

6.5 Conducted Emissions at the Band Edge

§15.247(d)

Test Overview and Limit

All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle (>98%), at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. For the following out of band conducted spurious emissions plots at the band edge, the EUT was set at a data rate of 1Mbps for “b” mode, 6 Mbps for “g” mode, 6 Mbps for “a” mode, 6.5/7.2Mbps for 20MHz BW “n” mode, 13.5/15Mbps for 40MHz “n”, and 29.3/32.5Mbps for 80MHz “ac” mode as these settings produced the worst-case emissions.

The limit for out-of-band spurious emissions at the band edge is 30dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100kHz bandwidth per the PSD procedure (Section 9.1).

Test Procedure Used

KDB 558074 v03r02 – Section 11.3

Test Settings

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW = 100kHz
4. VBW = 1MHz
5. Detector = Peak
6. Number of sweep points $\geq 2 \times \text{Span/RBW}$
7. Trace mode = max hold
8. Sweep time = auto couple
9. The trace was allowed to stabilize

Test Setup

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

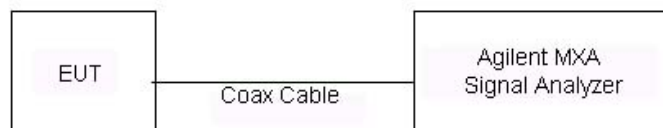




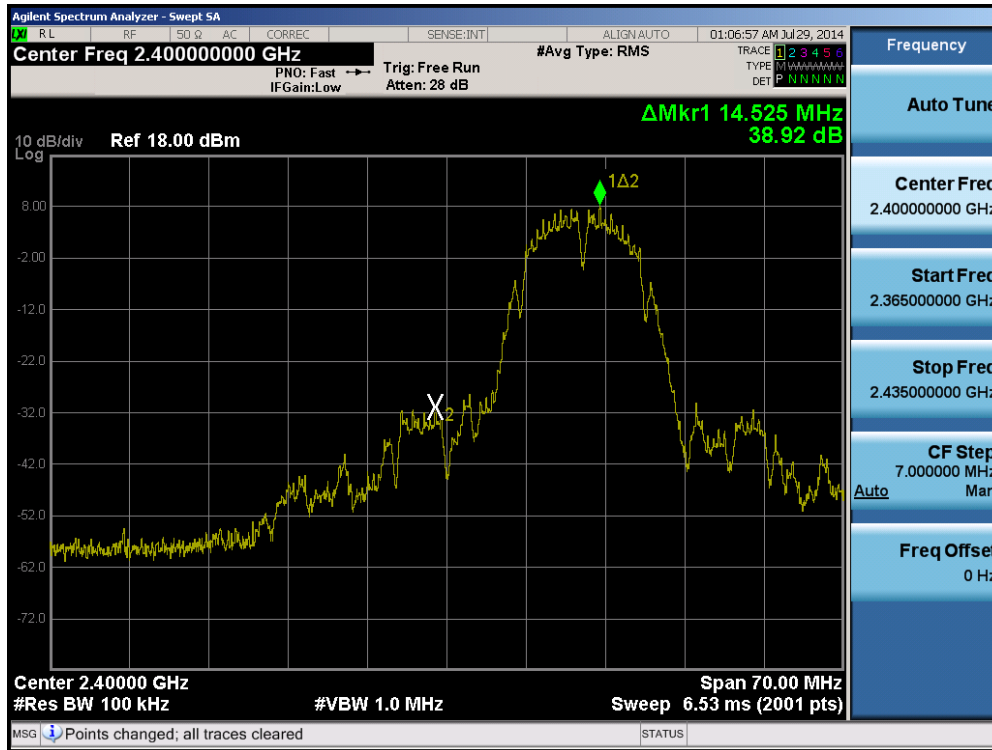
Figure 6-4. Test Instrument & Measurement Setup

Test Notes

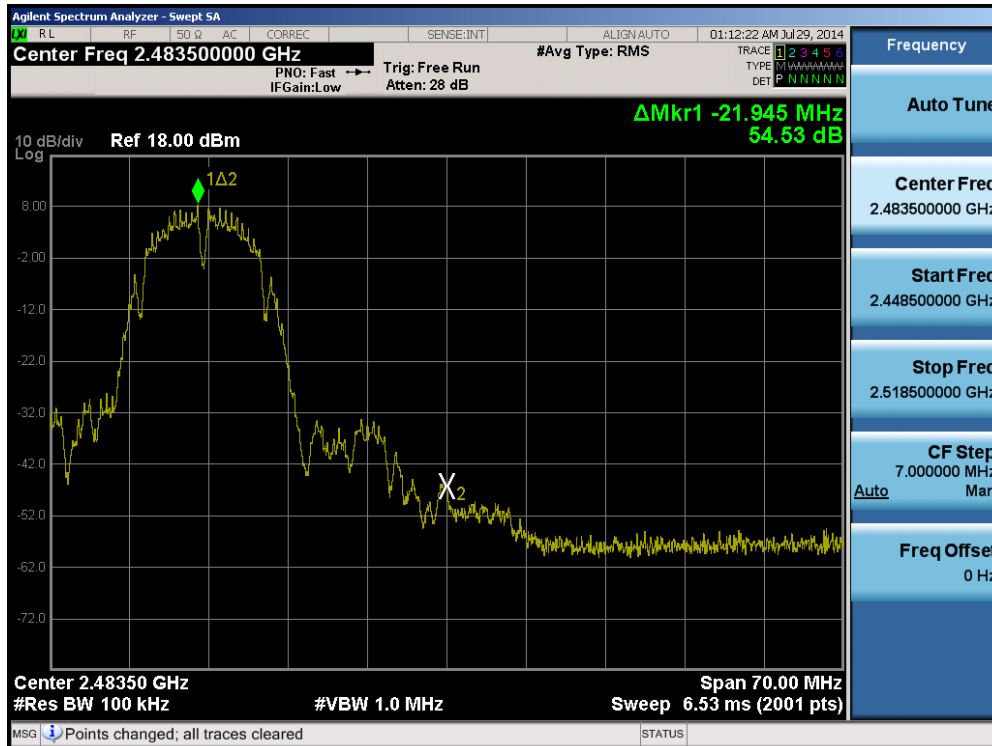
None

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset	Page 64 of 121	

Antenna-1 Conducted Emissions at the Band Edge

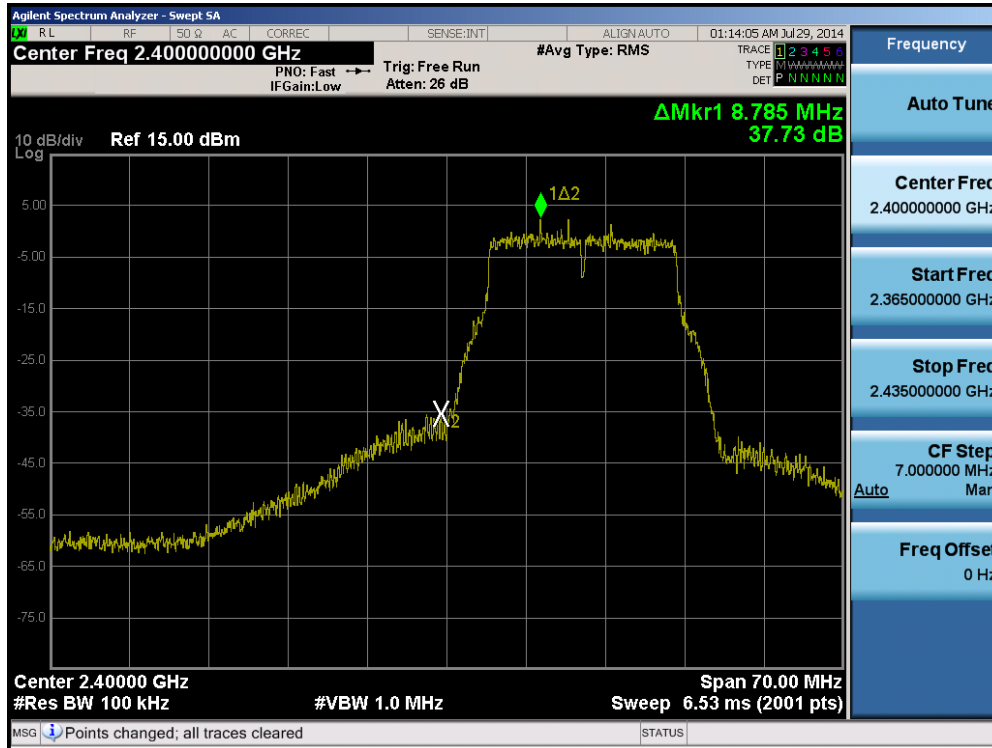


Plot 6-73. Band Edge Plot (802.11b – Ch. 1)

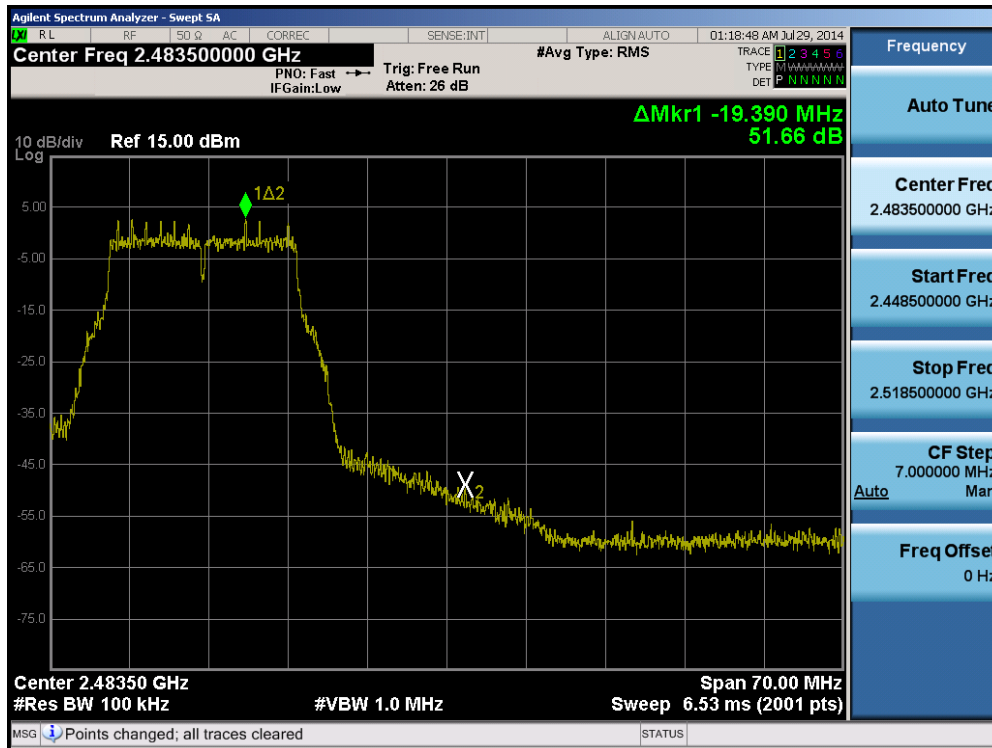


Plot 6-74. Band Edge Plot (802.11b – Ch. 11)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset	Page 65 of 121	

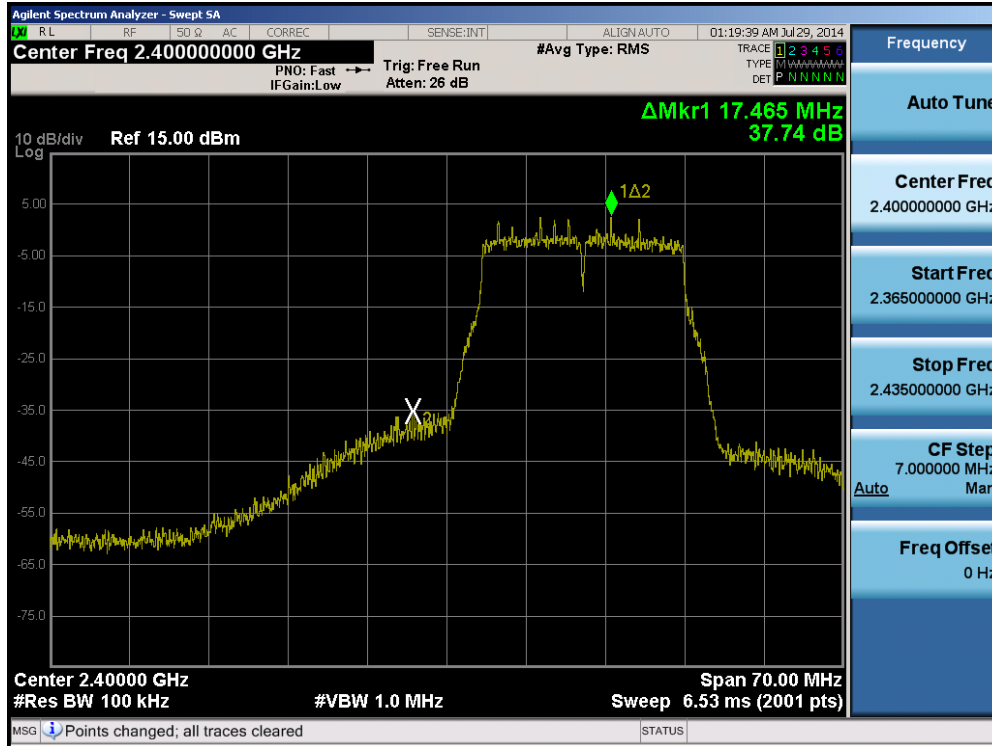


Plot 6-75. Band Edge Plot (802.11g– Ch. 1)

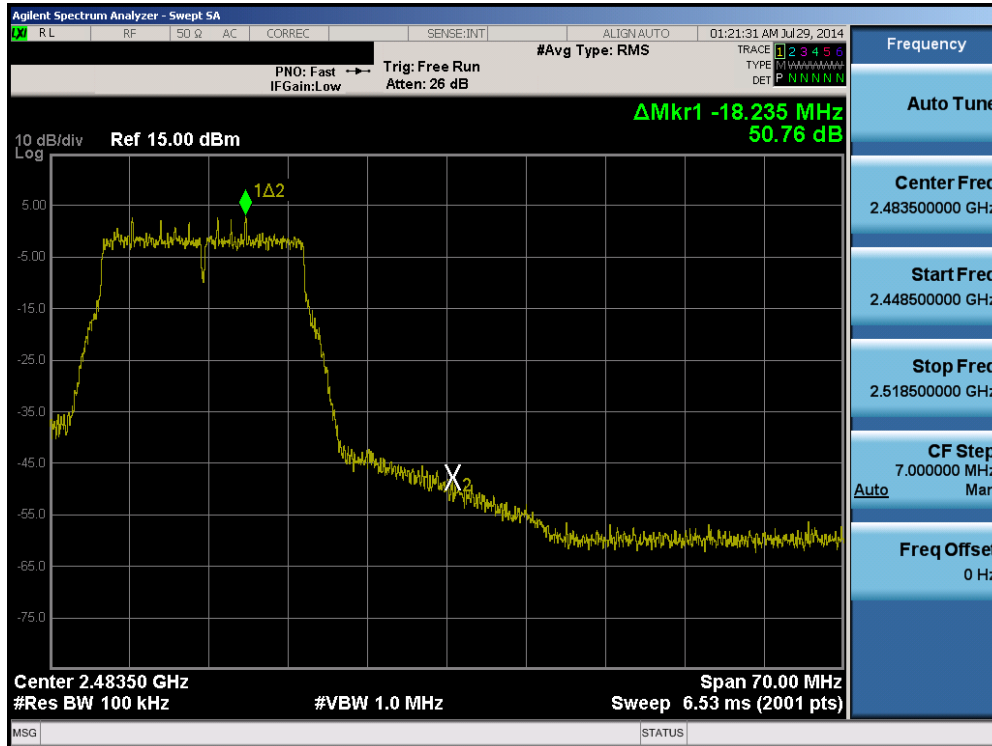


Plot 6-76. Band Edge Plot (802.11g – Ch. 11)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 66 of 121

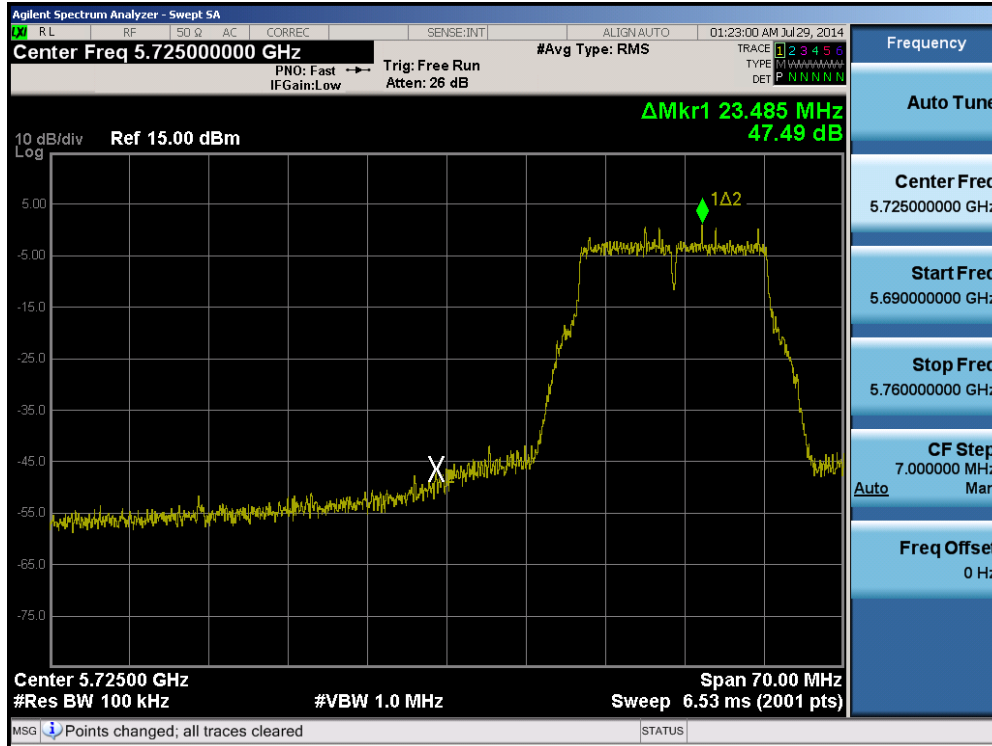


Plot 6-77. Band Edge Plot (802.11n (2.4GHz) – Ch. 1)

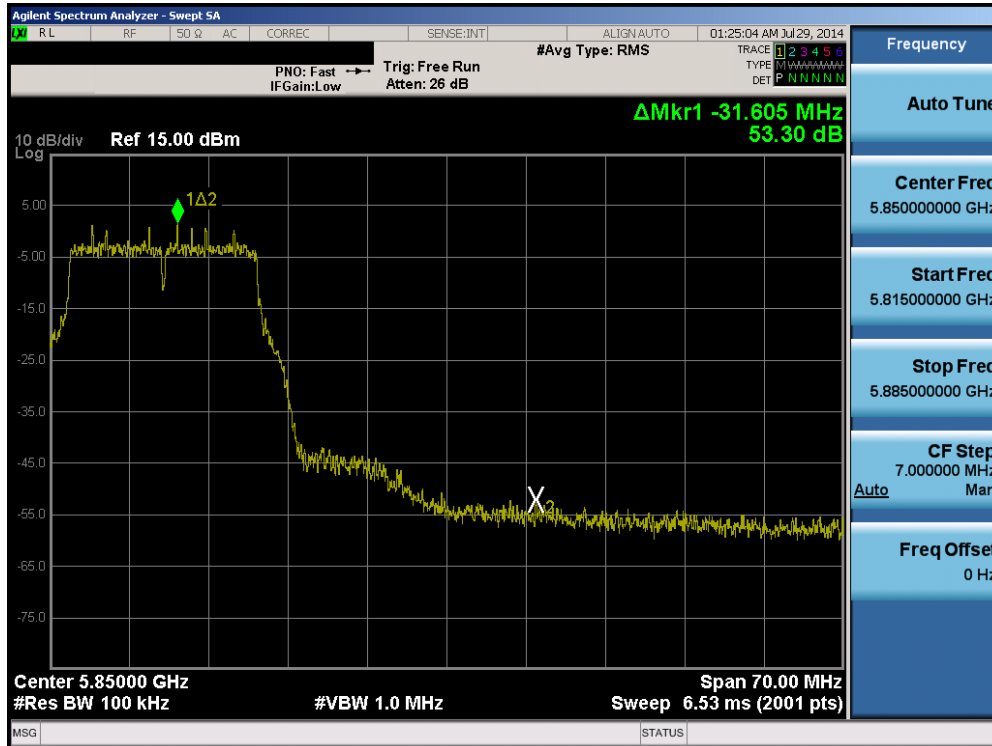


Plot 6-78. Band Edge Plot (802.11n (2.4GHz) – Ch. 11)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset	Page 67 of 121	

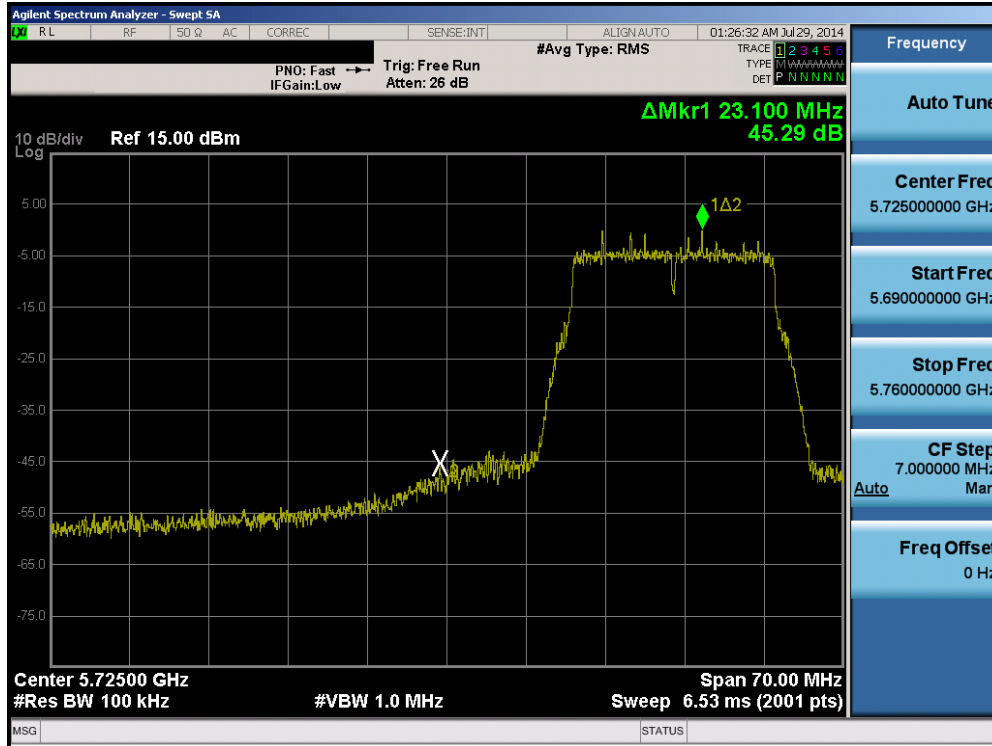


Plot 6-79. Band Edge Plot (802.11a – Ch. 149)

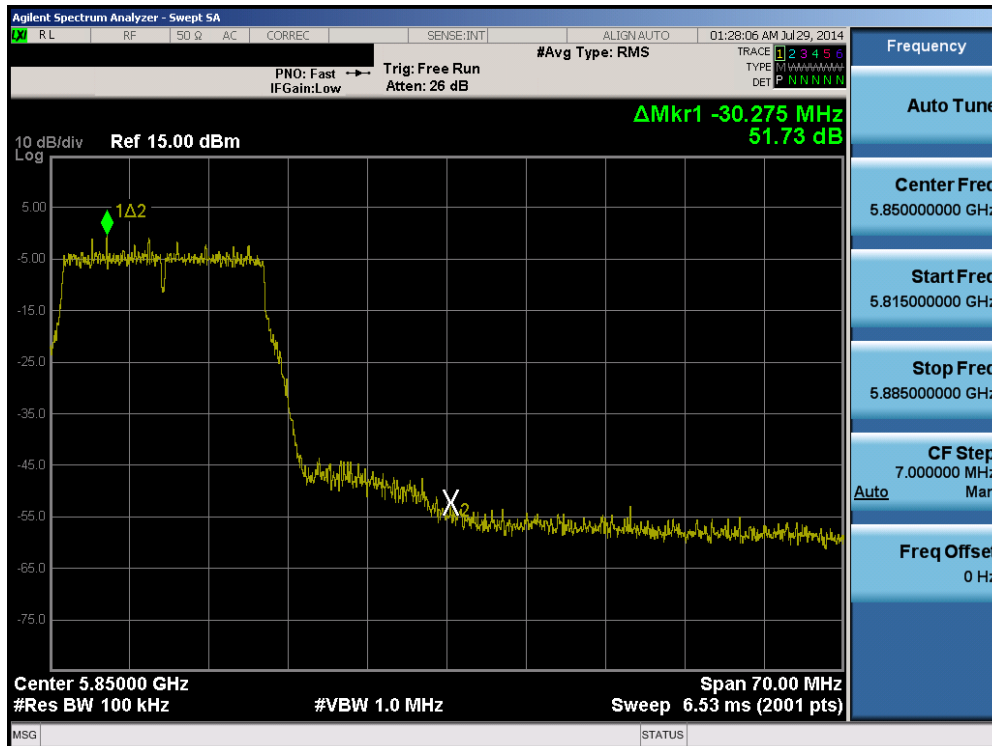


Plot 6-80. Band Edge Plot (802.11a – Ch. 165)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 68 of 121

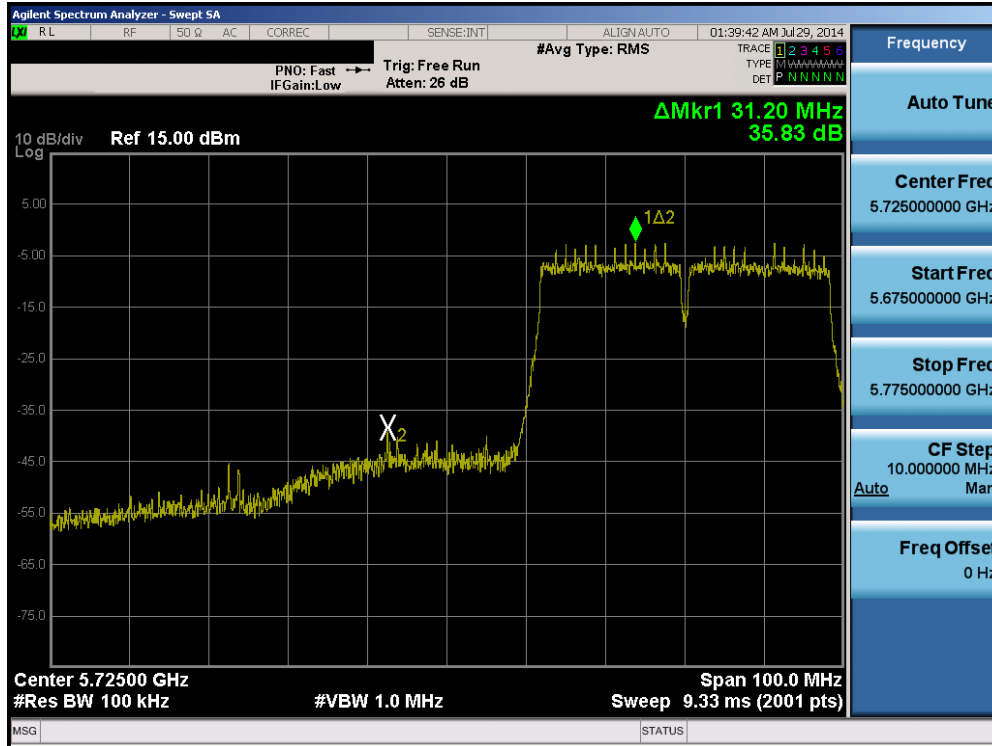


Plot 6-81. Band Edge Plot (20MHz BW 802.11n (5.8GHz) – Ch. 149)

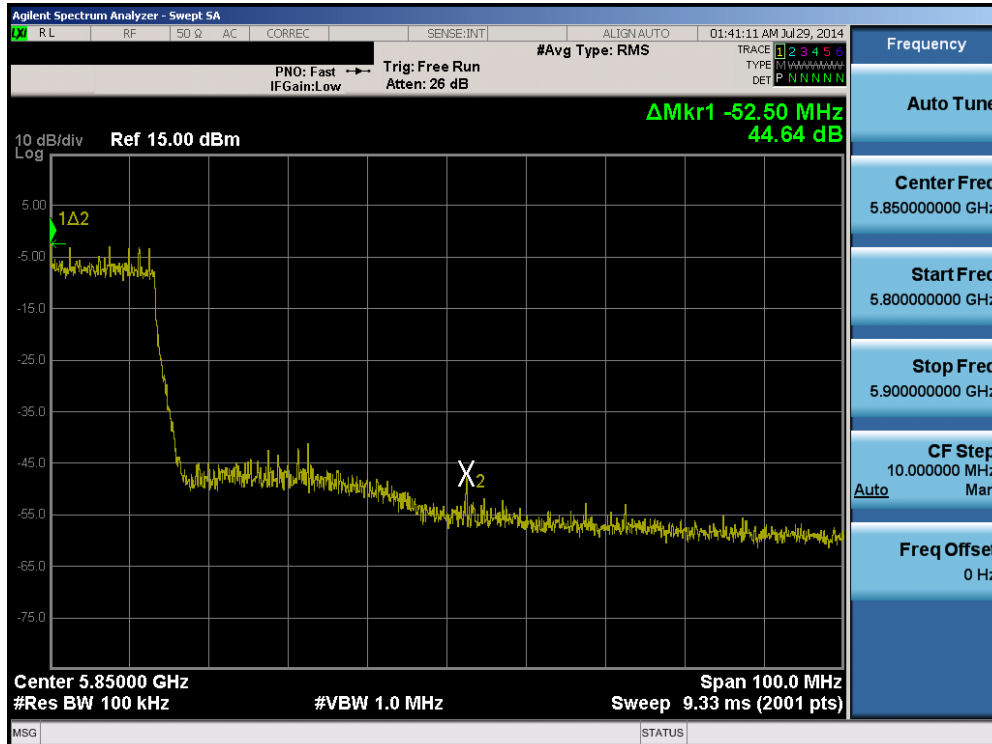


Plot 6-82. Band Edge Plot (20MHz BW 802.11n (5.8GHz) – Ch. 165)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 69 of 121

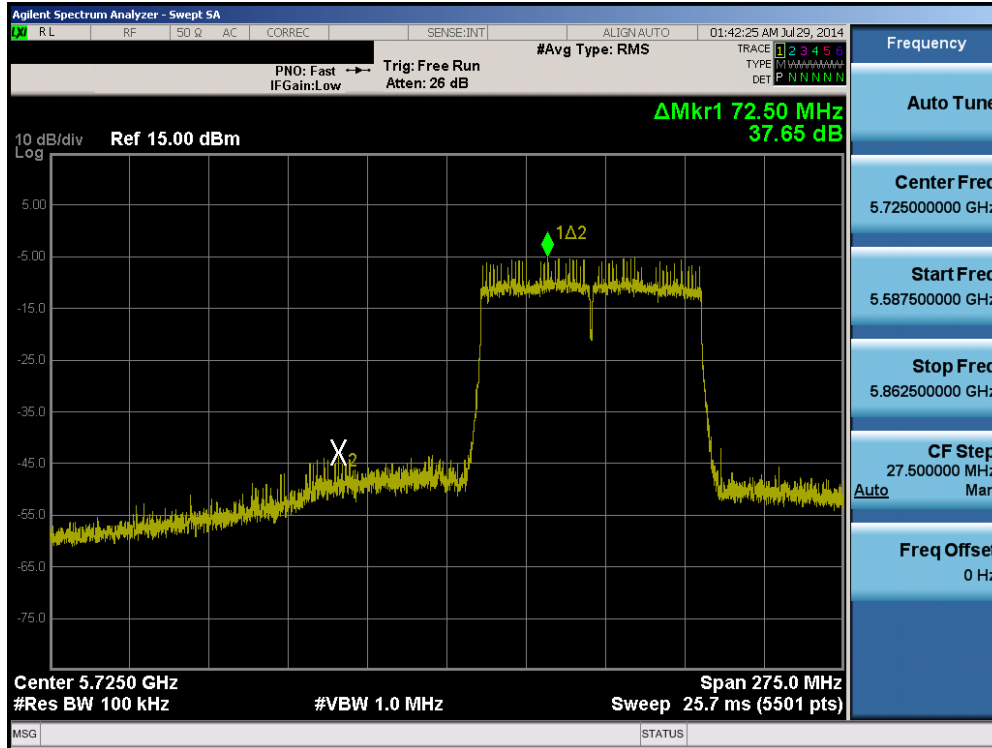


Plot 6-83. Band Edge Plot (40MHz BW 802.11n (5.8GHz) – Ch. 151)

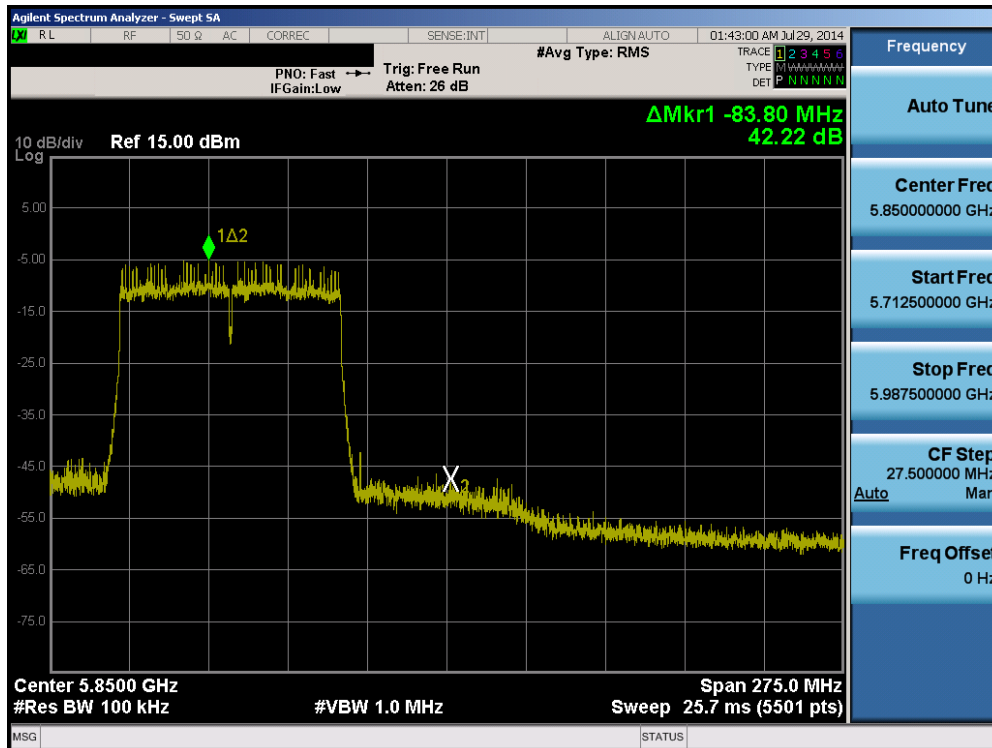


Plot 6-84. Band Edge Plot (40MHz BW 802.11n (5.8GHz) – Ch. 159)



FCC ID: A3LSMN915X	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 70 of 121



Plot 6-85. Band Edge Plot (80MHz BW 802.11ac (5.8GHz) – Ch. 155)



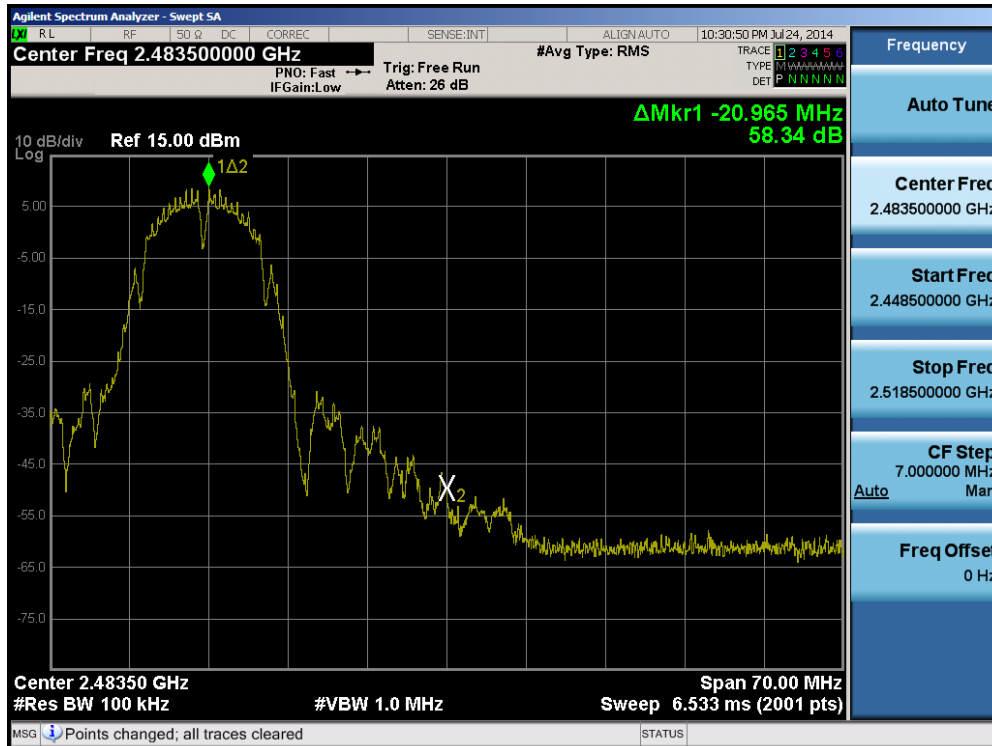
Plot 6-86. Band Edge Plot (80MHz BW 802.11ac (5.8GHz) – Ch. 155)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 71 of 121

Antenna-2 Conducted Emissions at the Band Edge

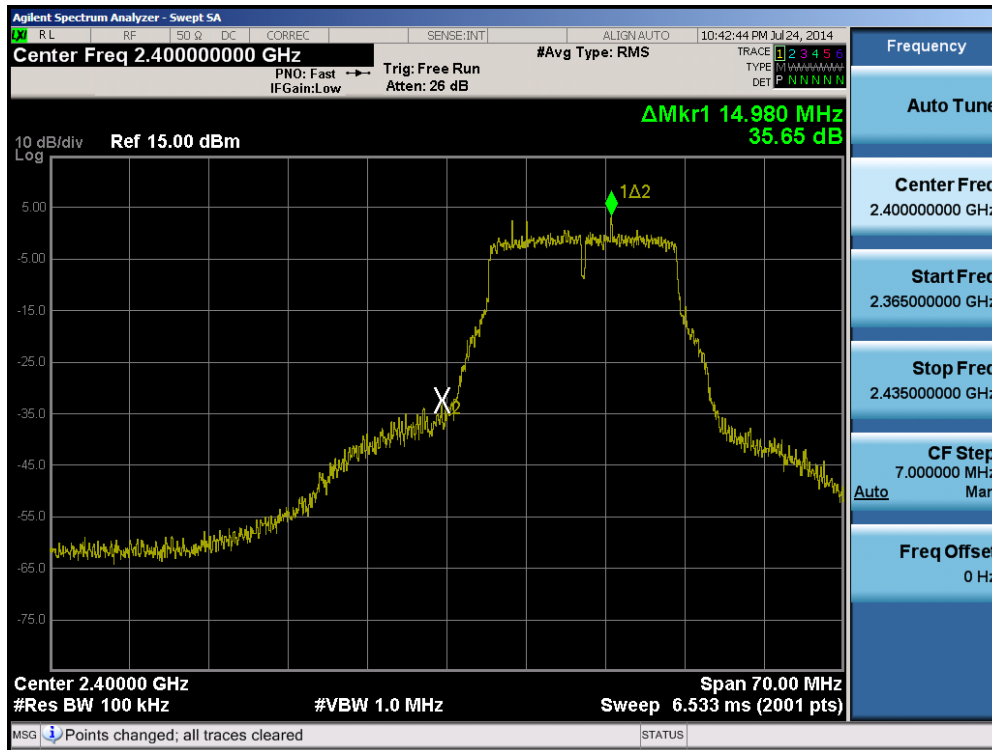


Plot 6-87. Band Edge Plot (802.11b – Ch. 1)

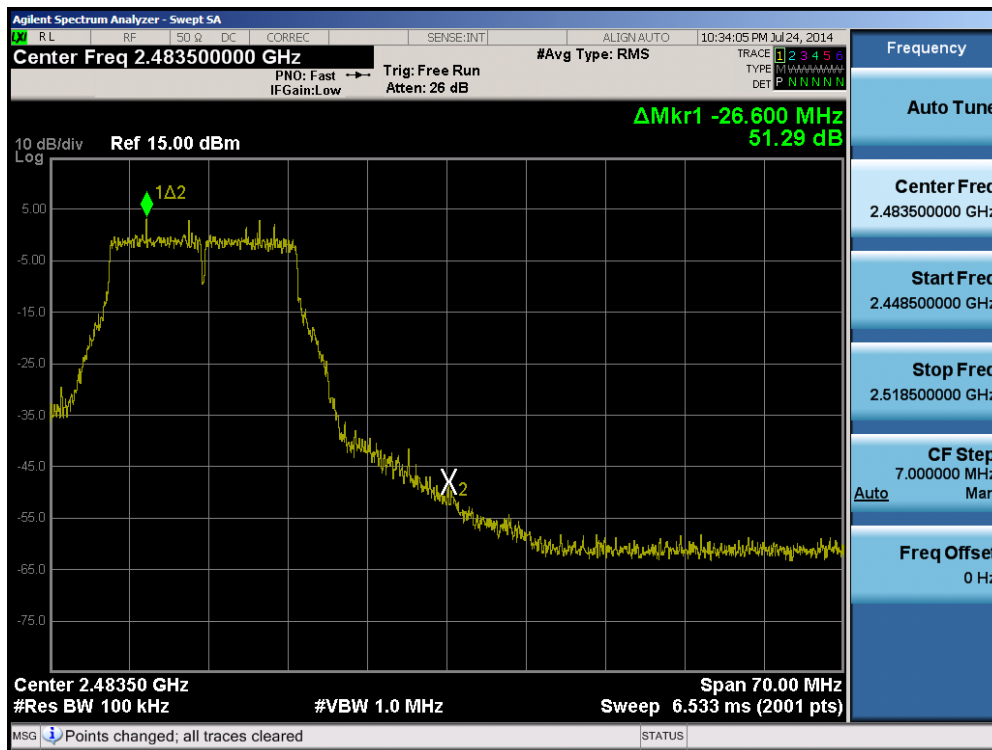


Plot 6-88. Band Edge Plot (802.11b – Ch. 11)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 72 of 121

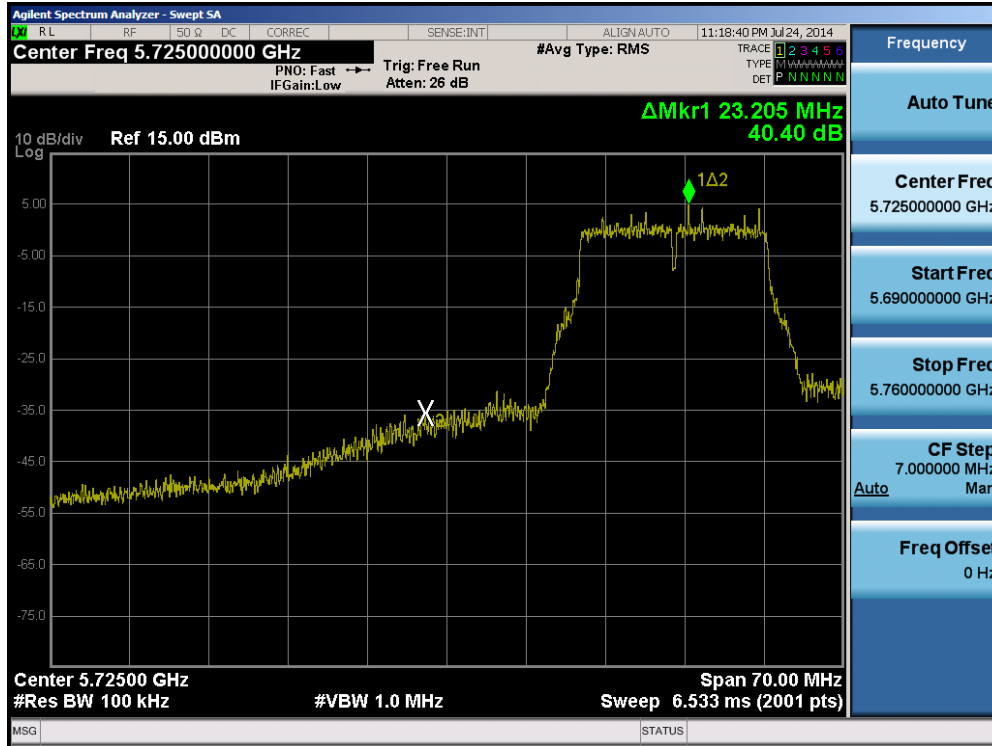


Plot 6-89. Band Edge Plot (802.11g– Ch. 1)

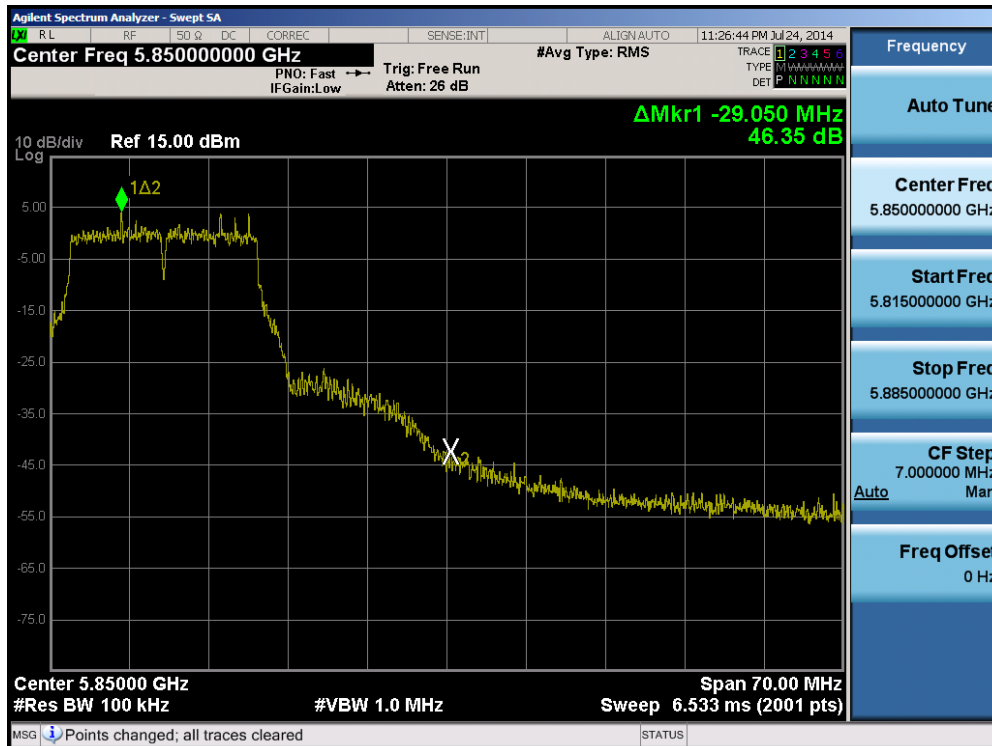


Plot 6-90. Band Edge Plot (802.11g – Ch. 11)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 73 of 121

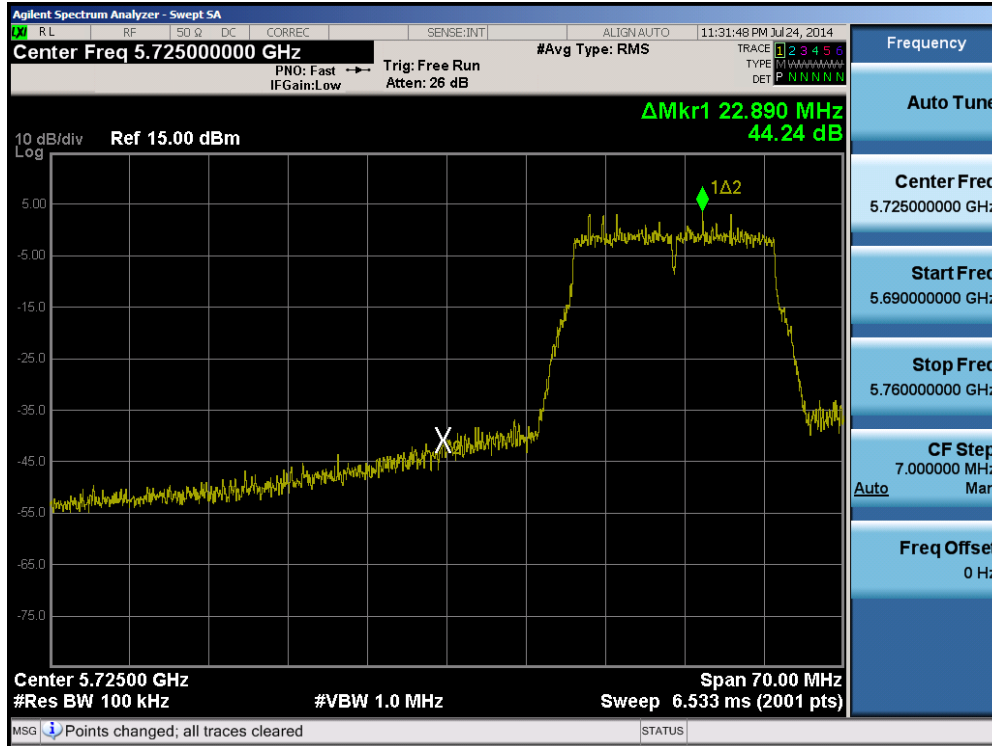


Plot 6-93. Band Edge Plot (802.11a – Ch. 149)

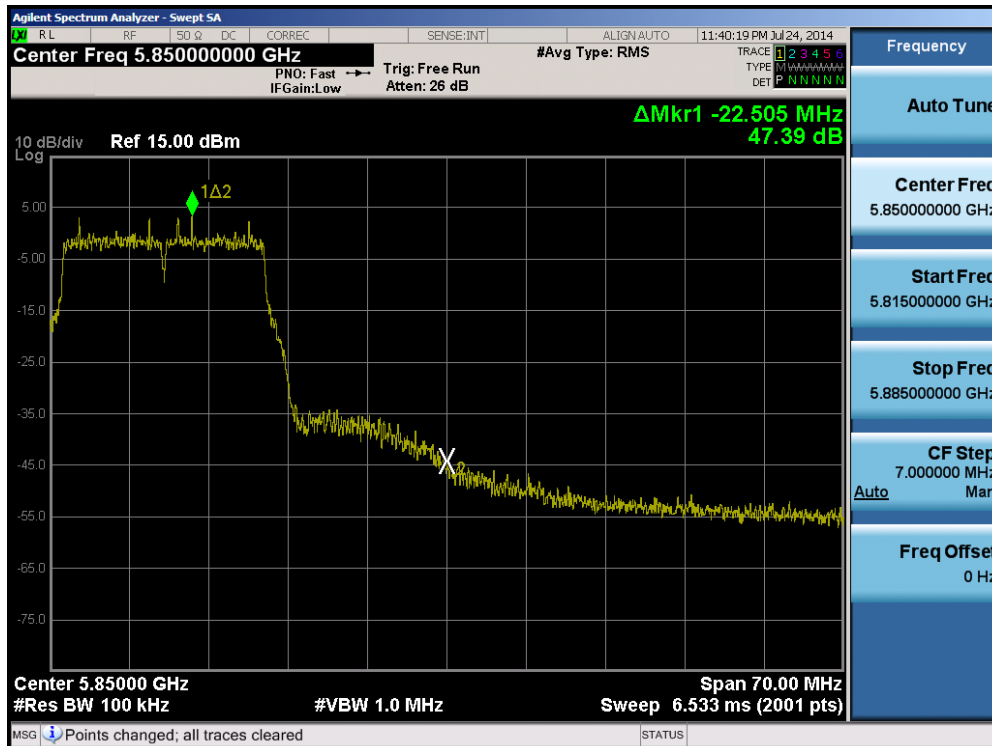


Plot 6-94. Band Edge Plot (802.11a – Ch. 165)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 75 of 121

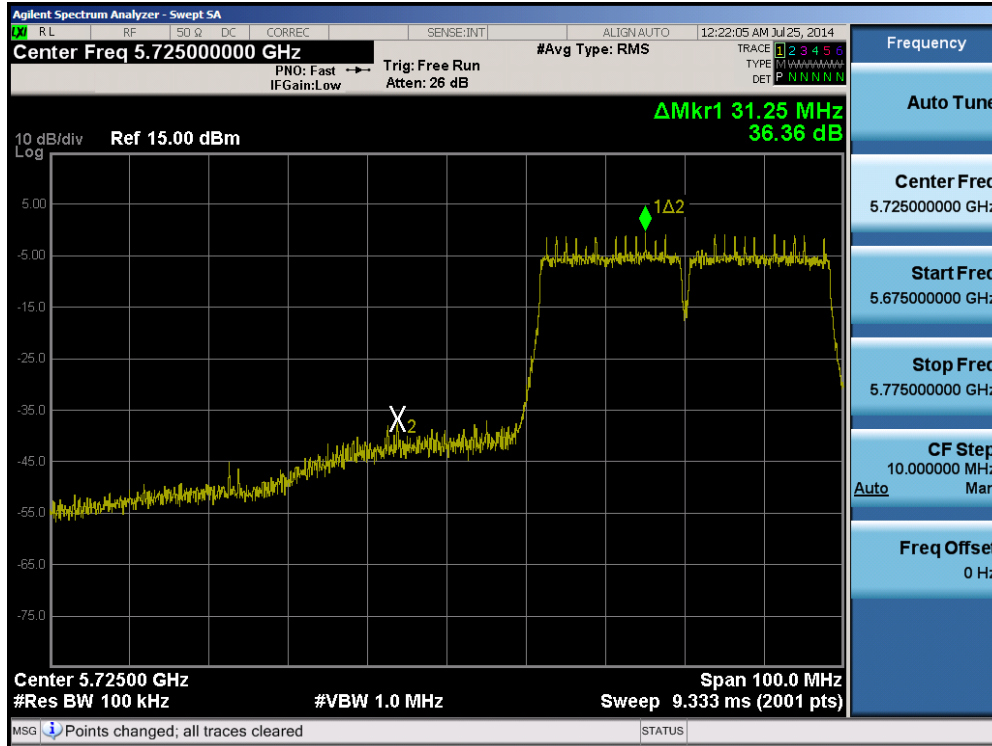


Plot 6-95. Band Edge Plot (20MHz BW 802.11n (5.8GHz) – Ch. 149)

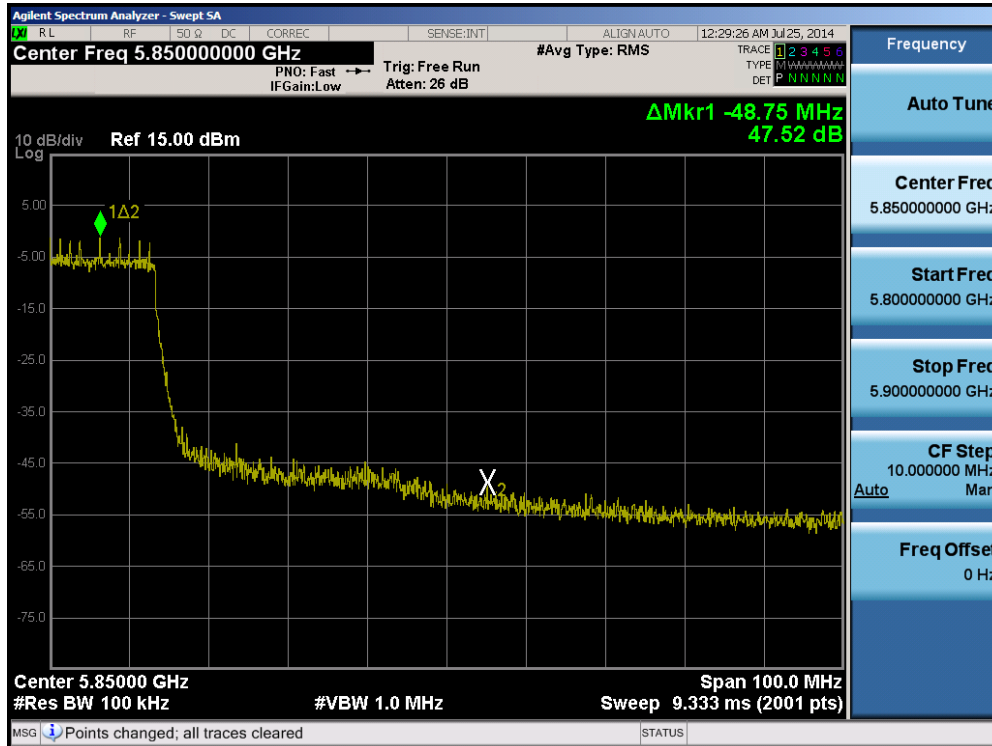


Plot 6-96. Band Edge Plot (20MHz BW 802.11n (5.8GHz) – Ch. 165)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 76 of 121

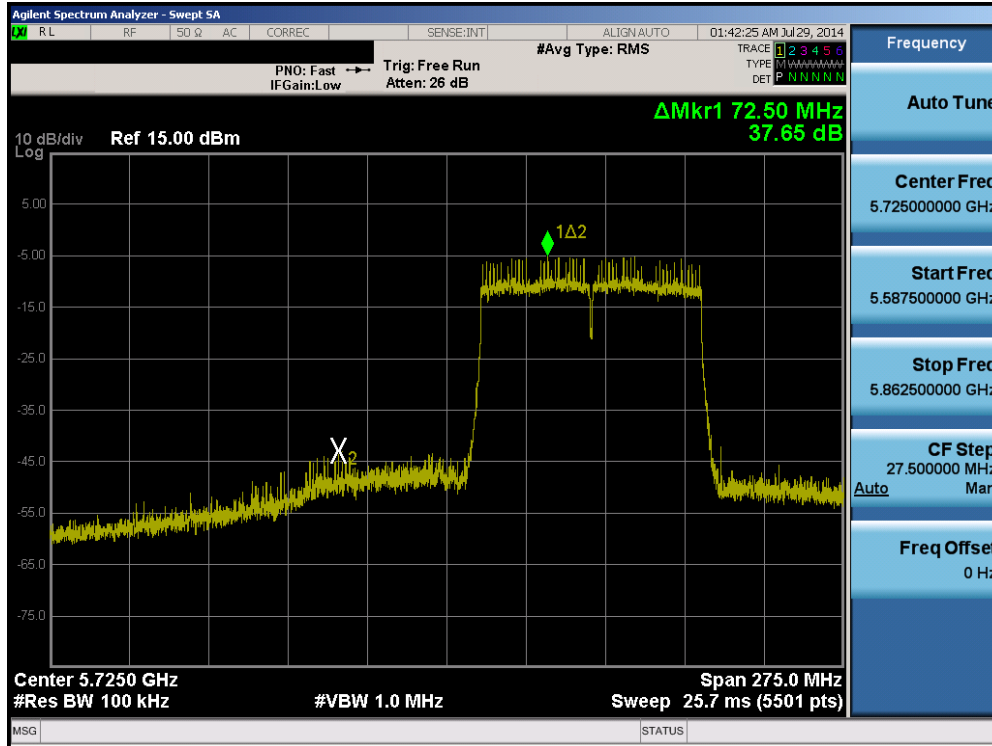


Plot 6-97. Band Edge Plot (40MHz BW 802.11n (5.8GHz) – Ch. 151)

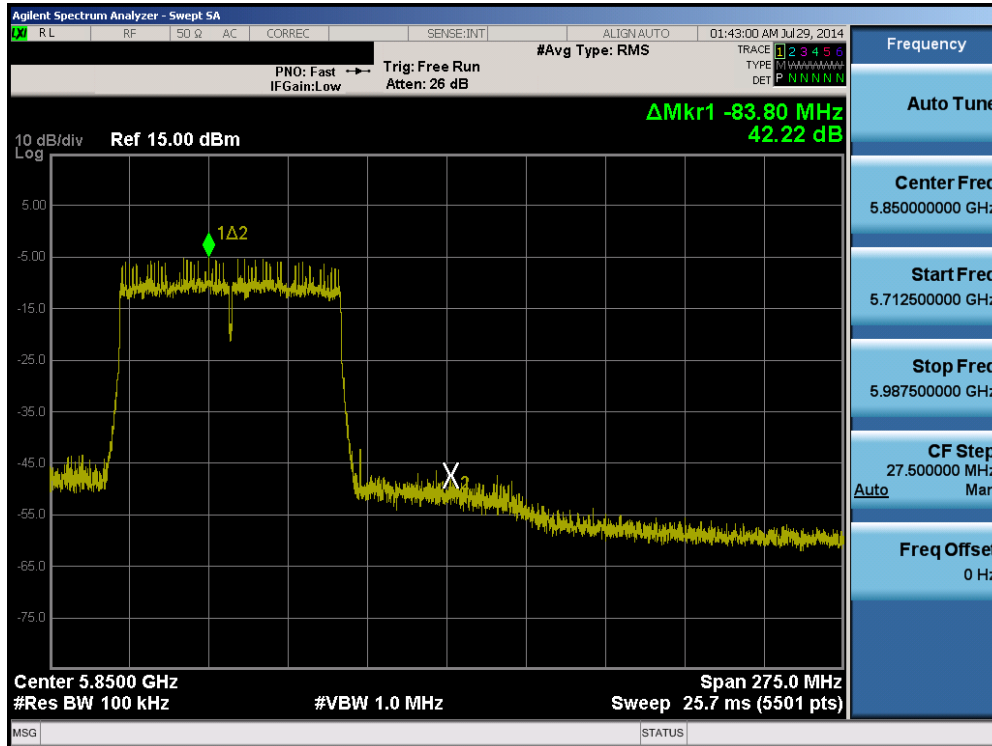


Plot 6-98. Band Edge Plot (40MHz BW 802.11n (5.8GHz) – Ch. 159)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 77 of 121



Plot 6-99. Band Edge Plot (80MHz BW 802.11ac (5.8GHz) – Ch. 155)



Plot 6-100. Band Edge Plot (80MHz BW 802.11ac (5.8GHz) – Ch. 155)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 78 of 121

6.6 Conducted Spurious Emissions

§15.247(d)

Test Overview and Limit

All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle (>98%), at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. For the following out of band conducted spurious emissions plots, the EUT was investigated in all available data rates for “b”, “g”, “a”, “n”, and “ac” modes. The worst case spurious emissions for the 2.4GHz band were found while transmitting in “b” mode at 1 Mbps and are shown in the plots below. The worst case spurious emissions for the 5.8GHz band were found while transmitting in “a” mode at 6 Mbps and are shown in the plots below.

The limit for out-of-band spurious emissions at the band edge is 30dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100kHz bandwidth per the procedure in Section 11.1 of KDB 558074 v03r02.

Test Procedure Used

KDB 558074 v03r02 – Section 11.3
KDB 662911 v02r01 – Section E)3)b)

Test Settings

1. Start frequency was set to 30MHz and stop frequency was set to 25GHz for 2.4GHz frequencies and 40GHz for 5GHz frequencies (separated into two plots per channel)
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = Peak
5. Trace mode = max hold
6. Sweep time = auto couple
7. The trace was allowed to stabilize

Test Setup

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

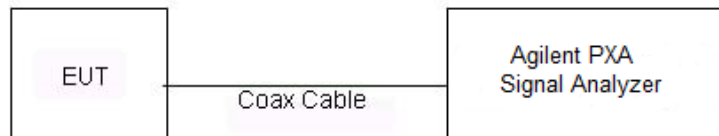






Figure 6-5. Test Instrument & Measurement Setup

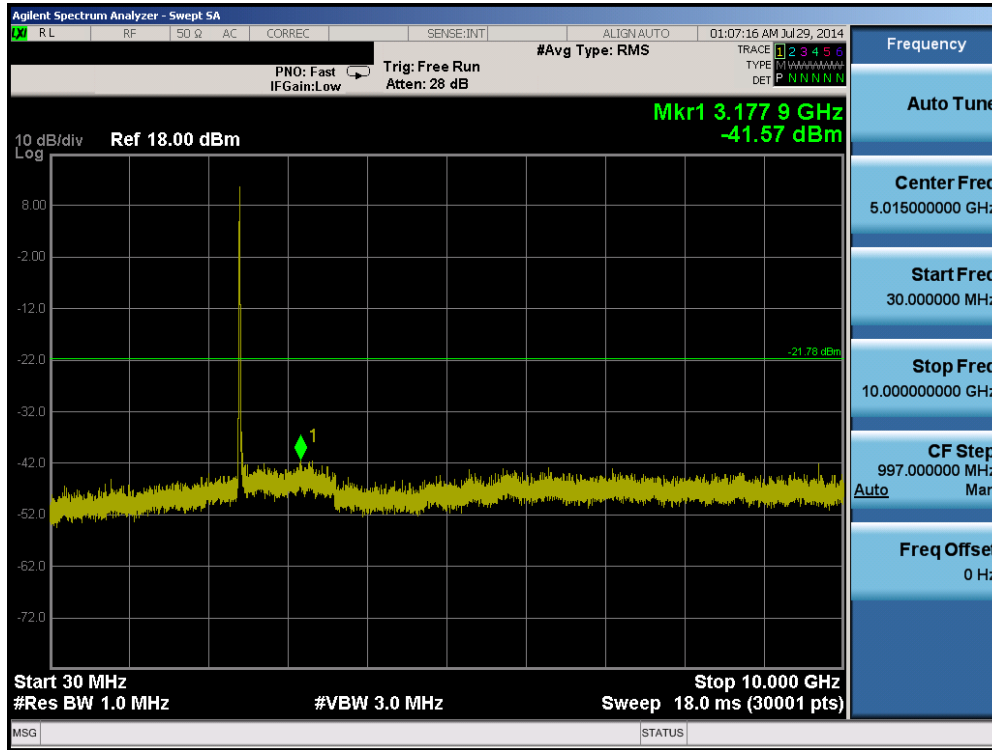
FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset	Page 79 of 121	

Test Notes

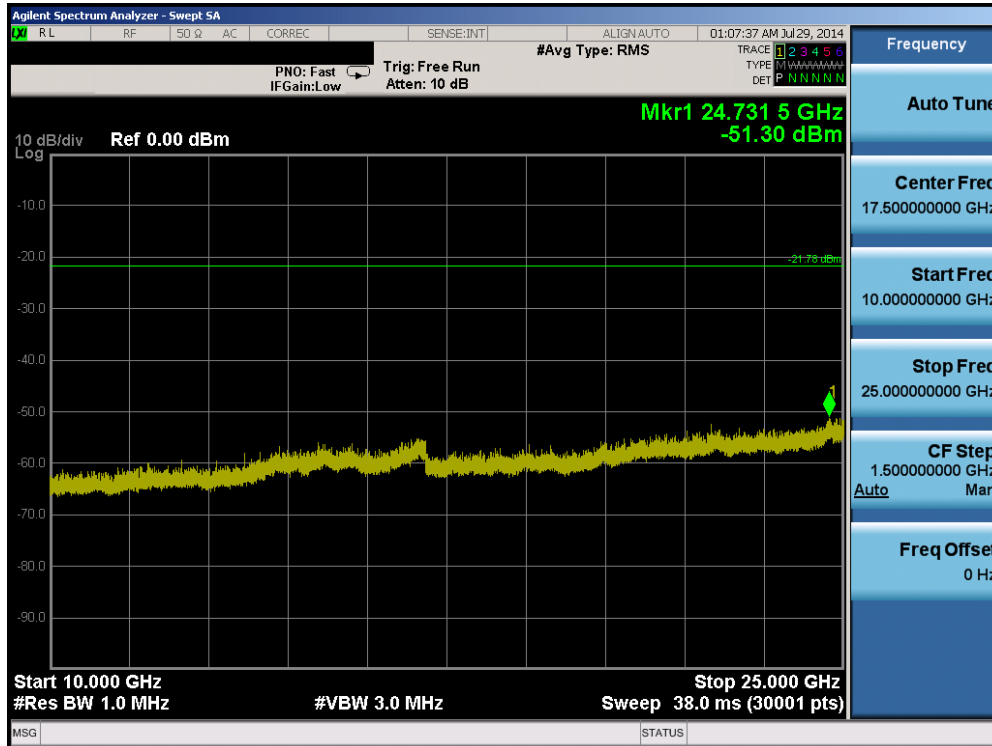
1. RBW was set to 1MHz rather than 100kHz in order to increase the measurement speed.
2. The display line shown in the following plots denotes the limit at 30dB below the fundamental emission level measured in a 100kHz bandwidth. However, since the traces in the following plots are measured with a 1MHz RBW, the display line may not necessarily appear to be 30dB below the level of the fundamental in a 1MHz bandwidth.
3. For plots showing conducted spurious emissions near the limit, the frequencies were investigated with a reduced RBW to ensure that no emissions were present.
4. The conducted spurious emissions were measured to relative limits. Therefore, in accordance with KDB 662911 v02r01 Section E)3)b), it was unnecessary to show compliance through the summation of test results of the individual outputs.

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION) 	Reviewed by: Quality Manager
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Antenna-1 Conducted Spurious Emissions

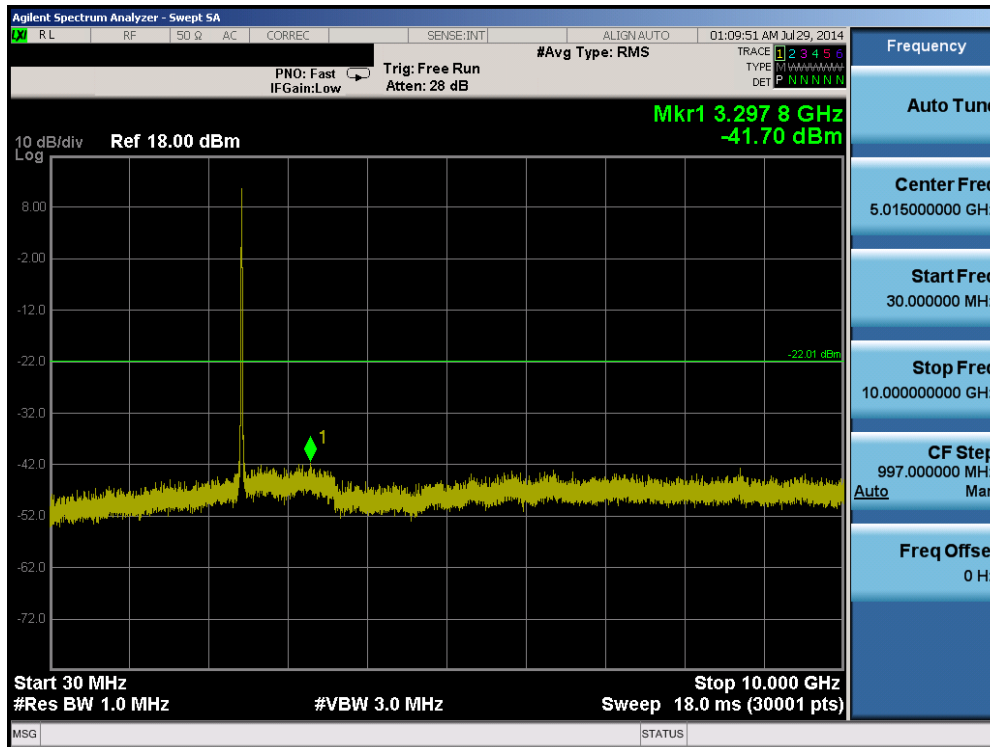


Plot 6-101. Conducted Spurious Plot (802.11b – Ch. 1)

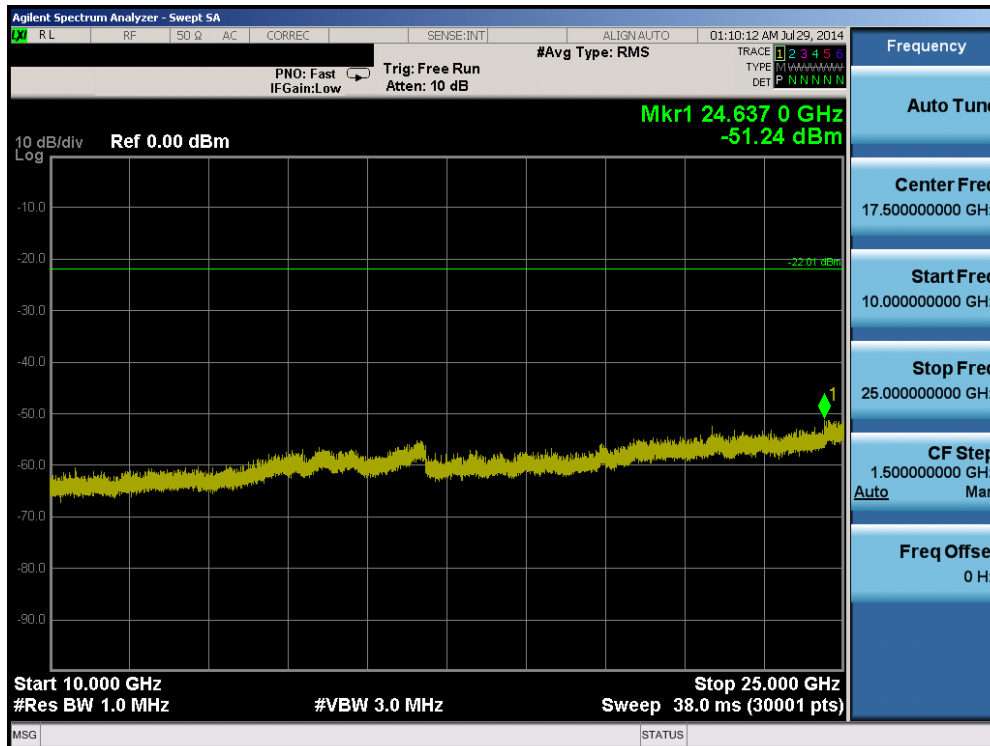


Plot 6-102. Conducted Spurious Plot (802.11b – Ch. 1)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 81 of 121

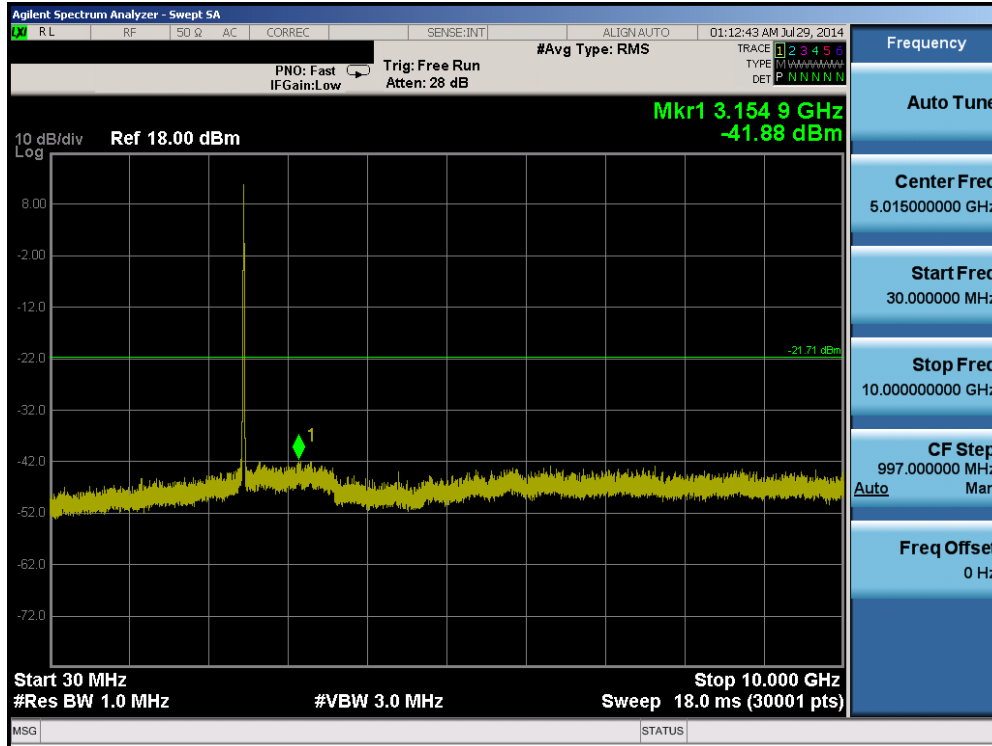


Plot 6-103. Conducted Spurious Plot (802.11b – Ch. 6)

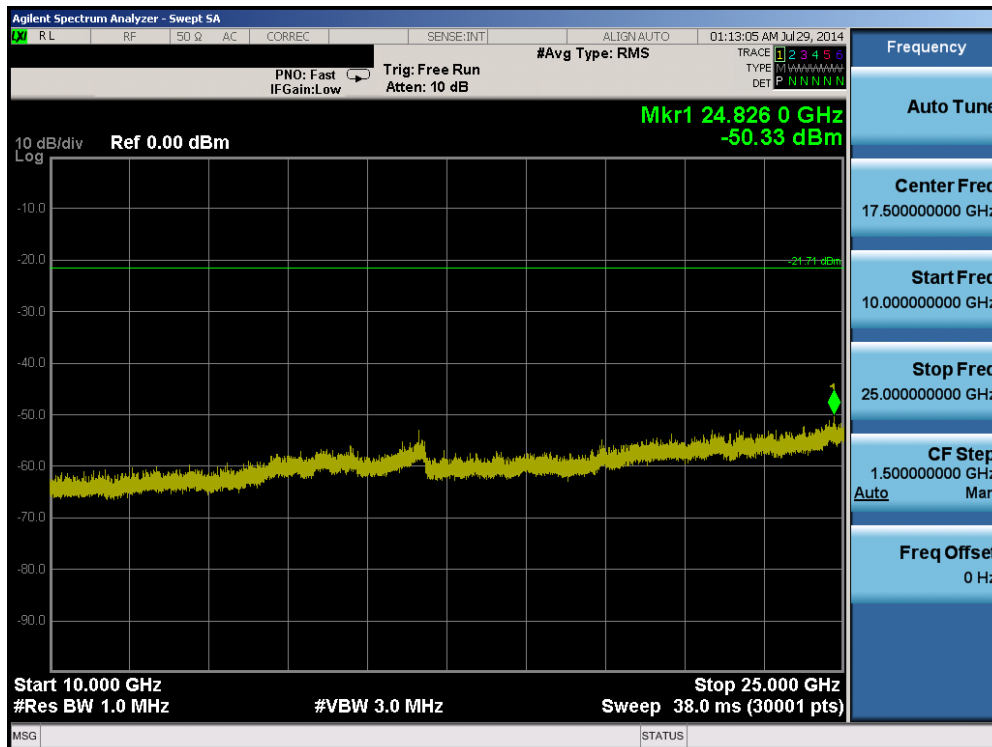


Plot 6-104. Conducted Spurious Plot (802.11b – Ch. 6)



FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 82 of 121

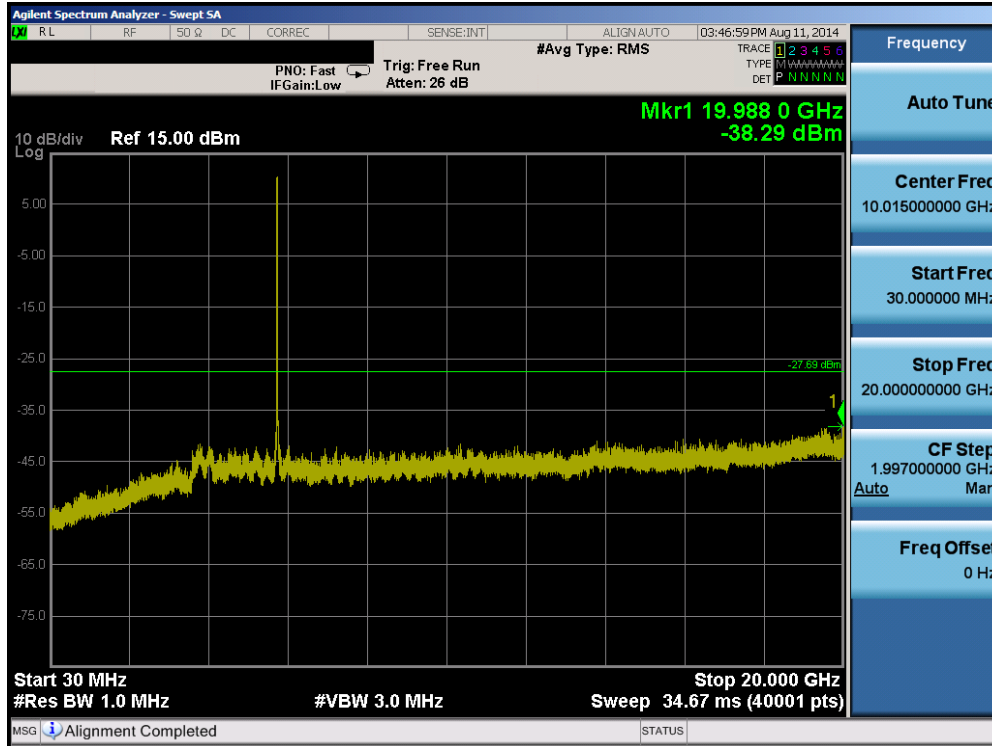


Plot 6-105. Conducted Spurious Plot (802.11b – Ch. 11)

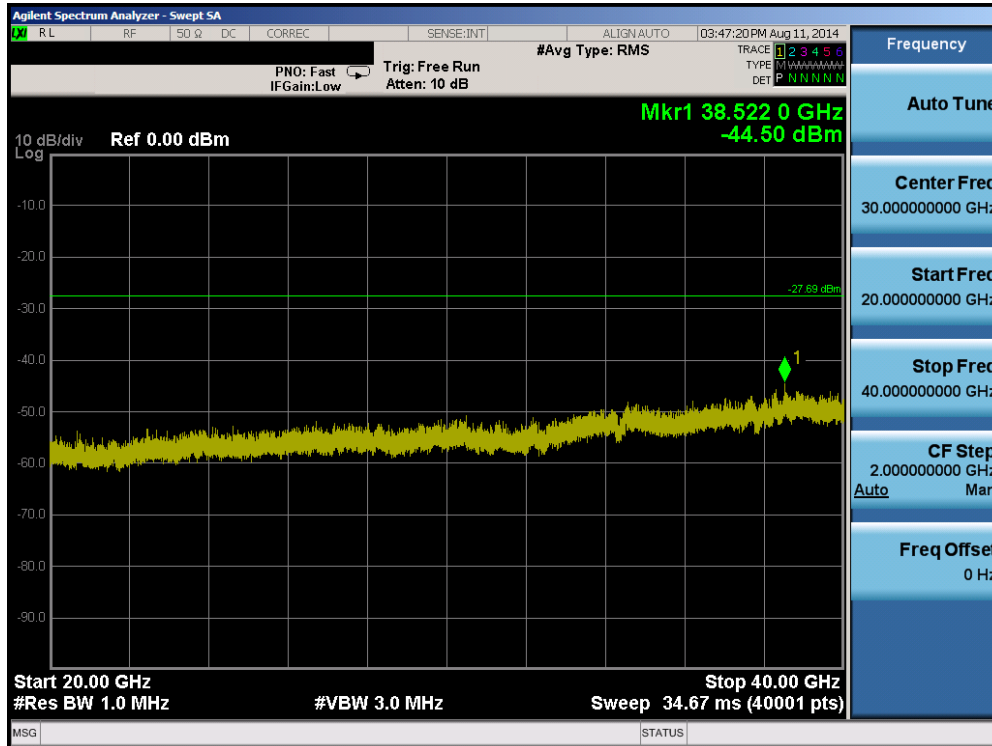


Plot 6-106. Conducted Spurious Plot (802.11b – Ch. 11)



FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 83 of 121

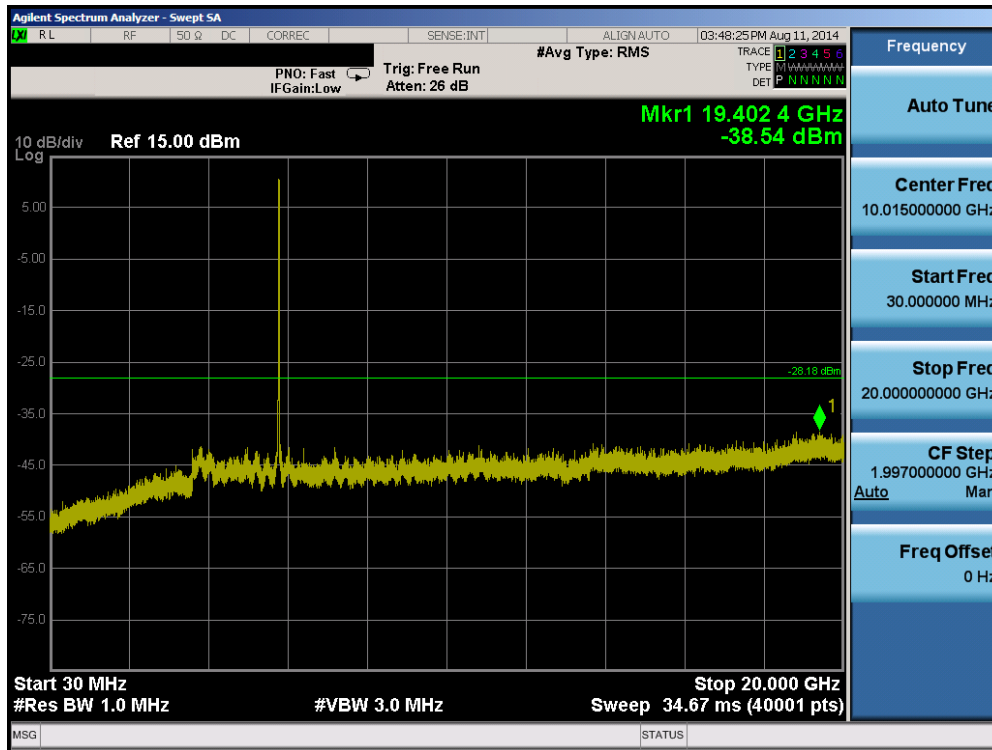


Plot 6-107. Conducted Spurious Plot (802.11a – Ch. 149)

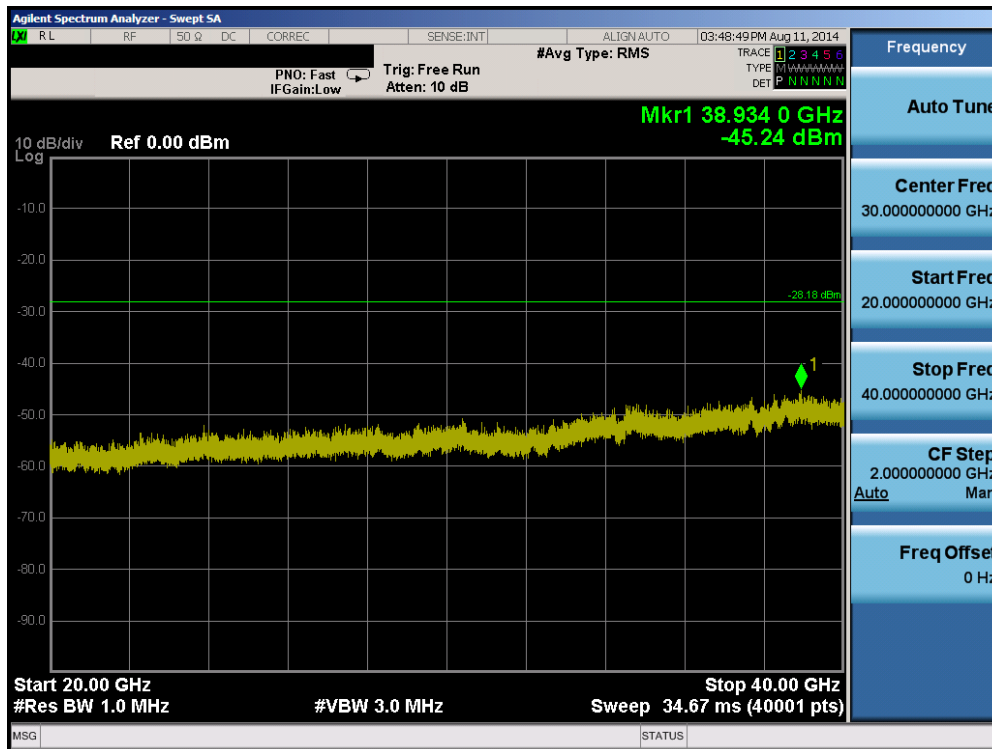


Plot 6-108. Conducted Spurious Plot (802.11a – Ch. 149)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 84 of 121

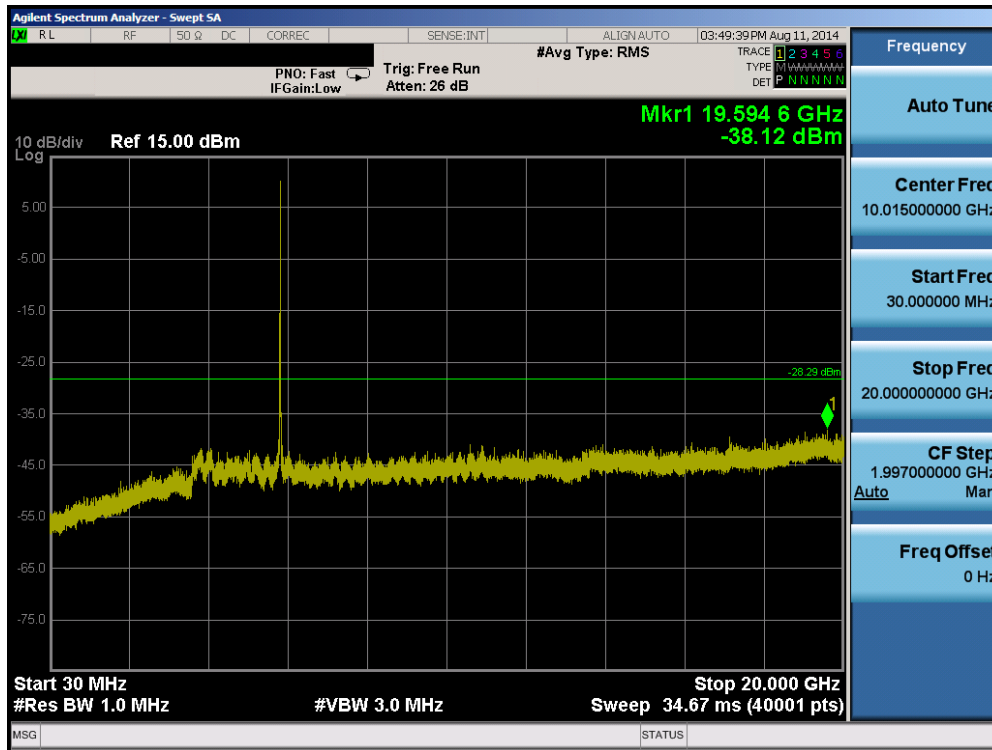


Plot 6-109. Conducted Spurious Plot (802.11a – Ch. 157)

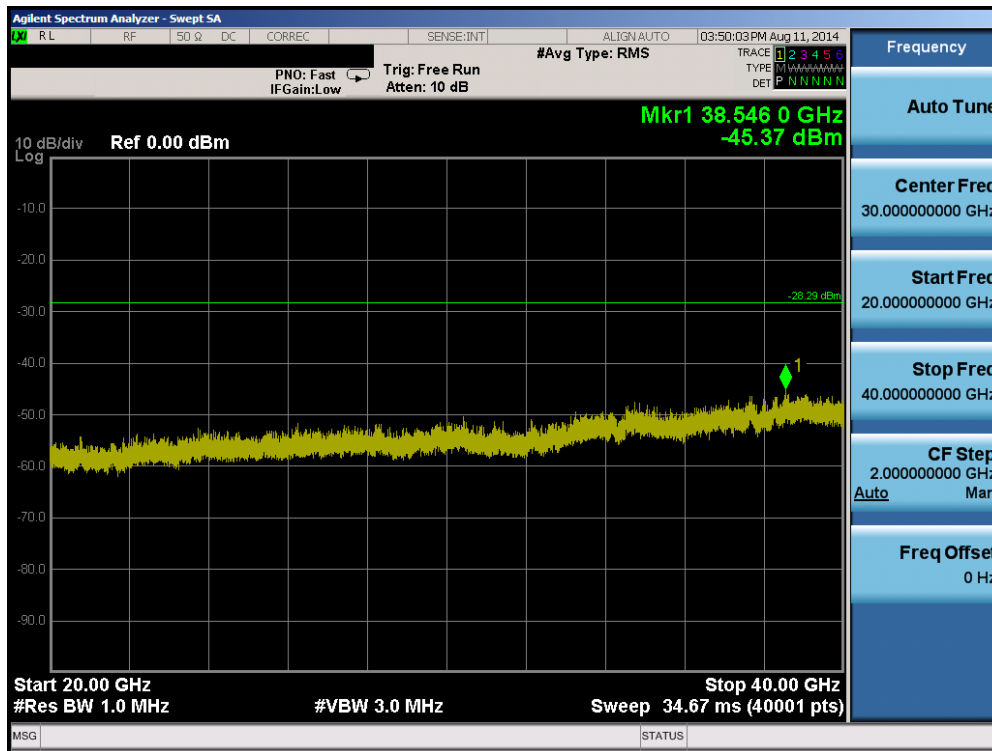


Plot 6-110. Conducted Spurious Plot (802.11a – Ch. 157)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 85 of 121



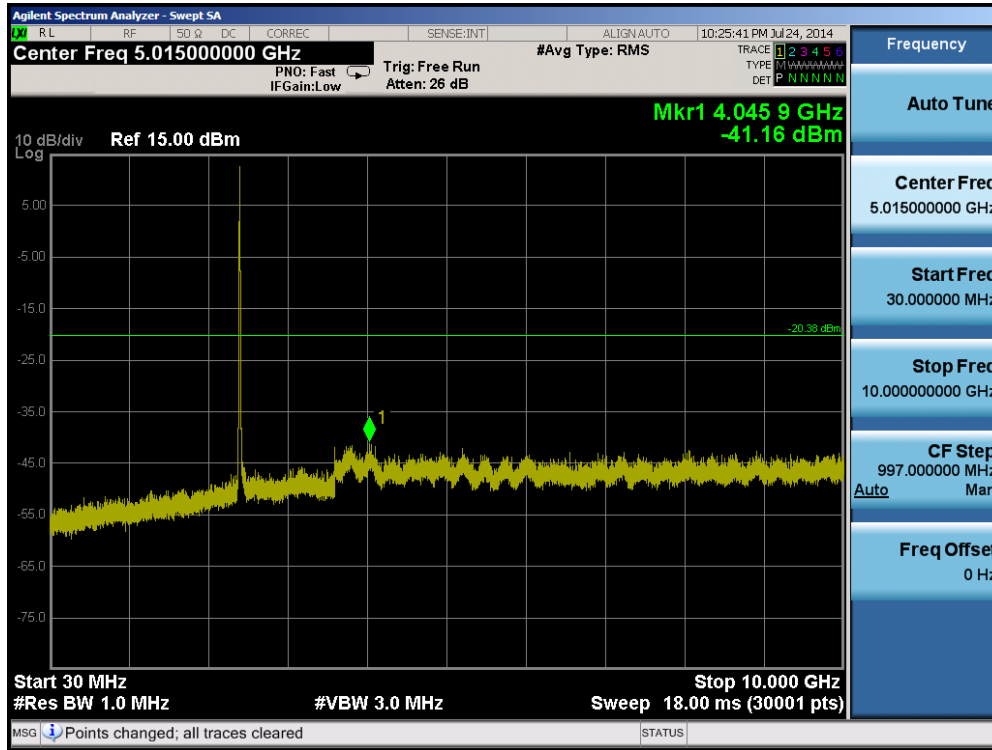
Plot 6-111. Conducted Spurious Plot (802.11a – Ch. 165)



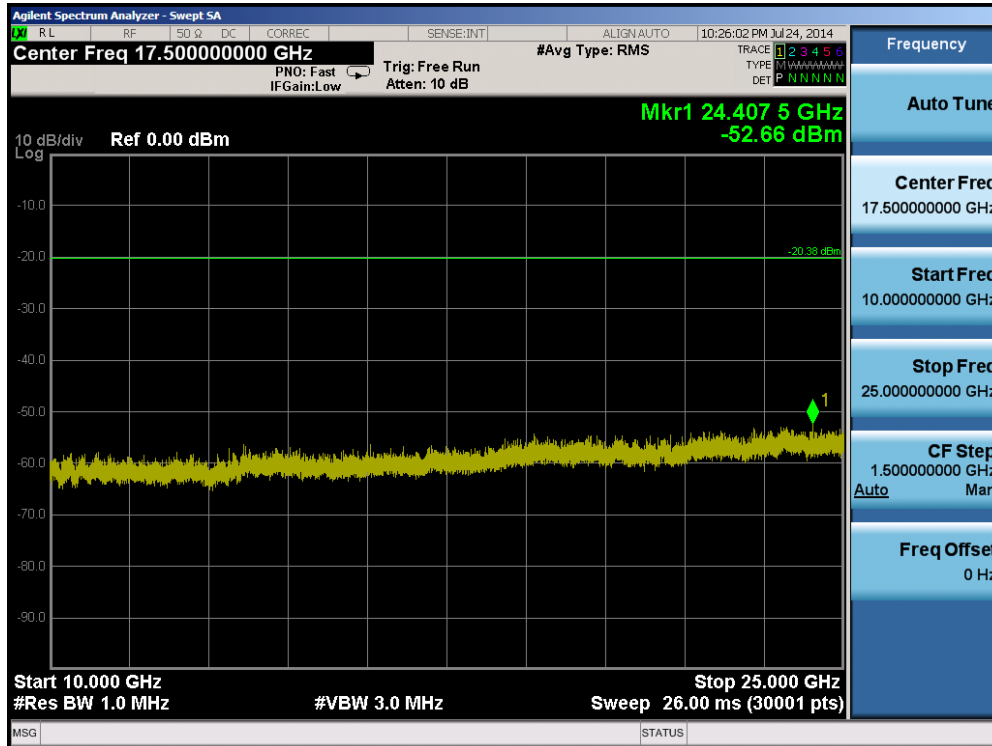
Plot 6-112. Conducted Spurious Plot (802.11a – Ch. 165)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 86 of 121

Antenna-2 Conducted Spurious Emissions

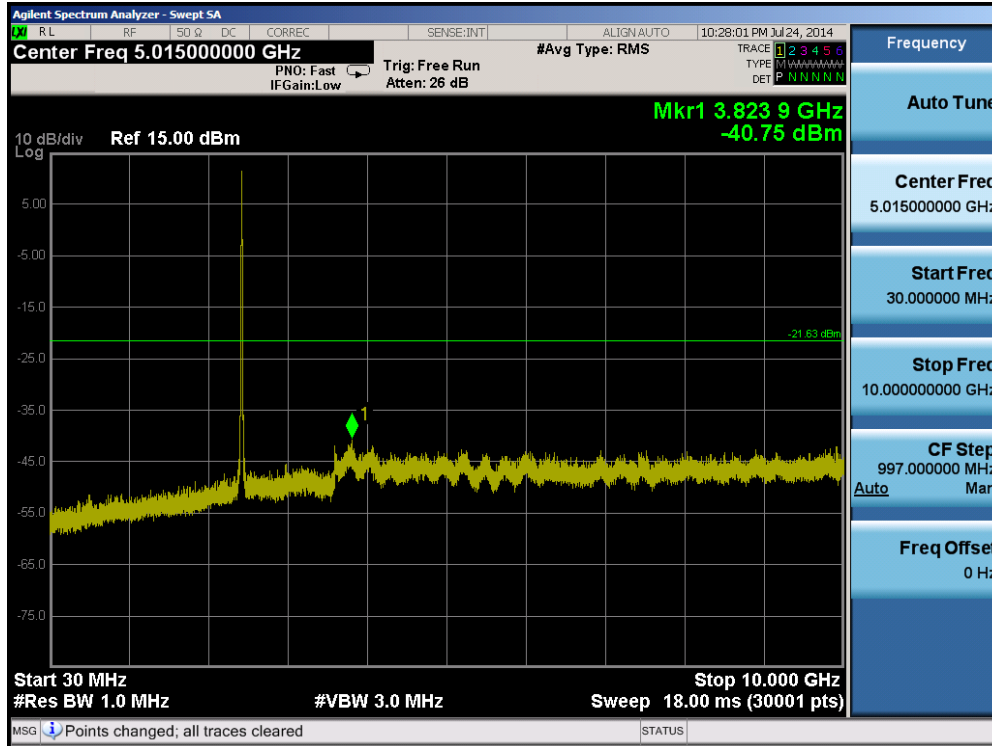


Plot 6-113. Conducted Spurious Plot (802.11b – Ch. 1)

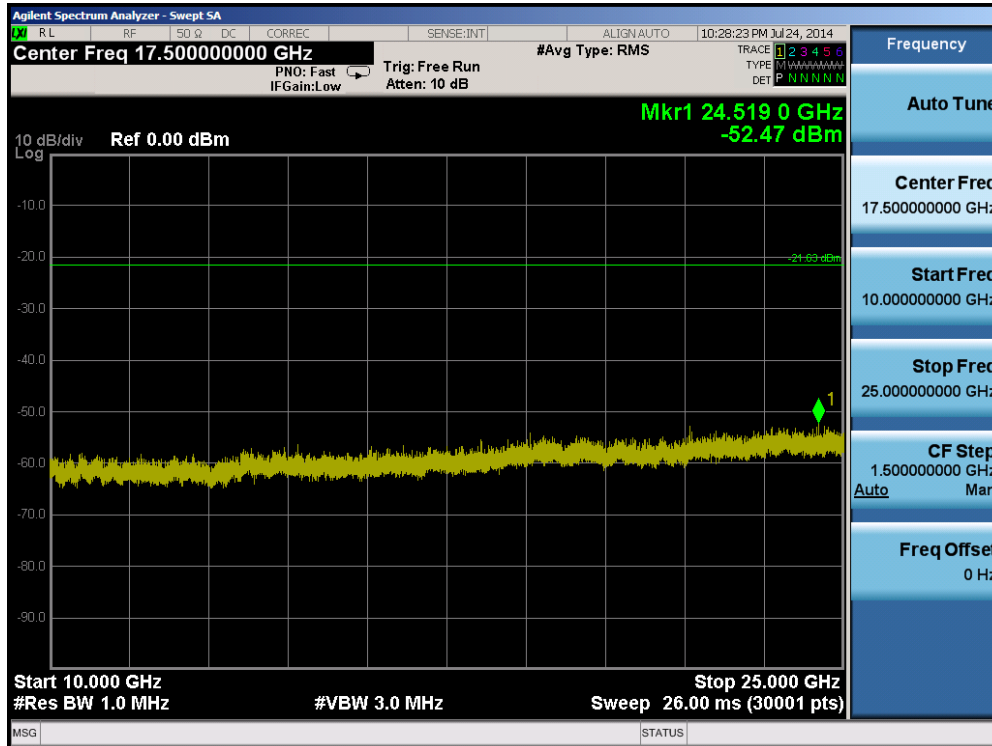


Plot 6-114. Conducted Spurious Plot (802.11b – Ch. 1)



FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/h/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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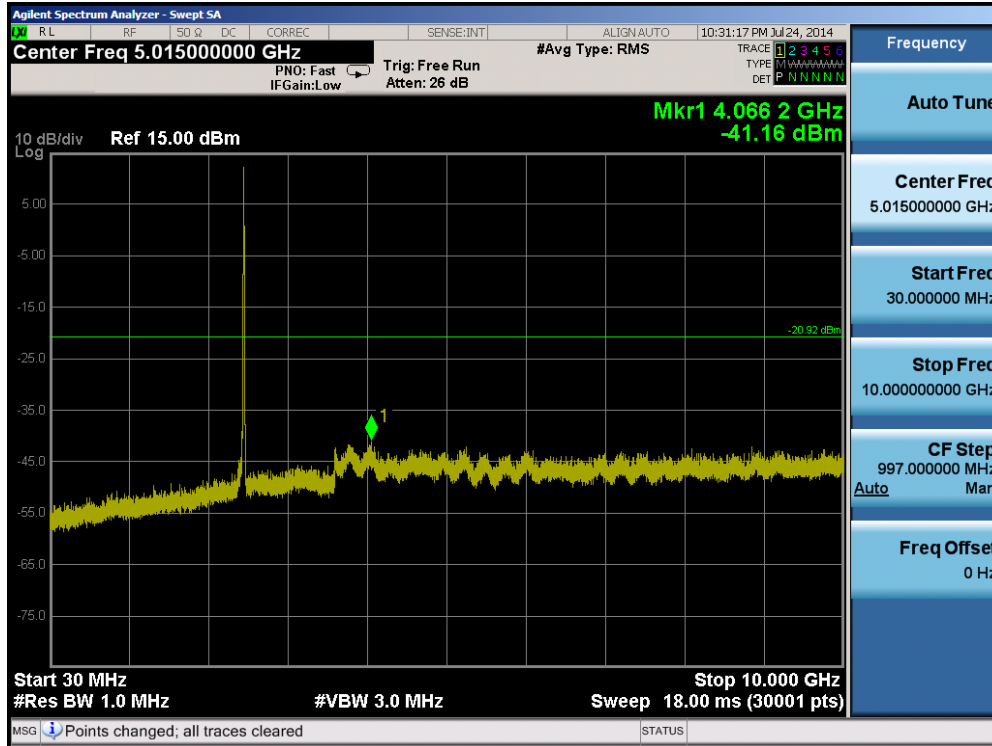


Plot 6-115. Conducted Spurious Plot (802.11b – Ch. 6)

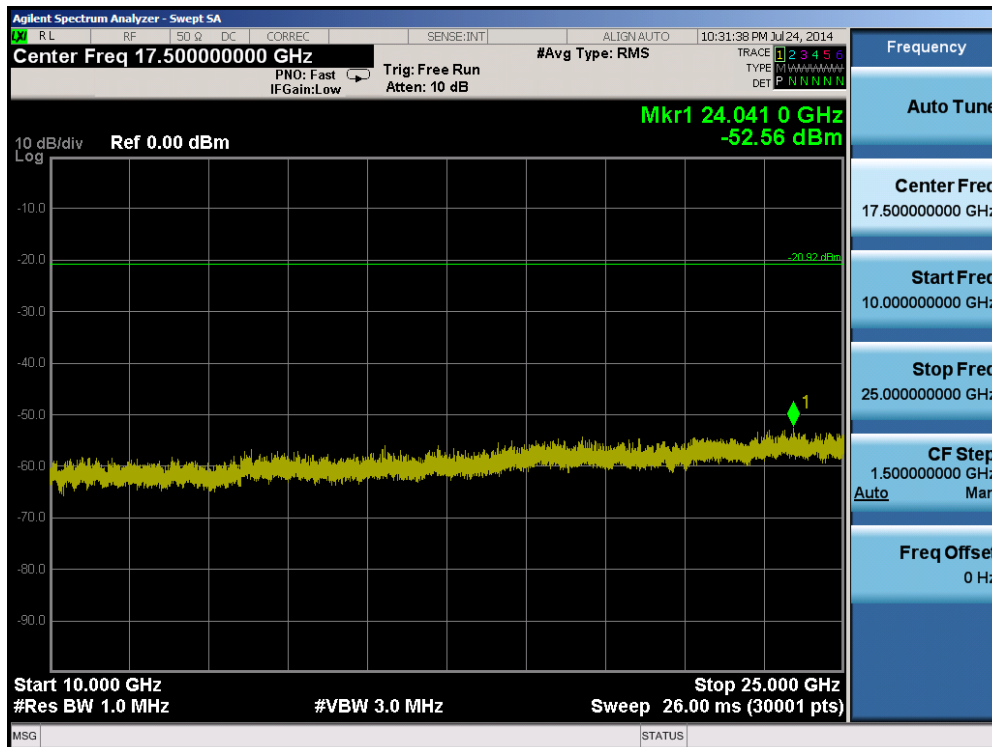


Plot 6-116. Conducted Spurious Plot (802.11b – Ch. 6)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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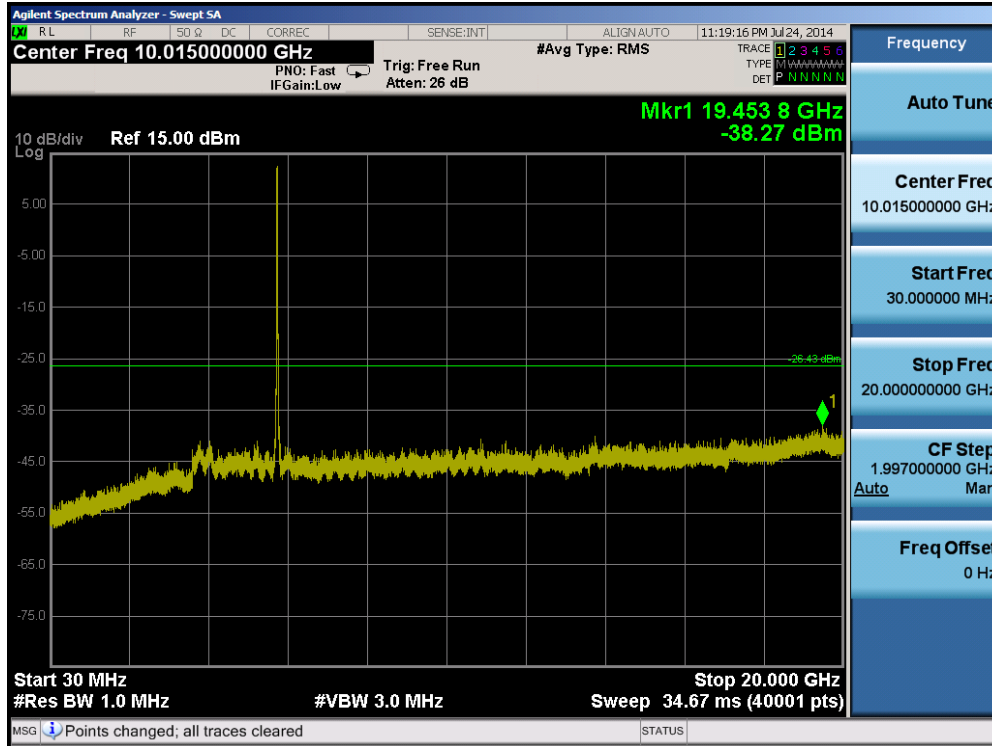


Plot 6-117. Conducted Spurious Plot (802.11b – Ch. 11)

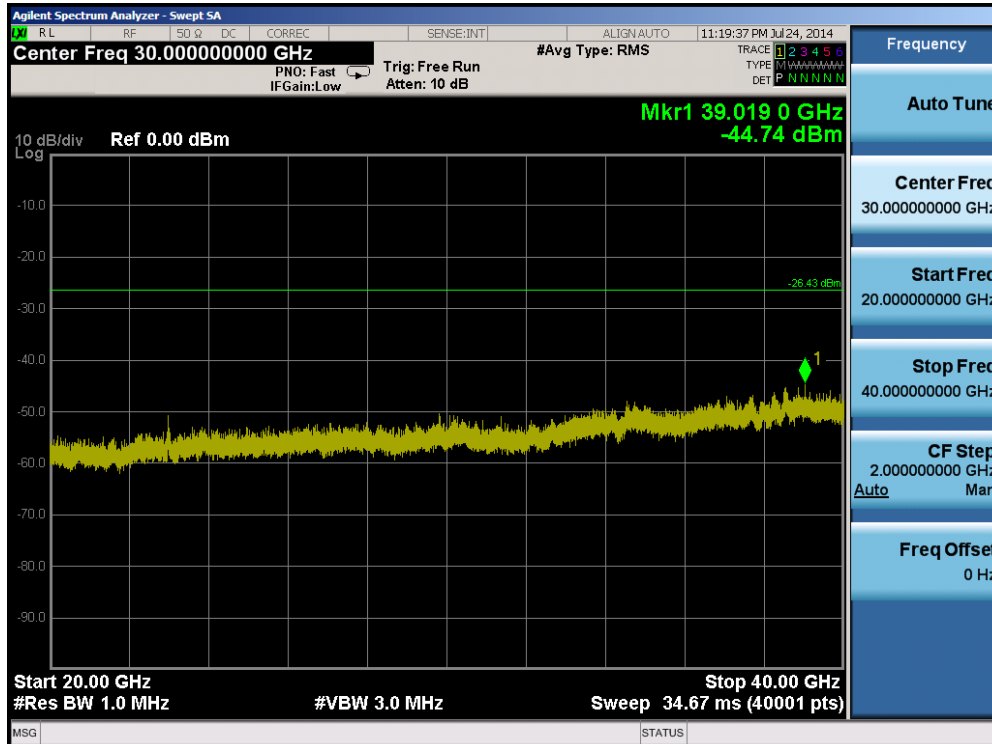


Plot 6-118. Conducted Spurious Plot (802.11b – Ch. 11)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 89 of 121

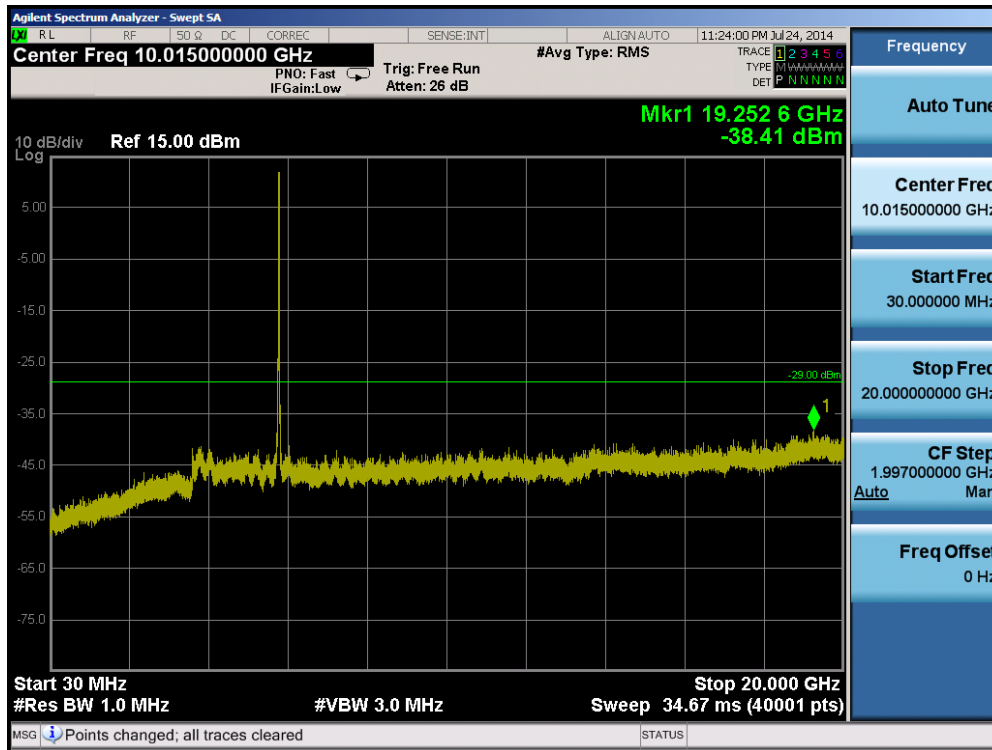


Plot 6-119. Conducted Spurious Plot (802.11a – Ch. 149)

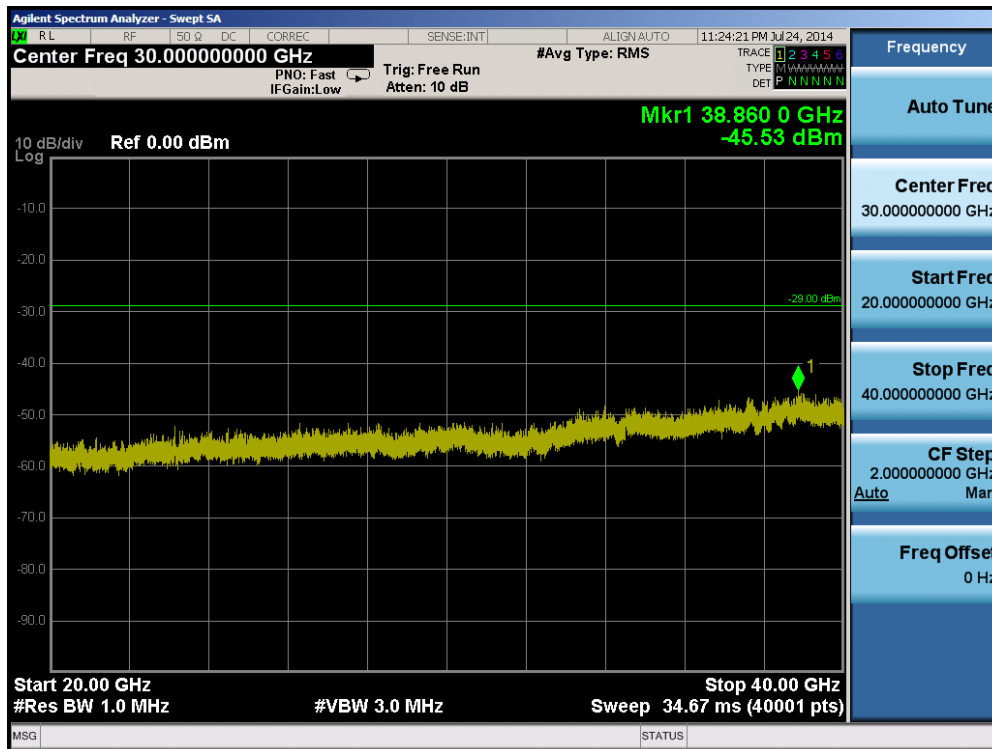


Plot 6-120. Conducted Spurious Plot (802.11a – Ch. 149)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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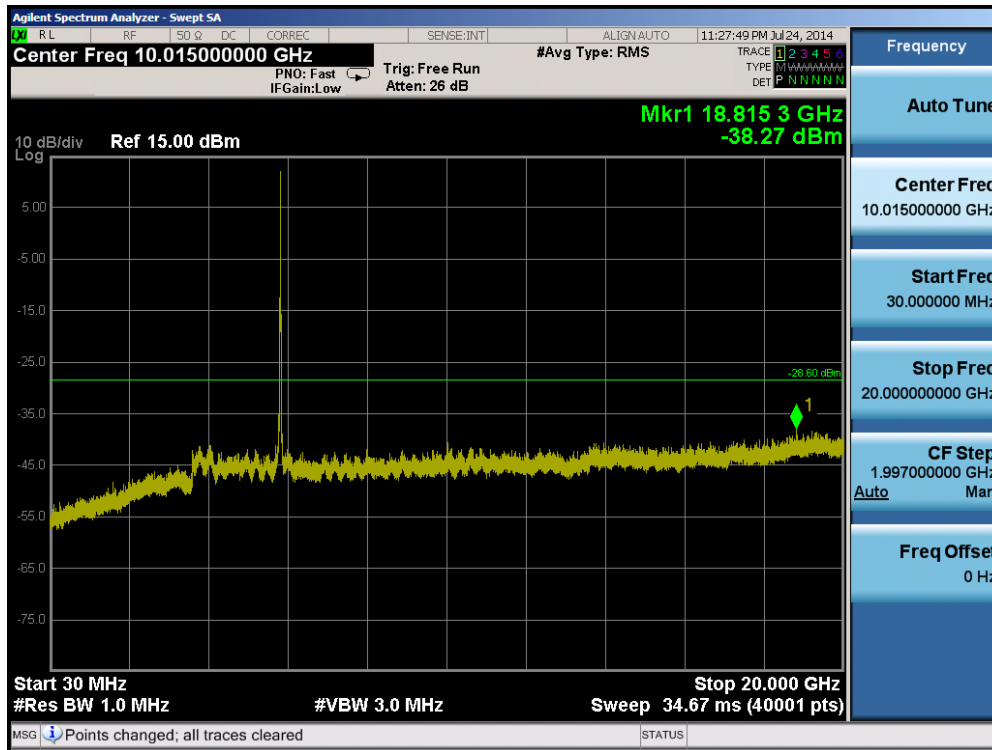


Plot 6-121. Conducted Spurious Plot (802.11a – Ch. 157)

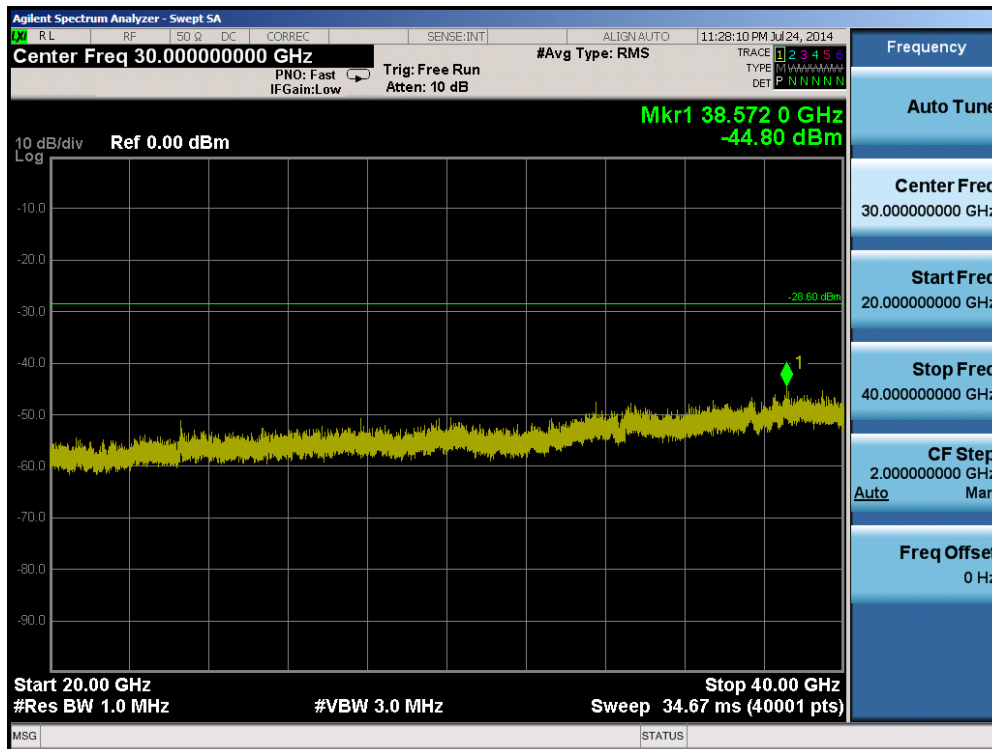


Plot 6-122. Conducted Spurious Plot (802.11a – Ch. 157)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 91 of 121



Plot 6-123. Conducted Spurious Plot (802.11a – Ch. 165)



Plot 6-124. Conducted Spurious Plot (802.11a – Ch. 165)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 92 of 121

6.7 Radiated Spurious Emission Measurements

§15.247(d) §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 maximum power, and at the appropriate frequencies. All data rates and modes were investigated for radiated spurious emissions. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table 6-31 per Section 15.209.

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

Table 6-31. Radiated Limits



Test Procedures Used

KDB 558074 v03r02 – Section 12.1, 12.2.7

Test Settings

Average Field Strength Measurements per Section 12.2.5.1 of KDB 558074 v03r02

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. Sweep time = auto
7. Trace (RMS) averaging was performed over at least 100 traces

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Peak Field Strength Measurements per Section 12.2.4 of KDB 558074 v03r02

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

Test Setup

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

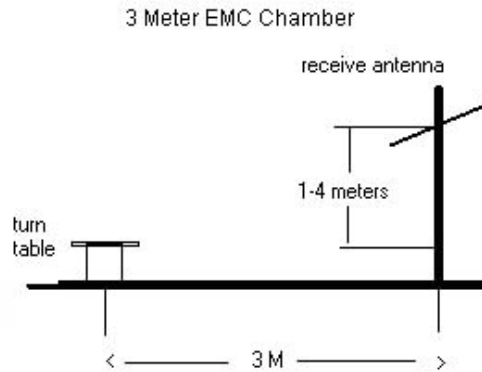




Figure 6-6. Test Instrument & Measurement Setup

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)	 Reviewed by: Quality Manager
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Test Notes

1. The optional test procedures for antenna port conducted measurements of unwanted emissions per the guidance of KDB 558074 v03r02 were not used to evaluate this device for compliance to radiated limits. All radiated spurious emissions levels were measured in a radiated test setup.
2. All emissions lying in restricted bands specified in §15.205 are below the limit shown in Table 6-10.
3. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
4. The battery used with this device for testing (Model: EB-BN915BBE) contains an embedded NFC antenna.
5. 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.
6. Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.

Sample Calculations



Determining Spurious Emissions Levels

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

Radiated Band Edge Measurement Offset

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

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

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Antenna-1 Radiated Spurious Emission Measurements

§15.247(d) §15.205 & §15.209

Worst Case Mode: 802.11b
 Worst Case Transfer Rate: 1 Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 2412MHz
 Channel: 01



Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
4824.00	-99.08	Avg	V	H2	40.99	48.91	53.98	-5.07
4824.00	-94.64	Peak	V	H2	40.99	53.35	73.98	-20.63
12060.00	-116.90	Avg	V	H2	45.98	36.07	53.98	-17.91
12060.00	-105.11	Peak	V	H2	45.98	47.86	73.98	-26.12

Table 6-32. Radiated Measurements

Worst Case Mode: 802.11b
 Worst Case Transfer Rate: 1 Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 2437MHz
 Channel: 06

Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
4874.00	-103.05	Avg	V	H2	41.02	44.98	53.98	-9.00
4874.00	-98.15	Peak	V	H2	41.02	49.87	73.98	-24.11
7311.00	-106.92	Avg	V	H2	41.32	41.41	53.98	-12.57
7311.00	-99.15	Peak	V	H2	41.32	49.18	73.98	-24.80
12185.00	-116.76	Avg	V	H2	46.06	36.29	53.98	-17.69
12185.00	-104.39	Peak	V	H2	46.06	48.66	73.98	-25.32

Table 6-33. Radiated Measurements

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Worst Case Mode: 802.11b
 Worst Case Transfer Rate: 1 Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 2462MHz
 Channel: 11



Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
4924.00	-106.97	Avg	V	H2	41.04	41.06	53.98	-12.92
4924.00	-100.57	Peak	V	H2	41.04	47.46	73.98	-26.52
7386.00	-110.44	Avg	V	H2	41.23	37.79	53.98	-16.19
7386.00	-100.91	Peak	V	H2	41.23	47.32	73.98	-26.66
12310.00	-117.12	Avg	V	H2	46.11	36.00	53.98	-17.98
12310.00	-104.74	Peak	V	H2	46.11	48.38	73.98	-25.60

Table 6-34. Radiated Measurements

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

Frequency [MHz]	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]
11490.00	-111.08	Avg	H	H2	45.13	0.00	41.05	53.98	-12.93
11490.00	-98.66	Peak	H	H2	45.13	0.00	53.47	73.98	-20.51
22980.00	-113.42	Avg	H	H2	49.90	-9.54	33.94	53.98	-20.04
22980.00	-102.95	Peak	H	H2	49.90	-9.54	44.41	73.98	-29.57

Table 6-35. Radiated Measurements

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac 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: 5785MHz
 Channel: 157



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]
11570.00	-109.56	Avg	H	H2	45.21	0.00	42.65	53.98	-11.33
11570.00	-96.91	Peak	H	H2	45.21	0.00	55.30	73.98	-18.68

Table 6-36. Radiated Measurements

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

Frequency [MHz]	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]
11650.00	-110.07	Avg	H	H2	45.27	0.00	42.20	53.98	-11.78
11650.00	-97.13	Peak	H	H2	45.27	0.00	55.14	73.98	-18.84

Table 6-37. Radiated Measurements

FCC ID: A3LSMN915X	 FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
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Antenna-2 Radiated Spurious Emission Measurements

§15.247(d) §15.205 & §15.209

Worst Case Mode: 802.11b
 Worst Case Transfer Rate: 1 Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 2412MHz
 Channel: 01



Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
4824.00	-102.99	Avg	V	H2	40.99	45.00	53.98	-8.98
4824.00	-97.85	Peak	V	H2	40.99	50.14	73.98	-23.84
12060.00	-116.92	Avg	V	H2	45.98	36.05	53.98	-17.93
12060.00	-104.66	Peak	V	H2	45.98	48.31	73.98	-25.67

Table 6-38. Radiated Measurements

Worst Case Mode: 802.11b
 Worst Case Transfer Rate: 1 Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 2437MHz
 Channel: 06

Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
4874.00	-101.17	Avg	V	H2	41.02	46.85	53.98	-7.13
4874.00	-97.14	Peak	V	H2	41.02	50.88	73.98	-23.10
7311.00	-106.84	Avg	V	H2	41.32	41.49	53.98	-12.49
7311.00	-99.48	Peak	V	H2	41.32	48.85	73.98	-25.13
12185.00	-115.86	Avg	V	H2	46.06	37.19	53.98	-16.79
12185.00	-104.49	Peak	V	H2	46.06	48.56	73.98	-25.42

Table 6-39. Radiated Measurements

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Worst Case Mode: 802.11b
 Worst Case Transfer Rate: 1 Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 2462MHz
 Channel: 11



Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Field Strength [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]
4924.00	-106.40	Avg	V	H2	41.04	41.63	53.98	-12.35
4924.00	-100.07	Peak	V	H2	41.04	47.96	73.98	-26.02
7386.00	-110.52	Avg	V	H2	41.23	37.71	53.98	-16.27
7386.00	-101.40	Peak	V	H2	41.23	46.83	73.98	-27.15
12310.00	-117.28	Avg	V	H2	46.11	35.84	53.98	-18.14
12310.00	-104.85	Peak	V	H2	46.11	48.27	73.98	-25.71

Table 6-40. Radiated Measurements

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

Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]
11490.00	-111.03	Avg	H	H2	45.13	0.00	41.10	53.98	-12.88
11490.00	-98.83	Peak	H	H2	45.13	0.00	53.30	73.98	-20.68
22980.00	-100.81	Avg	H	H2	49.90	-9.54	46.55	53.98	-7.43
22980.00	-88.99	Peak	H	H2	49.90	-9.54	58.37	73.98	-15.61

Table 6-41. Radiated Measurements

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac 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: 5785MHz
 Channel: 157



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]
11570.00	-110.88	Avg	H	H2	45.21	0.00	41.33	53.98	-12.65
11570.00	-98.12	Peak	H	H2	45.21	0.00	54.09	73.98	-19.89

Table 6-42. Radiated Measurements

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

Frequency [MHz]	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]
11650.00	-110.76	Avg	H	H2	45.27	0.00	41.51	53.98	-12.47
11650.00	-98.00	Peak	H	H2	45.27	0.00	54.27	73.98	-19.71

Table 6-43. Radiated Measurements

FCC ID: A3LSMN915X	 FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
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MIMO Radiated Spurious Emission Measurements

§15.247(d) §15.205 & §15.209

Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 2412MHz
 Channel: 01



Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
4824.00	-111.04	Avg	V	H2	40.99	36.95	53.98	-17.03
4824.00	-99.00	Peak	V	H2	40.99	48.99	73.98	-24.99
12060.00	-117.10	Avg	V	H2	45.98	35.87	53.98	-18.11
12060.00	-105.30	Peak	V	H2	45.98	47.67	73.98	-26.31

Table 6-44. Radiated Measurements

Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 2437MHz
 Channel: 06

Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
4874.00	-111.21	Avg	V	H2	41.02	36.81	53.98	-17.17
4874.00	-98.11	Peak	V	H2	41.02	49.91	73.98	-24.07
7311.00	-113.75	Avg	V	H2	41.32	34.58	53.98	-19.40
7311.00	-101.27	Peak	V	H2	41.32	47.06	73.98	-26.92
12185.00	-125.63	Avg	V	H2	46.06	27.42	53.98	-26.56
12185.00	-102.44	Peak	V	H2	46.06	50.61	73.98	-23.37

Table 6-45. Radiated Measurements

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 2462MHz
 Channel: 11



Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	EUT Pol. [H/H2/V]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
4924.00	-113.30	Avg	V	H2	41.04	34.73	53.98	-19.25
4924.00	-101.00	Peak	V	H2	41.04	47.03	73.98	-26.95
7386.00	-116.38	Avg	V	H2	41.23	31.85	53.98	-22.13
7386.00	-104.29	Peak	V	H2	41.23	43.94	73.98	-30.04
12310.00	-117.12	Avg	V	H2	46.11	36.00	53.98	-17.98
12310.00	-104.53	Peak	V	H2	46.11	48.59	73.98	-25.39

Table 6-46. Radiated Measurements

Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5745MHz
 Channel: 149

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]
11490.00	-105.43	Avg	H	H2	45.13	0.00	46.70	53.98	-7.28
11490.00	-93.06	Peak	H	H2	45.13	0.00	59.07	73.98	-14.91
22980.00	-106.22	Avg	H	H2	49.90	-9.54	41.14	53.98	-12.84
22980.00	-94.53	Peak	H	H2	49.90	-9.54	52.83	73.98	-21.15

Table 6-47. Radiated Measurements

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset	Page 103 of 121	

Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5785MHz
 Channel: 157



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]
11570.00	-104.93	Avg	H	H2	45.21	0.00	47.28	53.98	-6.70
11570.00	-92.61	Peak	H	H2	45.21	0.00	59.60	73.98	-14.38

Table 6-48. Radiated Measurements

Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5825MHz
 Channel: 165

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]
11650.00	-105.72	Avg	H	H2	45.27	0.00	46.55	53.98	-7.43
11650.00	-93.33	Peak	H	H2	45.27	0.00	58.94	73.98	-15.04

Table 6-49. Radiated Measurements

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset	Page 104 of 121	

6.8 Antenna-1 Radiated Restricted Band Edge Measurements

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The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting.

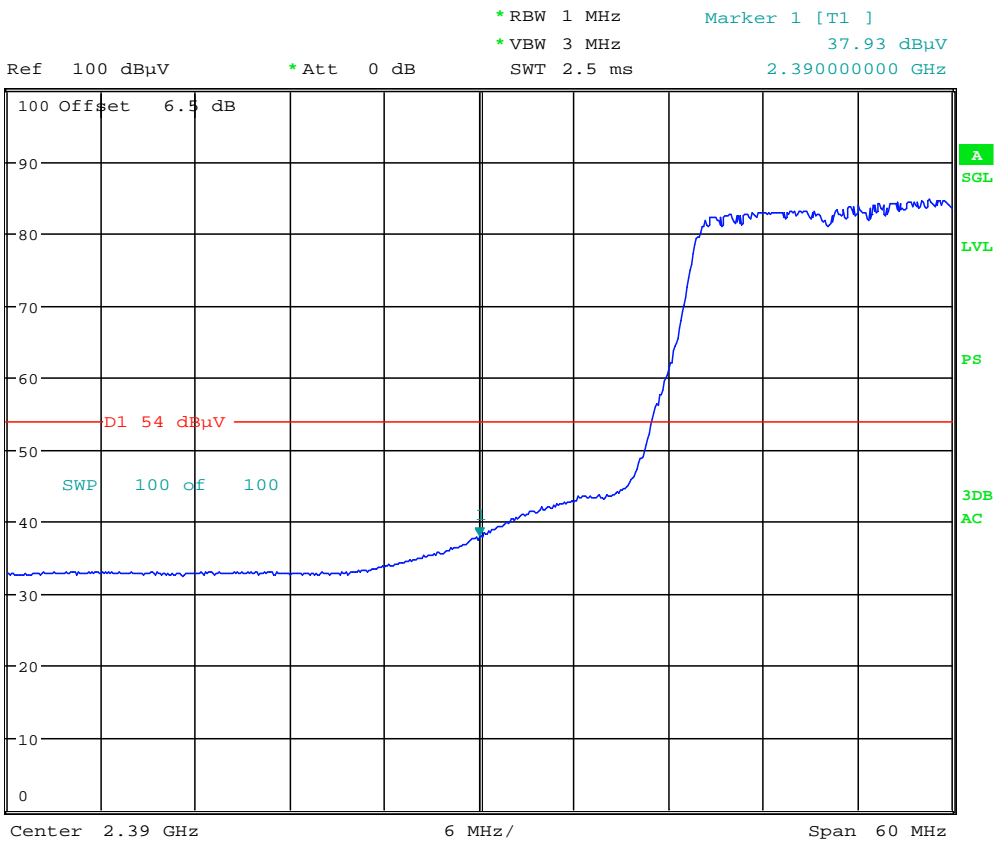
Worst Case Mode: 802.11g

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 2412MHz

Channel: 1



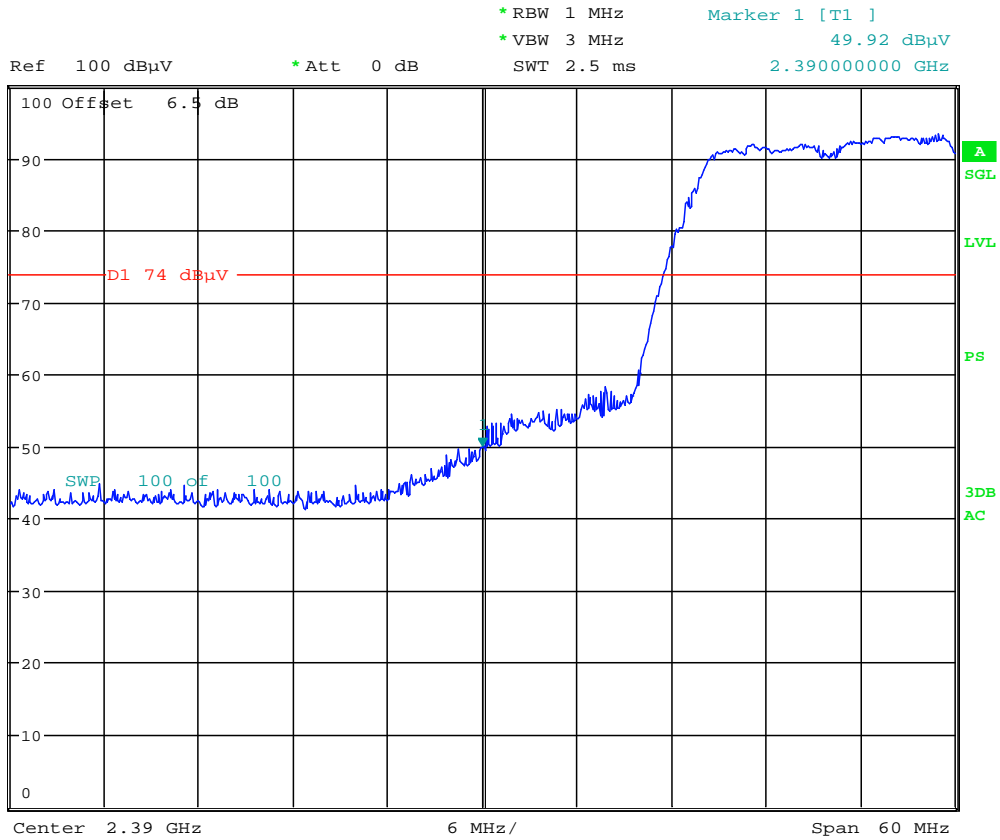
Date: 13.AUG.2014 23:32:15

Plot 6-125. Radiated Restricted Lower Band Edge Measurement (Average)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 - 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 105 of 121

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Date: 13.AUG.2014 23:32:43

Plot 6-126. Radiated Restricted Lower Band Edge Measurement (Peak)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 - 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 106 of 121

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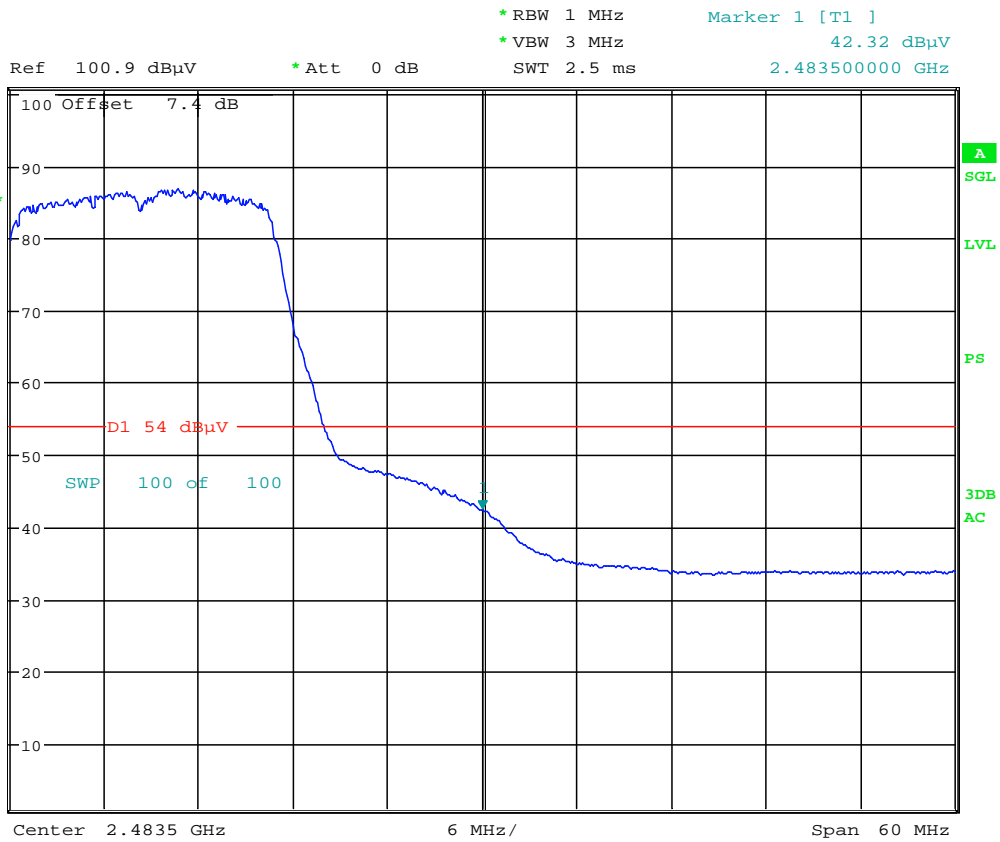
Worst Case Mode: 802.11g

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 2462MHz

Channel: 11



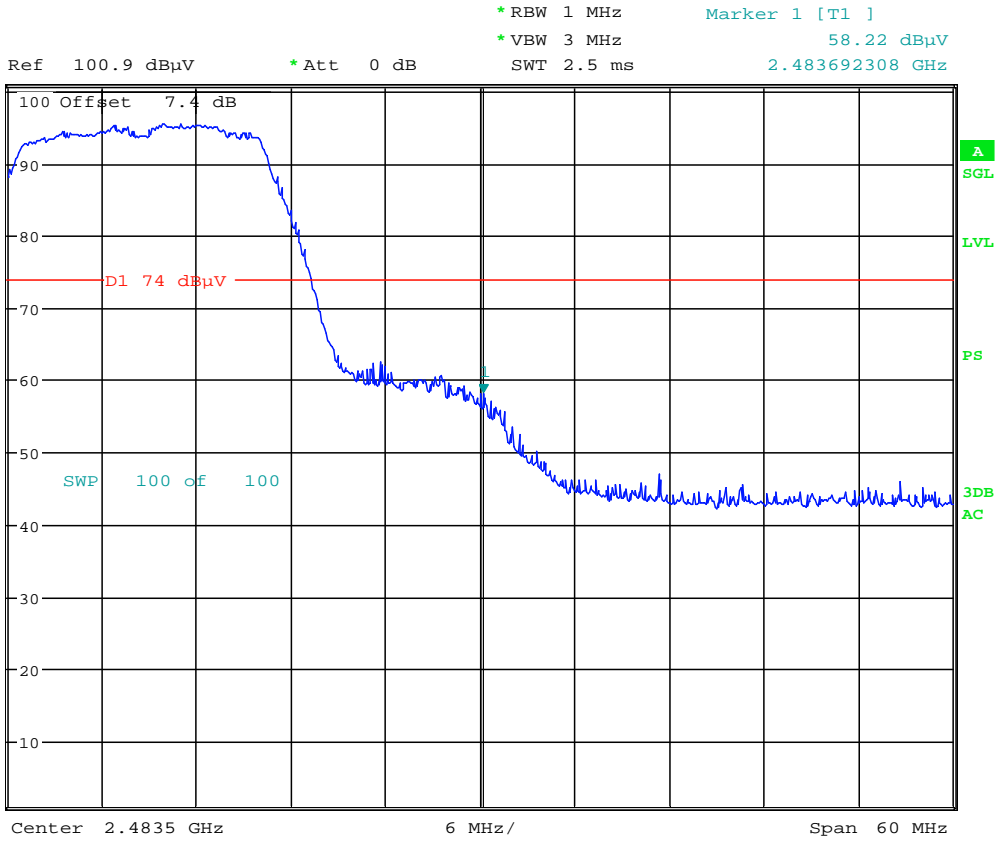
Date: 13.AUG.2014 23:40:01

Plot 6-127. Radiated Restricted Upper Band Edge Measurement (Average)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 107 of 121

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Date: 13.AUG.2014 23:40:24

Plot 6-128. Radiated Restricted Upper Band Edge Measurement (Peak)

FCC ID: A3LSMN915X	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 - 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset	Page 108 of 121	

6.9 Antenna-2 Radiated Restricted Band Edge Measurements

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The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting.

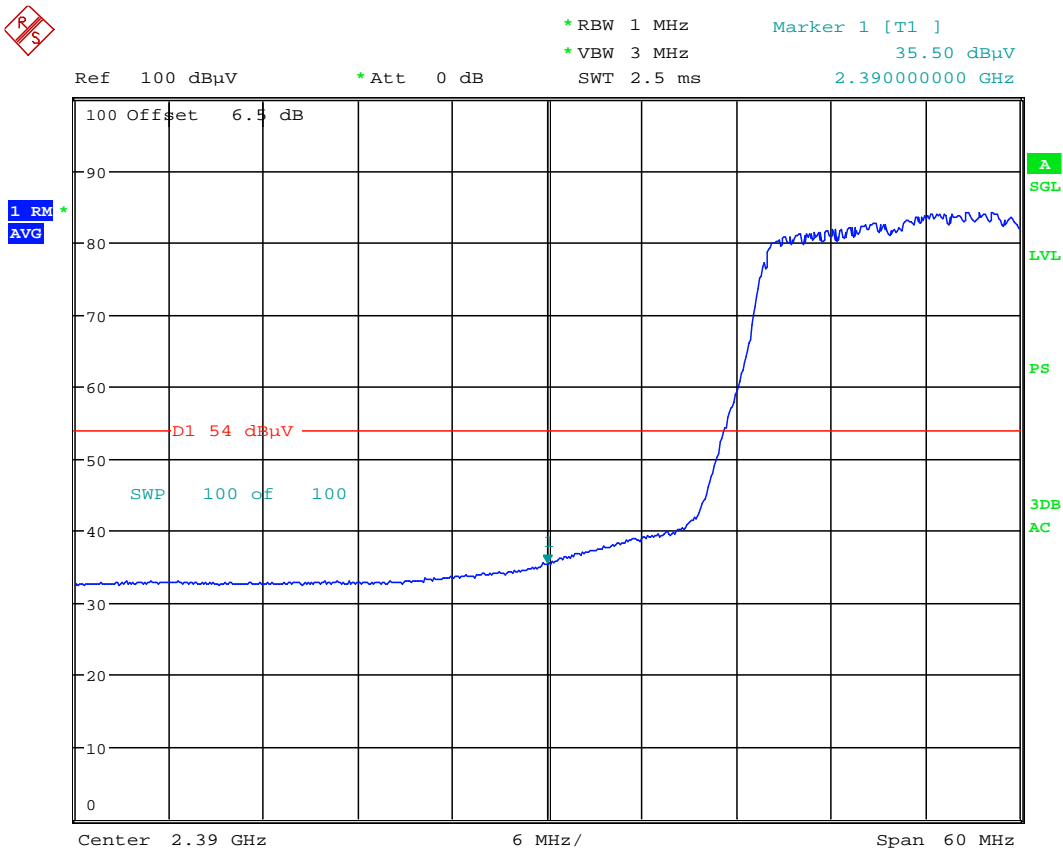
Worst Case Mode: 802.11g

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 2412MHz

Channel: 1



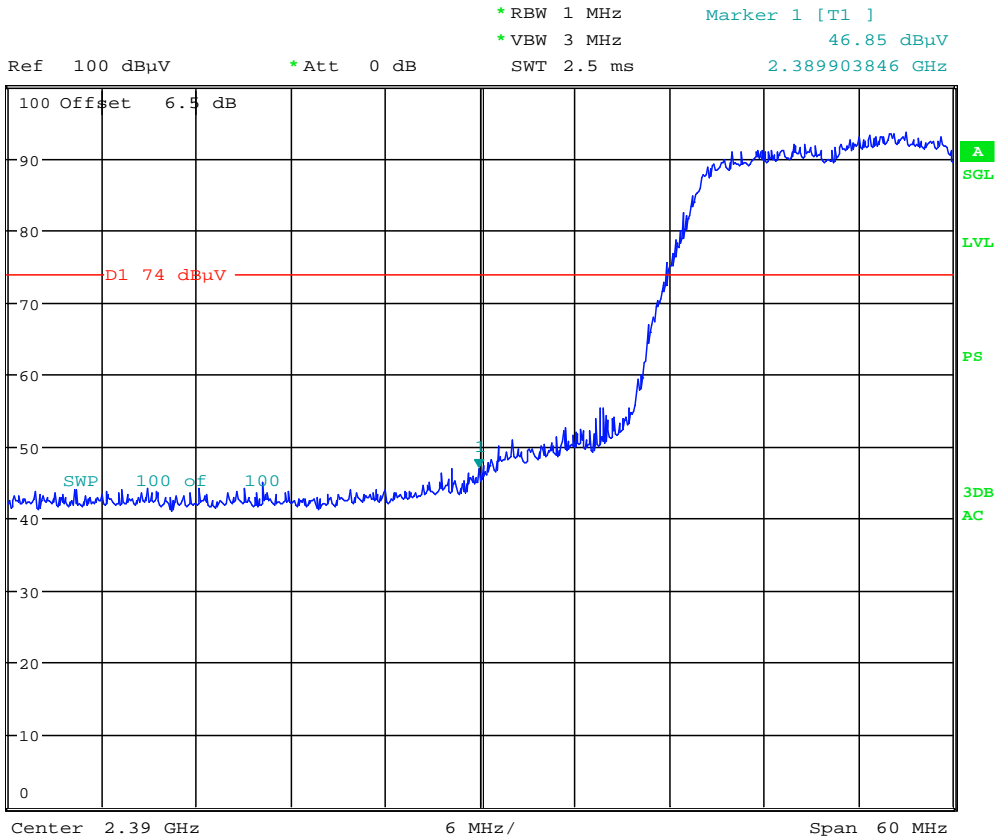
Date: 13.AUG.2014 23:58:33

Plot 6-129. Radiated Restricted Lower Band Edge Measurement (Average)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset	Page 109 of 121	

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Date: 13.AUG.2014 23:59:01

Plot 6-130. Radiated Restricted Lower Band Edge Measurement (Peak)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 - 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset	Page 110 of 121	

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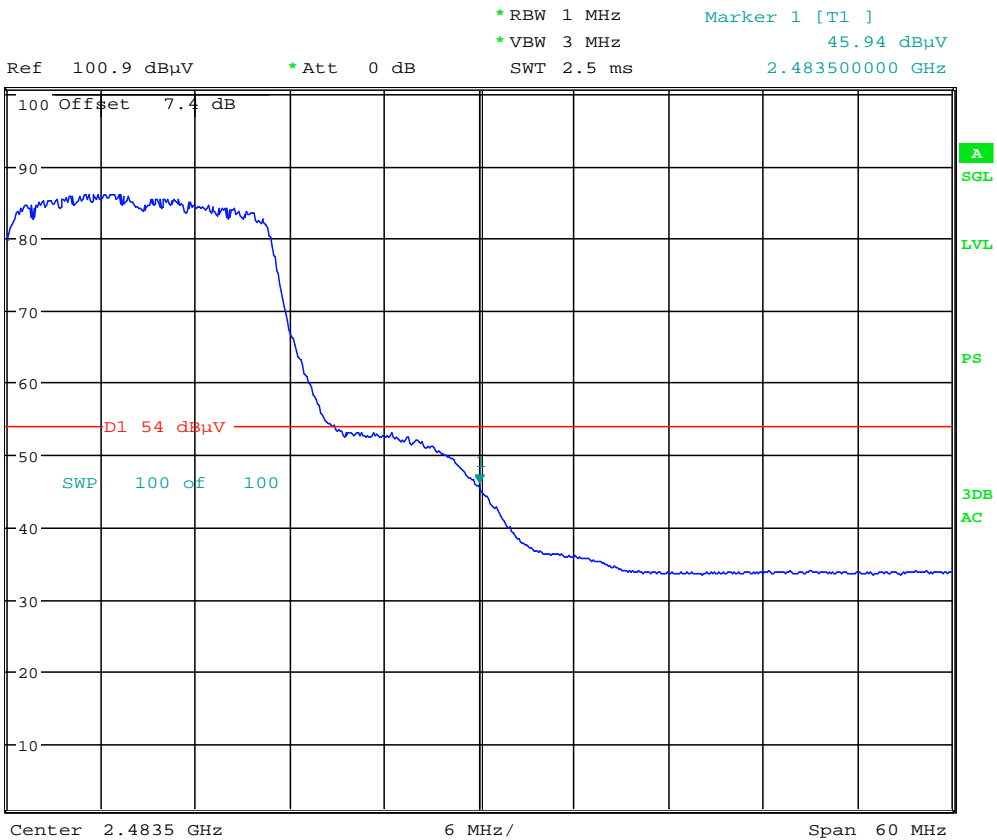
Worst Case Mode: 802.11g

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 2462MHz

Channel: 11



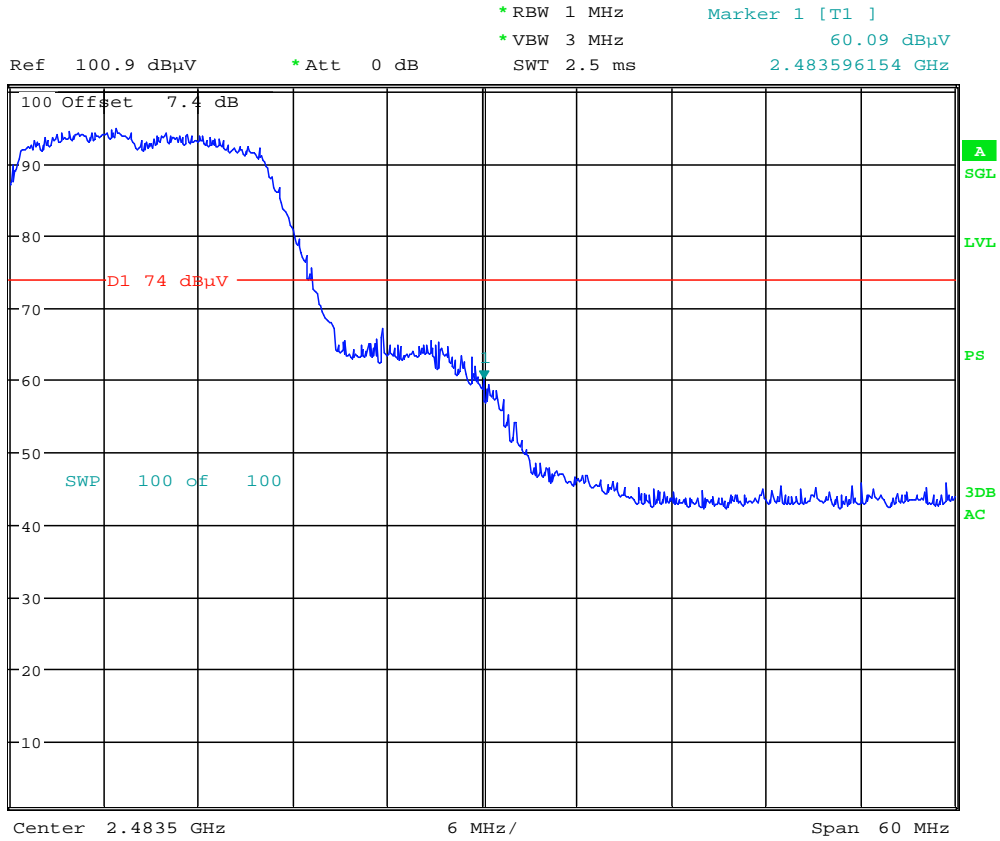
Date: 13.AUG.2014 23:51:42

Plot 6-131. Radiated Restricted Upper Band Edge Measurement (Average)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 111 of 121

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Date: 13.AUG.2014 23:52:11

Plot 6-132. Radiated Restricted Upper Band Edge Measurement (Peak)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset	Page 112 of 121

6.10 MIMO Radiated Restricted Band Edge Measurements

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The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting.

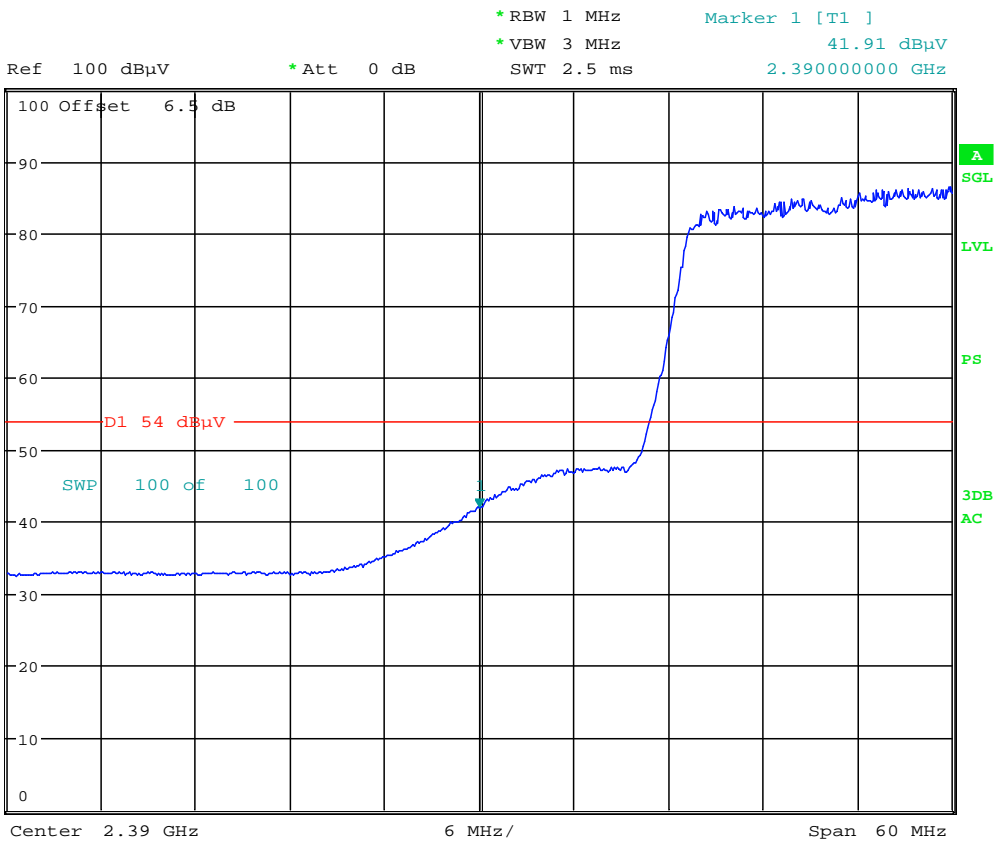
Worst Case Mode: 802.11n

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 2412MHz

Channel: 1



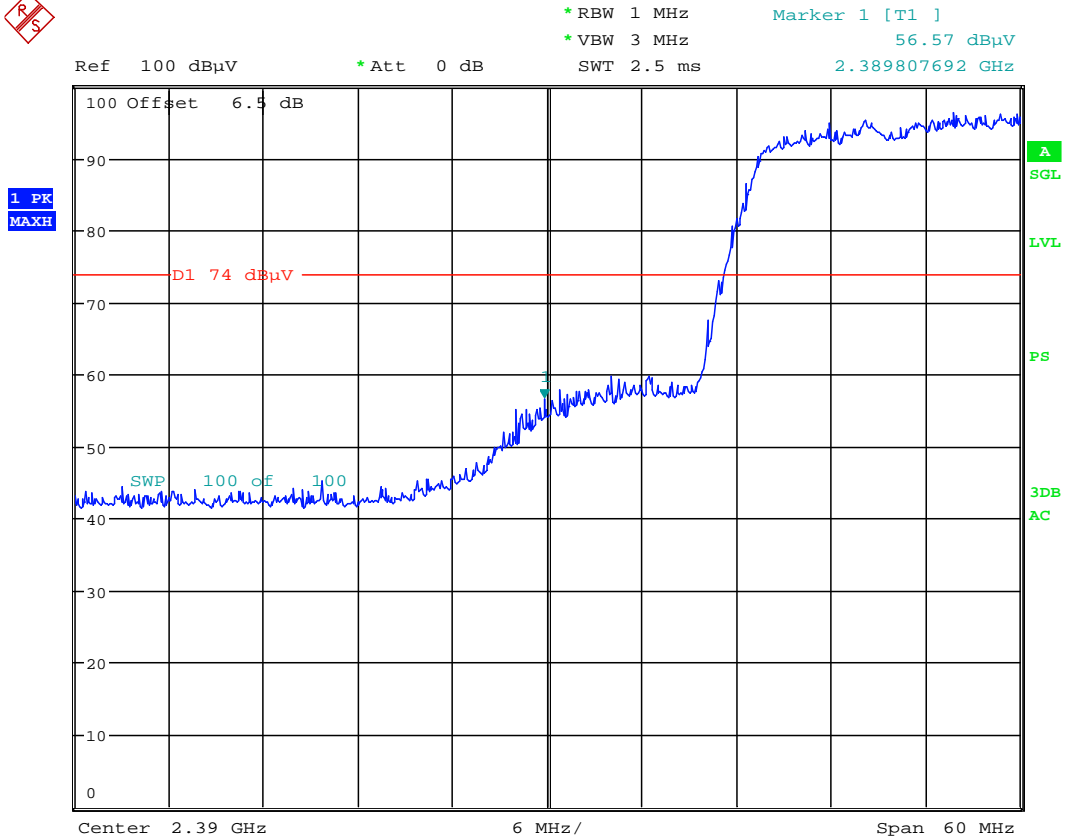
Date: 14.AUG.2014 00:03:40

Plot 6-133. Radiated Restricted Lower Band Edge Measurement (Average)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 - 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset	Page 113 of 121	



Radiated Restricted Band Edge Measurements

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Date: 14.AUG.2014 00:04:11

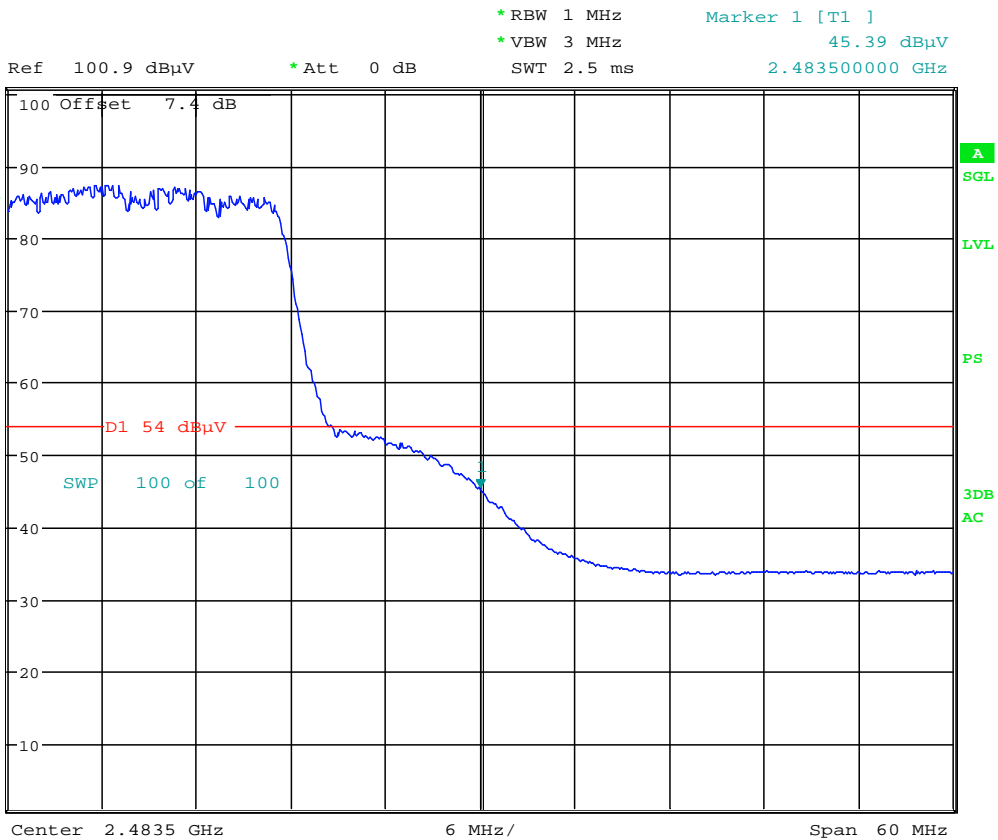
Plot 6-134. Radiated Restricted Lower Band Edge Measurement (Peak)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 114 of 121

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Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 2462MHz
 Channel: 11



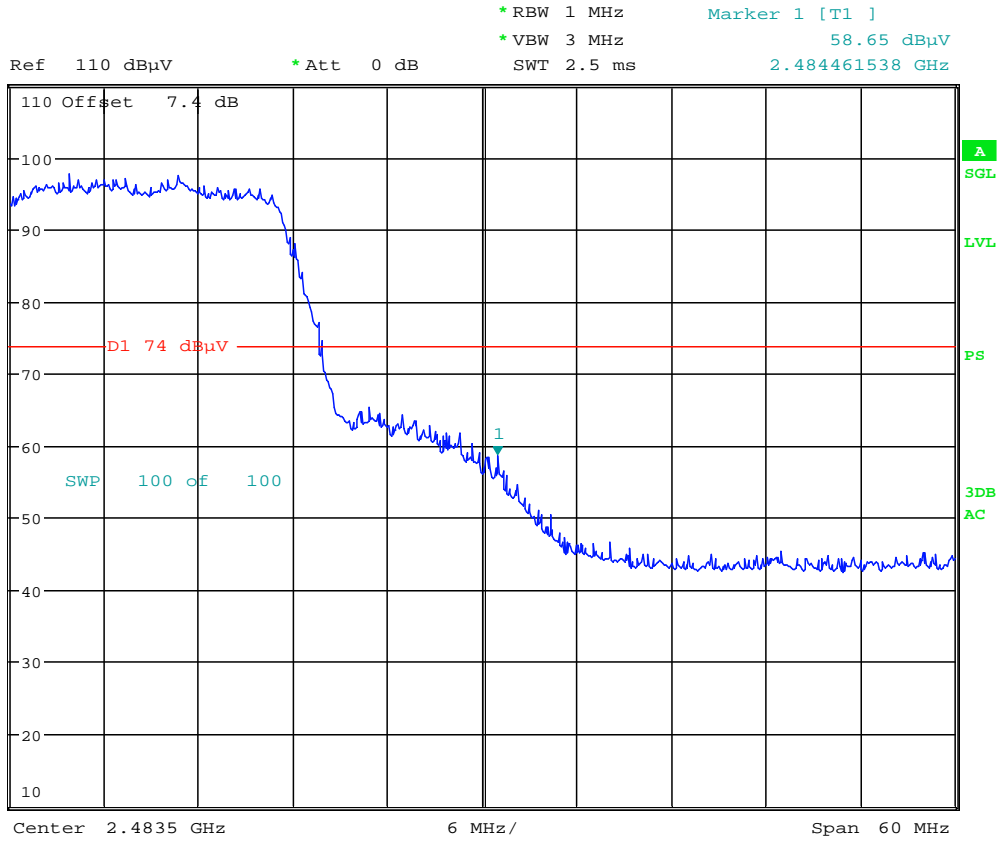
Date: 14.AUG.2014 00:08:48

Plot 6-135. Radiated Restricted Upper Band Edge Measurement (Average)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 115 of 121

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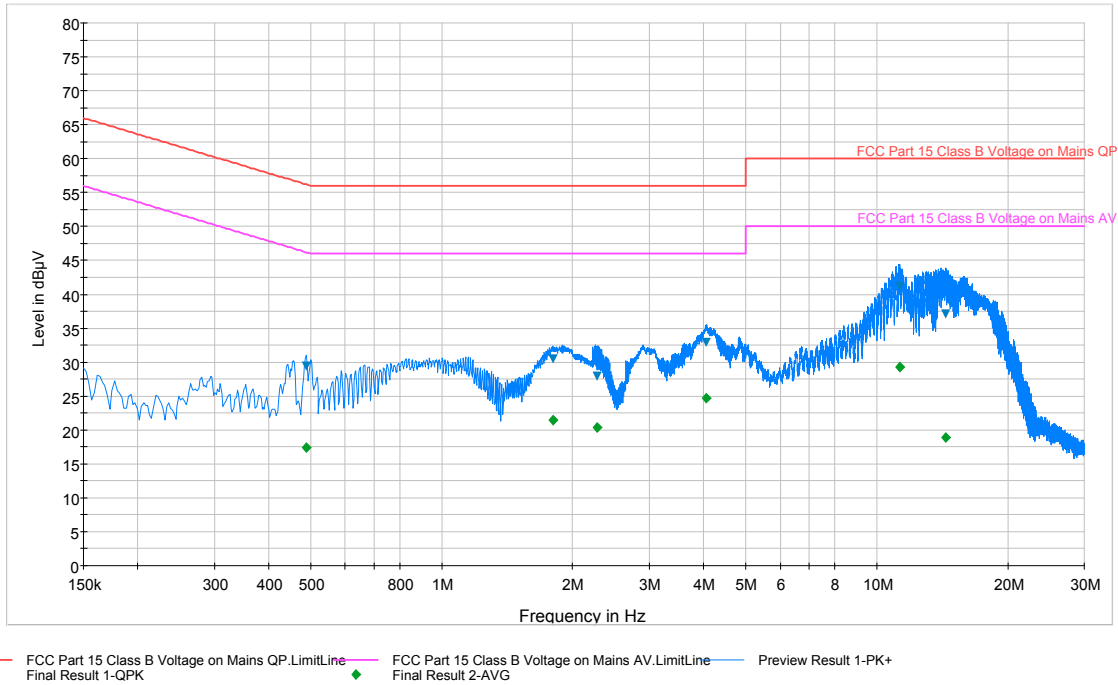
Date: 14.AUG.2014 00:09:18

Plot 6-136. Radiated Restricted Upper Band Edge Measurement (Peak)

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset	Page 116 of 121	

6.11 Line-Conducted Test Data

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Plot 6-137. Line Conducted Plot with 802.11b (L1)

Frequency MHz	Line	Corr. dB	QuasiPeak dBµV	Limit dBµV	Margin dB	Average dBµV	Limit dBµV	Margin dB
0.488	L1	0.1	29.40	56.20	26.80	17.40	46.20	28.80
1.799	L1	0.1	30.50	56.00	25.50	21.50	46.00	24.50
2.272	L1	0.1	27.90	56.00	28.10	20.40	46.00	25.60
4.065	L1	0.2	32.90	56.00	23.10	24.70	46.00	21.30
11.283	L1	0.4	41.10	60.00	18.90	29.30	50.00	20.70
14.377	L1	0.5	37.20	60.00	22.80	18.90	50.00	31.10

Table 6-50. Line Conducted Data with 802.11b (L1)

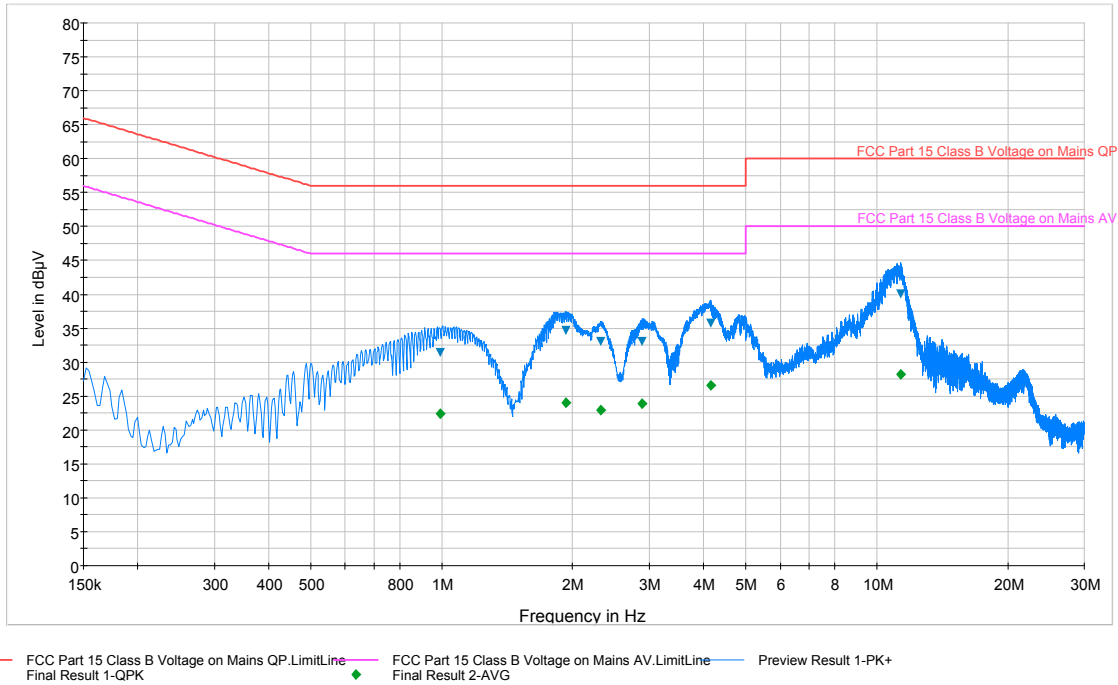
Notes:

- All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11b mode using 1Mbps on Channel 6. 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.
- Factor (dB) = Cable loss (dB) + LISN insertion factor (dB)
- QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Factor (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.

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 117 of 121

Line-Conducted Test Data

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Plot 6-138. Line Conducted Plot with 802.11b (N)

Frequency MHz	Line	Corr. dB	QuasiPeak dBµV	Limit dBµV	Margin dB	Average dBµV	Limit dBµV	Margin dB
0.992	N	0.1	31.50	56.00	24.50	22.40	46.00	23.60
1.930	N	0.2	34.60	56.00	21.40	24.00	46.00	22.00
2.321	N	0.2	33.10	56.00	22.90	22.90	46.00	23.10
2.891	N	0.2	33.00	56.00	23.00	23.90	46.00	22.10
4.157	N	0.2	35.70	56.00	20.30	26.60	46.00	19.40
11.357	N	0.4	40.10	60.00	19.90	28.10	50.00	21.90

Table 6-51. Line Conducted Data with 802.11b (N)

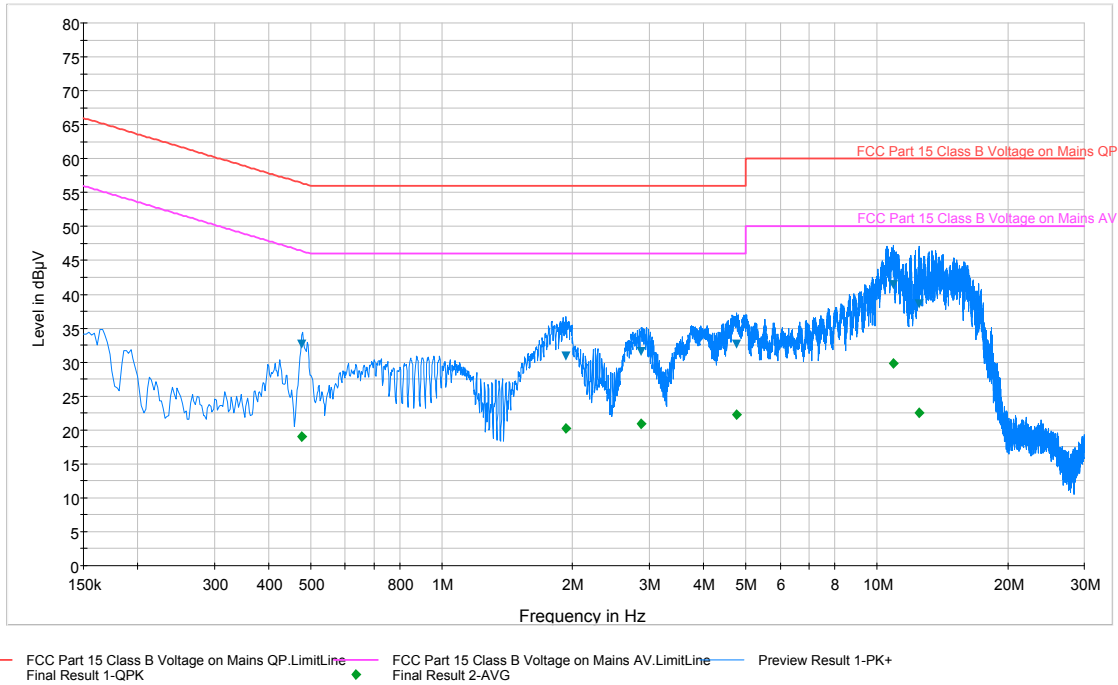
Notes:

1. All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11b mode using 1Mbps on Channel 6. 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. Factor (dB) = Cable loss (dB) + LISN insertion factor (dB)
4. QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Factor (dB)
5. Margin (dB) = QP/AV Limit (dBµV) – QP/AV Level (dBµV)
6. Traces shown in plot are made using a peak detector.
7. Deviations to the Specifications: None.

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Plot 6-139. Line Conducted Plot with 802.11a (L1)

Frequency MHz	Line	Corr. dB	QuasiPeak dBµV	Limit dBµV	Margin dB	Average dBµV	Limit dBµV	Margin dB
0.476	L1	0.1	32.70	56.40	23.70	19.10	46.40	27.30
1.932	L1	0.1	30.80	56.00	25.20	20.30	46.00	25.70
2.879	L1	0.2	31.60	56.00	24.40	21.00	46.00	25.00
4.767	L1	0.2	32.60	56.00	23.40	22.30	46.00	23.70
10.941	L1	0.4	41.40	60.00	18.60	29.80	50.00	20.20
12.541	L1	0.4	38.50	60.00	21.50	22.50	50.00	27.50

Table 6-52. Line Conducted Data with 802.11a (L1)

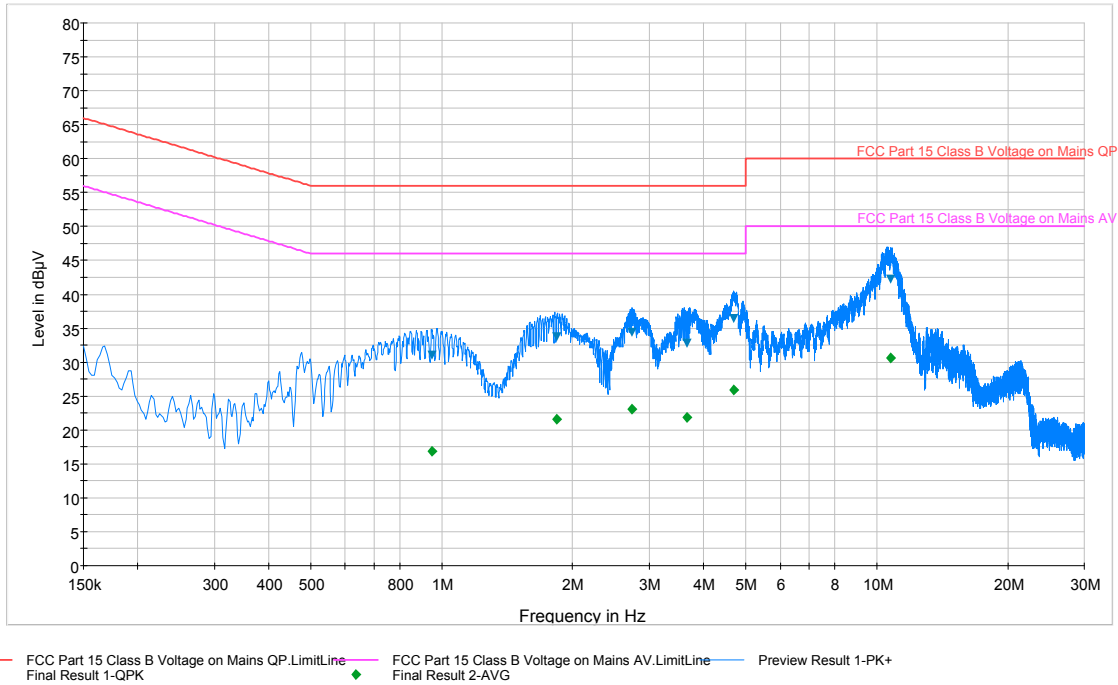
Notes:

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 157. 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. Factor (dB) = Cable loss (dB) + LISN insertion factor (dB)
4. QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Factor (dB)
5. Margin (dB) = QP/AV Limit (dBµV) – QP/AV Level (dBµV)
6. Traces shown in plot are made using a peak detector.
7. Deviations to the Specifications: None.

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 119 of 121

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Plot 6-140. Line Conducted Plot with 802.11a (N)

Frequency MHz	Line	Corr. dB	QuasiPeak dBµV	Limit dBµV	Margin dB	Average dBµV	Limit dBµV	Margin dB
0.949	N	0.1	31.00	56.00	25.00	16.90	46.00	29.10
1.842	N	0.2	33.70	56.00	22.30	21.60	46.00	24.40
2.735	N	0.2	34.40	56.00	21.60	23.10	46.00	22.90
3.671	N	0.2	32.80	56.00	23.20	21.90	46.00	24.10
4.693	N	0.2	36.40	56.00	19.60	25.90	46.00	20.10
10.788	N	0.4	42.30	60.00	17.70	30.60	50.00	19.40

Table 6-53. Line Conducted Data with 802.11a (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 157. 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.
- Factor (dB) = Cable loss (dB) + LISN insertion factor (dB)
- QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Factor (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.

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset		Page 120 of 121

7.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMN915X** is in compliance with Part 15C of the FCC Rules.

FCC ID: A3LSMN915X		FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION) 	Reviewed by: Quality Manager
Test Report S/N: 0Y1408181742.A3L	Test Dates: 7/24 – 8/11/2014, 8/13 - 8/26/2014	EUT Type: Portable Handset	Page 121 of 121