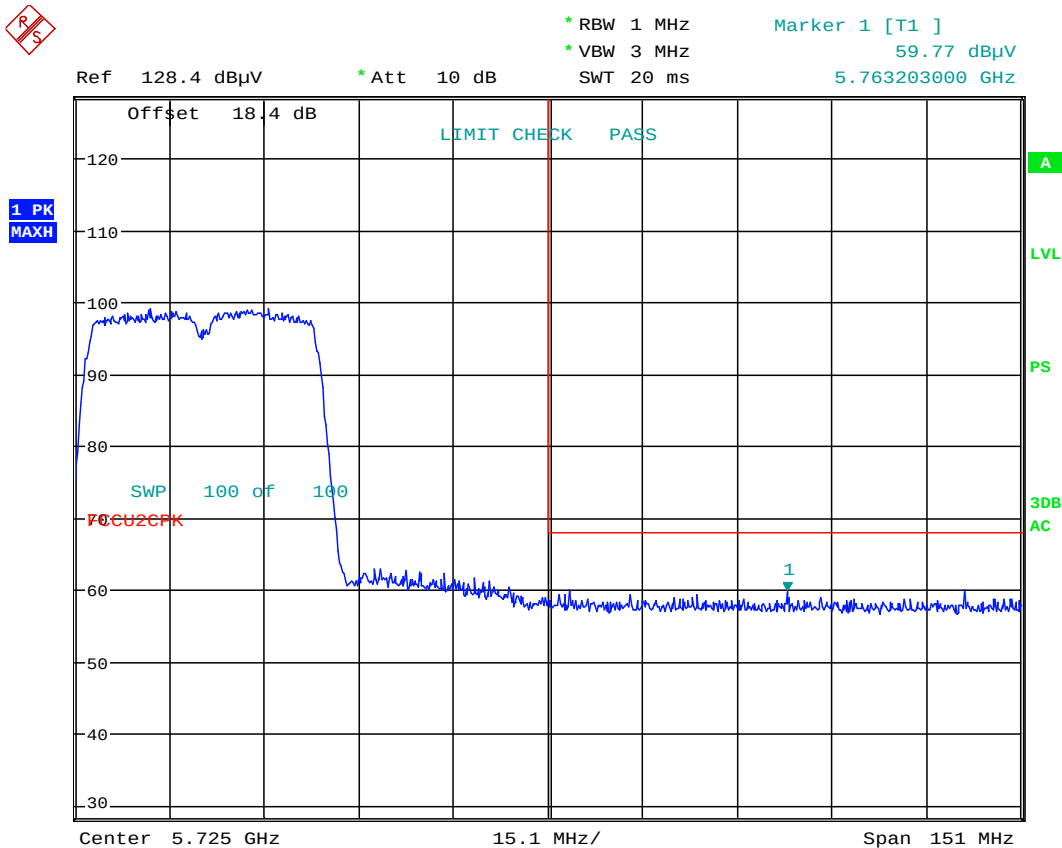
Date: 16.SEP.2014 10:19:51

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 123 of 177

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: 16.SEP.2014 10:56:35

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 124 of 177

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

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

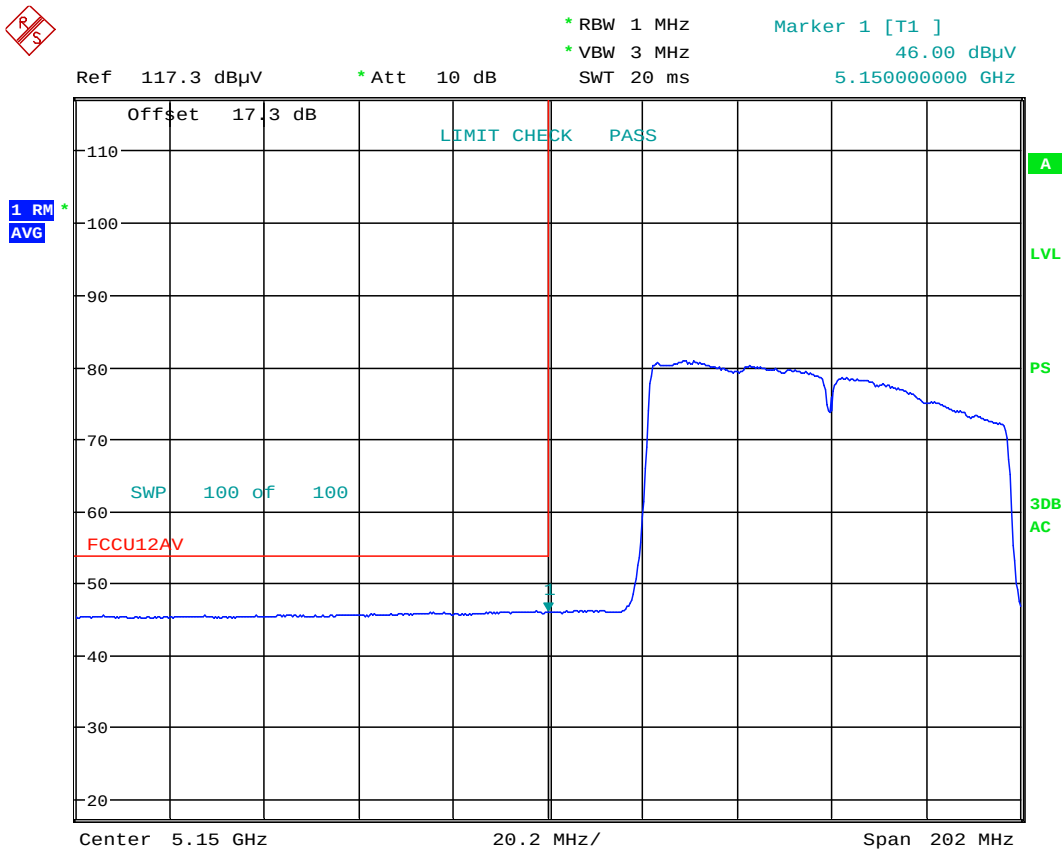
Worst Case Mode: 802.11n (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5210MHz

Channel: 42

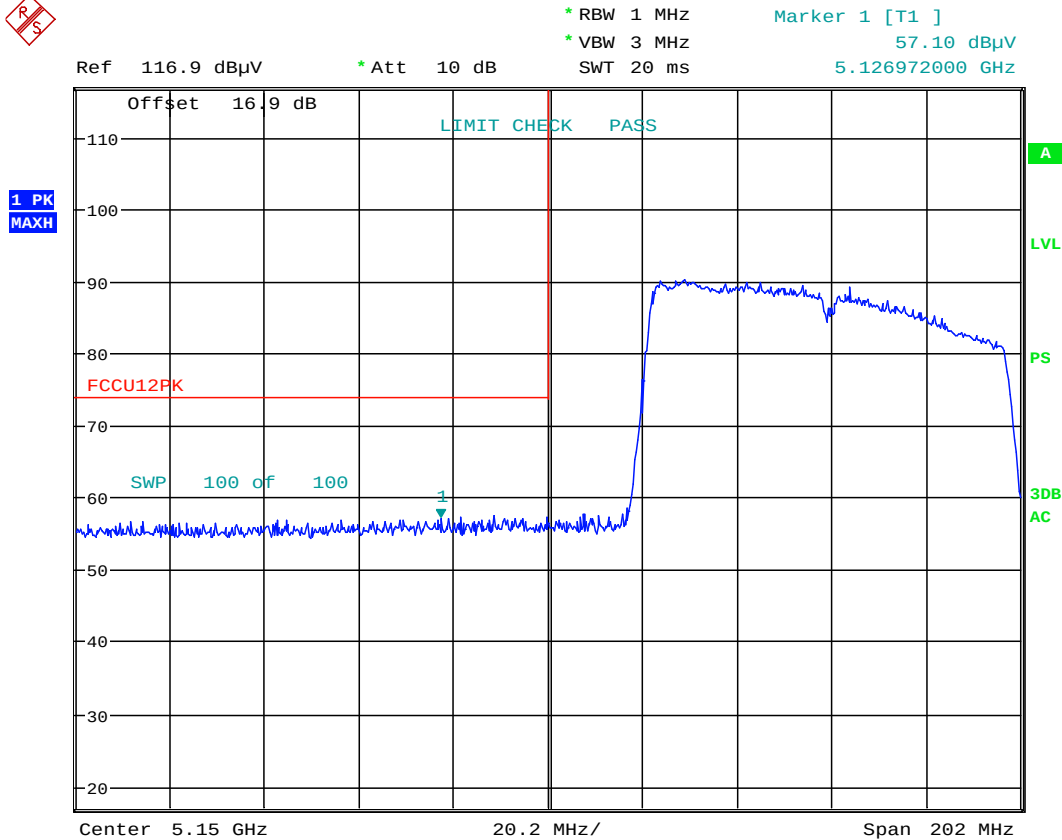


Date: 15.SEP.2014 22:23:57

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 125 of 177

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



Date: 15.SEP.2014 22:24:55

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

FCC ID: A3LSMN915A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 126 of 177

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

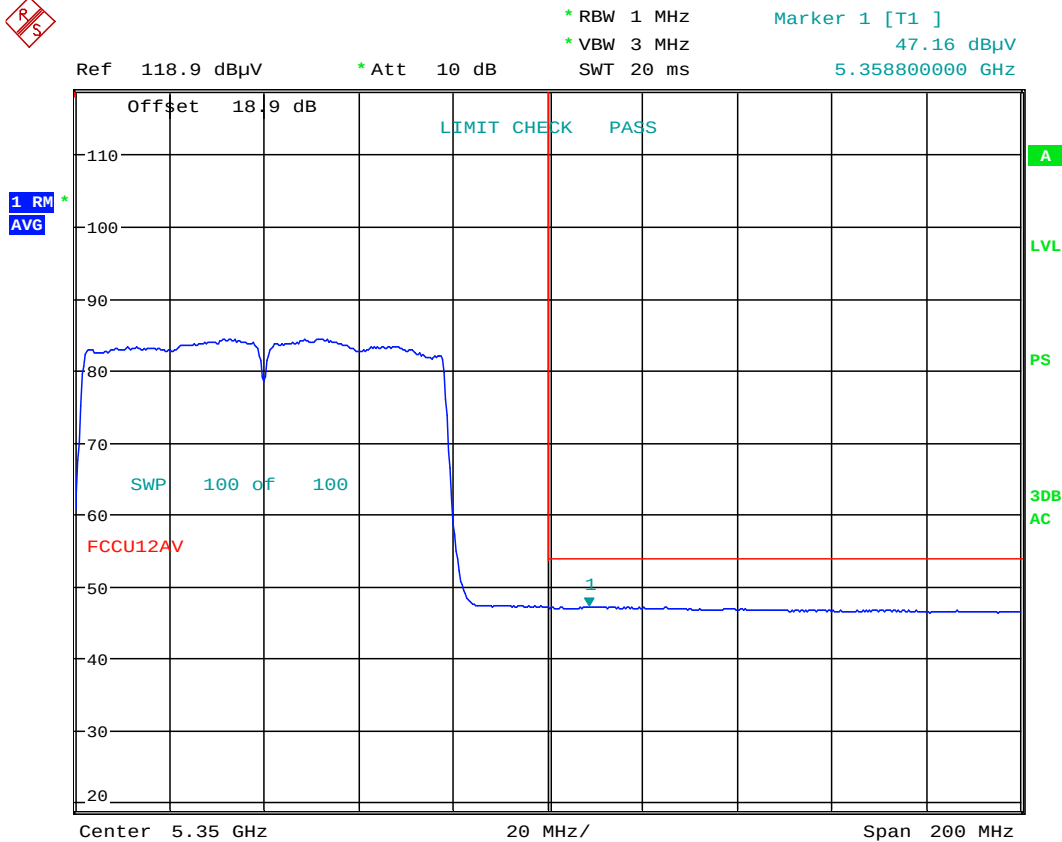
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5290MHz

Channel: 58

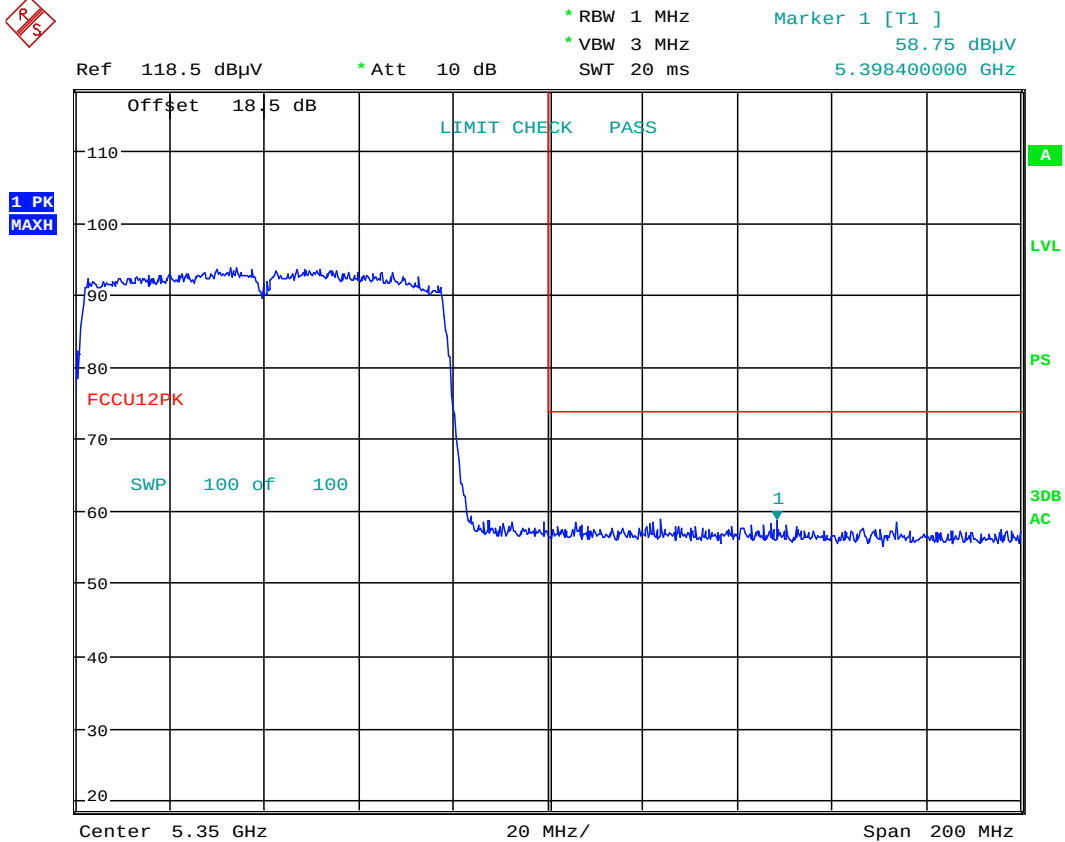


Date: 16.SEP.2014 09:50:31

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 127 of 177

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

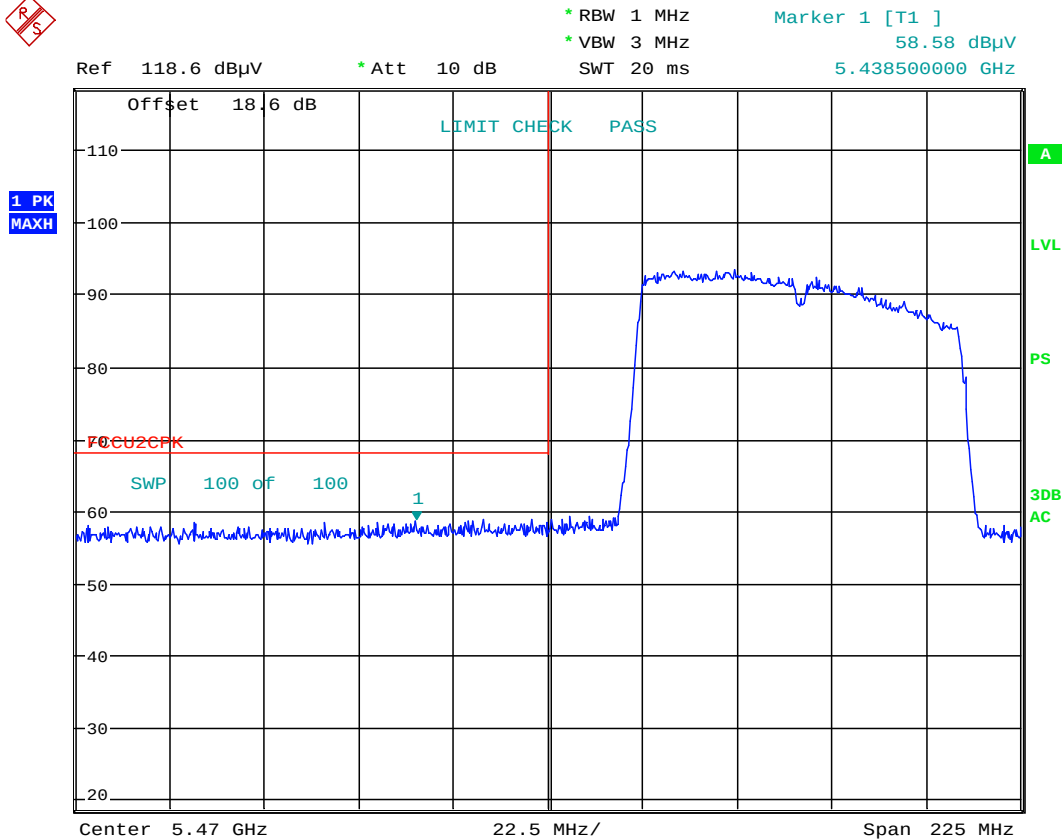


Date: 16.SEP.2014 09:53:42

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 128 of 177

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



Date: 16.SEP.2014 10:24:40

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 130 of 177

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

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

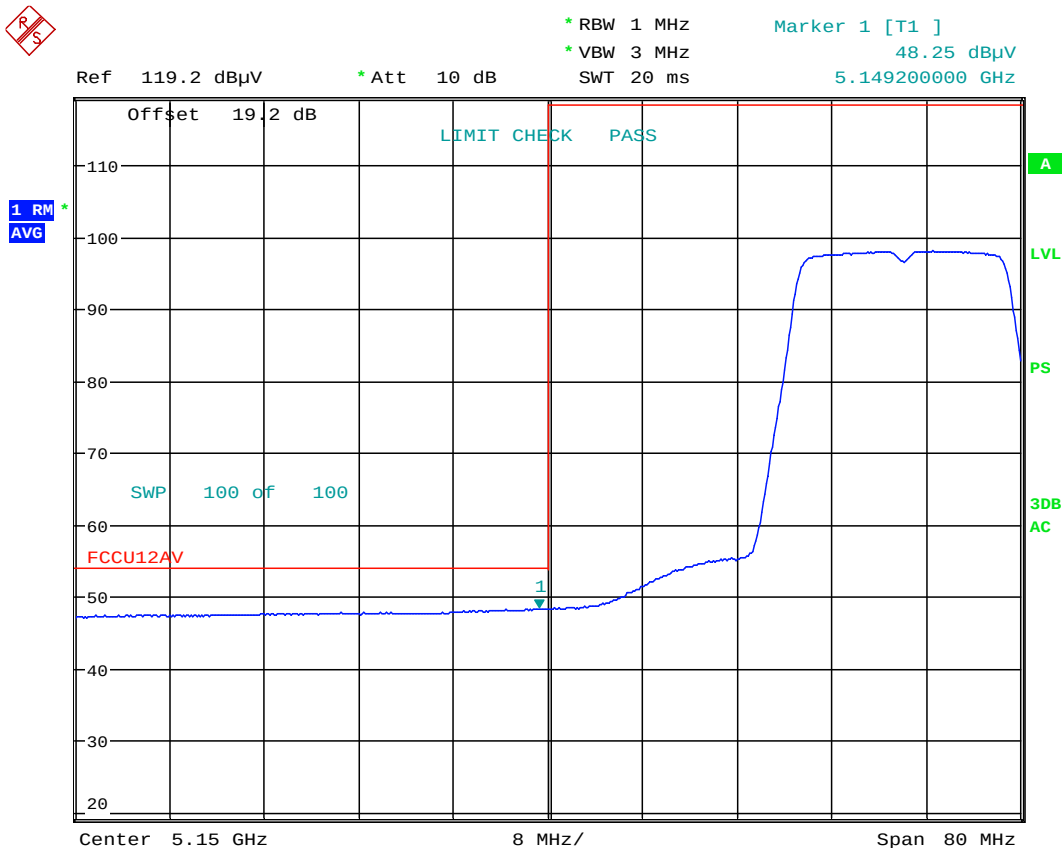
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36



Date: 16.SEP.2014 11:37:02

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 131 of 177

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

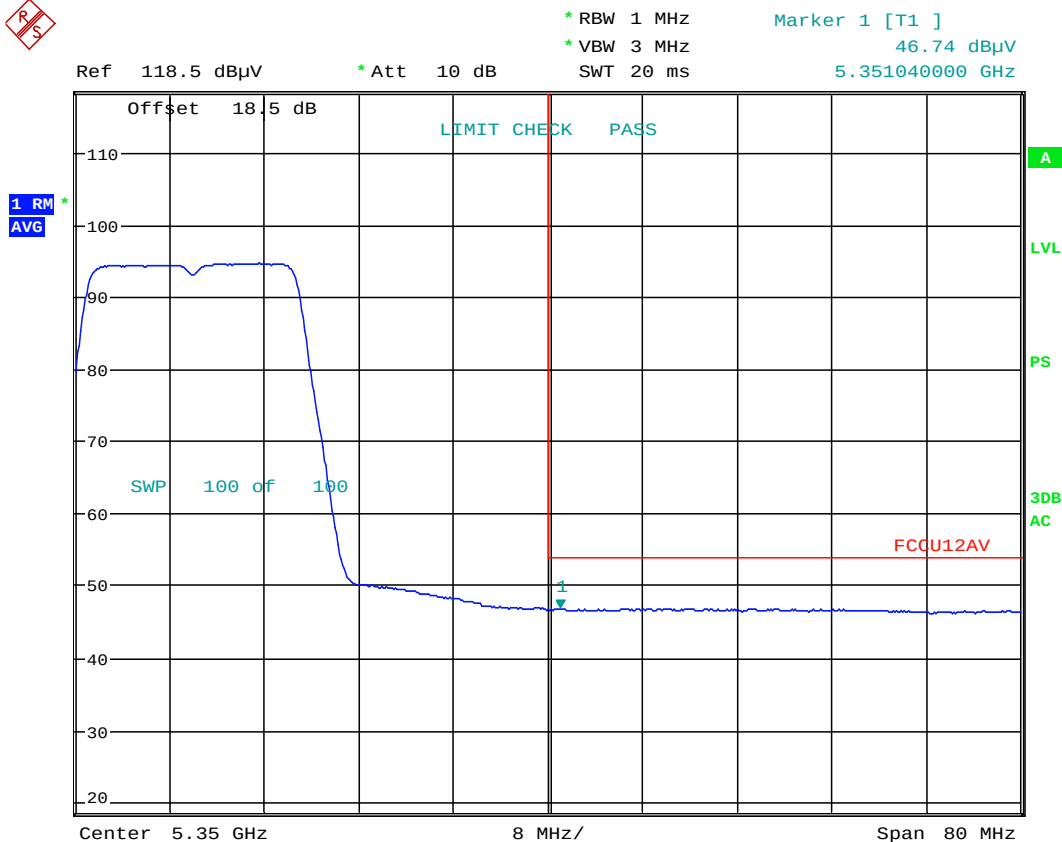
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5320MHz

Channel: 64

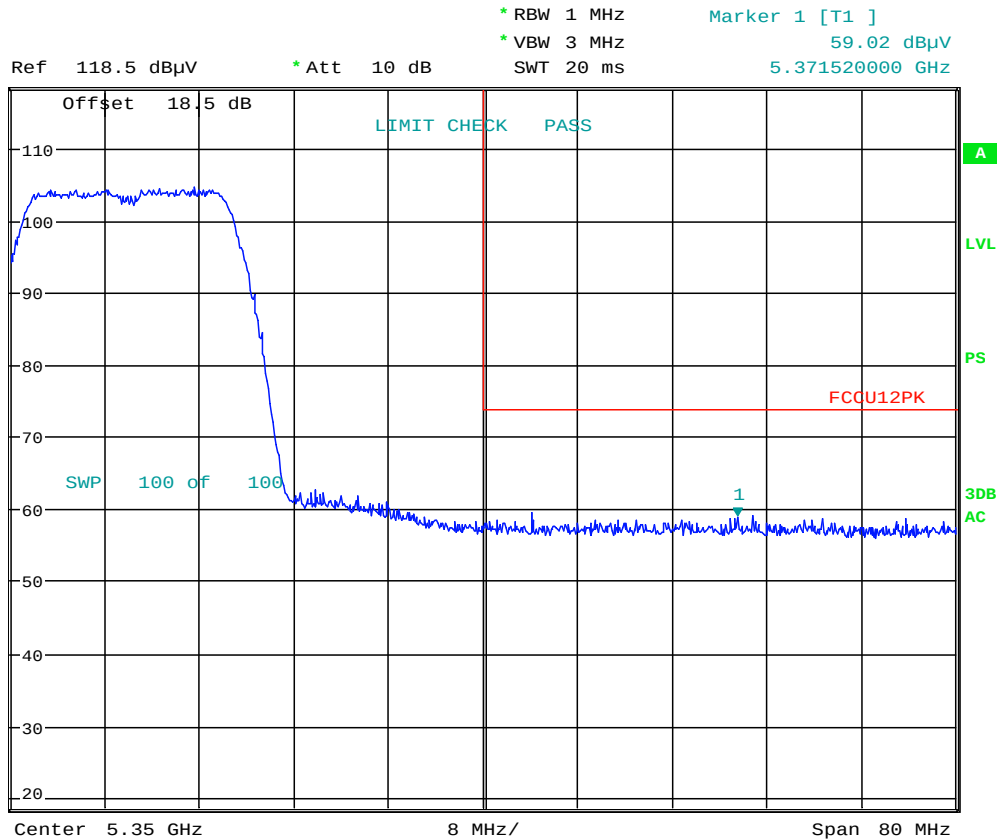


Date: 16.SEP.2014 12:37:18

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 133 of 177

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



Date: 16.SEP.2014 12:37:47

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 134 of 177

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

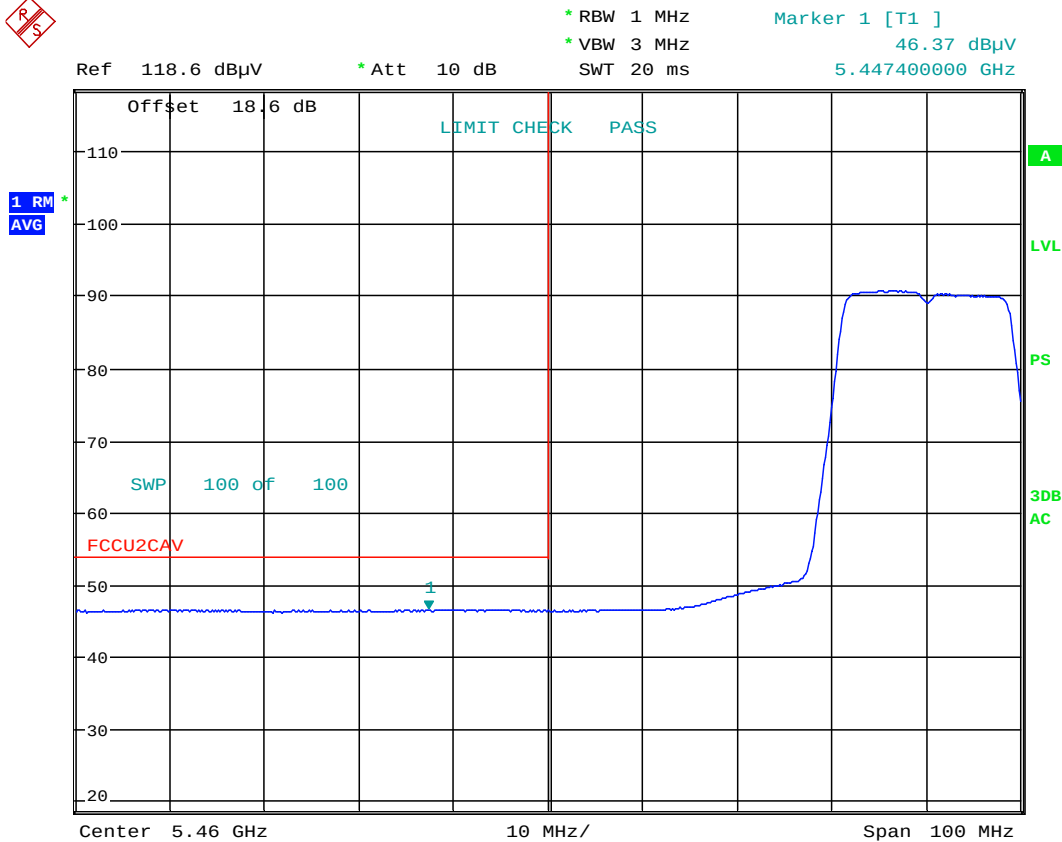
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5500MHz

Channel: 100

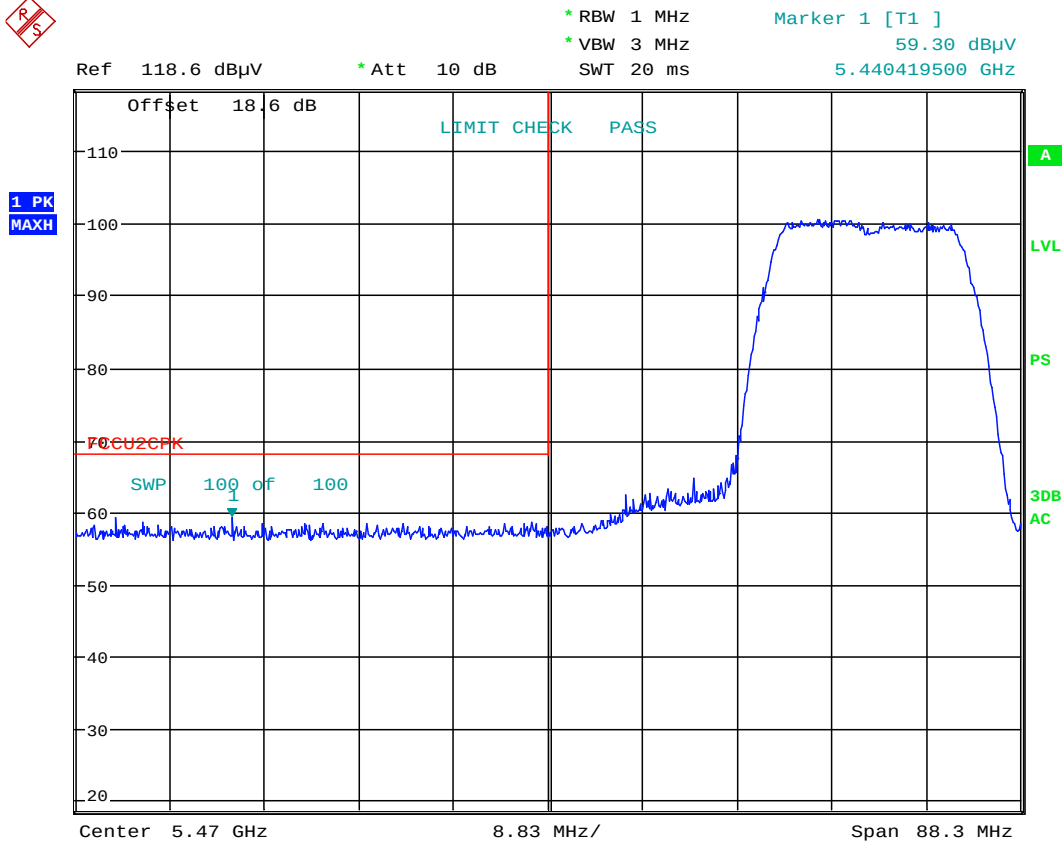


Date: 16.SEP.2014 13:36:19

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 135 of 177

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



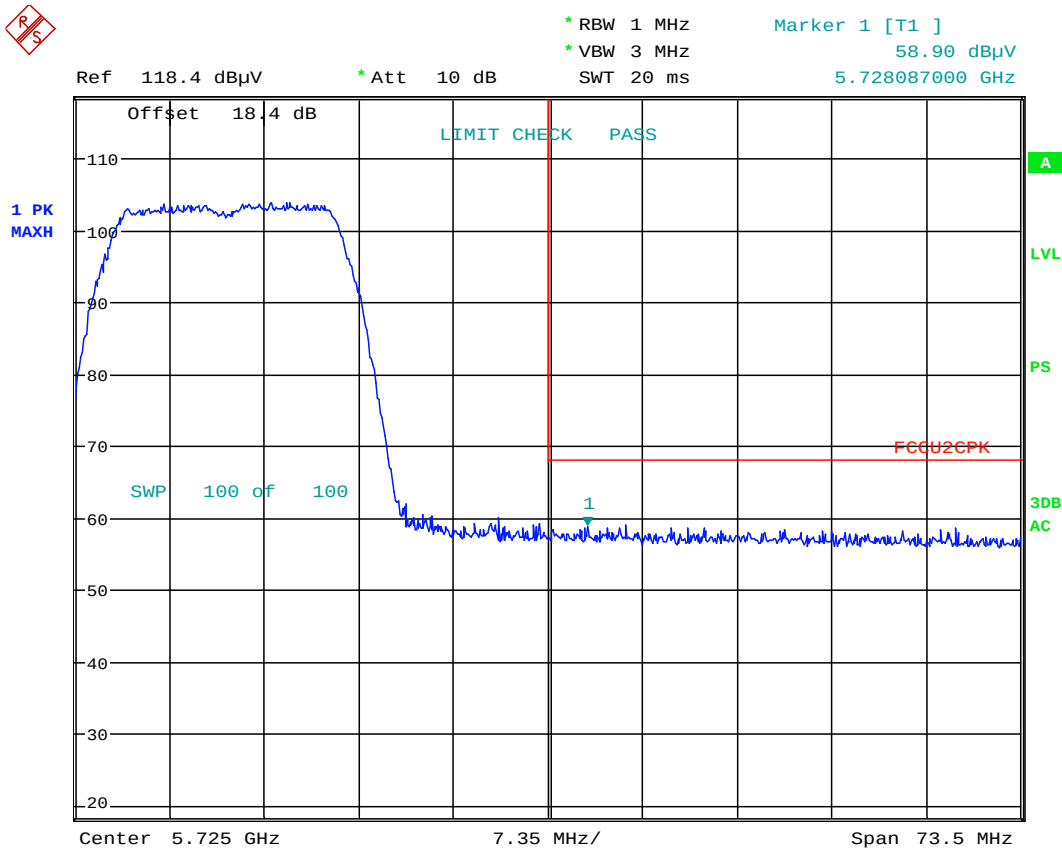
Date: 16.SEP.2014 13:37:38

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

FCC ID: A3LSMN915A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 136 of 177

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: 16.SEP.2014 14:12:41

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 137 of 177

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

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

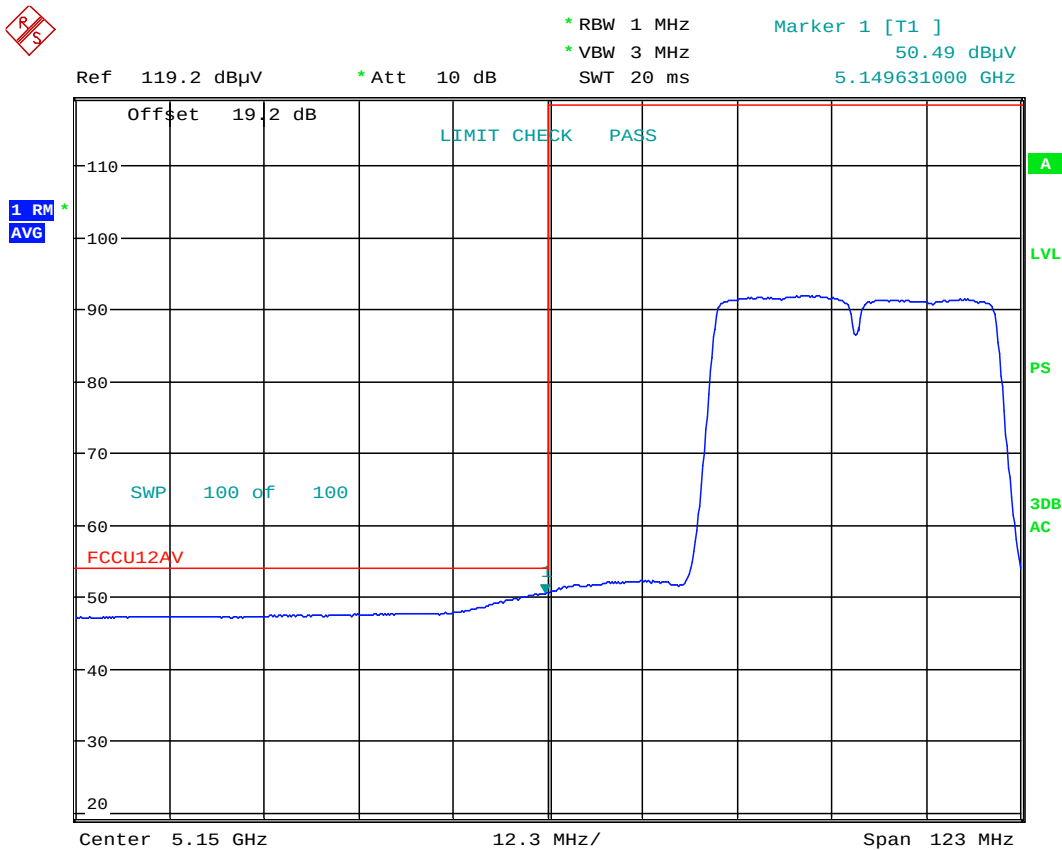
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5190MHz

Channel: 38

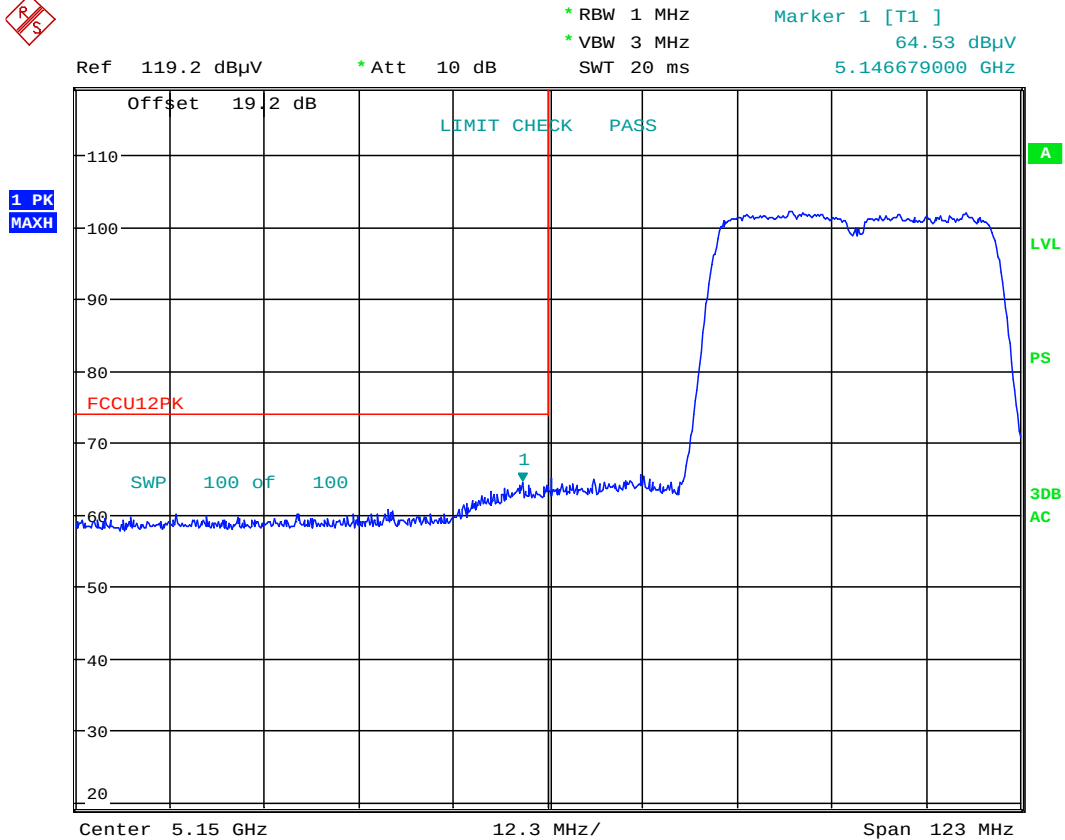


Date: 16.SEP.2014 11:44:33

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 138 of 177

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



Date: 16.SEP.2014 11:51:30

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 139 of 177

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

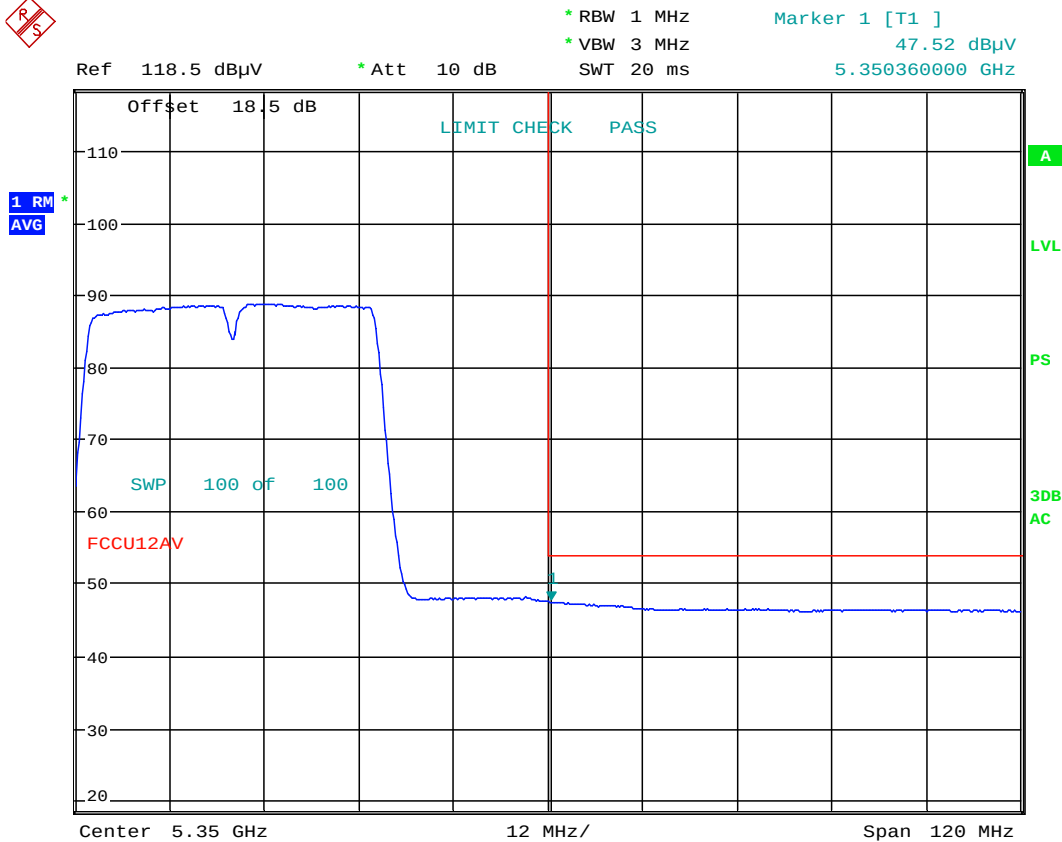
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5310MHz

Channel: 62

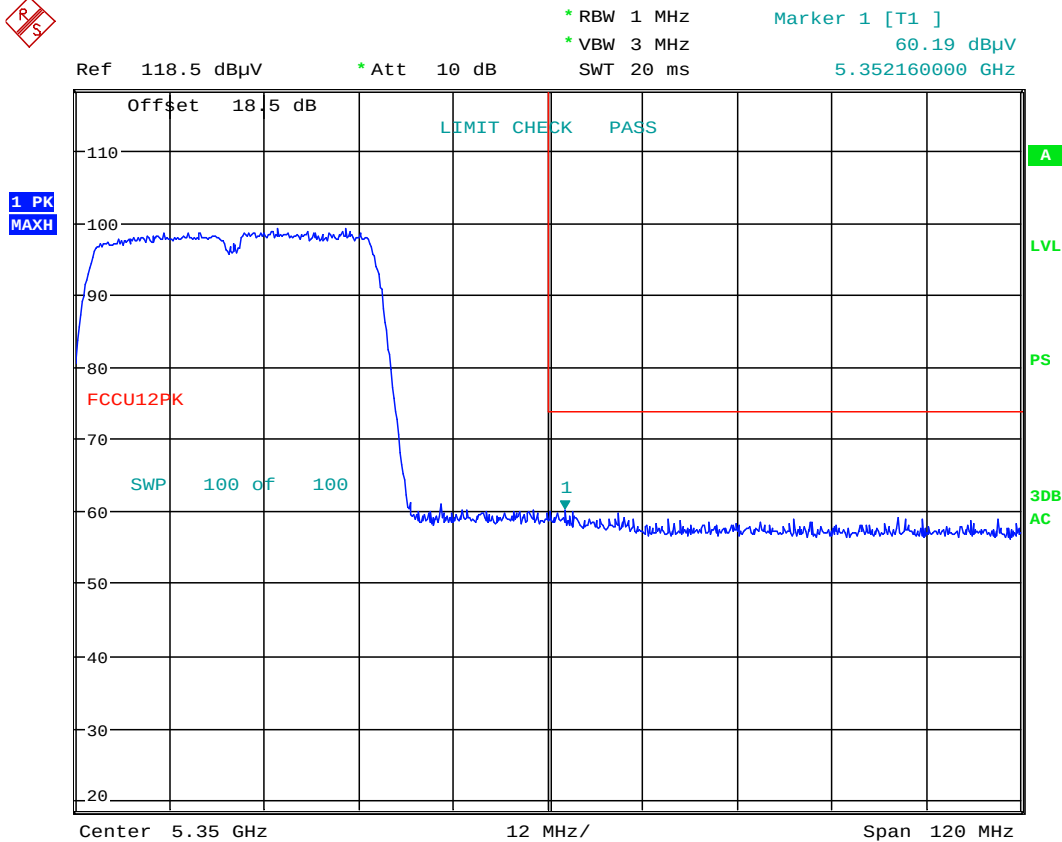


Date: 16.SEP.2014 12:39:45

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 140 of 177

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



Date: 16.SEP.2014 12:41:30

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 141 of 177

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

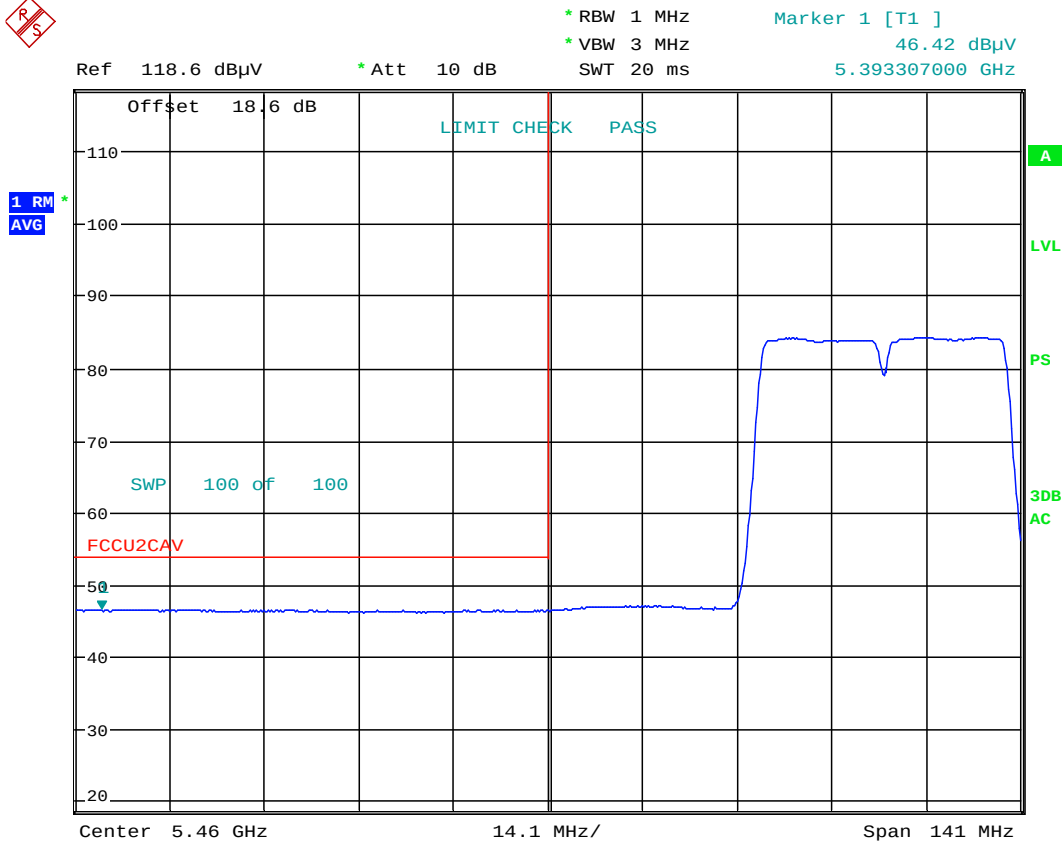
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5510MHz

Channel: 102

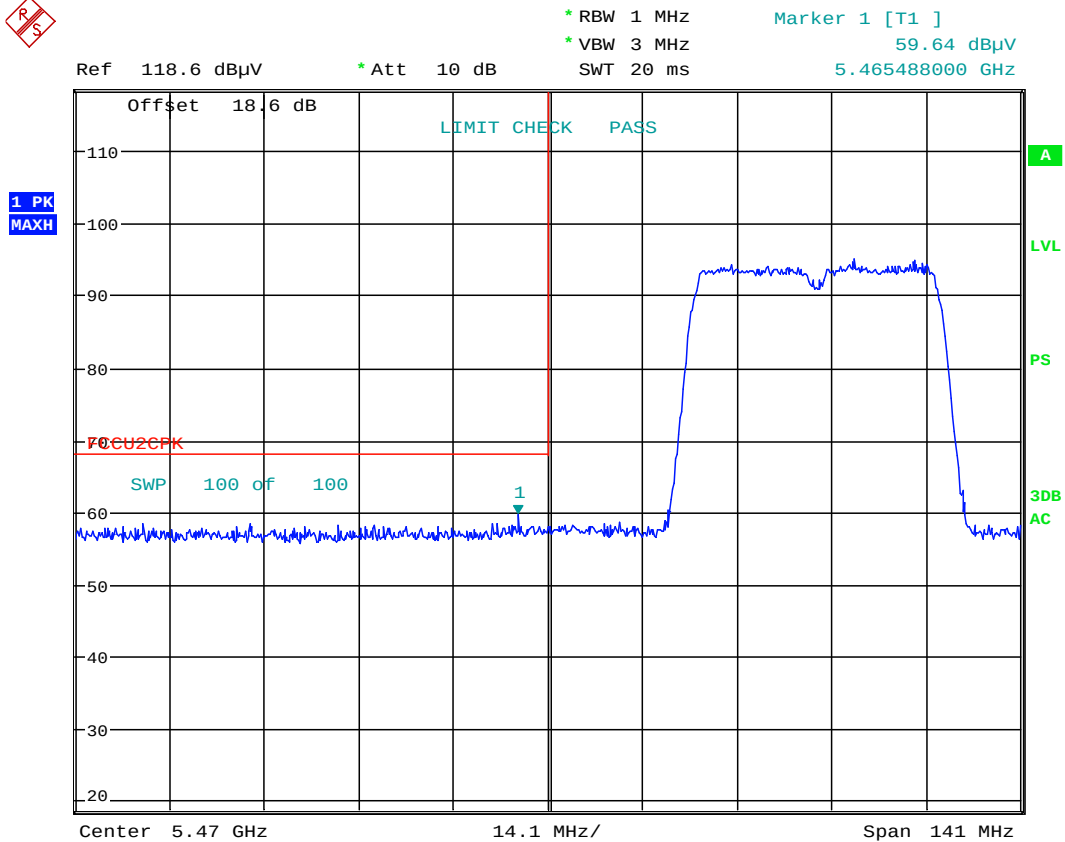


Date: 16.SEP.2014 13:40:28

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 142 of 177

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



Date: 16.SEP.2014 13:41:23

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 143 of 177

Radiated Band Edge Measurements (40MHz BW)

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

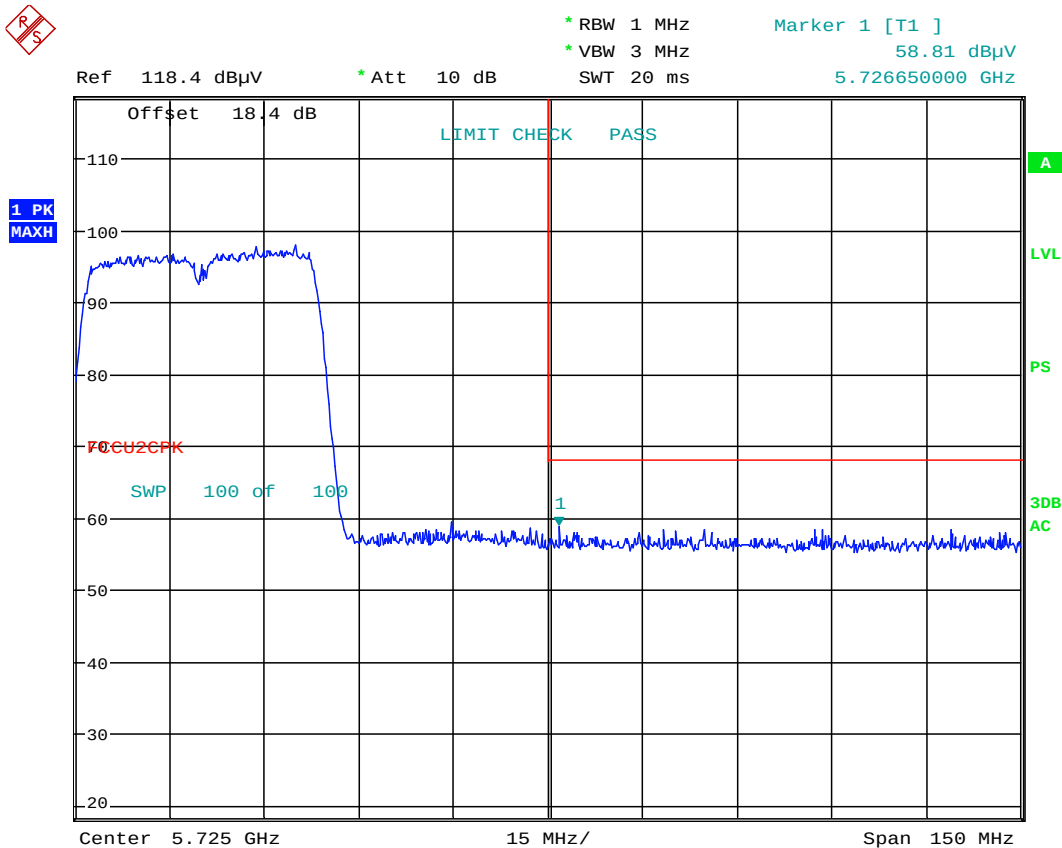
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5670MHz

Channel: 134



Date: 16.SEP.2014 14:15:46

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 144 of 177

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

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

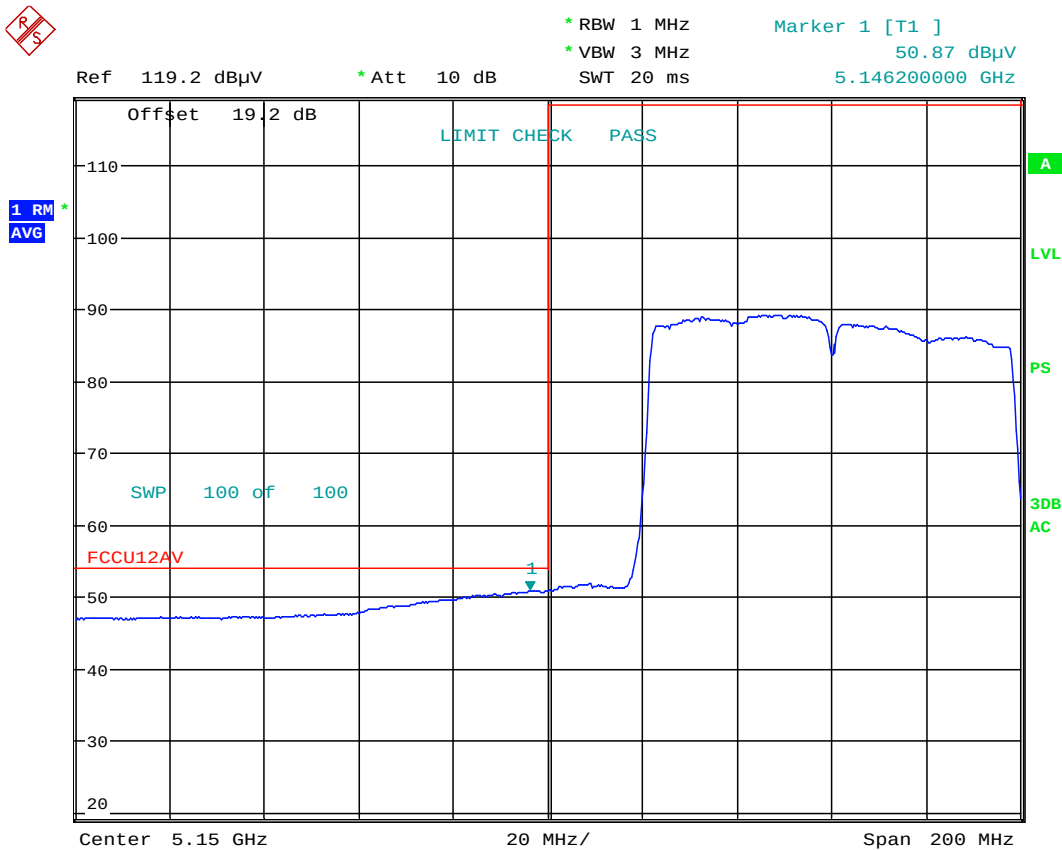
Worst Case Mode: 802.11n (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5210MHz

Channel: 42

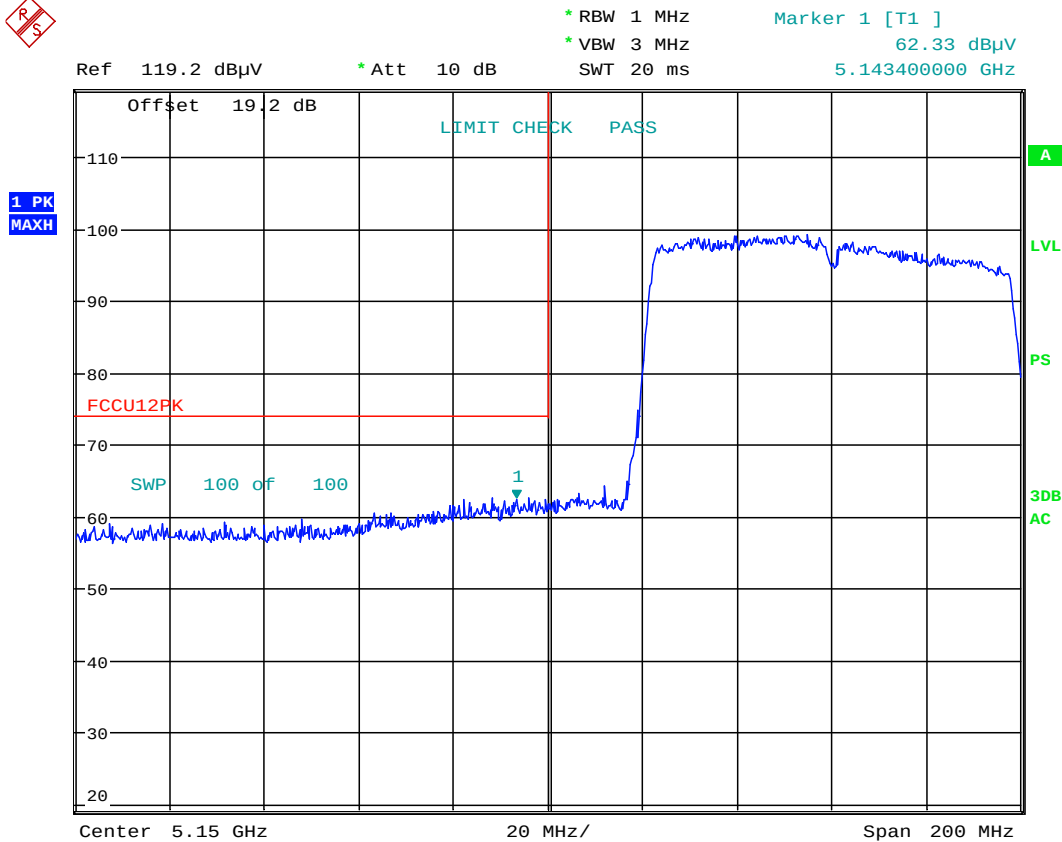


Date: 16.SEP.2014 12:05:24

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 145 of 177

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



Date: 16.SEP.2014 12:05:54

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 146 of 177

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

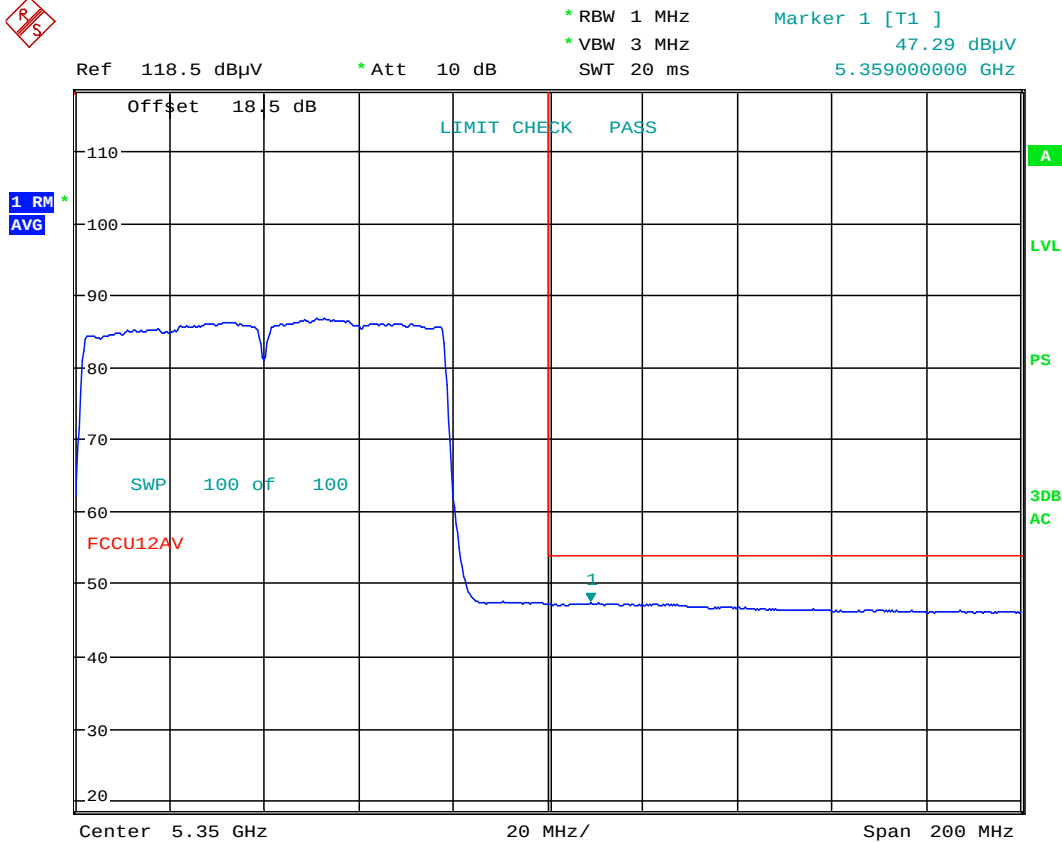
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5290MHz

Channel: 58

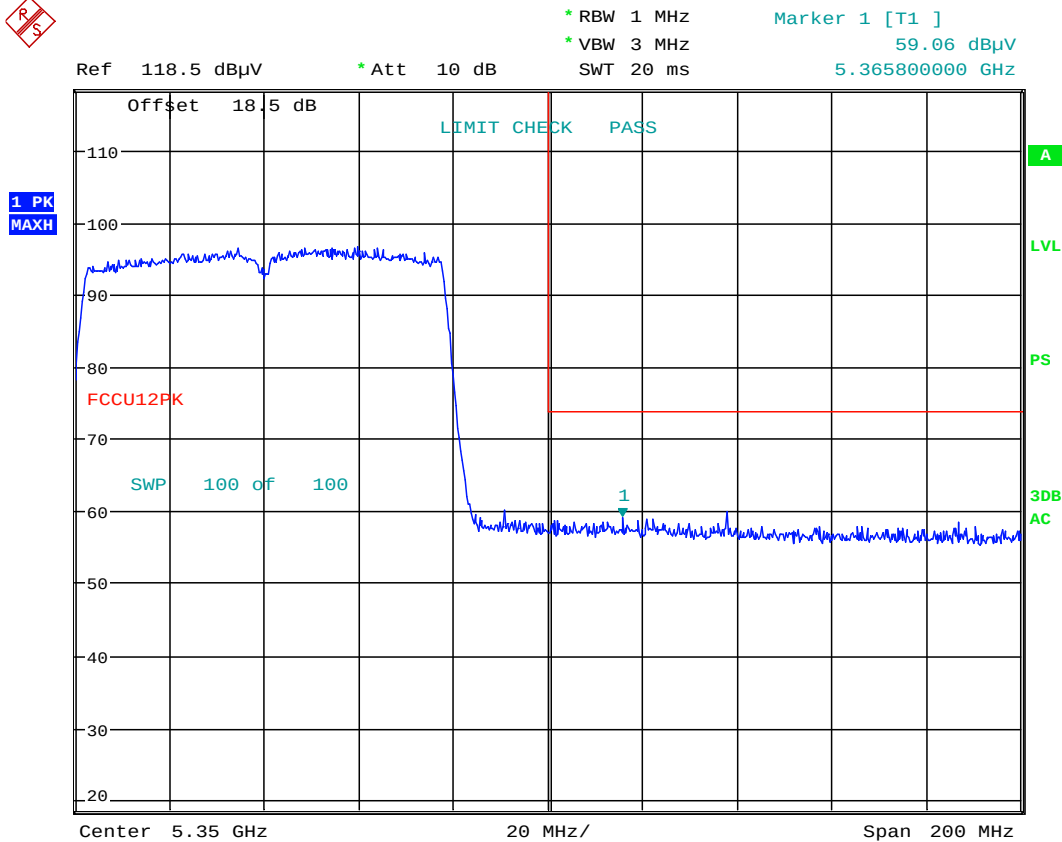


Date: 16.SEP.2014 12:43:34

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 147 of 177

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



Date: 16.SEP.2014 12:44:00

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 148 of 177

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

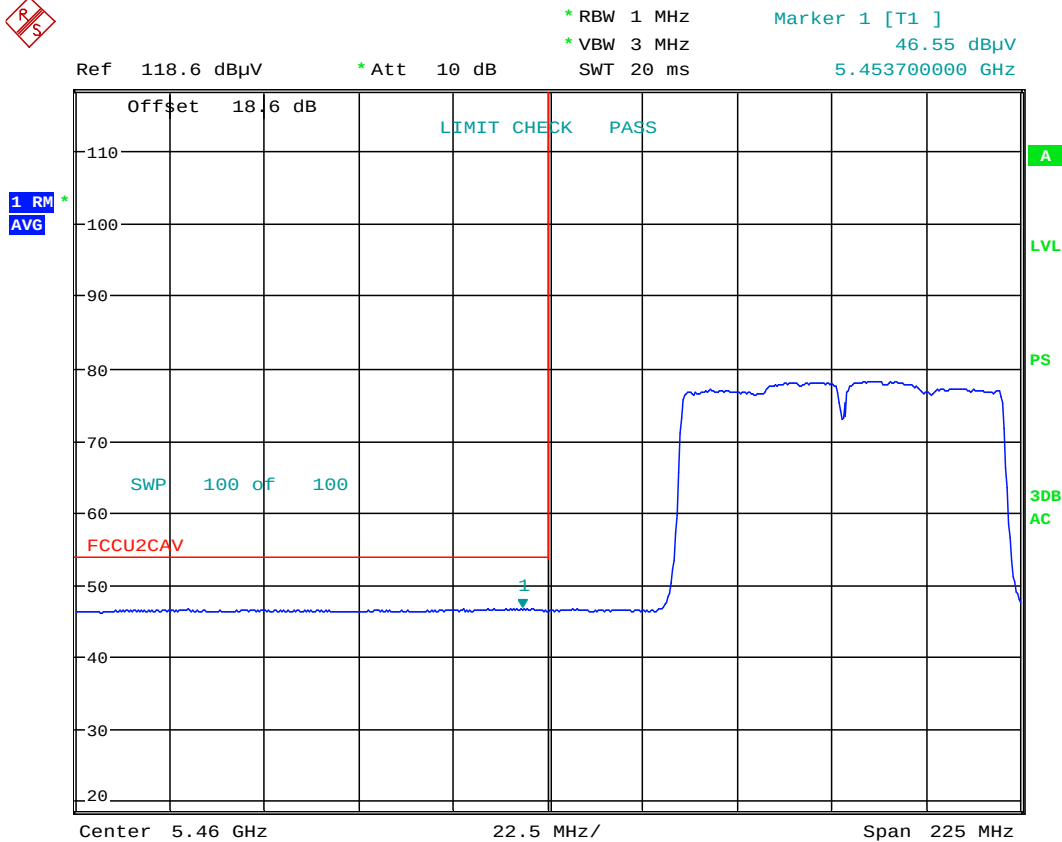
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5530MHz

Channel: 106

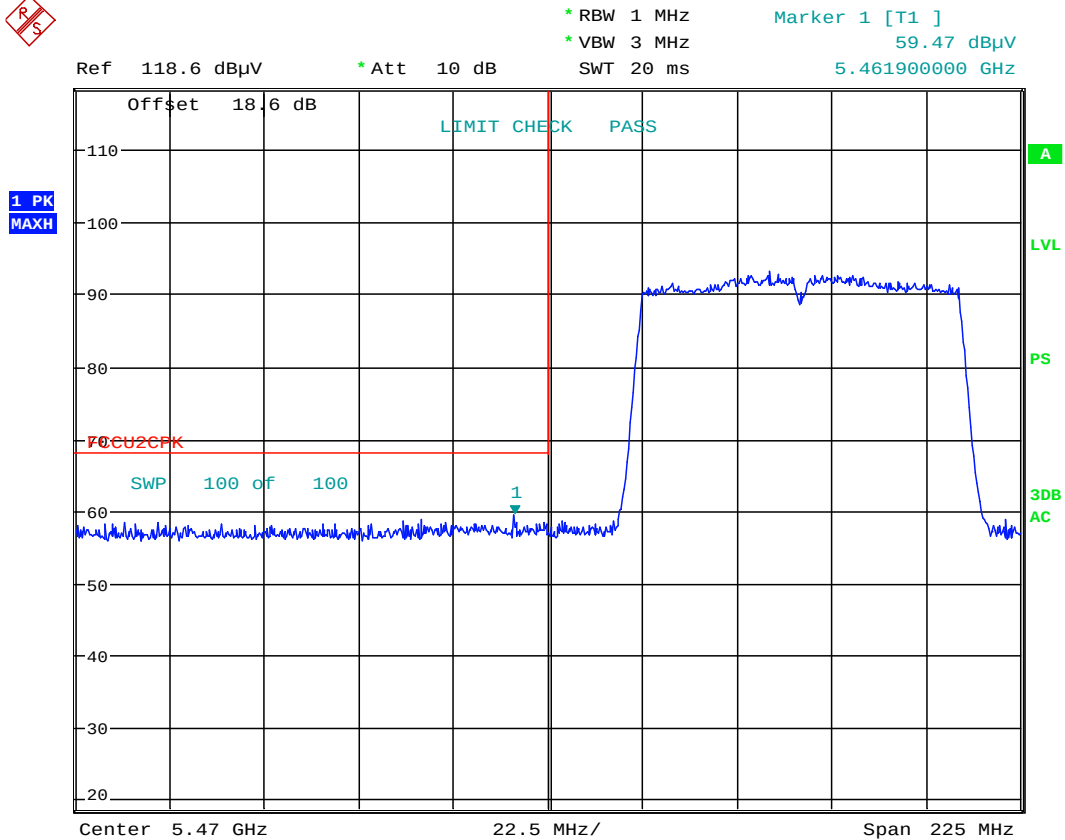


Date: 16.SEP.2014 13:43:40

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 149 of 177

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



Date: 16.SEP.2014 13:51:56

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

FCC ID: A3LSMN915A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 150 of 177

6.14 MIMO Radiated Band Edge Measurements (20MHz BW)

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

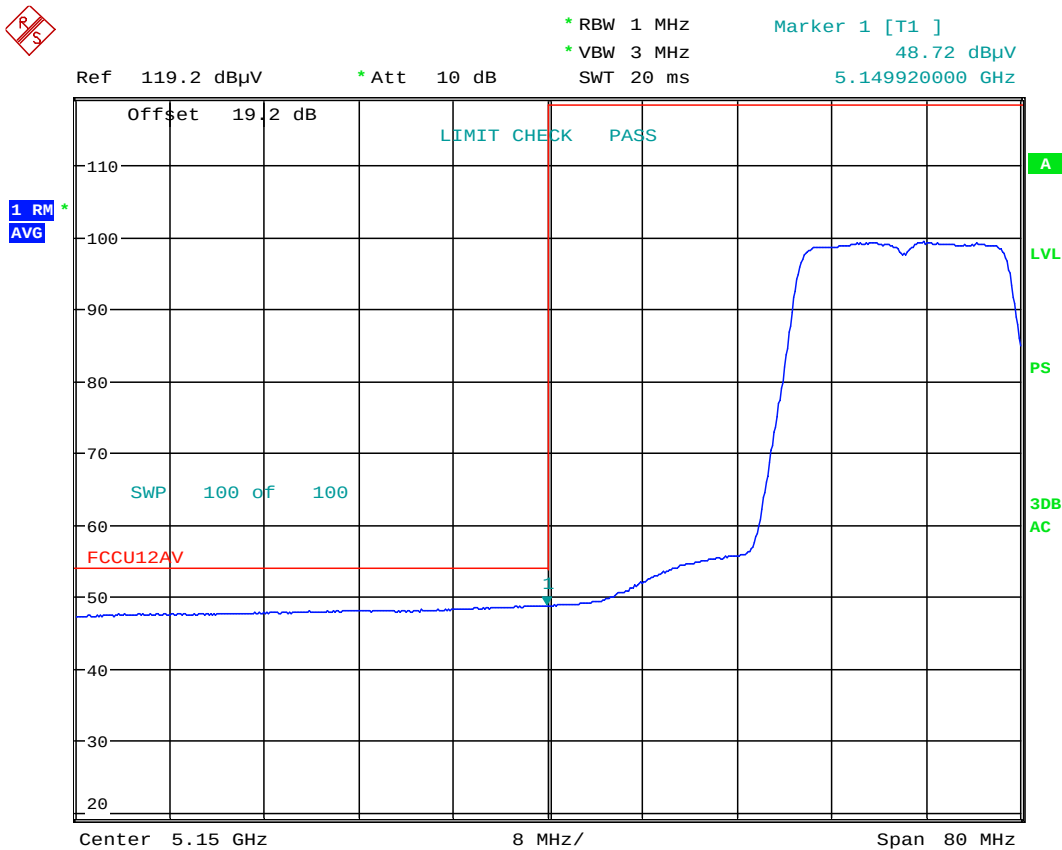
Worst Case Mode: 802.11n (20MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36

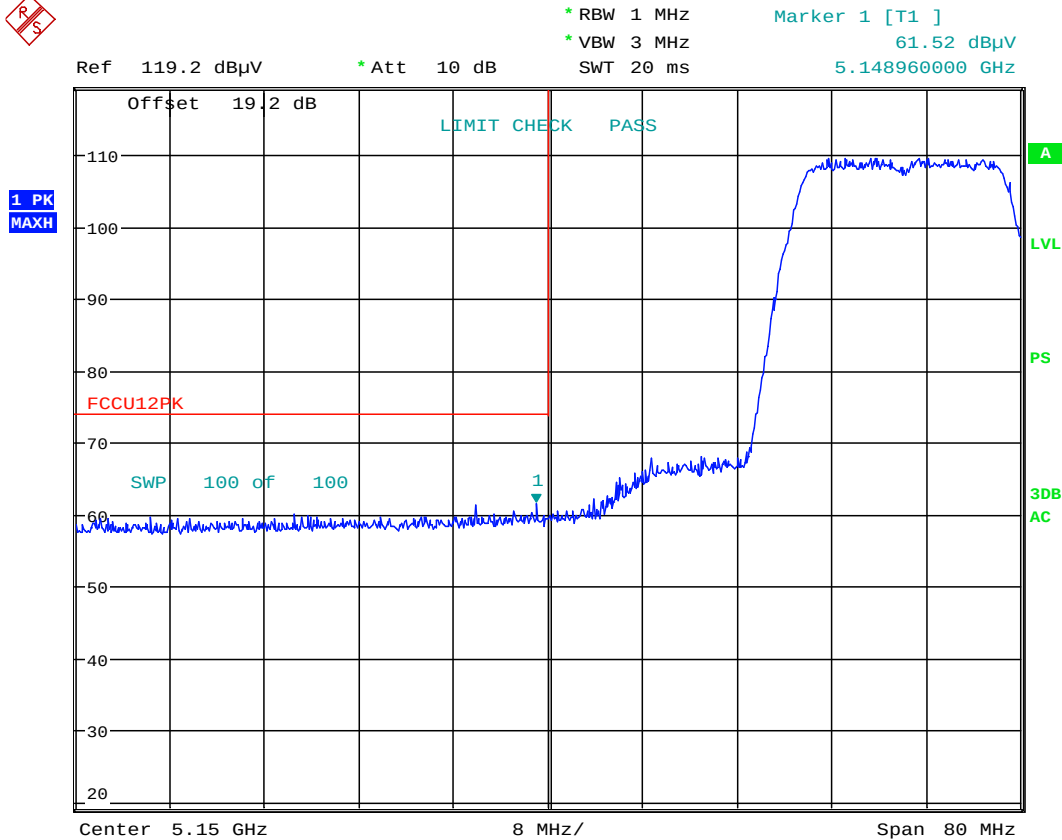


Date: 17.SEP.2014 13:26:48

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 151 of 177

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



Date: 17.SEP.2014 13:27:18

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 152 of 177

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

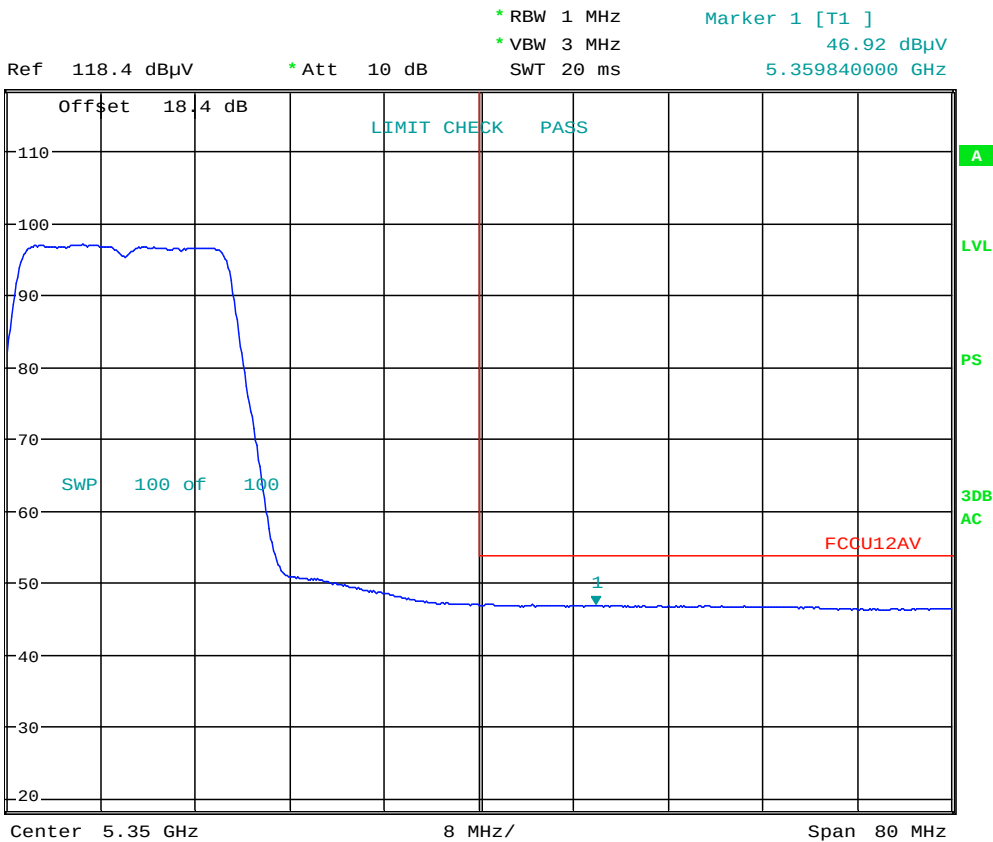
Worst Case Mode: 802.11n (20MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5320MHz

Channel: 64

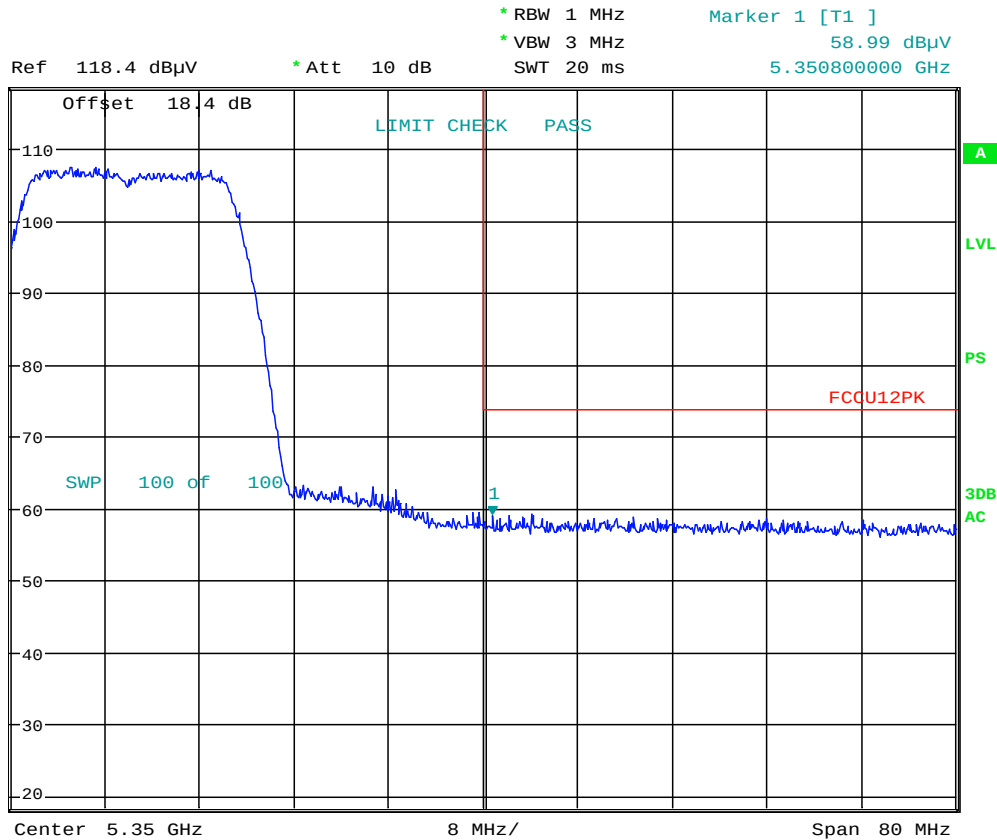


Date: 18.SEP.2014 09:08:02

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 153 of 177

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



Date: 18.SEP.2014 09:08:57

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 154 of 177

Radiated Band Edge Measurements (20MHz BW)

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

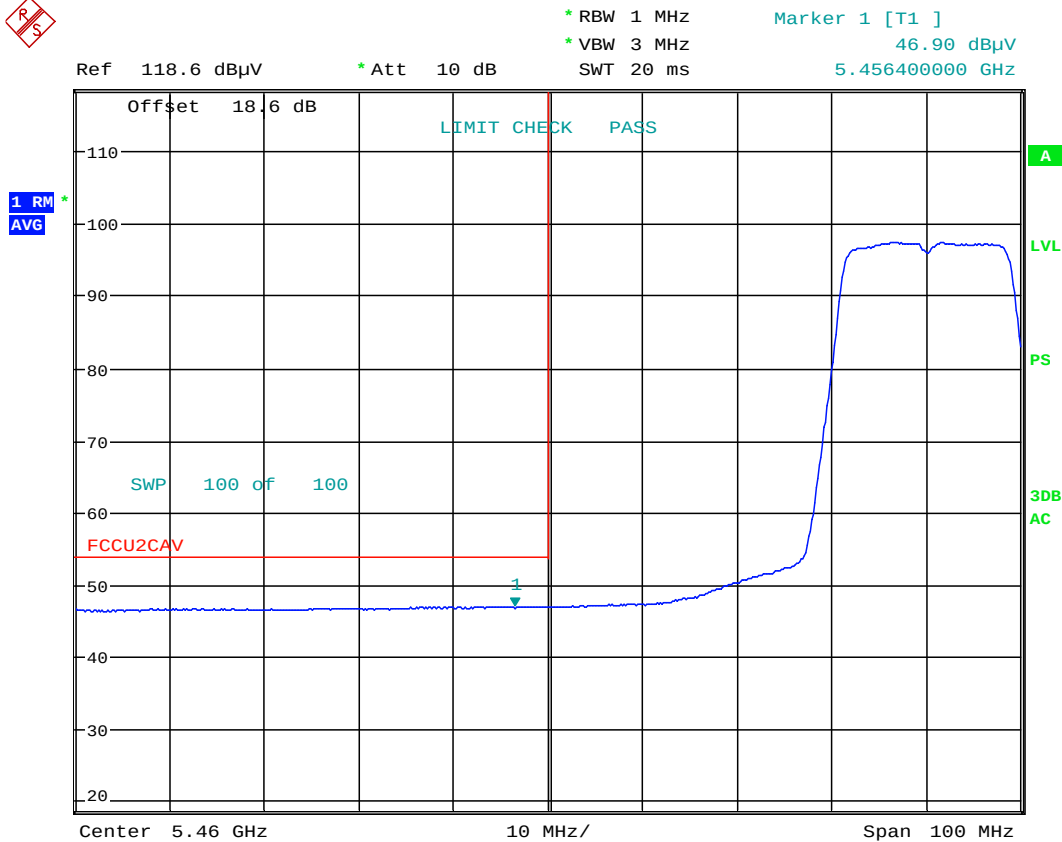
Worst Case Mode: 802.11n (20MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5500MHz

Channel: 100

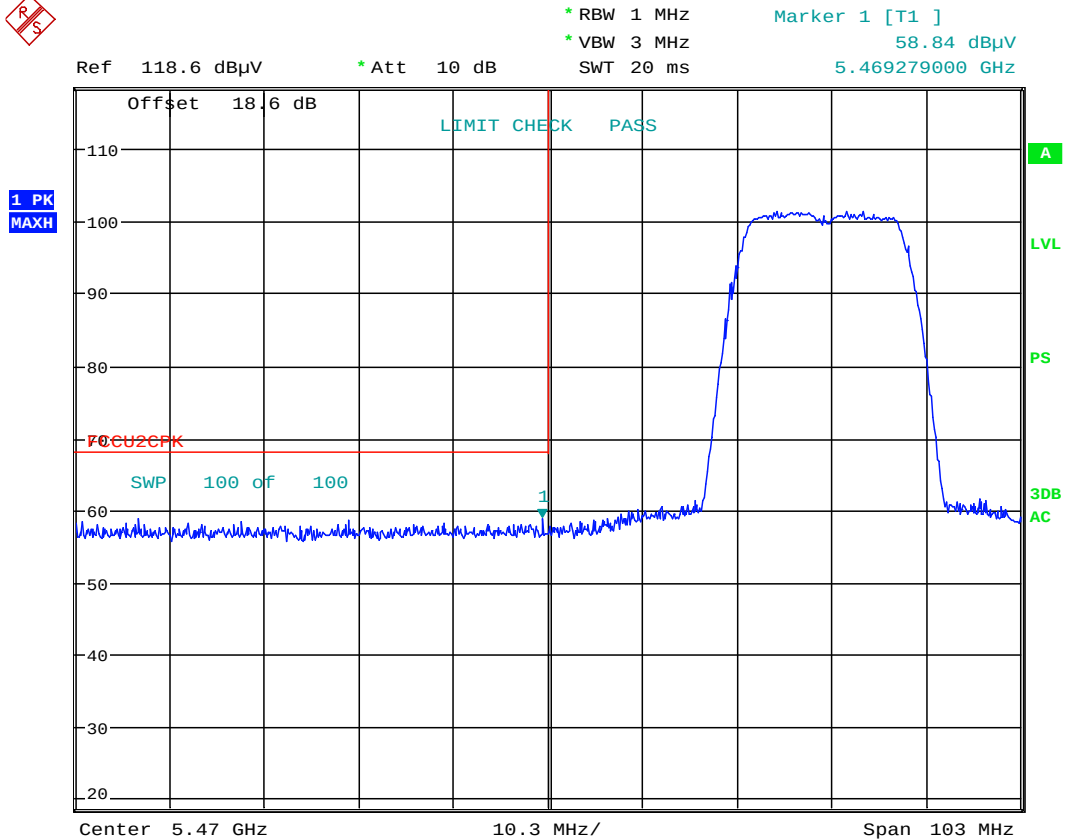


Date: 18.SEP.2014 09:53:31

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 155 of 177

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



Date: 16.SEP.2014 10:16:13

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 156 of 177

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

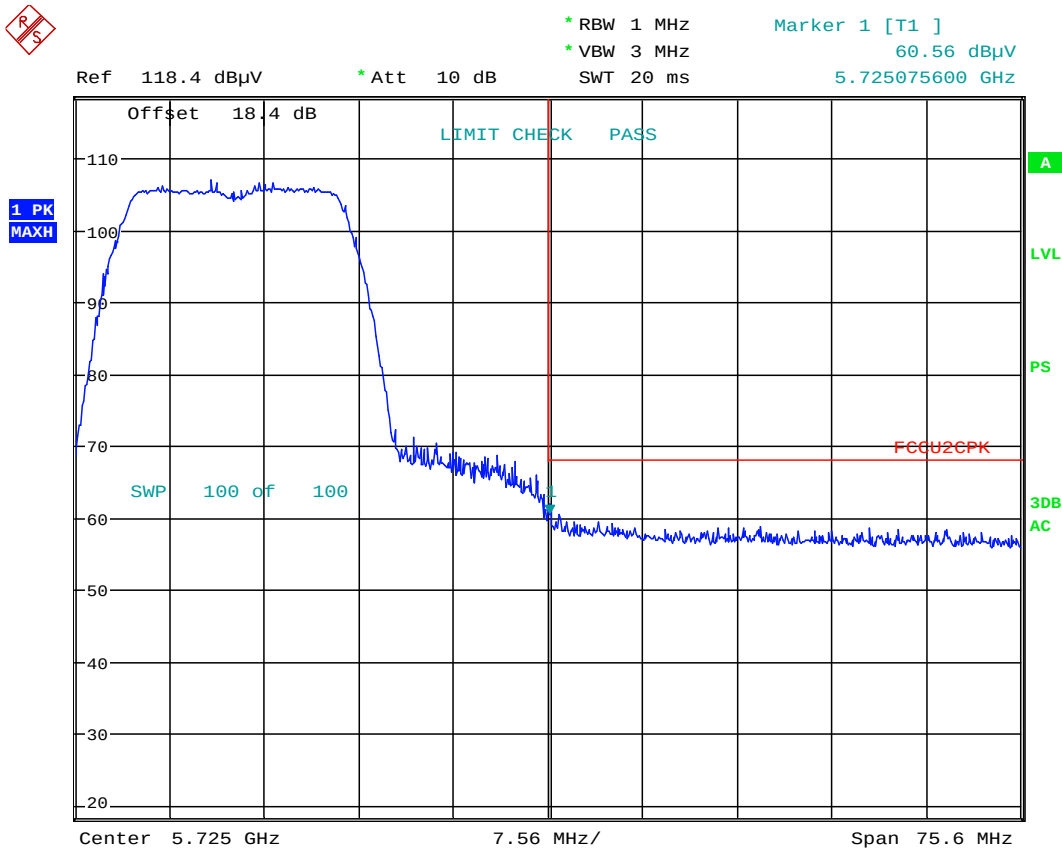
Worst Case Mode: 802.11n (20MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5700MHz

Channel: 140

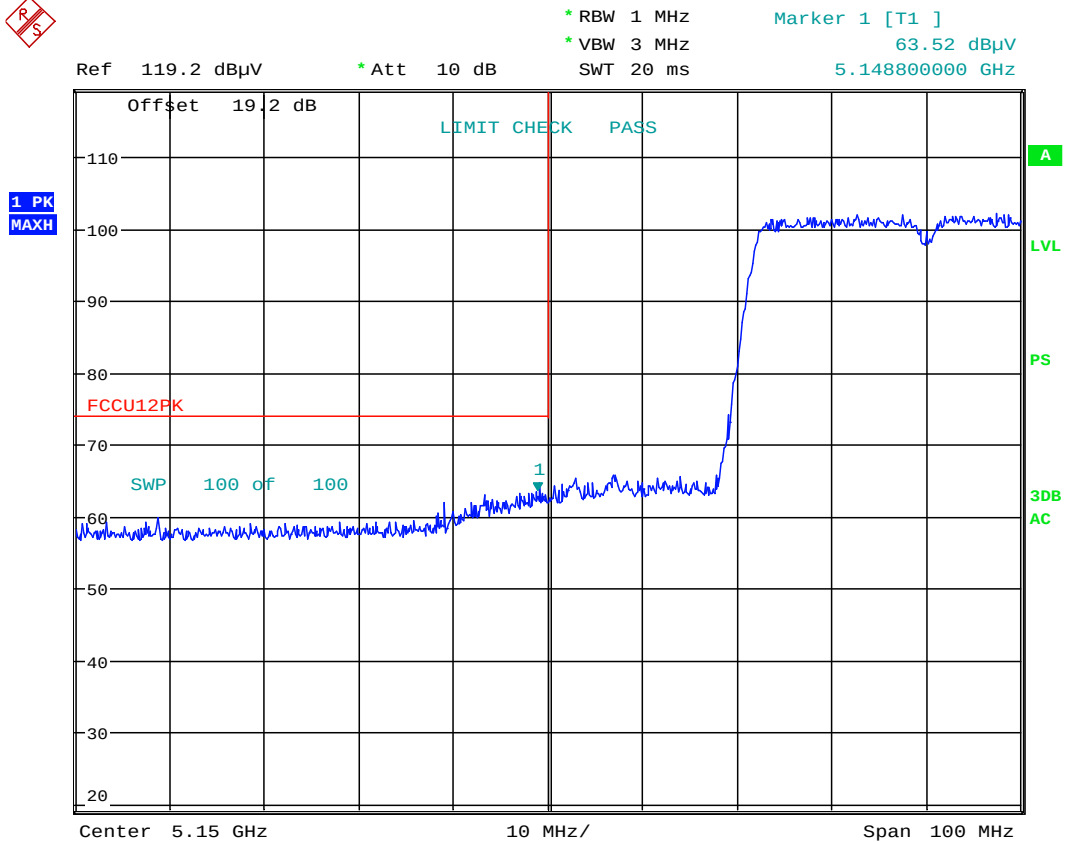


Date: 18.SEP.2014 10:36:52

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 157 of 177

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



Date: 18.SEP.2014 08:39:59

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 159 of 177

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

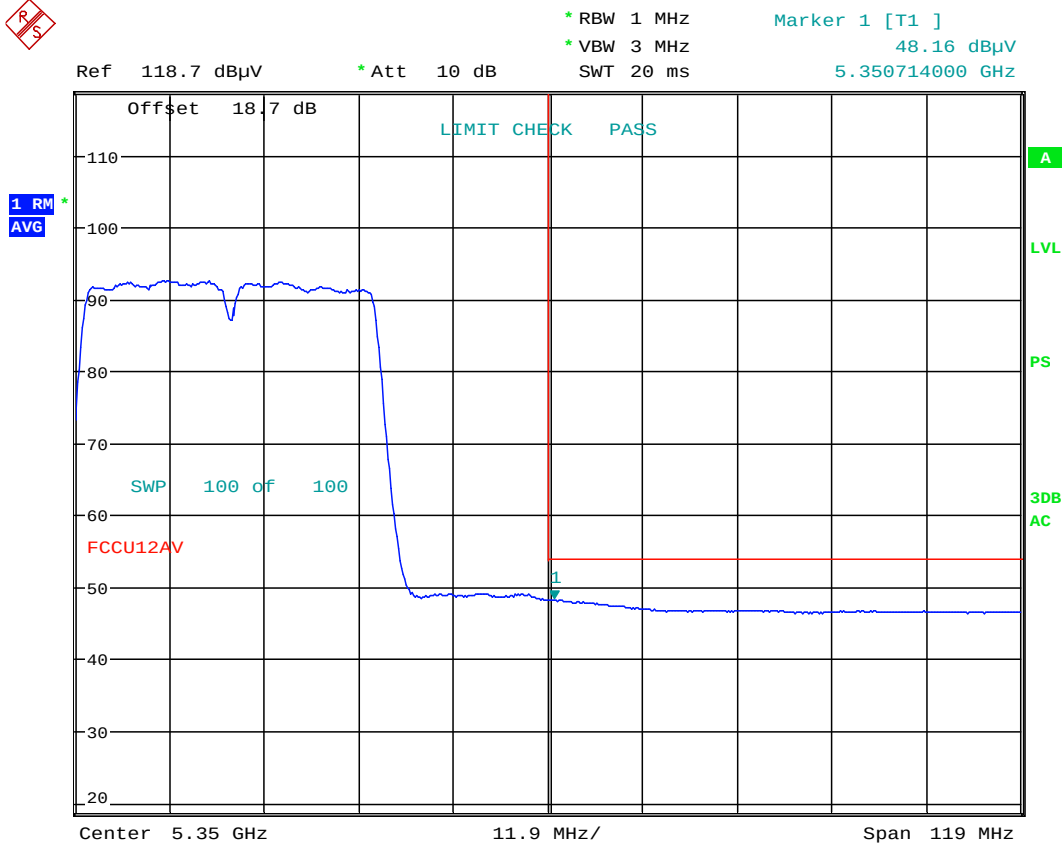
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5310MHz

Channel: 62



Date: 18.SEP.2014 09:17:34

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 160 of 177

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

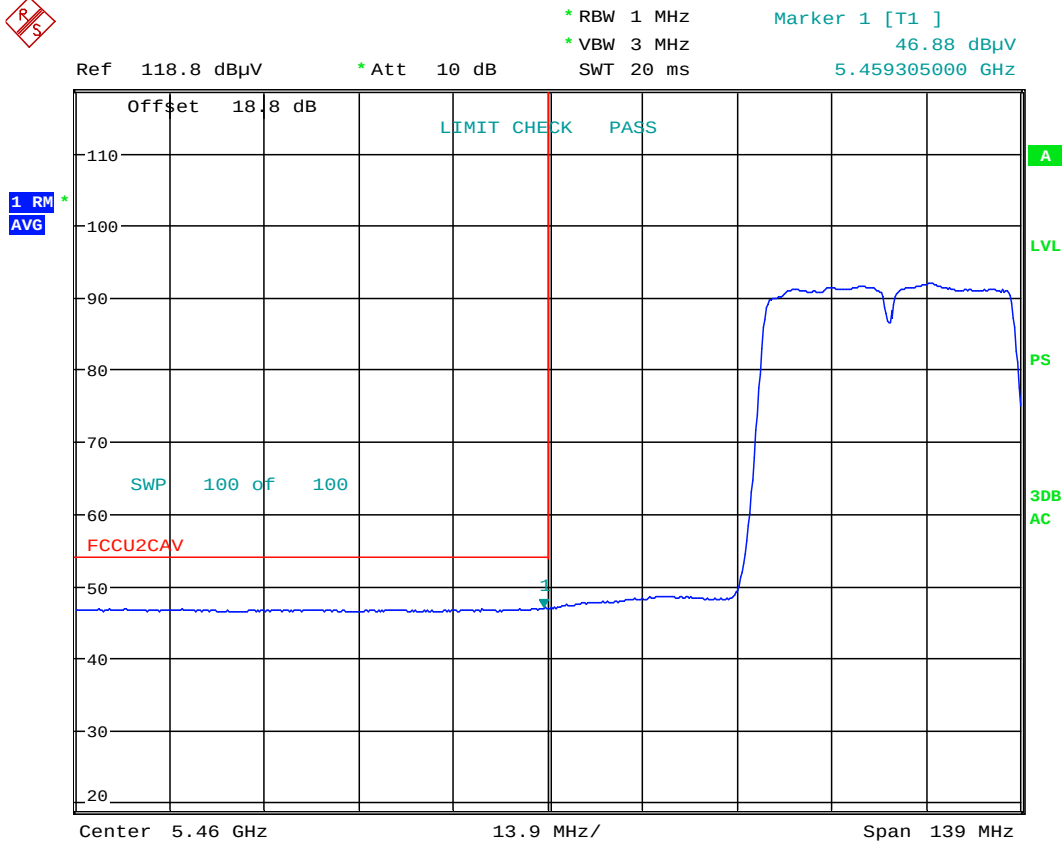
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5510MHz

Channel: 102

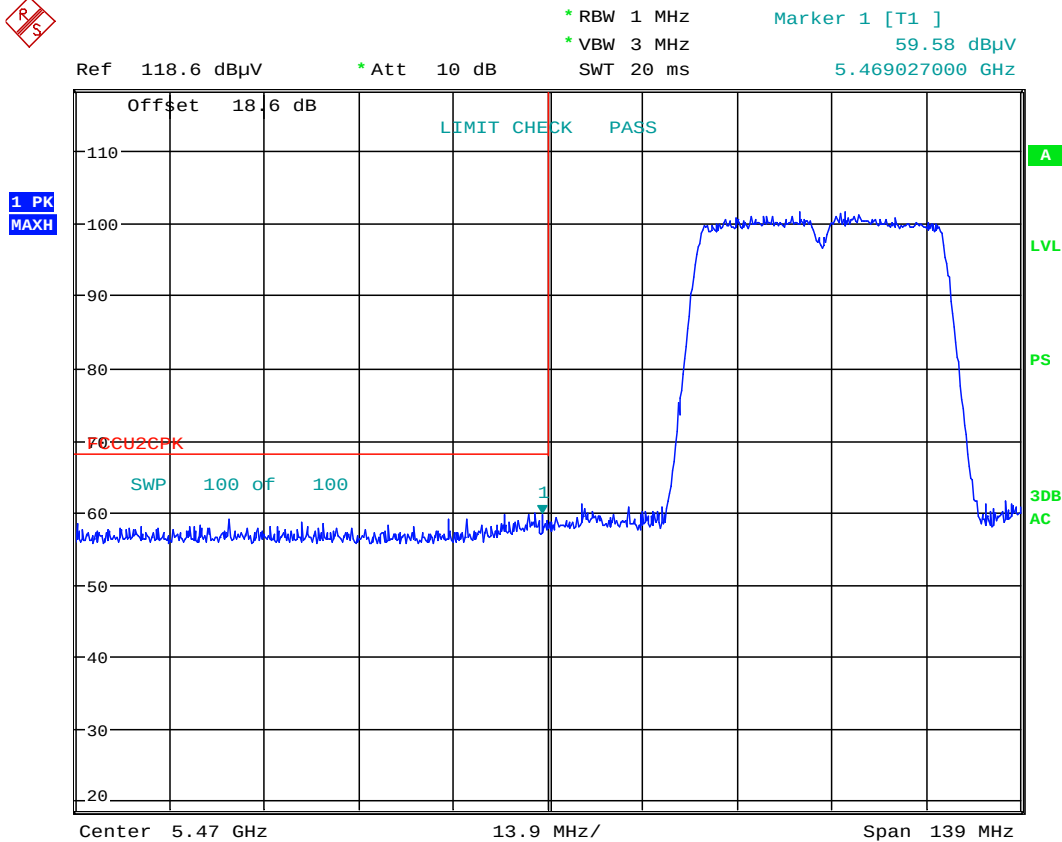


Date: 18.SEP.2014 09:57:39

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 162 of 177

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



Date: 18.SEP.2014 09:58:18

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 163 of 177

Radiated Band Edge Measurements (40MHz BW)

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

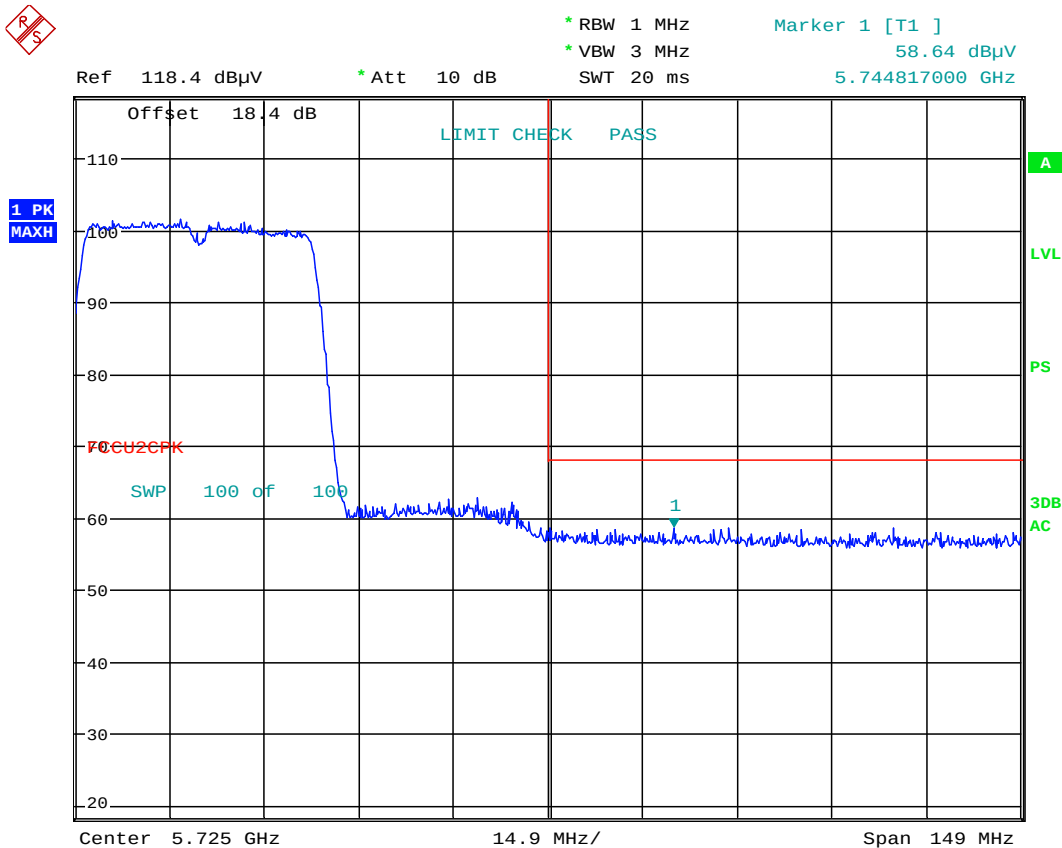
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5670MHz

Channel: 134



Date: 18.SEP.2014 10:39:19

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 164 of 177

6.16 MIMO Radiated Band Edge Measurements (80MHz BW)

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

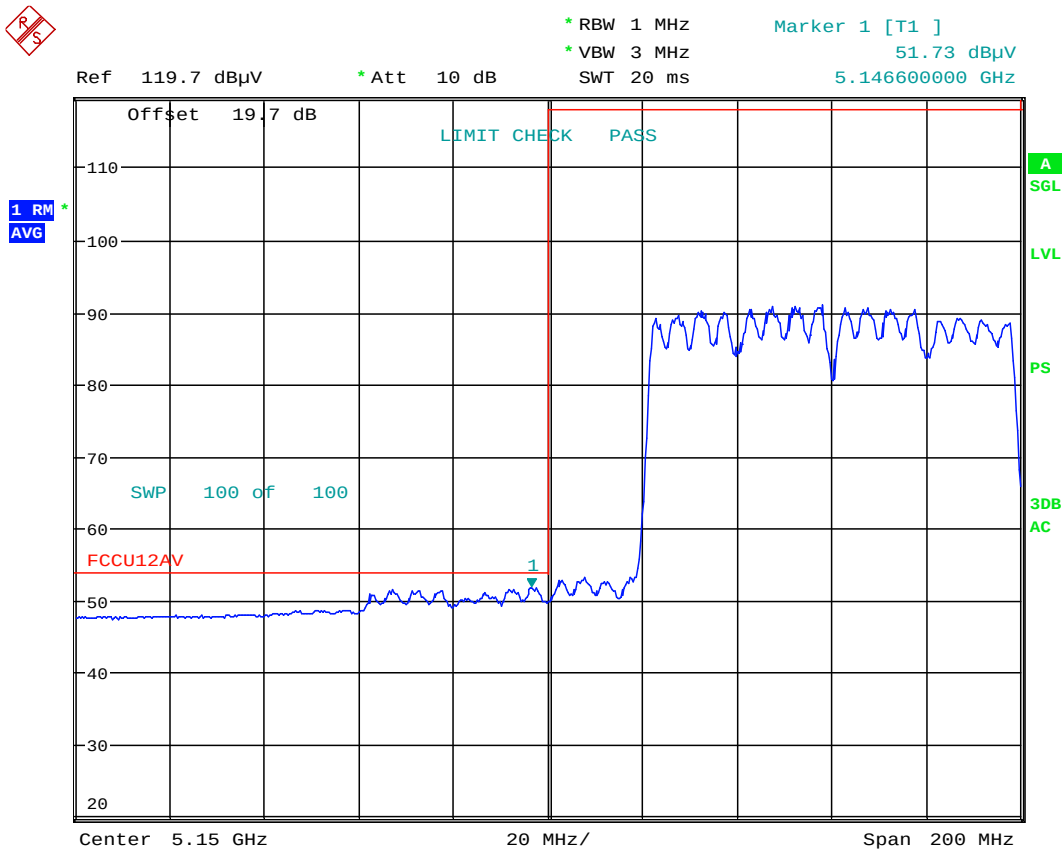
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5210MHz

Channel: 42

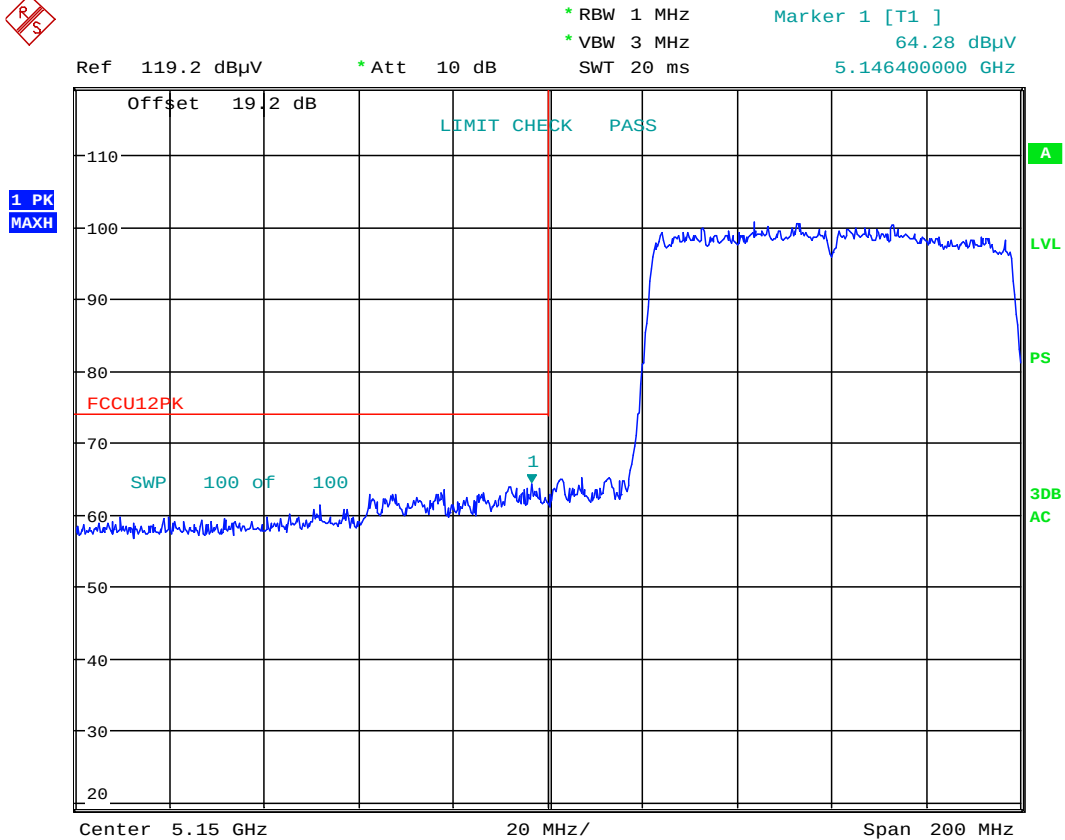


Date: 18.SEP.2014 08:49:34

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 165 of 177

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



Date: 18.SEP.2014 08:50:59

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 166 of 177

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

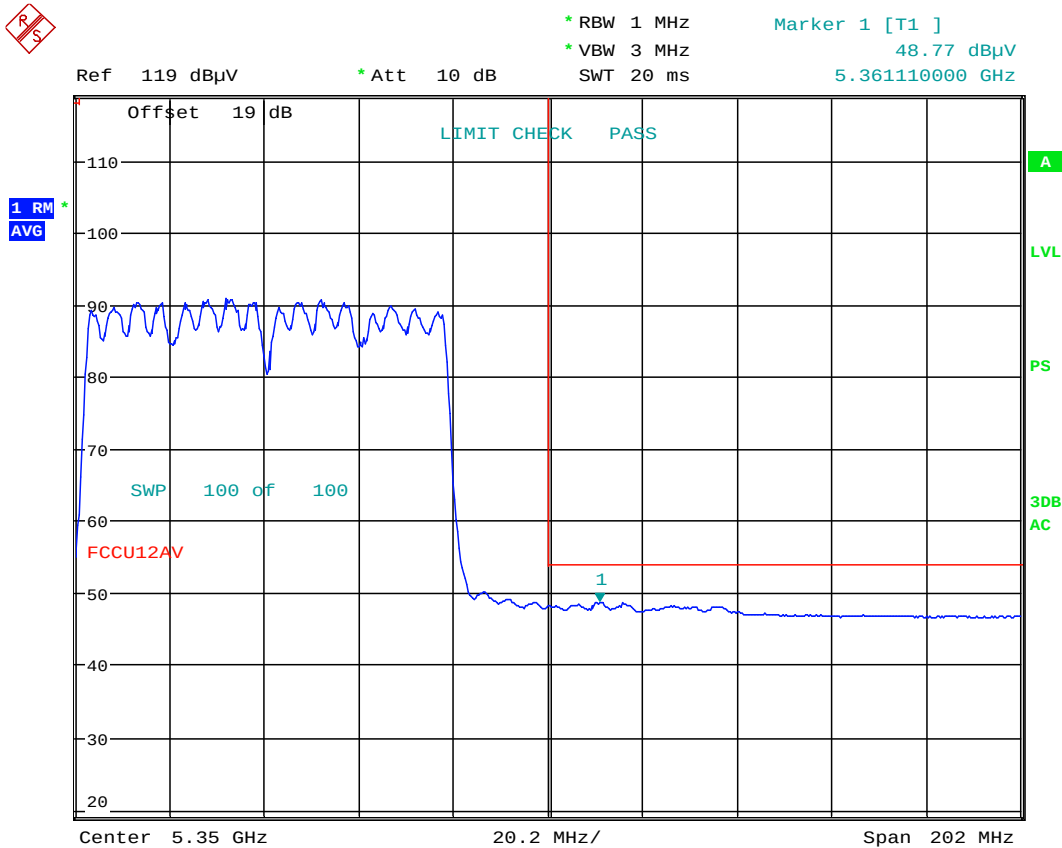
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5290MHz

Channel: 58

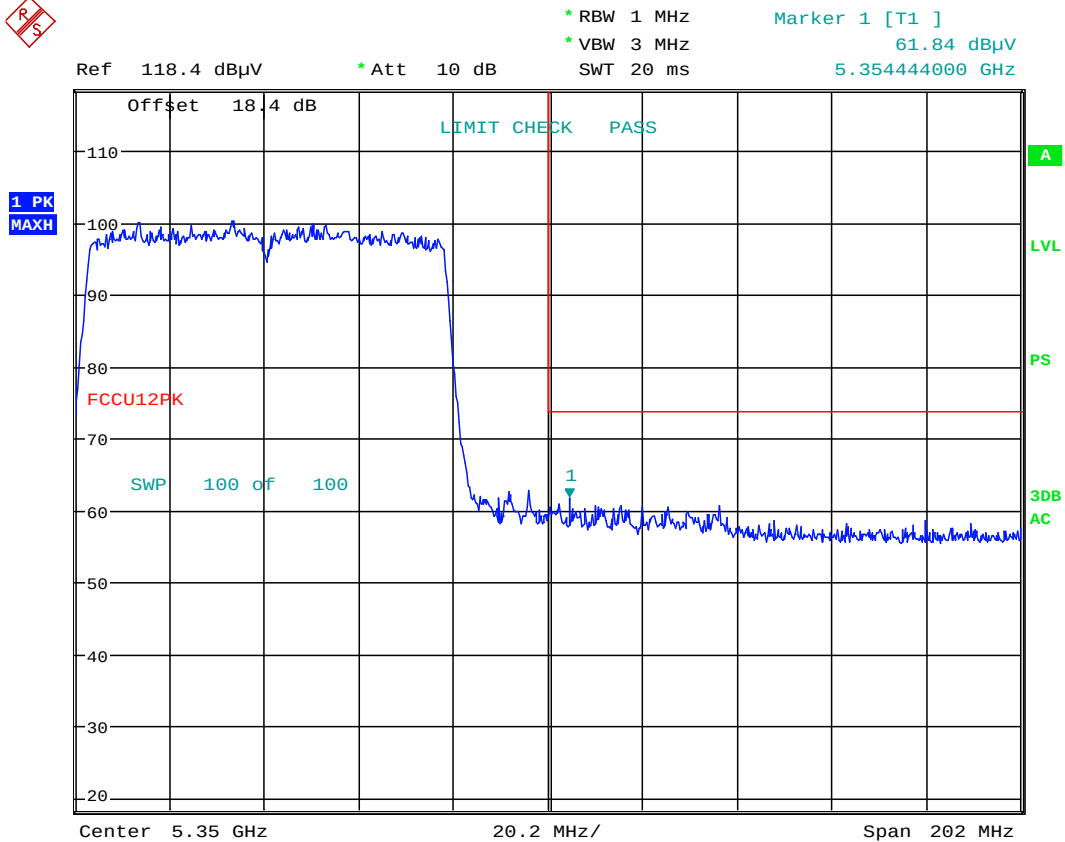


Date: 18.SEP.2014 09:20:25

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 167 of 177

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



Date: 18.SEP.2014 09:20:56

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 168 of 177

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

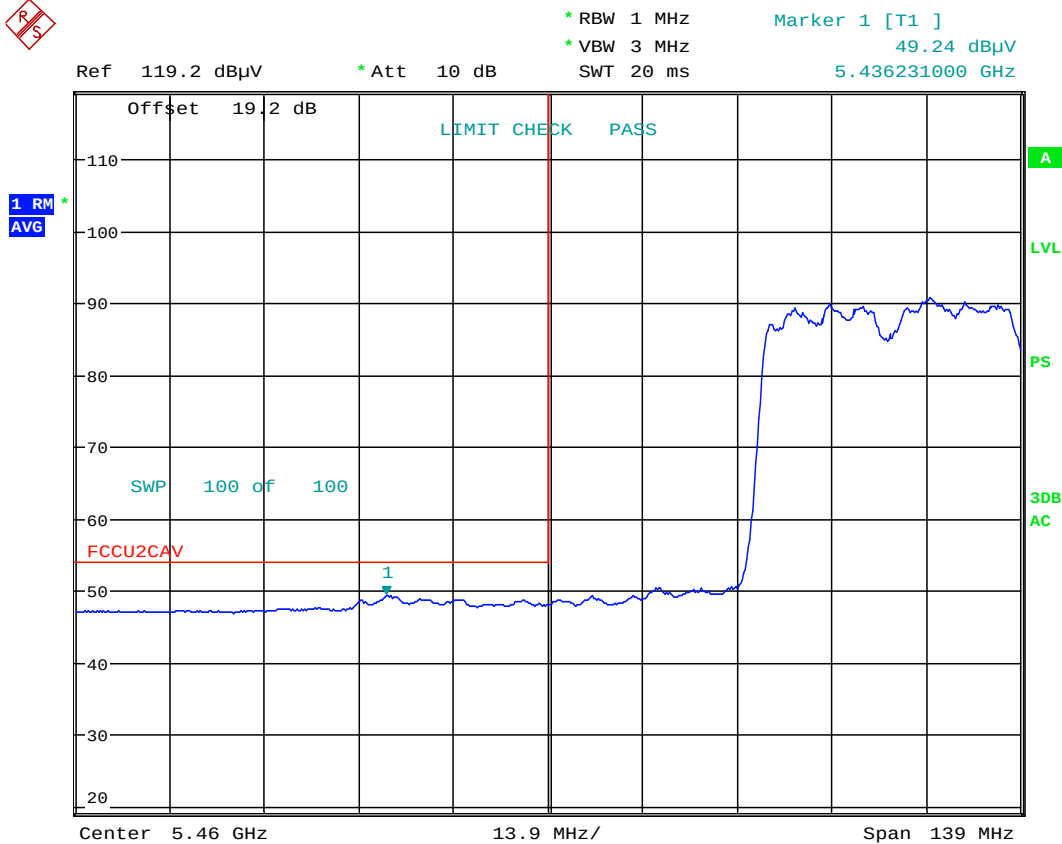
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5530MHz

Channel: 106

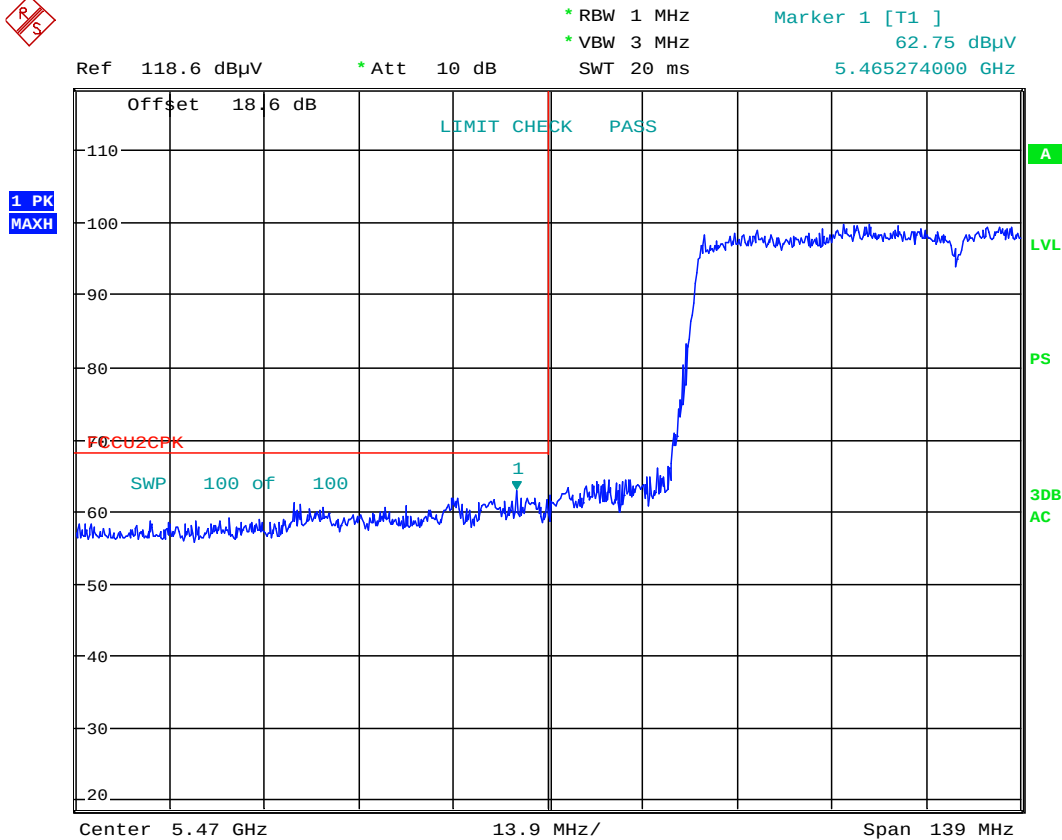


Date: 18.SEP.2014 10:00:26

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 169 of 177

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



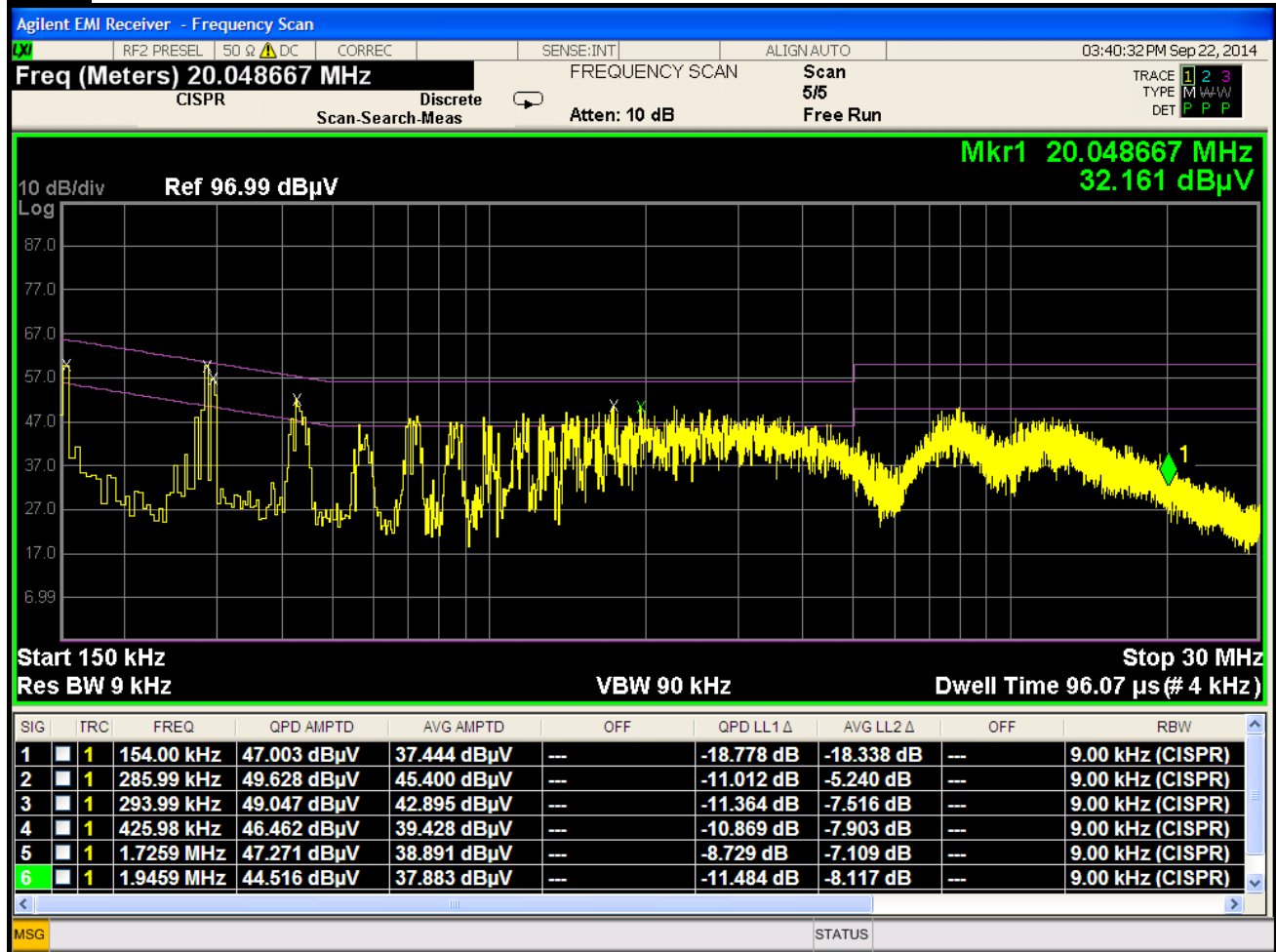
Date: 18.SEP.2014 10:01:04

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 170 of 177

6.17 Line-Conducted Test Data

\$15.407



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

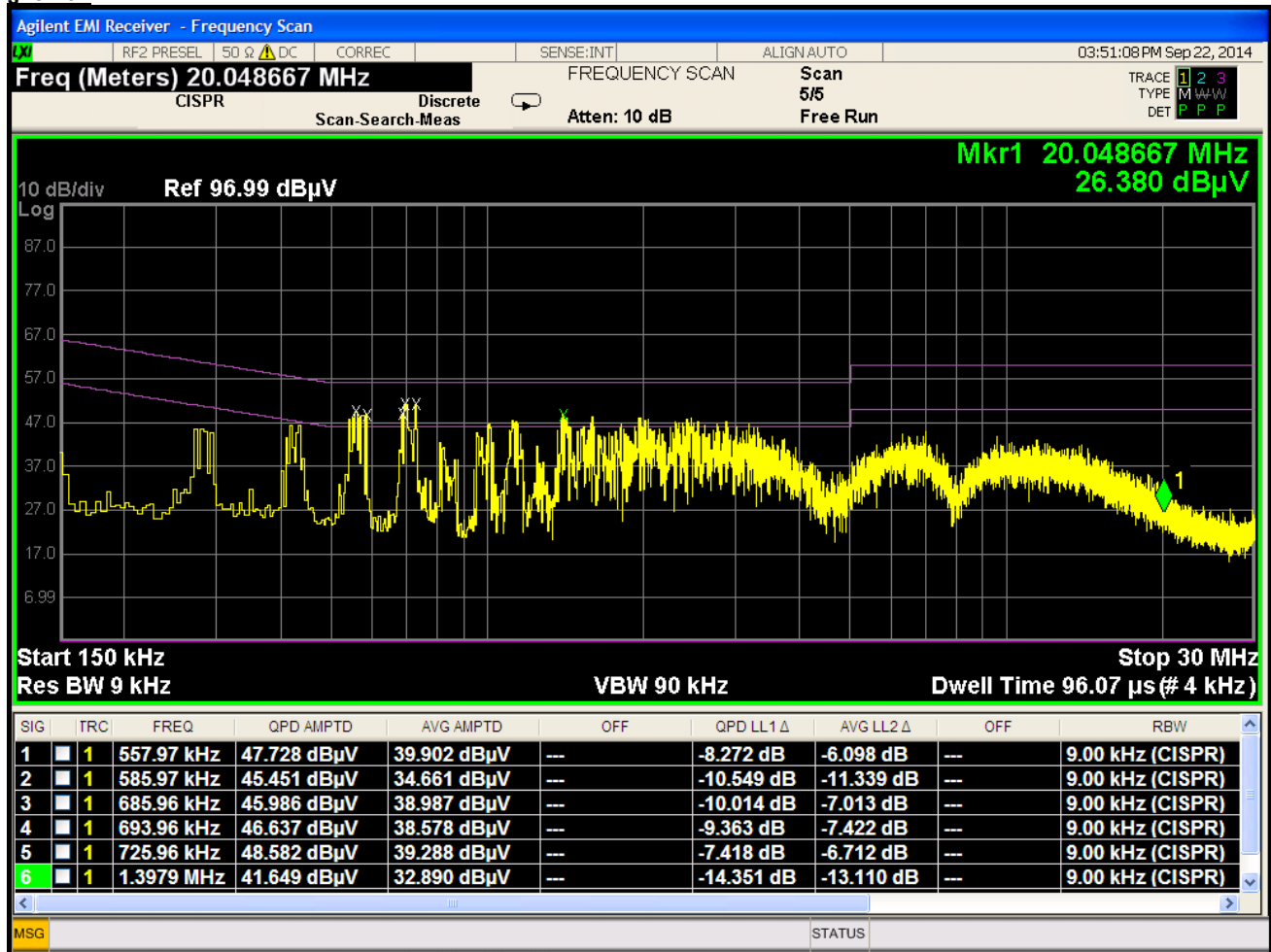
Notes:

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 171 of 177

Line-Conducted Test Data

\$15.407



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

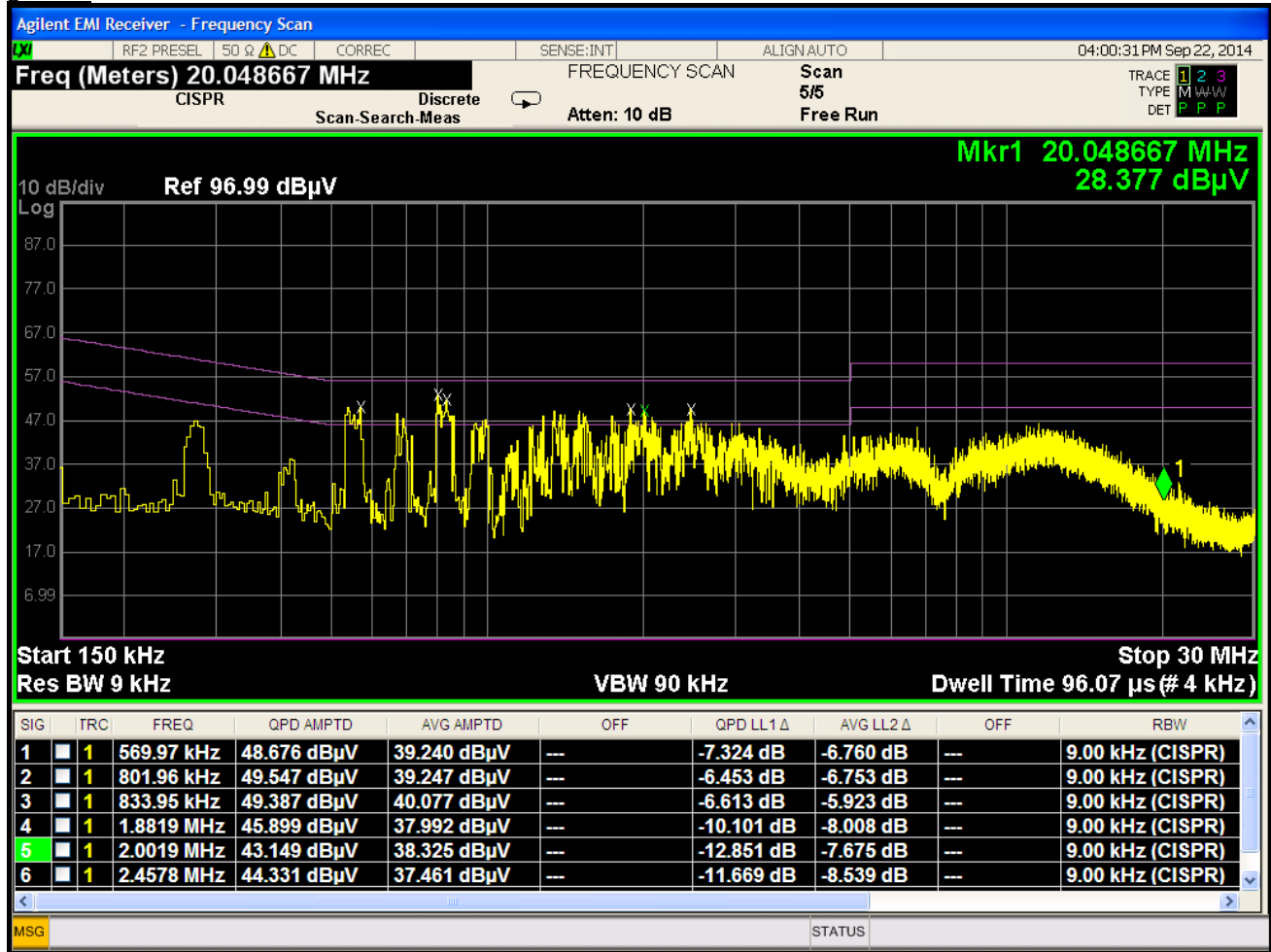
Notes:

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 172 of 177

Line-Conducted Test Data

\$15.407



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

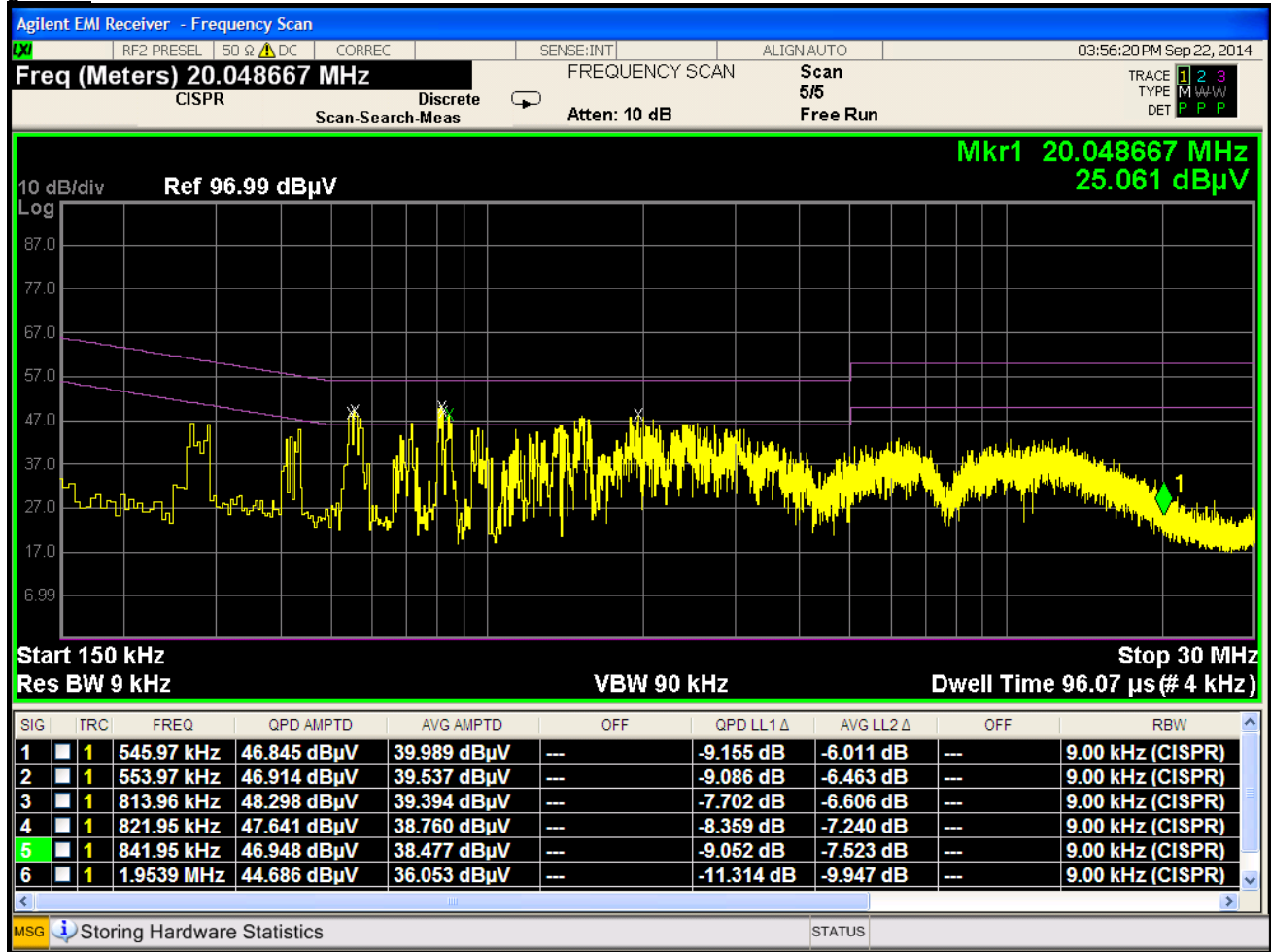
Notes:

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

FCC ID: A3LSMN915A	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: 0Y1409021799.A3L	Test Dates: 9/3-9/24/2014	EUT Type: Portable Handset		Page 173 of 177

Line-Conducted Test Data

\$15.407



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

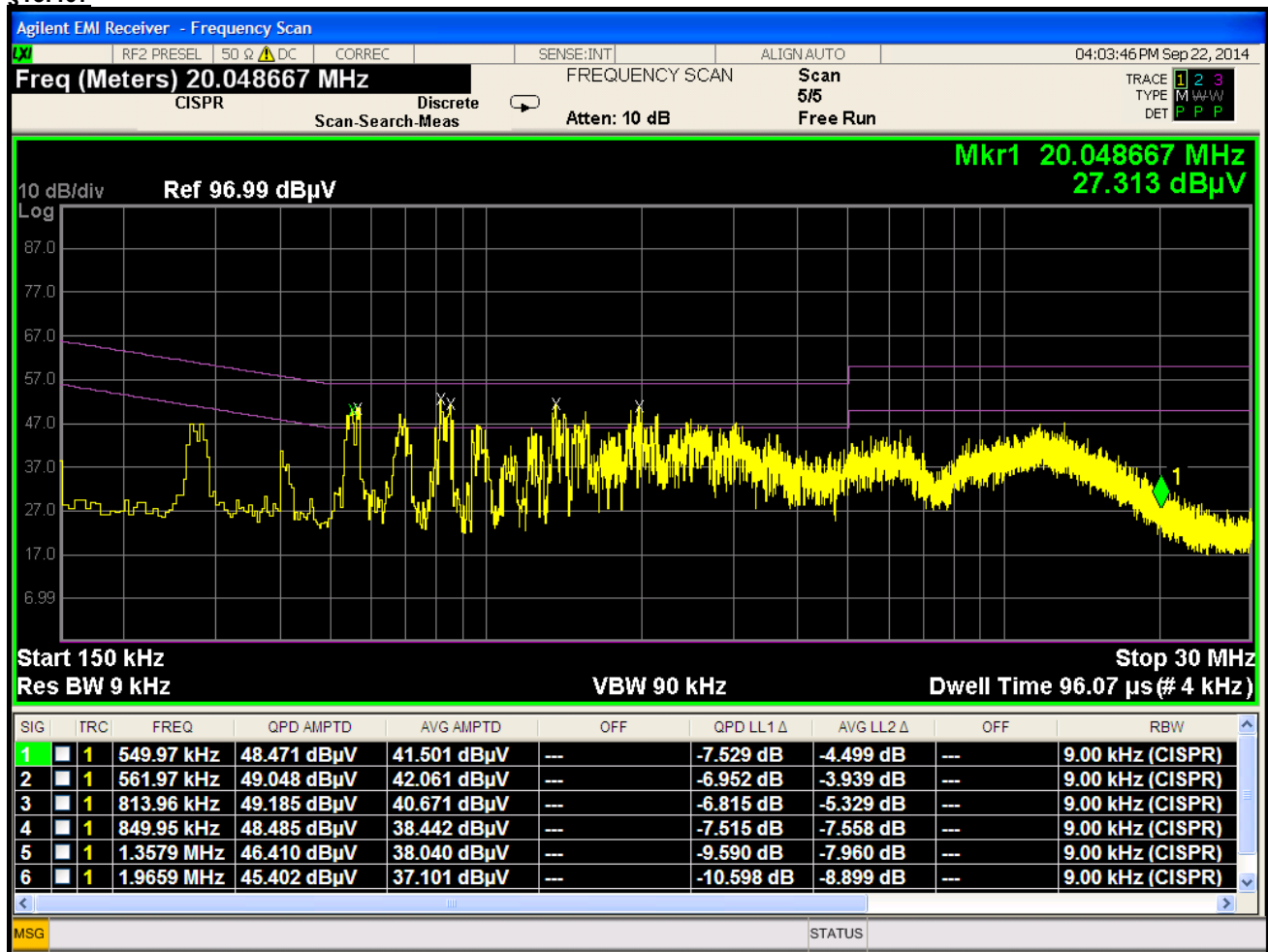
Notes:

- 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/AVLimit (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)

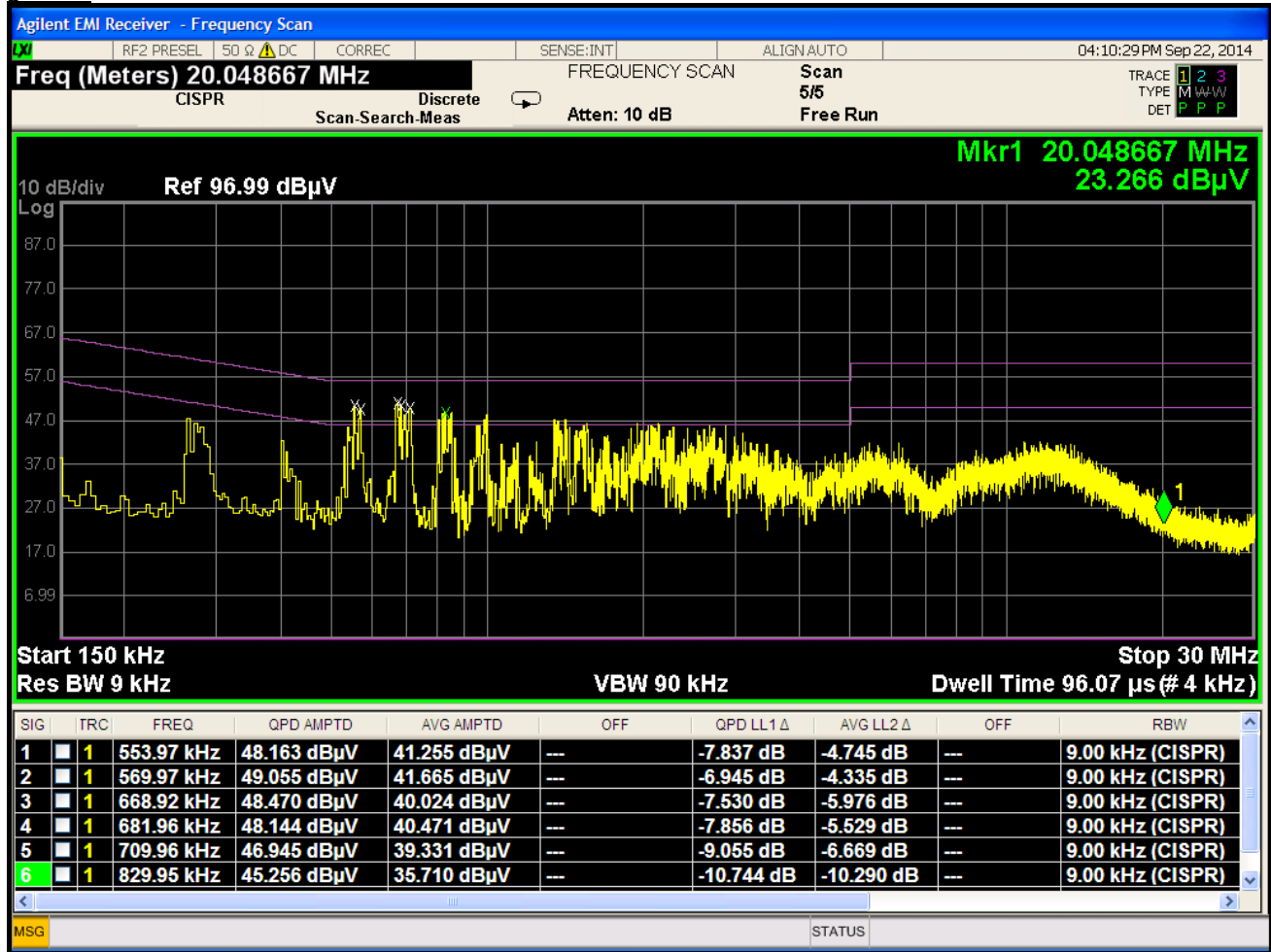
Notes:

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

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\$15.407



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

Notes:

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

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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: A3LSMN915A** is in compliance with Part 15E of the FCC Rules.

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