

6.7 Conducted Spurious Emissions

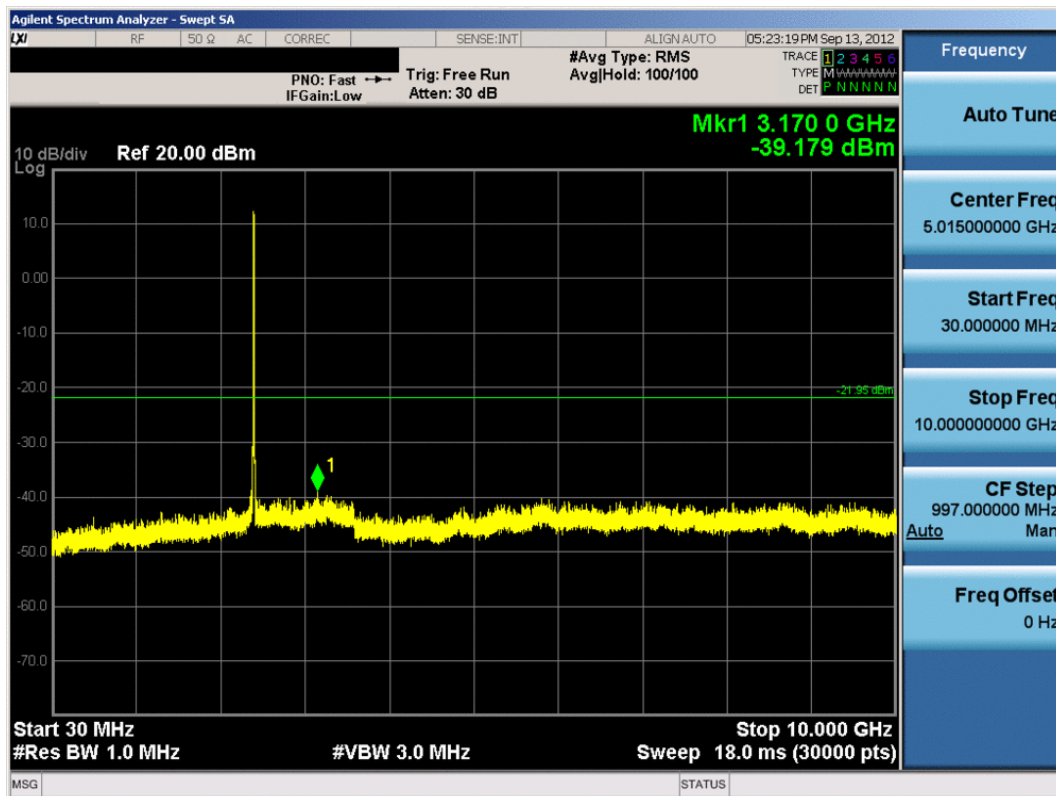
\$15.247(d); RSS-210 [A8.5]

For the following out of band conducted spurious emissions plots, the EUT was investigated in all available data rates for “b”, “g”, “a”, and “n” 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 display line shown in the following plots denotes the limit at 30dB below the fundamental emission level measured in a 100kHz bandwidth, as determined in Section 6.6 of this report. 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.

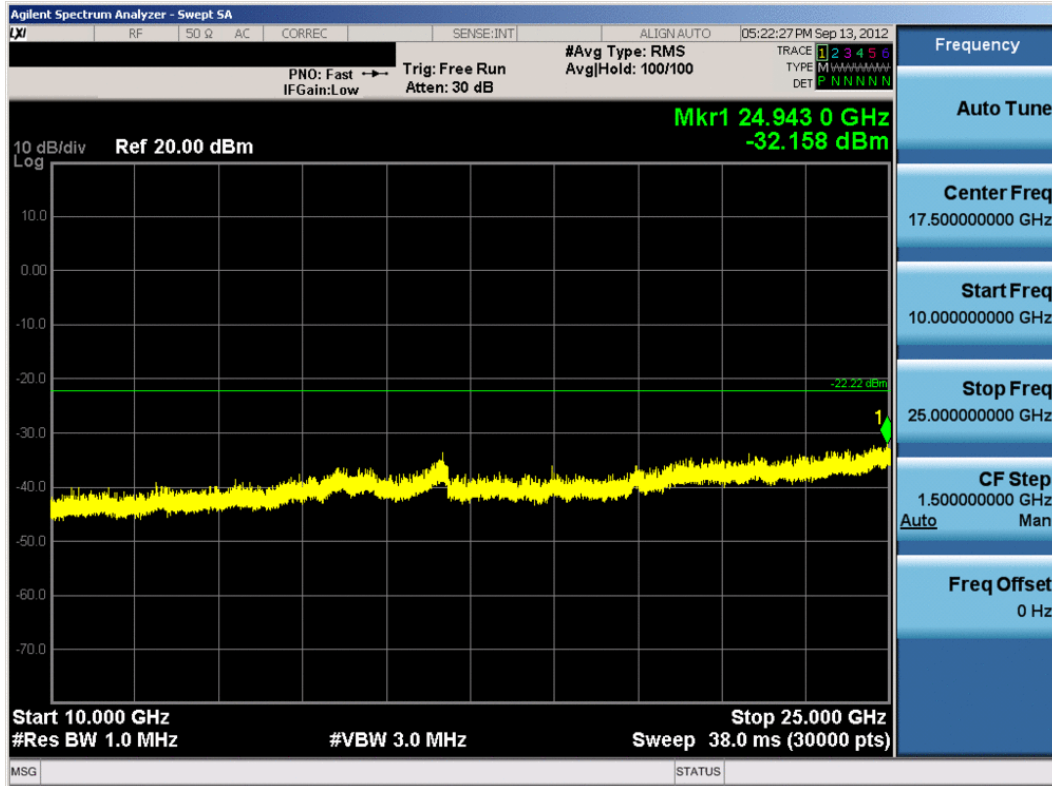
For plots showing conducted spurious emissions near the limit, the frequencies were investigated with a reduced RBW to ensure that no emissions were present.

Plot 6-53 through Plot 6-58 were recorded using a PSA spectrum analyzer connected to a laptop PC via GPIB connection. Since the PSA is limited to a maximum of 8192 sweeping points, roughly about 4GHz of spectrum can be analyzed while ensuring that the bin-to-bin spacing is such that narrowband emissions are not lost (i.e. # points $\geq 2 * \text{Span}/\text{RBW}$). A program installed on the laptop (“PCTEST 40GHz CSE”, Version 1.0) sets the spectrum analyzer to gather the maximum number of spectral points from 30MHz to 40GHz in 4GHz increments and then places the data into an Excel spreadsheet from which the conducted plots are generated. The limit is 30dBc and is determined from the power spectral density plots which are measured with a 100kHz RBW. The spectrum analyzer is set as follows for each 4GHz portion of spectrum that is analyzed: RBW = 1MHz, VBW = 3MHz, sweep time = auto, detector = max peak, number of points = 8192.

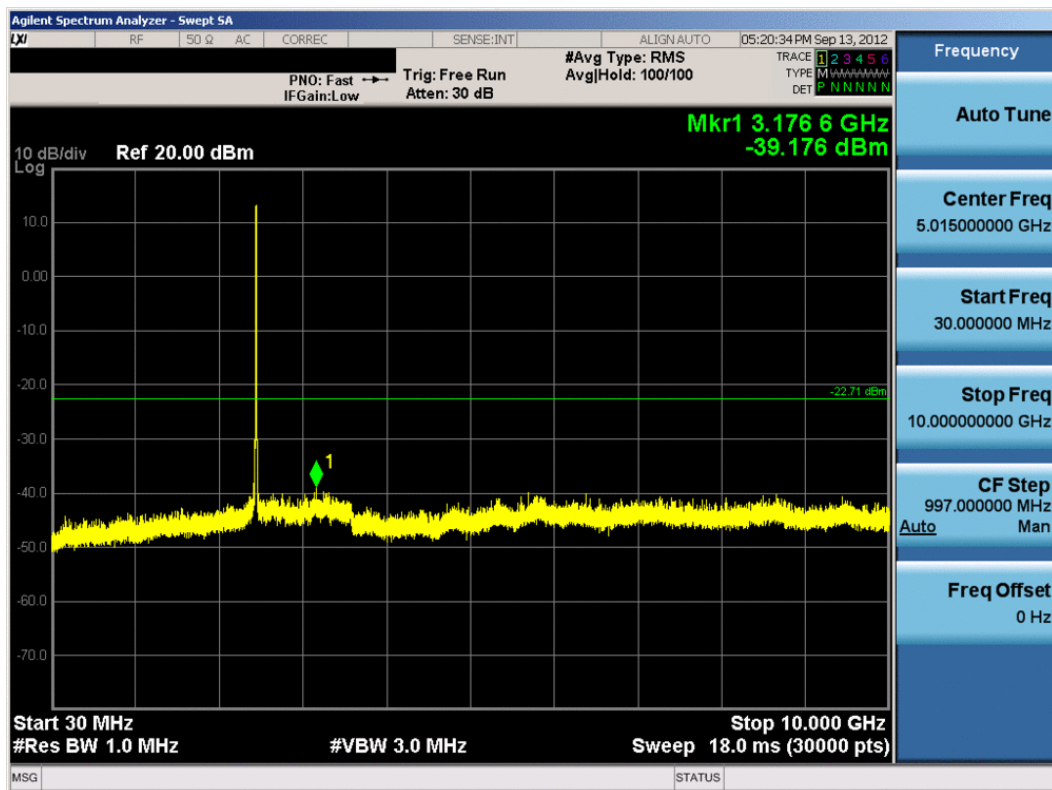


Plot 6-47. Conducted Spurious Plot (802.11b – Ch. 1)

FCC ID: A3LSWDSCL21		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1209111326.A3L	Test Dates: 09/13/12 - 09/24/12	EUT Type: Portable Handset	Page 40 of 60	

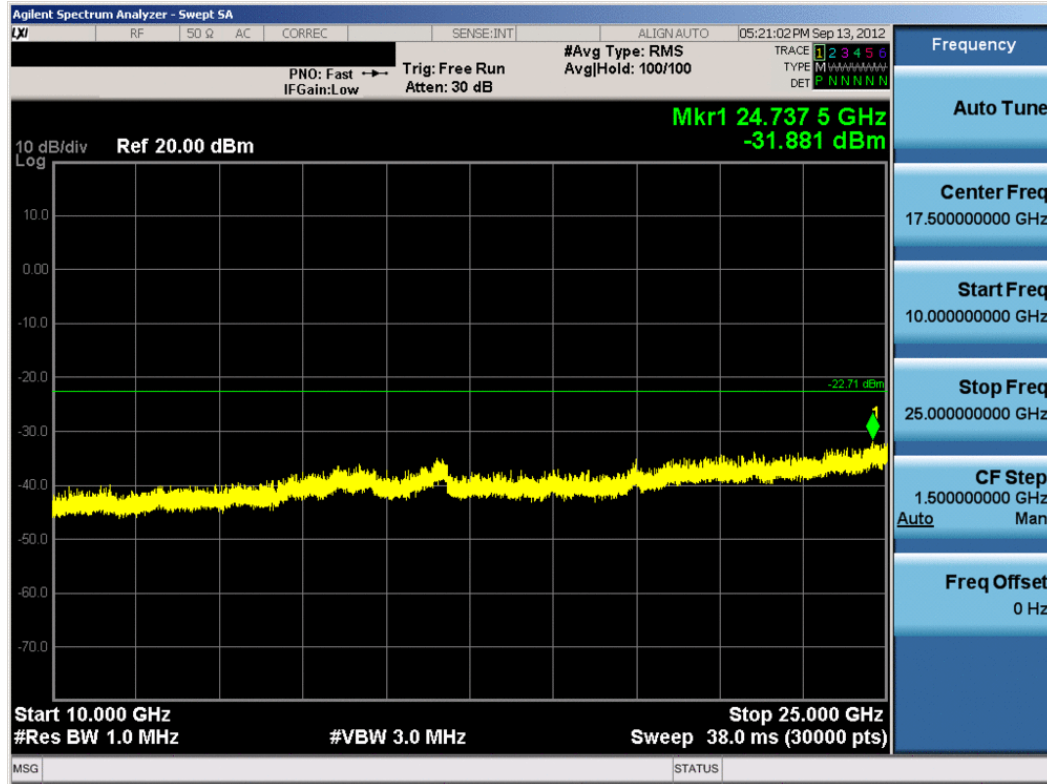


Plot 6-50. Conducted Spurious Plot (802.11b – Ch. 6)

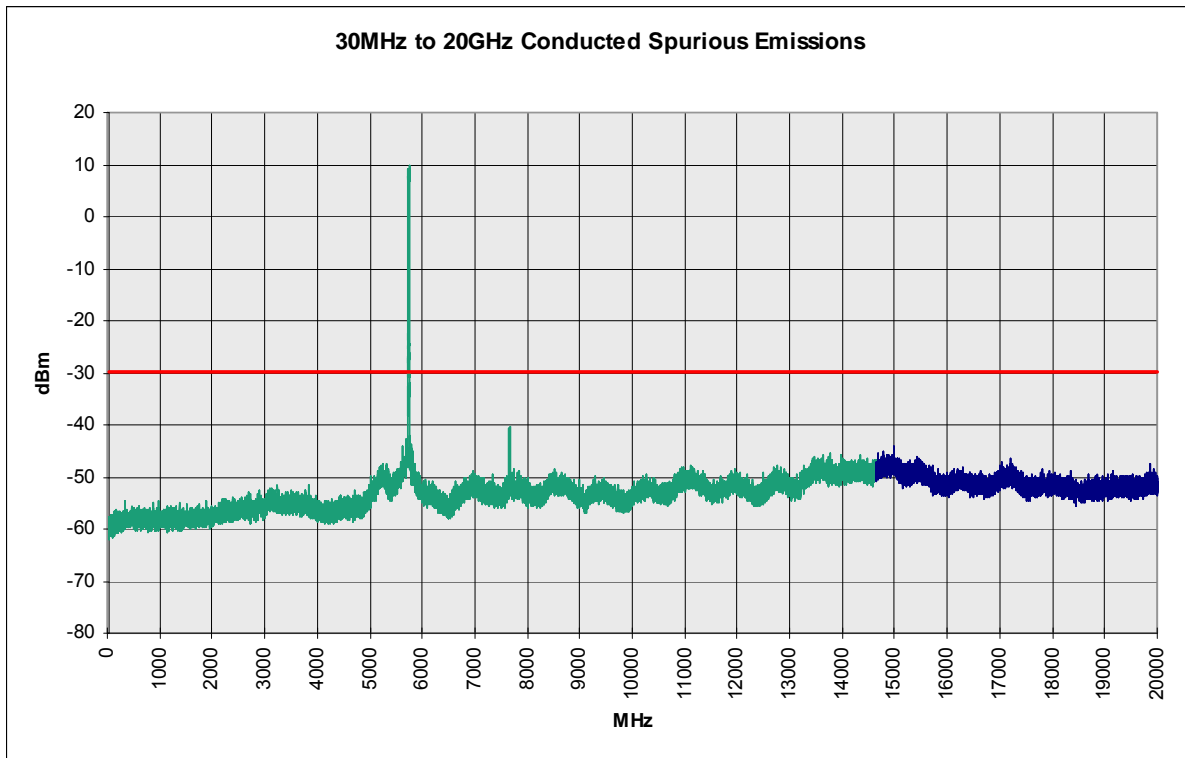


Plot 6-51. Conducted Spurious Plot (802.11b – Ch. 11)

FCC ID: A3LSWDSCL21		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1209111326.A3L	Test Dates: 09/13/12 - 09/24/12	EUT Type: Portable Handset		Page 42 of 60

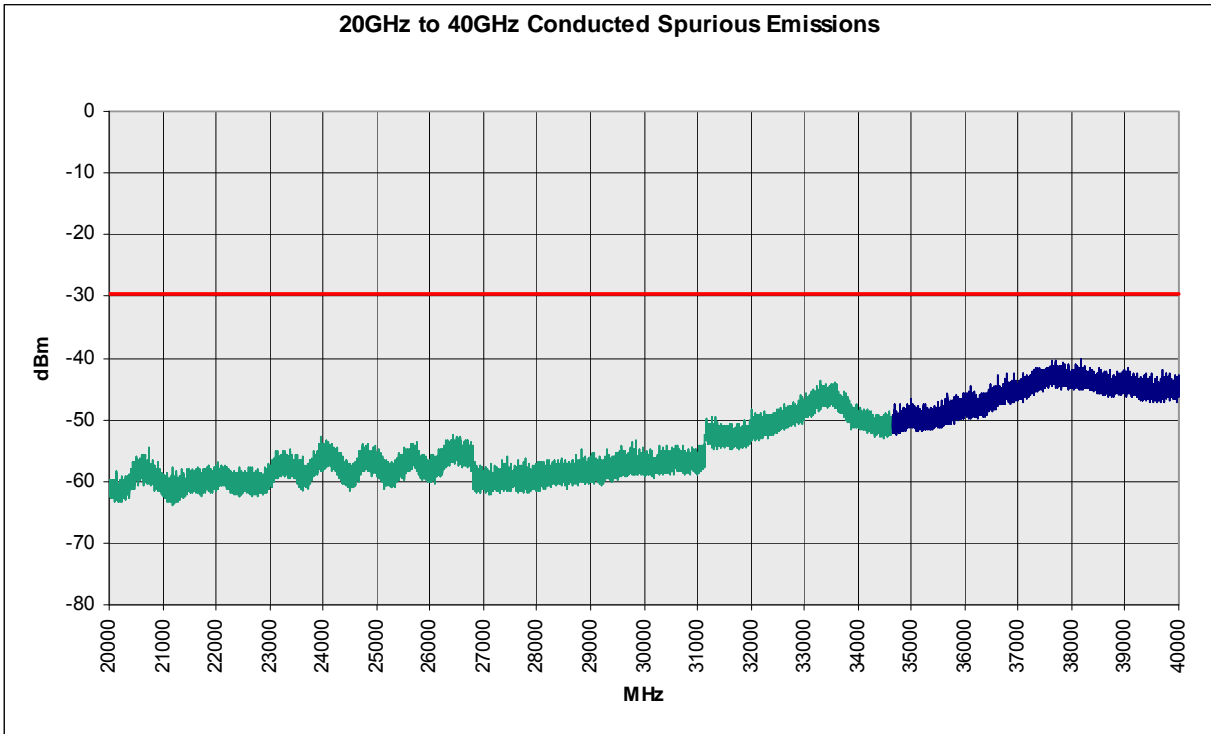


Plot 6-52. Conducted Spurious Plot (802.11b – Ch. 11)

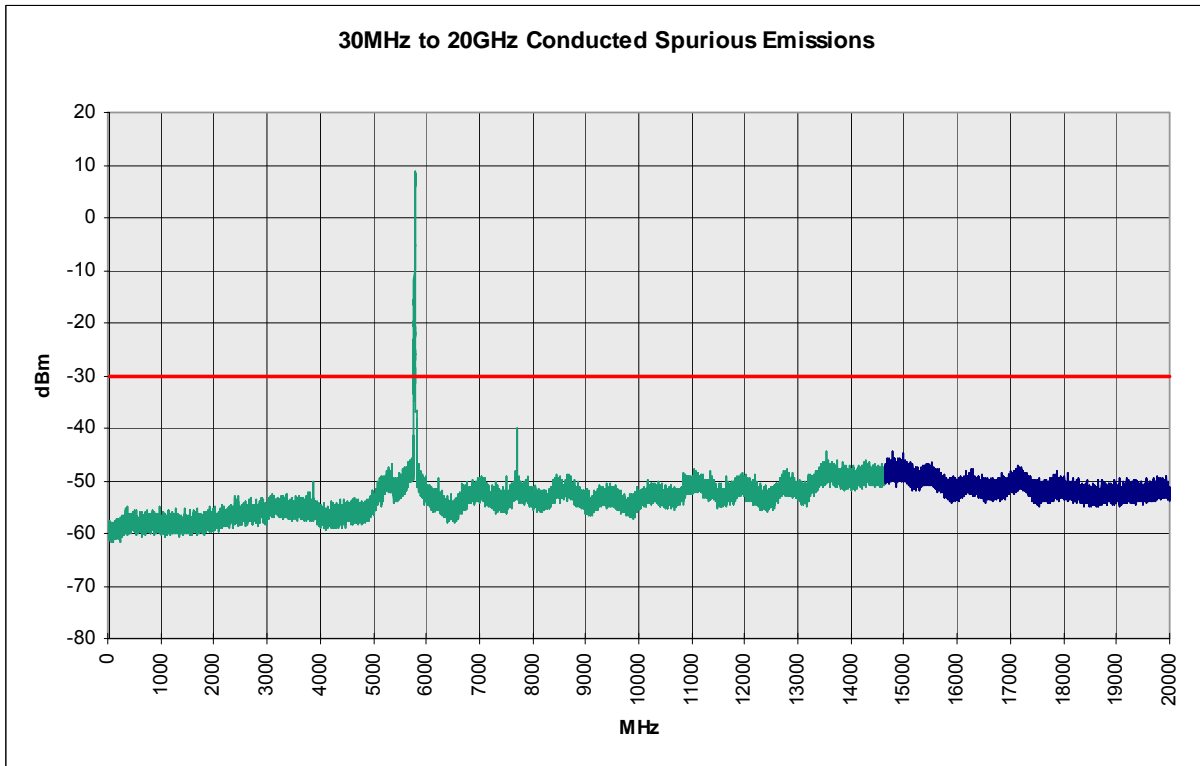


Plot 6-53. Conducted Spurious Plot (802.11a – Ch. 149)

FCC ID: A3LSWDSCL21		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1209111326.A3L	Test Dates: 09/13/12 - 09/24/12	EUT Type: Portable Handset		Page 43 of 60

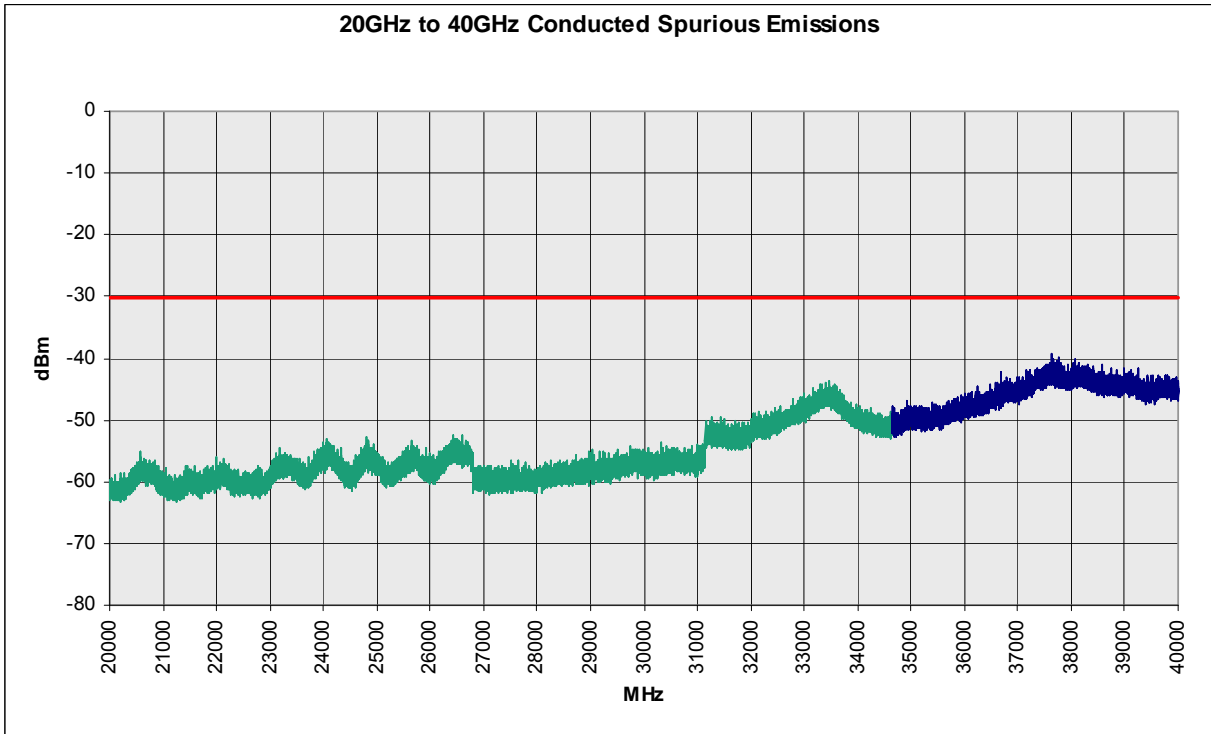


Plot 6-54. Conducted Spurious Plot (802.11a – Ch. 149)

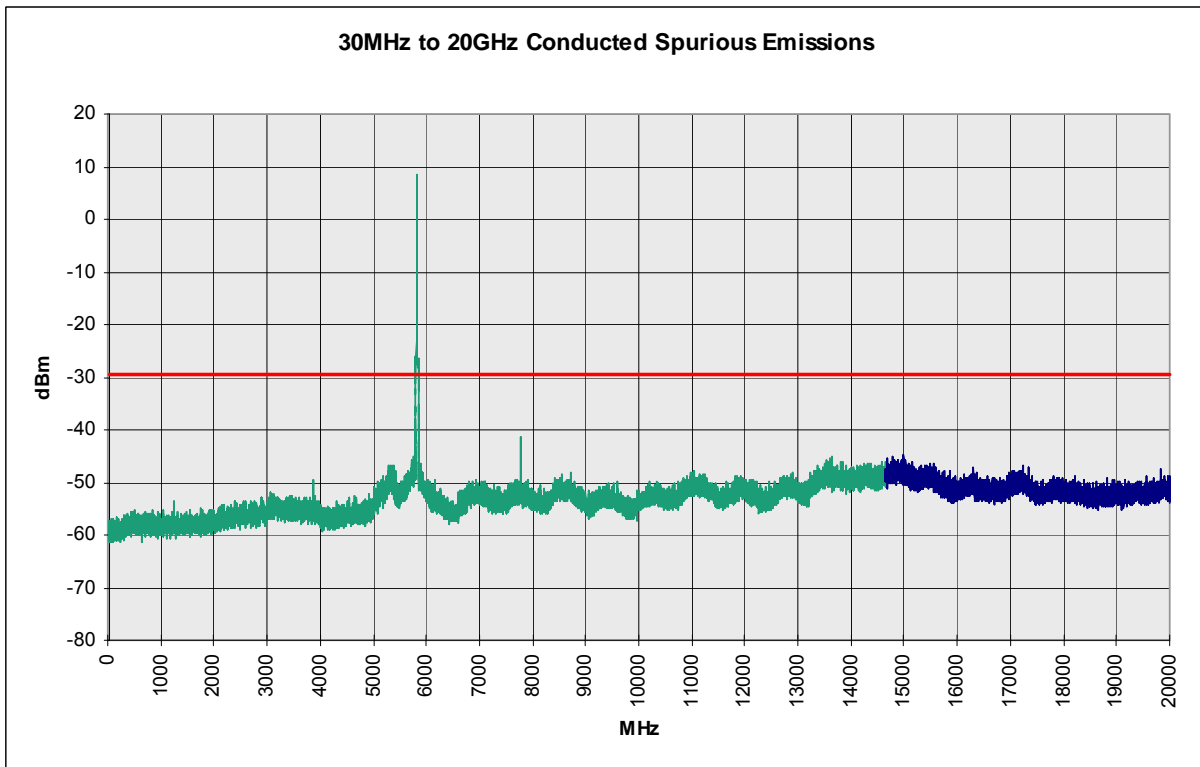


Plot 6-55. Conducted Spurious Plot (802.11a – Ch. 157)



FCC ID: A3LSWDSCL21		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1209111326.A3L	Test Dates: 09/13/12 - 09/24/12	EUT Type: Portable Handset	Page 44 of 60	

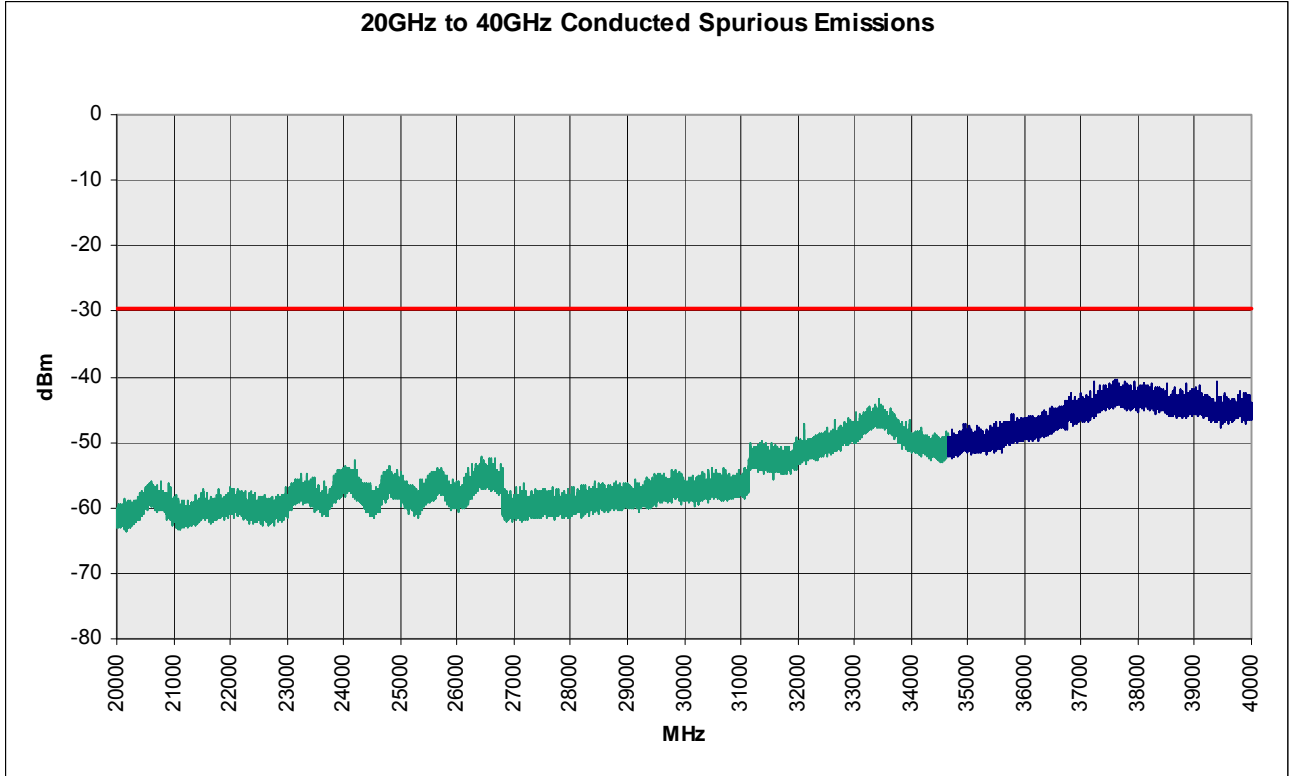


Plot 6-56. Conducted Spurious Plot (802.11a – Ch. 157)





Plot 6-57. Conducted Spurious Plot (802.11a – Ch. 165)

FCC ID: A3LSWDSCL21		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1209111326.A3L	Test Dates: 09/13/12 - 09/24/12	EUT Type: Portable Handset	Page 45 of 60	



Plot 6-58. Conducted Spurious Plot (802.11a – Ch. 165)

FCC ID: A3LSWDSCL21		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1209111326.A3L	Test Dates: 09/13/12 - 09/24/12	EUT Type: Portable Handset	Page 46 of 60	

6.8 Radiated Spurious Emission Measurements

§15.247(d) / §15.205 & §15.209; RSS-210 [A8.5]

The EUT was tested from 9kHz up to the tenth 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. 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 6-10 per Section 15.209.


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 measurements shown in this section were obtained using traditional radiated test methods as defined in C63.10-2009. The optional test procedures for antenna port conducted measurements of unwanted emissions per the guidance of KDB 558074 were not used to evaluate this device.

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 6-10. Radiated Limits

Sample Calculation

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

FCC ID: A3LSWDSC21		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1209111326.A3L	Test Dates: 09/13/12 - 09/24/12	EUT Type: Portable Handset	Page 47 of 60	

Radiated Spurious Emission Measurements (Cont'd)

§15.247(d) / §15.205 & §15.209; RSS-210 [A8.5]

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	Pol. [H/V]	AFCL [dB/m]	Field Strength [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]
4824.00	-110.82	Avg	H	38.96	35.14	53.98	-18.84
4824.00	-99.97	Peak	H	38.96	45.99	73.98	-27.99
12060.00	-135.00	Avg	H	49.04	21.04	53.98	-32.94
12060.00	-125.00	Peak	H	49.04	31.04	73.98	-42.94

Table 6-11. Radiated Measurements @ 3 meters

NOTES:

- All emissions shown lie in the restricted bands specified in §15.205 are below the limit shown in Table 6-10.
- For frequencies > 1GHz, average measurements are recorded using the RBAVG1 measurement procedure of KDB 558074 using RBW = 1MHz, VBW = 3MHz, RMS detector, 1001 measurement points, and a 3 second sweep time. Peak measurements are recorded using RBW = 1MHz, VBW = 3MHz and a peak detector.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the second harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μ V/m (54dB μ /m) at 3 meters radiated.

FCC ID: A3LSWDSCL21		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1209111326.A3L	Test Dates: 09/13/12 - 09/24/12	EUT Type: Portable Handset	Page 48 of 60	

Radiated Spurious Emission Measurements (Cont'd)

§15.247(d) / §15.205 & §15.209; RSS-210 [A8.5]

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	Pol. [H/V]	AFCL [dB/m]	Field Strength [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]
4874.00	-109.84	Avg	H	39.22	36.38	53.98	-17.60
4874.00	-100.17	Peak	H	39.22	46.05	73.98	-27.93
7311.00	-135.00	Avg	H	39.41	11.41	53.98	-42.57
7311.00	-125.00	Peak	H	39.41	21.41	73.98	-52.57
12185.00	-135.00	Avg	H	48.25	20.25	53.98	-33.73
12185.00	-125.00	Peak	H	48.25	30.25	73.98	-43.73

Table 6-12. Radiated Measurements @ 3 meters

NOTES:

- All emissions shown lie in the restricted bands specified in §15.205 are below the limit shown in Table 6-10.
- For frequencies > 1GHz, average measurements are recorded using the RBAVG1 measurement procedure of KDB 558074 using RBW = 1MHz, VBW = 3MHz, RMS detector, 1001 measurement points, and a 3 second sweep time. Peak measurements are recorded using RBW = 1MHz, VBW = 3MHz and a peak detector.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the second harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μ V/m (54dB μ /m) at 3 meters radiated.

FCC ID: A3LSWDSCL21		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1209111326.A3L	Test Dates: 09/13/12 - 09/24/12	EUT Type: Portable Handset	Page 49 of 60	

Radiated Spurious Emission Measurements (Cont'd)

§15.247(d) / §15.205 & §15.209; RSS-210 [A8.5]

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	Pol. [H/V]	AFCL [dB/m]	Field Strength [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]
4924.00	-110.55	Avg	H	39.64	36.09	53.98	-17.88
4924.00	-100.50	Peak	H	39.64	46.14	73.98	-27.83
7386.00	-135.00	Avg	H	39.58	11.58	53.98	-42.40
7386.00	-125.00	Peak	H	39.58	21.58	73.98	-52.40
12310.00	-135.00	Avg	H	47.56	19.56	53.98	-34.41
12310.00	-125.00	Peak	H	47.56	29.56	73.98	-44.41

Table 6-13. Radiated Measurements @ 3 meters

NOTES:

- All emissions shown lie in the restricted bands specified in §15.205 are below the limit shown in Table 6-10.
- For frequencies > 1GHz, average measurements are recorded using the RBAVG1 measurement procedure of KDB 558074 using RBW = 1MHz, VBW = 3MHz, RMS detector, 1001 measurement points, and a 3 second sweep time. Peak measurements are recorded using RBW = 1MHz, VBW = 3MHz and a peak detector.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the second harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μ V/m (54dB μ /m) at 3 meters radiated.

FCC ID: A3LSWDSCL21		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1209111326.A3L	Test Dates: 09/13/12 - 09/24/12	EUT Type: Portable Handset	Page 50 of 60	

Radiated Spurious Emission Measurements (Cont'd)

§15.247(d) / §15.205 & §15.209; RSS-210 [A8.5]

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5745MHz



Channel: 149

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Field Strength [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]
11490.00	-110.17	Avg	H	47.34	44.2	53.98	-9.81
11490.00	-100.07	Peak	H	47.34	54.3	73.98	-19.71
22980.00	-135.00	Avg	H	38.97	11.0	53.98	-43.01
22980.00	-125.00	Peak	H	38.97	21.0	73.98	-53.01

Table 6-14. Radiated Measurements @ 3 meters

NOTES:

- All emissions shown lie in the restricted bands specified in §15.205 are below the limit shown in Table 6-10.
- For frequencies > 1GHz, average measurements are recorded using the RBAVG1 measurement procedure of KDB 558074 using RBW = 1MHz, VBW = 3MHz, RMS detector, 1001 measurement points, and a 3 second sweep time. Peak measurements are recorded using RBW = 1MHz, VBW = 3MHz and a peak detector.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the second harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μ V/m (54dB μ /m) at 3 meters radiated.

FCC ID: A3LSWDSCL21		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1209111326.A3L	Test Dates: 09/13/12 - 09/24/12	EUT Type: Portable Handset	Page 51 of 60	

Radiated Spurious Emission Measurements (Cont'd)

§15.247(d) / §15.205 & §15.209; RSS-210 [A8.5]

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5785MHz



Channel: 157

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
11570.00	-109.21	Avg	H	47.40	45.2	53.98	-8.79
11570.00	-99.98	Peak	H	47.40	54.4	73.98	-19.56

Table 6-15. Radiated Measurements @ 3 meters

NOTES:

- All emissions shown lie in the restricted bands specified in §15.205 are below the limit shown in Table 6-10.
- For frequencies > 1GHz, average measurements are recorded using the RBAVG1 measurement procedure of KDB 558074 using RBW = 1MHz, VBW = 3MHz, RMS detector, 1001 measurement points, and a 3 second sweep time. Peak measurements are recorded using RBW = 1MHz, VBW = 3MHz and a peak detector.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the second harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated.

FCC ID: A3LSWDSCL21		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1209111326.A3L	Test Dates: 09/13/12 - 09/24/12	EUT Type: Portable Handset	Page 52 of 60	

Radiated Spurious Emission Measurements (Cont'd)

§15.247(d) / §15.205 & §15.209; RSS-210 [A8.5]

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5825MHz



Channel: 165

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
11650.00	-110.19	Avg	H	47.50	44.3	53.98	-9.67
11650.00	-99.98	Peak	H	47.50	54.5	73.98	-19.46

Table 6-16. Radiated Measurements @ 3 meters

NOTES:

- All emissions shown lie in the restricted bands specified in §15.205 are below the limit shown in Table 6-10.
- For frequencies > 1GHz, average measurements are recorded using the RBAVG1 measurement procedure of KDB 558074 using RBW = 1MHz, VBW = 3MHz, RMS detector, 1001 measurement points, and a 3 second sweep time. Peak measurements are recorded using RBW = 1MHz, VBW = 3MHz and a peak detector.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the second harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated.

FCC ID: A3LSWDSCL21		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1209111326.A3L	Test Dates: 09/13/12 - 09/24/12	EUT Type: Portable Handset	Page 53 of 60	

6.9 Radiated Restricted Band Edge Measurements

§15.205 / §15.209; RSS-210 [A8.5]

Worst Case Mode: 802.11g

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 2412MHz



Channel: 1

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Field Strength [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]
2381.15	-94.44	Avg	H	35.93	48.49	53.98	-5.49
2381.15	-84.89	Peak	H	35.93	58.04	73.98	-15.94
2388.85	-90.04	Avg	H	36.01	52.97	53.98	-1.01
2388.85	-82.68	Peak	H	36.01	60.33	73.98	-13.65
2390.00	-91.86	Avg	H	36.02	51.16	53.98	-2.82
2390.00	-76.17	Peak	H	36.02	66.85	73.98	-7.13

Table 6-17. Radiated Restricted Band Measurements at 3-meters

NOTES:

- All emissions shown lie in the restricted bands specified in §15.205 are below the limit shown in Table 6-10.
- For frequencies > 1GHz, average measurements are recorded using the RBAVG1 measurement procedure of KDB 558074 using RBW = 1MHz, VBW = 3MHz, RMS detector, 1001 measurement points, and a 3 second sweep time. Peak measurements are recorded using RBW = 1MHz, VBW = 3MHz and a peak detector.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μ V/m (54dB μ /m) at 3 meters radiated.

FCC ID: A3LSWDSCL21		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1209111326.A3L	Test Dates: 09/13/12 - 09/24/12	EUT Type: Portable Handset	Page 54 of 60	

Radiated Restricted Band Edge Measurements (Cont'd)

§15.205 / §15.209; RSS-210 [A8.5]

Worst Case Mode: 802.11g

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 2462MHz



Channel: 11

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
2483.50	-93.79	Avg	H	36.97	50.18	53.98	-3.80
2483.50	-78.40	Peak	H	36.97	65.57	73.98	-8.41
2483.98	-94.07	Avg	H	36.98	49.91	53.98	-4.07
2483.98	-78.20	Peak	H	36.98	65.78	73.98	-8.20
2484.64	-95.55	Avg	H	36.99	48.43	53.98	-5.55
2484.64	-81.40	Peak	H	36.99	62.58	73.98	-11.40

Table 6-18. Radiated Restricted Band Measurements at 3-meters

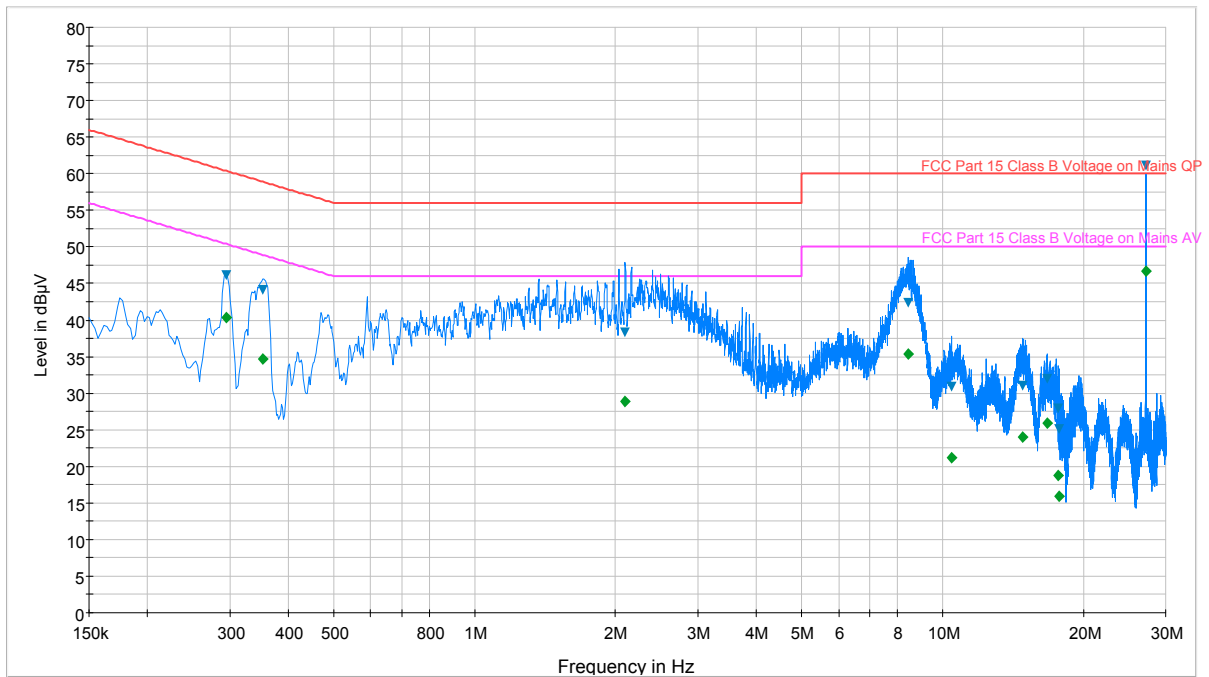
NOTES:

- All emissions shown lie in the restricted bands specified in §15.205 are below the limit shown in Table 6-10.
- For frequencies > 1GHz, average measurements are recorded using the RBAVG1 measurement procedure of KDB 558074 using RBW = 1MHz, VBW = 3MHz, RMS detector, 1001 measurement points, and a 3 second sweep time. Peak measurements are recorded using RBW = 1MHz, VBW = 3MHz and a peak detector.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated.

FCC ID: A3LSWDSCL21		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1209111326.A3L	Test Dates: 09/13/12 - 09/24/12	EUT Type: Portable Handset	Page 55 of 60	

6.10 Line-Conducted Test Data

§15.207; RSS-Gen [7.2.2]



— FCC Part 15 Class B Voltage on Mains QP.LimitLine
 — FCC Part 15 Class B Voltage on Mains AV.LimitLine
 — Preview Result 1-PK+
▼ Final Result 1-QPK
 ◆ Final Result 2-AVG

Plot 6-59. Line Conducted Plot with 802.11b (L1)

Frequency MHz	Line	Corr. dB	QuasiPeak dBµV	Limit dBµV	Margin dB	Average dBµV	Limit dBµV	Margin dB
0.294	L1	0.1	46.10	60.40	14.30	40.40	50.40	10.00
0.353	L1	0.1	44.10	58.90	14.80	34.70	48.90	14.20
2.101	L1	0.2	38.30	56.00	17.70	28.90	46.00	17.10
8.457	L1	0.3	42.40	60.00	17.60	35.40	50.00	14.60
10.442	L1	0.4	30.90	60.00	29.10	21.20	50.00	28.80
14.852	L1	0.5	31.00	60.00	29.00	24.00	50.00	26.00
16.719	L1	0.6	32.00	60.00	28.00	25.80	50.00	24.20
17.707	L1	0.7	27.90	60.00	32.10	18.70	50.00	31.30
17.770	L1	0.7	25.10	60.00	34.90	15.90	50.00	34.10
27.191	L1	0.9	61.10	60.00	-1.10	46.70	50.00	3.30

Table 6-19. Line Conducted Data with 802.11b (L1)

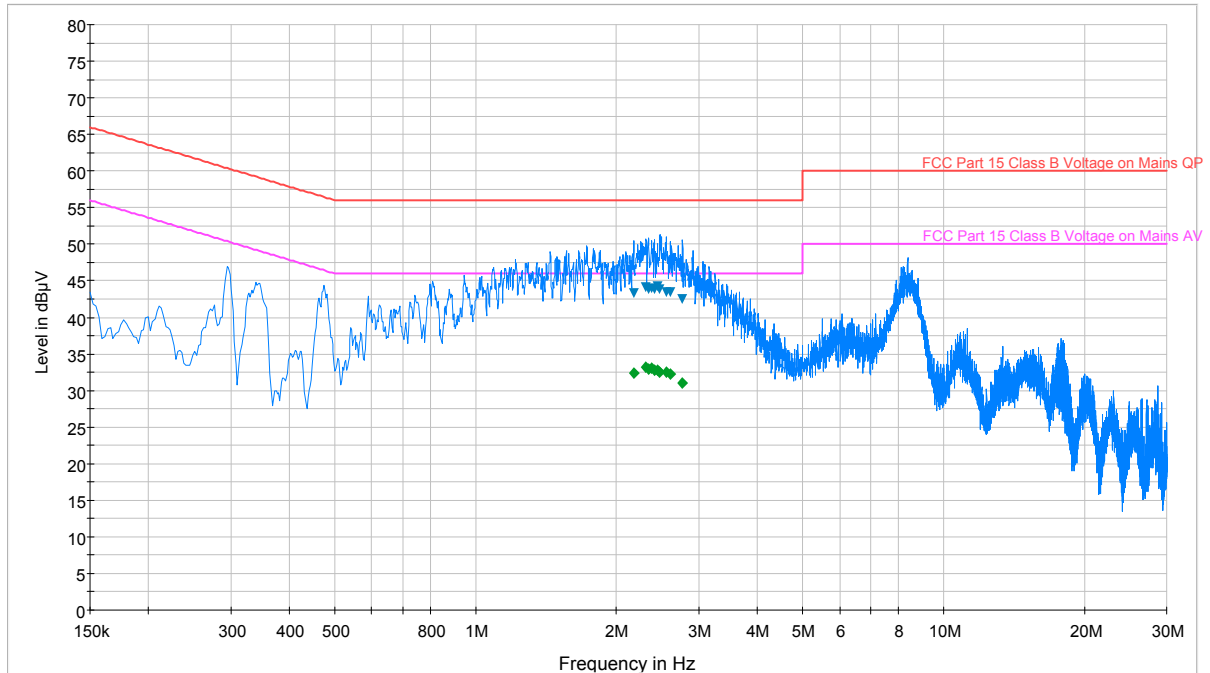
Notes:

- 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: A3LSWDSCL21		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1209111326.A3L	Test Dates: 09/13/12 - 09/24/12	EUT Type: Portable Handset		Page 56 of 60

Line-Conducted Test Data (Cont'd)

§15.207; RSS-Gen [7.2.2]



— FCC Part 15 Class B Voltage on Mains QP.LimitLine — FCC Part 15 Class B Voltage on Mains AV.LimitLine — Preview Result 1-PK+
▼ Final Result 1-QPK ◆ Final Result 2-AVG

Plot 6-60. Line Conducted Plot with 802.11b (N)

Frequency MHz	Line	Corr. dB	QuasiPeak dBµV	Limit dBµV	Margin dB	Average dBµV	Limit dBµV	Margin dB
2.177	N	0.2	43.30	56.00	12.70	32.40	46.00	13.60
2.315	N	0.2	44.10	56.00	11.90	33.10	46.00	12.90
2.339	N	0.2	43.80	56.00	12.20	33.00	46.00	13.00
2.375	N	0.2	43.90	56.00	12.10	33.00	46.00	13.00
2.416	N	0.2	43.90	56.00	12.10	32.80	46.00	13.20
2.447	N	0.2	44.30	56.00	11.70	32.80	46.00	13.20
2.477	N	0.2	43.90	56.00	12.10	32.60	46.00	13.40
2.555	N	0.2	43.40	56.00	12.60	32.50	46.00	13.50
2.612	N	0.2	43.40	56.00	12.60	32.20	46.00	13.80
2.769	N	0.2	42.50	56.00	13.50	31.10	46.00	14.90

Table 6-20. Line Conducted Data with 802.11b (N)

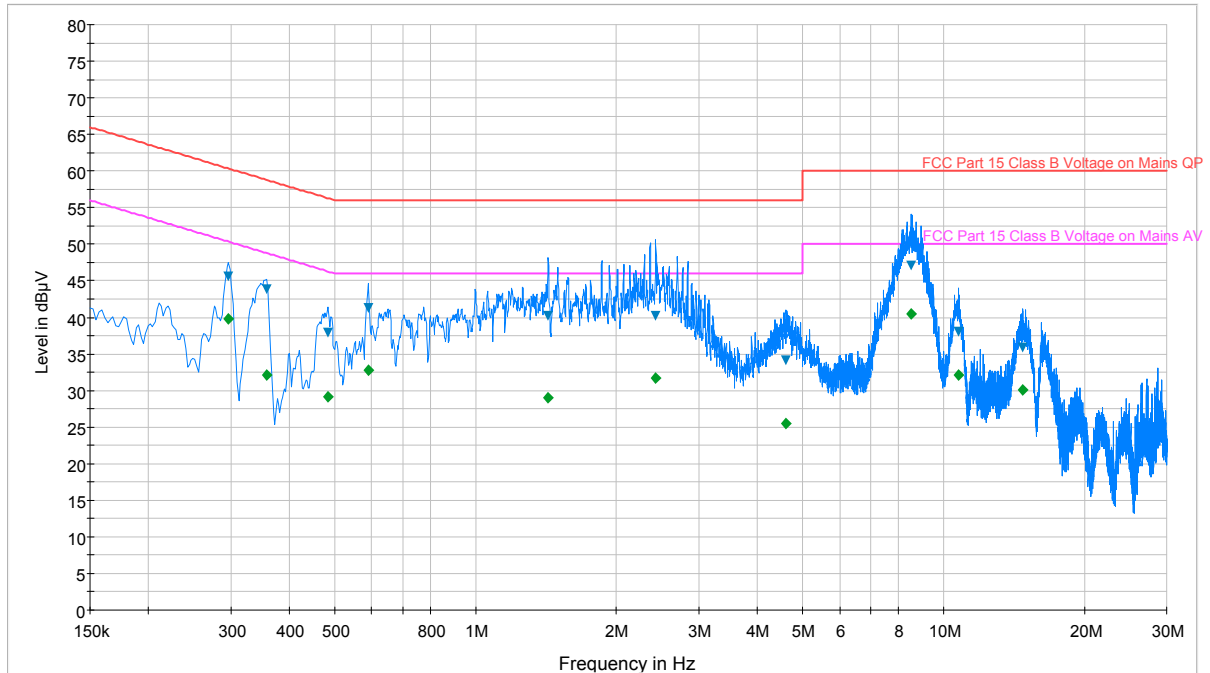
Notes:

- 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: A3LSWDSCL21		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1209111326.A3L	Test Dates: 09/13/12 - 09/24/12	EUT Type: Portable Handset		Page 57 of 60

Line-Conducted Test Data (Cont'd)

§15.207; RSS-Gen [7.2.2]



— FCC Part 15 Class B Voltage on Mains QP.LimitLine — FCC Part 15 Class B Voltage on Mains AV.LimitLine — Preview Result 1-PK+
▼ Final Result 1-QPK ◆ Final Result 2-AVG

Plot 6-61. Line Conducted Plot with 802.11a (L1)

Frequency MHz	Line	Corr. dB	QuasiPeak dBµV	Limit dBµV	Margin dB	Average dBµV	Limit dBµV	Margin dB
0.296	L1	0.1	45.70	60.30	14.60	39.80	50.30	10.50
0.357	L1	0.1	43.90	58.80	14.90	32.10	48.80	16.70
0.483	L1	0.1	38.00	56.30	18.30	29.20	46.30	17.10
0.589	L1	0.1	41.30	56.00	14.70	32.80	46.00	13.20
1.430	L1	0.2	40.20	56.00	15.80	29.00	46.00	17.00
2.427	L1	0.2	40.10	56.00	15.90	31.70	46.00	14.30
4.592	L1	0.2	34.20	56.00	21.80	25.60	46.00	20.40
8.540	L1	0.3	47.10	60.00	12.90	40.50	50.00	9.50
10.788	L1	0.4	38.00	60.00	22.00	32.20	50.00	17.80
14.791	L1	0.5	35.90	60.00	24.10	30.00	50.00	20.00

Table 6-21. Line Conducted Data with 802.11a (L1)

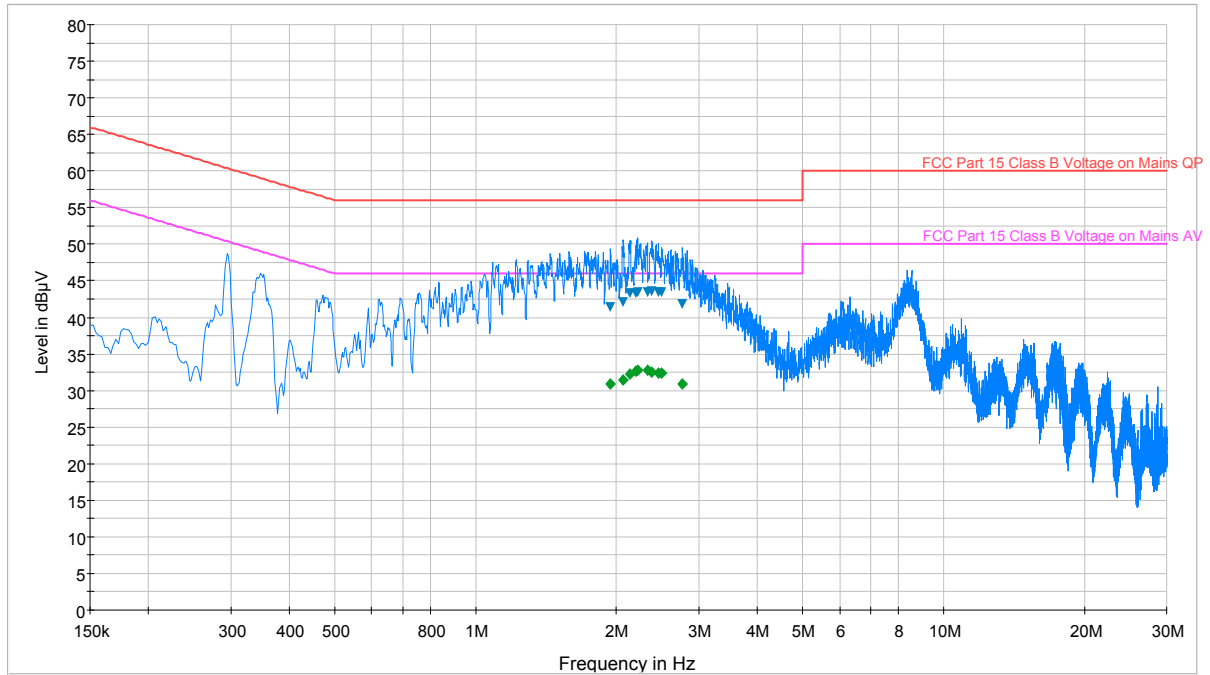
Notes:

- 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 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: A3LSWDSCL21		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1209111326.A3L	Test Dates: 09/13/12 - 09/24/12	EUT Type: Portable Handset		Page 58 of 60

Line-Conducted Test Data (Cont'd)

§15.207; RSS-Gen [7.2.2]



— FCC Part 15 Class B Voltage on Mains QP.LimitLine — FCC Part 15 Class B Voltage on Mains AV.LimitLine — Preview Result 1-PK+
▼ Final Result 1-QPK ◆ Final Result 2-AVG

Plot 6-62. Line Conducted Plot with 802.11a (N)

Frequency MHz	Line	Corr. dB	QuasiPeak dBµV	Limit dBµV	Margin dB	Average dBµV	Limit dBµV	Margin dB
1.943	N	0.2	41.40	56.00	14.60	30.90	46.00	15.10
2.069	N	0.2	42.10	56.00	13.90	31.40	46.00	14.60
2.141	N	0.2	43.30	56.00	12.70	32.30	46.00	13.70
2.198	N	0.2	43.30	56.00	12.70	32.60	46.00	13.40
2.222	N	0.2	43.50	56.00	12.50	32.80	46.00	13.20
2.328	N	0.2	43.50	56.00	12.50	32.80	46.00	13.20
2.382	N	0.2	43.60	56.00	12.40	32.60	46.00	13.40
2.461	N	0.2	43.40	56.00	12.60	32.40	46.00	13.60
2.499	N	0.2	43.40	56.00	12.60	32.30	46.00	13.70
2.769	N	0.2	41.90	56.00	14.10	30.90	46.00	15.10

Table 6-22. 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: A3LSWDSCL21		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1209111326.A3L	Test Dates: 09/13/12 - 09/24/12	EUT Type: Portable Handset		Page 59 of 60

7.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSWDSCL21** is in compliance with Part 15C of the FCC Rules and RSS-210 of the Industry Canada Rules.

FCC ID: A3LSWDSCL21		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1209111326.A3L	Test Dates: 09/13/12 - 09/24/12	EUT Type: Portable Handset	Page 60 of 60	