

6.3 Output Power Measurement – 802.11b/g/n (2.4GHz)

§15.247(b)(3); RSS-210 [A8.4]

A transmitter antenna terminal of EUT is connected to the input of an RF power sensor. Measurement is made using a broadband power meter capable of making peak and average measurements while the EUT is operating in transmission mode at the appropriate frequencies. **The maximum permissible conducted output power is 1 Watt.**

Mode	Freq [MHz]	Channel	Detector	802.11b Conducted Power [dBm]			
				Data Rate [Mbps]			
				1	2	5.5	11
802.11b	2412	1	AVG	15.01	15.06	15.10	15.08
			PEAK	17.59	17.59	17.53	17.56
802.11b	2437	6	AVG	15.34	15.39	15.44	15.45
			PEAK	17.95	17.91	17.88	17.91
802.11b	2462	11	AVG	15.51	15.61	15.67	15.63
			PEAK	18.09	18.14	18.10	18.09

Table 6-3. 802.11b Conducted Output Power Measurements

Mode	Freq [MHz]	Channel	Detector	802.11g Conducted Power [dBm]							
				Data Rate [Mbps]							
				6	9	12	18	24	36	48	54
802.11g	2412	1	AVG	13.64	13.67	13.59	13.64	13.63	13.66	13.59	13.56
			PEAK	21.37	21.44	21.29	21.67	21.62	21.48	21.46	21.57
802.11g	2437	6	AVG	14.01	13.99	13.97	13.98	13.96	14.03	13.94	13.93
			PEAK	21.86	21.74	21.76	21.73	21.65	21.91	21.69	21.82
802.11g	2462	11	AVG	14.16	14.20	14.17	14.11	14.15	14.09	14.17	14.14
			PEAK	21.73	22.00	21.86	21.85	21.92	21.92	22.18	22.02

Table 6-4. 802.11g Conducted Output Power Measurements

Mode	Freq [MHz]	Channel	Detector	802.11n (2.4GHz) Conducted Power [dBm]							
				Data Rate [Mbps]							
				6.5/7.2	13/14.4	19.5/21.7	26/28.9	39/43.4	52/57.8	58.5/65	65/72.2
802.11n	2412	1	AVG	12.56	12.51	12.54	12.53	12.54	12.52	12.55	12.54
			PEAK	20.50	20.23	20.28	20.38	20.59	20.33	20.25	20.26
802.11n	2437	6	AVG	12.92	12.87	12.86	12.91	12.88	12.80	12.79	12.86
			PEAK	20.69	20.48	20.51	20.81	20.77	20.69	20.54	20.80
802.11n	2462	11	AVG	13.12	13.05	13.06	13.08	13.04	13.03	13.04	13.04
			PEAK	20.72	20.84	20.86	20.92	20.80	20.66	20.79	20.77

Table 6-5. 20MHz BW 802.11n (2.4GHz) Conducted Output Power Measurements

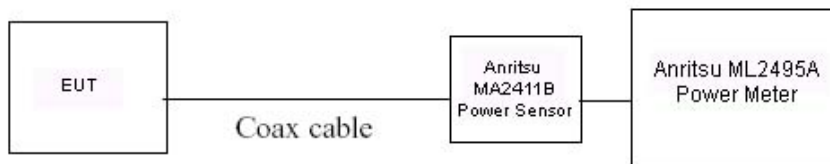


Figure 6-2. Test Instrument & Measurement Setup

FCC ID: A3LGTI8190N		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 21 of 62

6.4 Output Power Measurement – 802.11a/n (5GHz)

§15.247(b)(3); RSS-210 [A8.4]

A transmitter antenna terminal of EUT is connected to the input of an RF power sensor. Measurement is made using a broadband power meter capable of making peak and average power measurements while the EUT is operating in transmission mode at the appropriate frequencies. **The maximum permissible conducted output power is 1 Watt.**

Mode	Freq [MHz]	Channel	Detector	802.11a Conducted Power [dBm]							
				Data Rate [Mbps]							
				6	9	12	18	24	36	48	54
802.11a	5745	149	AVG	13.33	13.35	13.36	13.38	13.48	13.43	13.50	13.48
			PEAK	20.74	20.91	20.65	20.86	21.00	20.90	21.03	20.84
802.11a	5765	153	AVG	13.33	13.39	13.36	13.47	13.40	13.41	13.47	13.42
			PEAK	20.94	20.95	20.93	21.02	20.85	21.02	20.83	20.95
802.11a	5785	157	AVG	13.32	13.39	13.34	13.36	13.43	13.39	13.41	13.46
			PEAK	20.92	20.94	20.68	20.56	21.20	20.67	20.96	21.23
802.11a	5805	161	AVG	13.33	13.28	13.31	13.27	13.32	13.39	13.41	13.38
			PEAK	21.18	20.99	21.08	20.97	20.88	20.88	21.06	20.96
802.11a	5825	165	AVG	13.30	13.36	13.30	13.35	13.35	13.38	13.42	13.36
			PEAK	20.85	20.95	21.08	21.04	21.00	21.06	21.12	20.92

Table 6-6. 802.11a Conducted Output Power Measurements

Mode	Freq [MHz]	Channel	Detector	20MHz BW 802.11n (5GHz) Conducted Power [dBm]							
				Data Rate [Mbps]							
				6.5/7.2	13/14.4	19.5/21.7	26/28.9	39/43.4	52/57.8	58.5/65	65/72.2
802.11n	5745	149	AVG	13.24	13.30	13.34	13.31	13.36	13.42	13.38	13.45
			PEAK	20.48	20.60	20.78	20.62	20.95	20.77	20.73	20.83
802.11n	5765	153	AVG	13.25	13.27	13.34	13.31	13.32	13.39	13.40	13.41
			PEAK	20.46	20.71	21.01	20.88	20.88	20.79	20.99	20.89
802.11n	5785	157	AVG	13.25	13.23	13.31	13.24	13.31	13.39	13.34	13.36
			PEAK	20.48	20.74	21.01	20.58	20.97	20.98	20.73	20.74
802.11n	5805	161	AVG	13.16	13.24	13.24	13.26	13.34	13.34	13.37	13.34
			PEAK	20.73	20.71	20.77	20.90	21.01	20.78	20.49	20.89
802.11n	5825	165	AVG	13.18	13.13	13.23	13.24	13.29	13.26	13.32	13.29
			PEAK	20.71	20.68	20.80	20.94	21.22	21.02	21.04	20.82

Table 6-7. 20MHz BW 802.11n (5GHz) Conducted Output Power Measurements

Mode	Freq [MHz]	Channel	Detector	40MHz BW 802.11n (5GHz) Conducted Power [dBm]							
				Data Rate [Mbps]							
				13.5/15	27/30	40.5/45	54/60	81/90	108/120	121.5/135	135/150
802.11n	5755	151	AVG	12.96	13.05	13.12	13.05	13.04	13.15	13.27	13.17
			PEAK	19.96	19.52	19.80	20.19	20.14	19.82	20.50	20.30
802.11n	5795	159	AVG	12.86	12.92	13.02	12.86	12.94	12.92	13.07	13.07
			PEAK	19.91	19.92	20.17	19.87	20.09	19.94	20.15	19.83

Table 6-8. 40MHz BW 802.11n (5GHz) Conducted Output Power Measurements

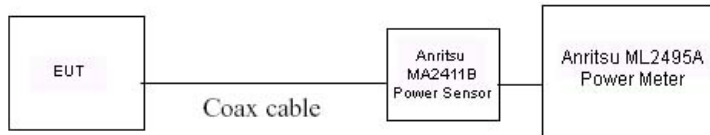


Figure 6-3. Test Instrument & Measurement Setup

FCC ID: A3LGTI8190N		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 22 of 62

6.5 Power Spectral Density (802.11a/b/g/n)

§15.247(e); RSS-210 [A8.2]

The peak power density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies. **The maximum permissible power spectral density is 8 dBm in any 3 kHz band.**

Per the guidance on power spectral density measurements given in KDB 558074, the spectrum is measured with a 100kHz bandwidth using a peak detector. The measured spectrum is compared to the 8dBm/3kHz limit given in 15.247(e) by applying a bandwidth correction factor equal to $10\log(3\text{kHz}/100\text{kHz}) = -15.23\text{dB}$.

Per the guidance of KDB 558074, section 5.4.1.1, the reference level for out of band emissions is established from the plots of this section since the emissions are measured with a RBW of 100kHz. This reference level is then used to determine the limit in subsequent plots for out of band spurious emissions.

Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Spectral Density [dBm]	Bandwidth Correction Factor [dB]	Corrected Power Spectral Density [dBm]	Maximum Permissible Power Density [dBm / 3kHz]	Margin [dB]
2412	1	b	1	7.629	-15.23	-7.600	8.0	-15.60
2437	6	b	1	8.003	-15.23	-7.226	8.0	-15.23
2462	11	b	1	8.033	-15.23	-7.196	8.0	-15.20
2412	1	g	6	4.090	-15.23	-11.139	8.0	-19.14
2437	6	g	6	4.575	-15.23	-10.654	8.0	-18.65
2462	11	g	6	4.691	-15.23	-10.538	8.0	-18.54
2412	1	n	6.5/7.2 (MCS0)	2.958	-15.23	-12.271	8.0	-20.27
2437	6	n	6.5/7.2 (MCS0)	3.507	-15.23	-11.722	8.0	-19.72
2462	11	n	6.5/7.2 (MCS0)	3.689	-15.23	-11.540	8.0	-19.54
5745	149	a	6	1.127	-15.23	-14.102	8.0	-22.10
5785	157	a	6	0.558	-15.23	-14.671	8.0	-22.67
5825	165	a	6	1.074	-15.23	-14.155	8.0	-22.15
5745	149	n (20MHz)	6.5/7.2 (MCS0)	0.998	-15.23	-14.231	8.0	-22.23
5785	157	n (20MHz)	6.5/7.2 (MCS0)	0.423	-15.23	-14.806	8.0	-22.81
5825	165	n (20MHz)	6.5/7.2 (MCS0)	0.808	-15.23	-14.421	8.0	-22.42
5755	151	n (40MHz)	13.5/15 (MCS0)	-2.377	-15.23	-17.606	8.0	-25.61
5795	159	n (40MHz)	13.5/15 (MCS0)	-2.537	-15.23	-17.766	8.0	-25.77

Table 6-9. Conducted Power Density Measurements

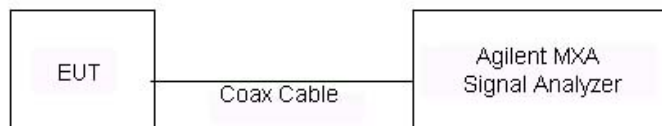
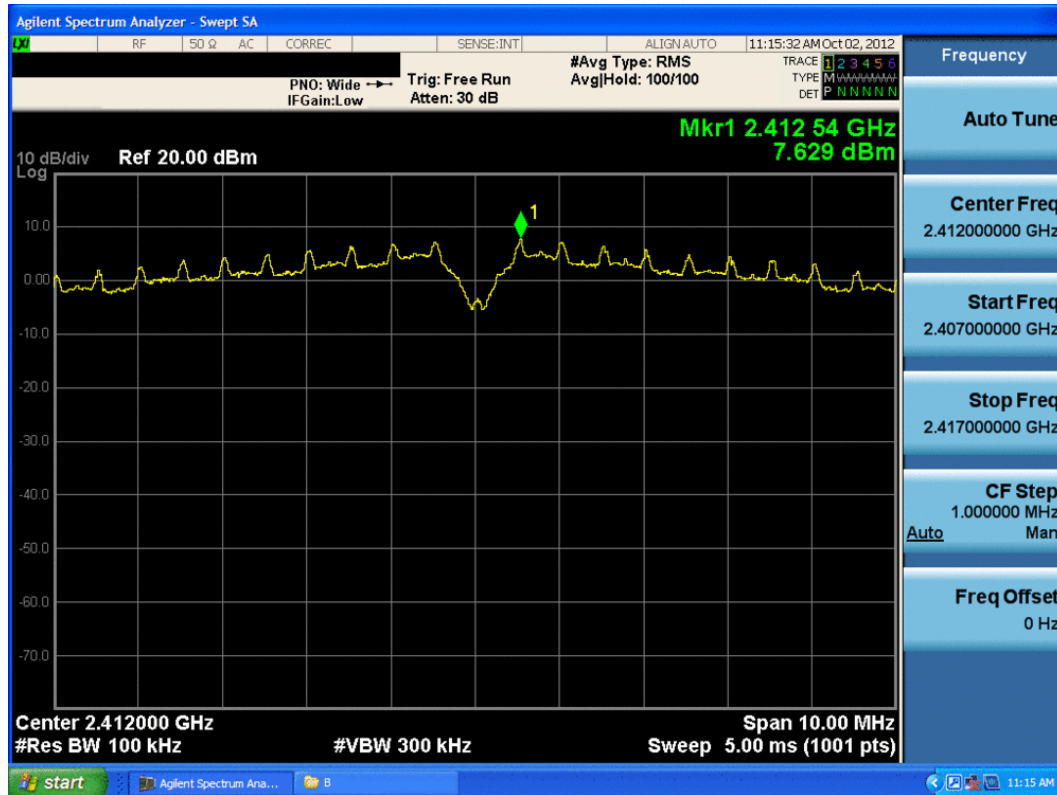
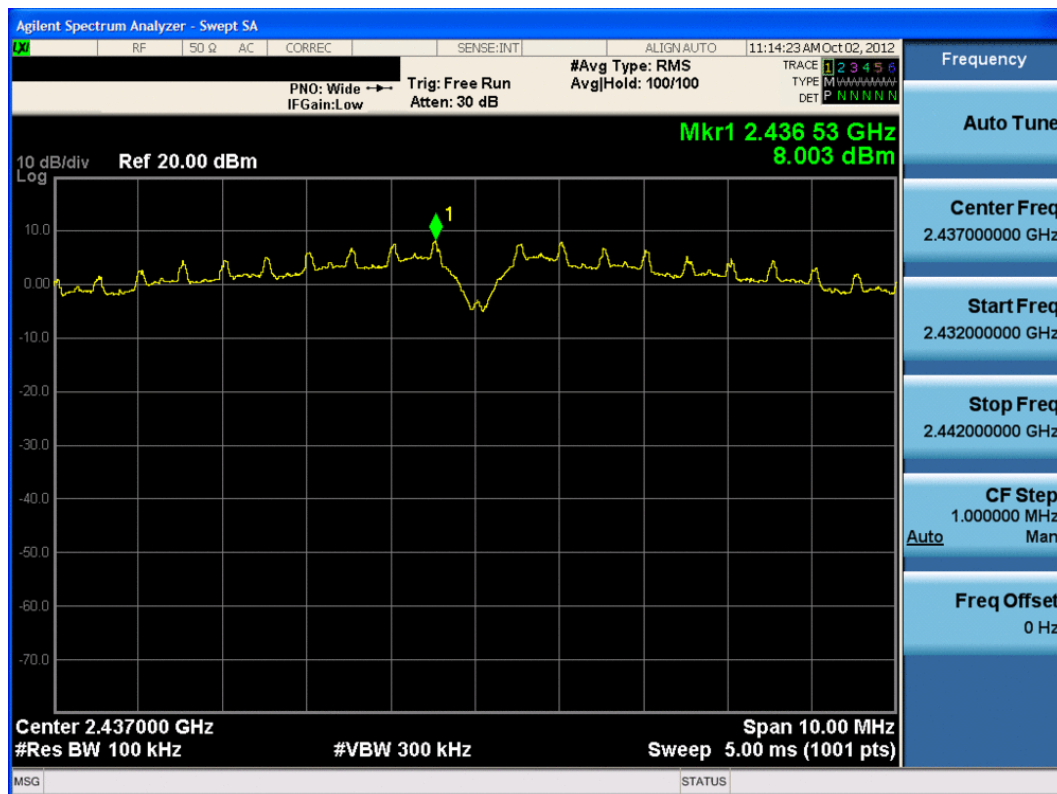


Figure 6-4. Test Instrument & Measurement Setup

FCC ID: A3LGTI8190N		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 23 of 62

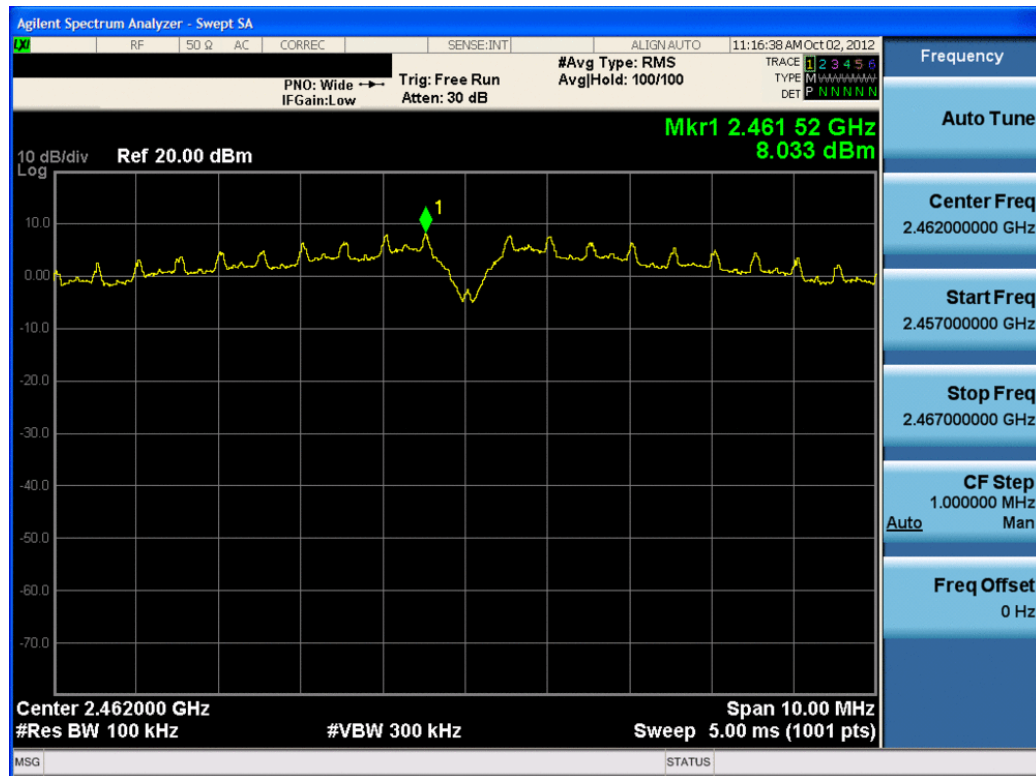


Plot 6-18. Power Spectral Density Plot (802.11b – Ch. 1)

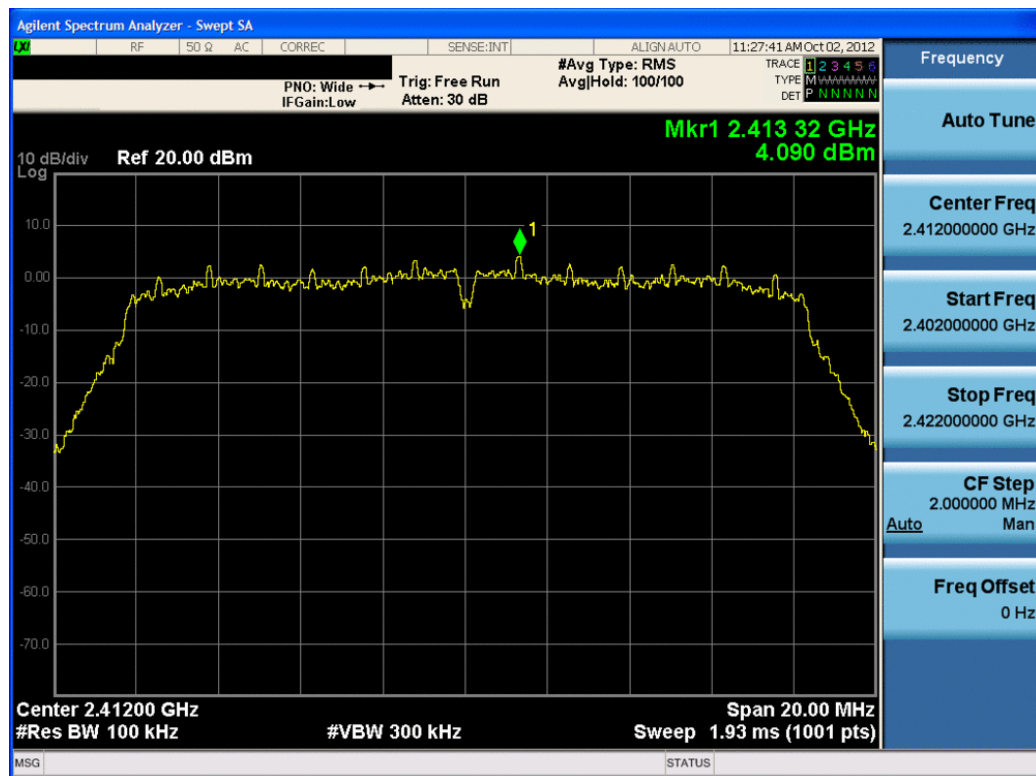


Plot 6-19. Power Spectral Density Plot (802.11b – Ch. 6)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 24 of 62

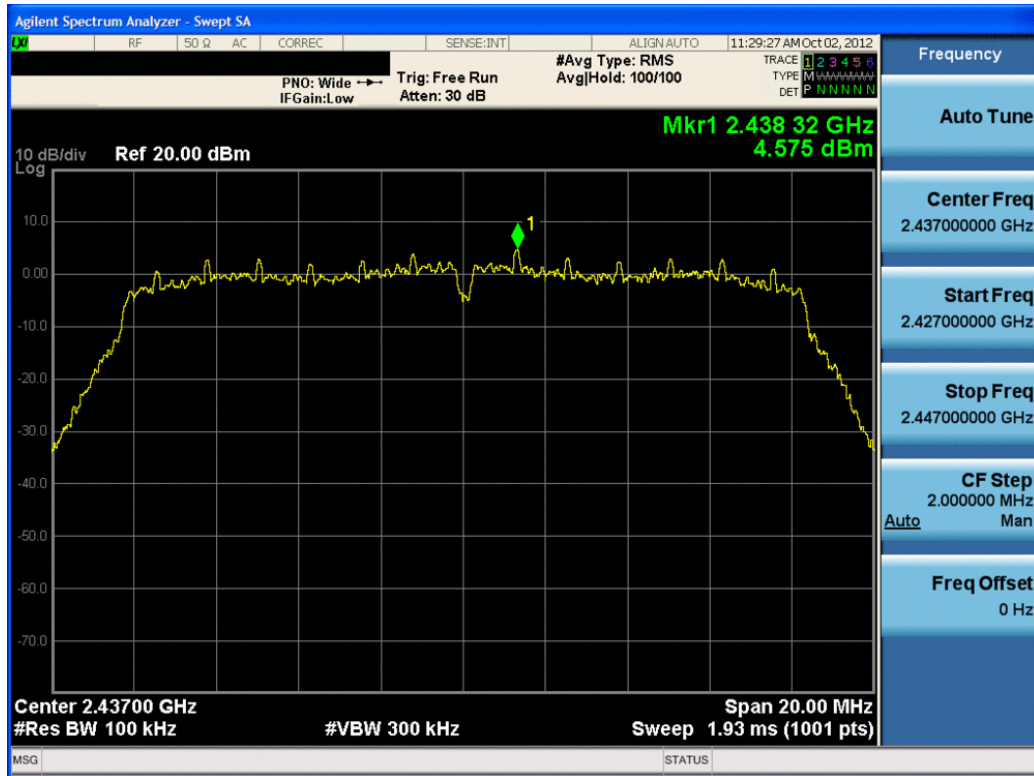


Plot 6-20. Power Spectral Density Plot (802.11b – Ch. 11)

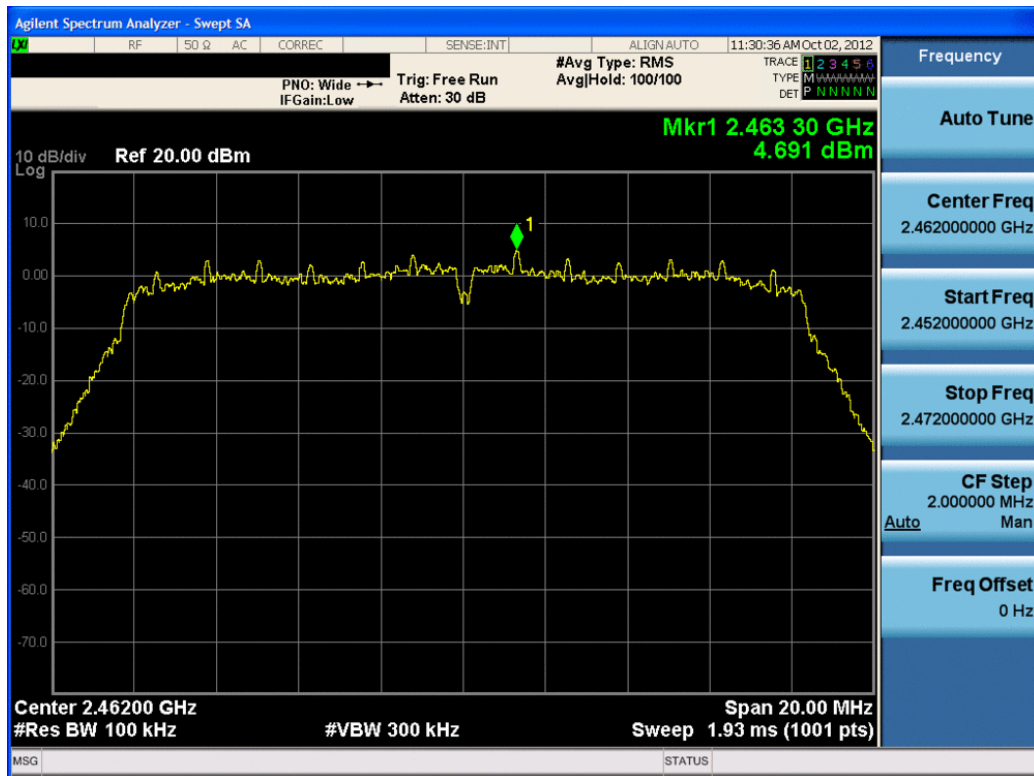


Plot 6-21. Power Spectral Density Plot (802.11g – Ch. 1)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 25 of 62

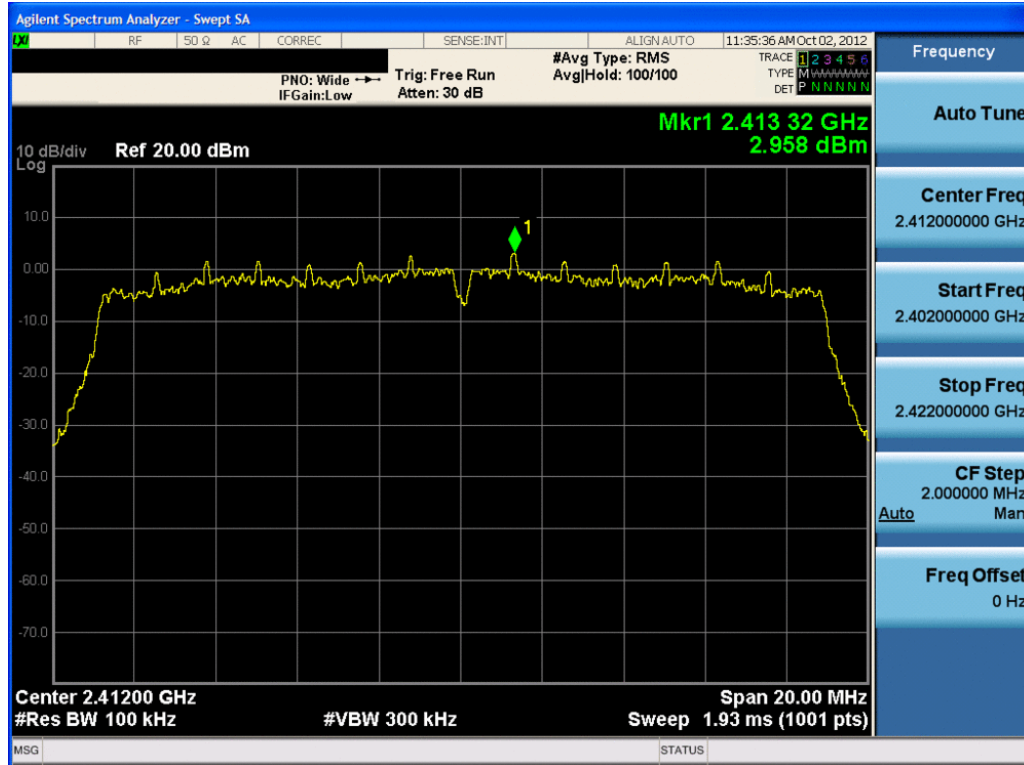


Plot 6-22. Power Spectral Density Plot (802.11g – Ch. 6)

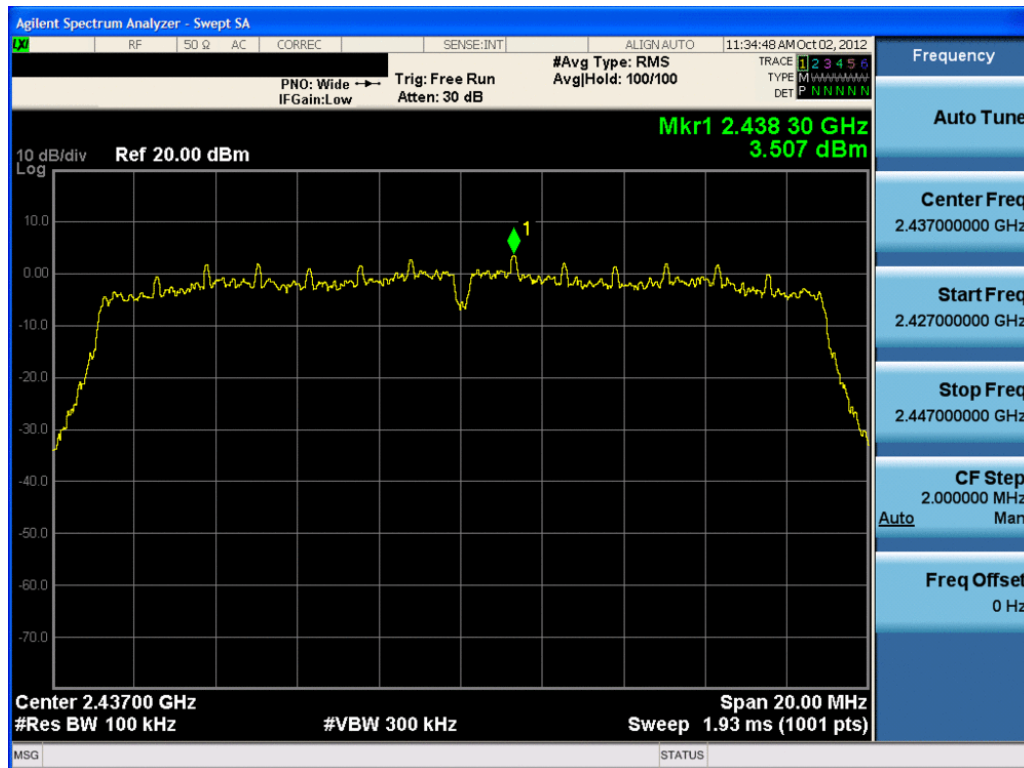


Plot 6-23. Power Spectral Density Plot (802.11g – Ch. 11)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 26 of 62

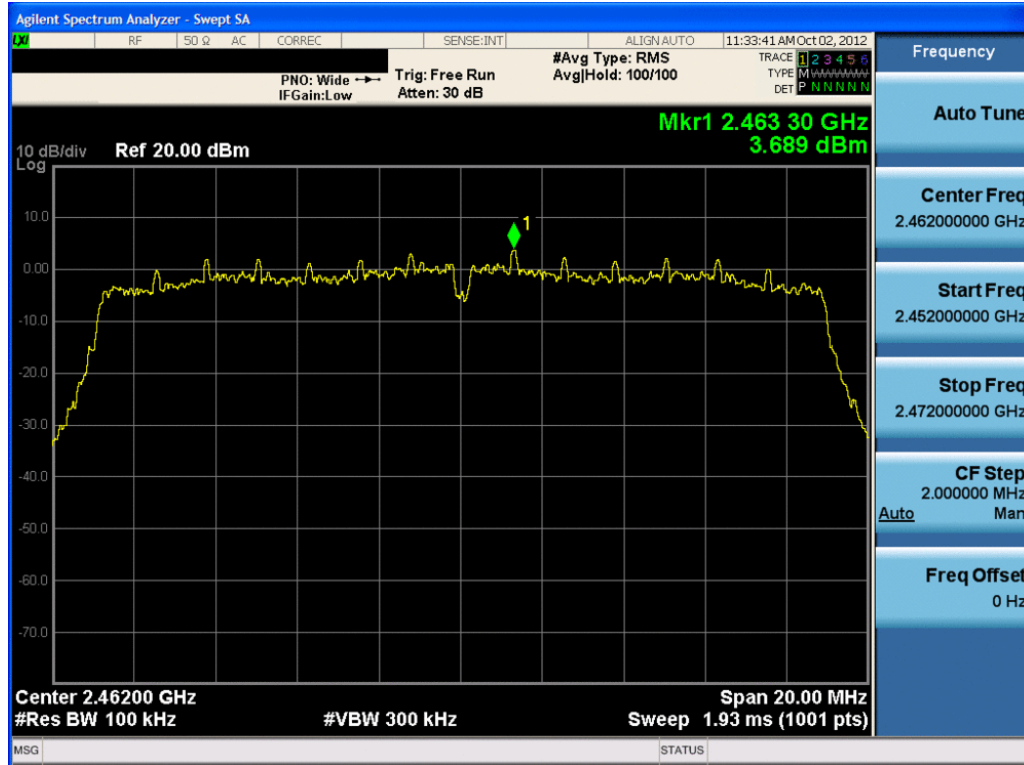


Plot 6-24. Power Spectral Density Plot (802.11n (2.4GHz) – Ch. 1)

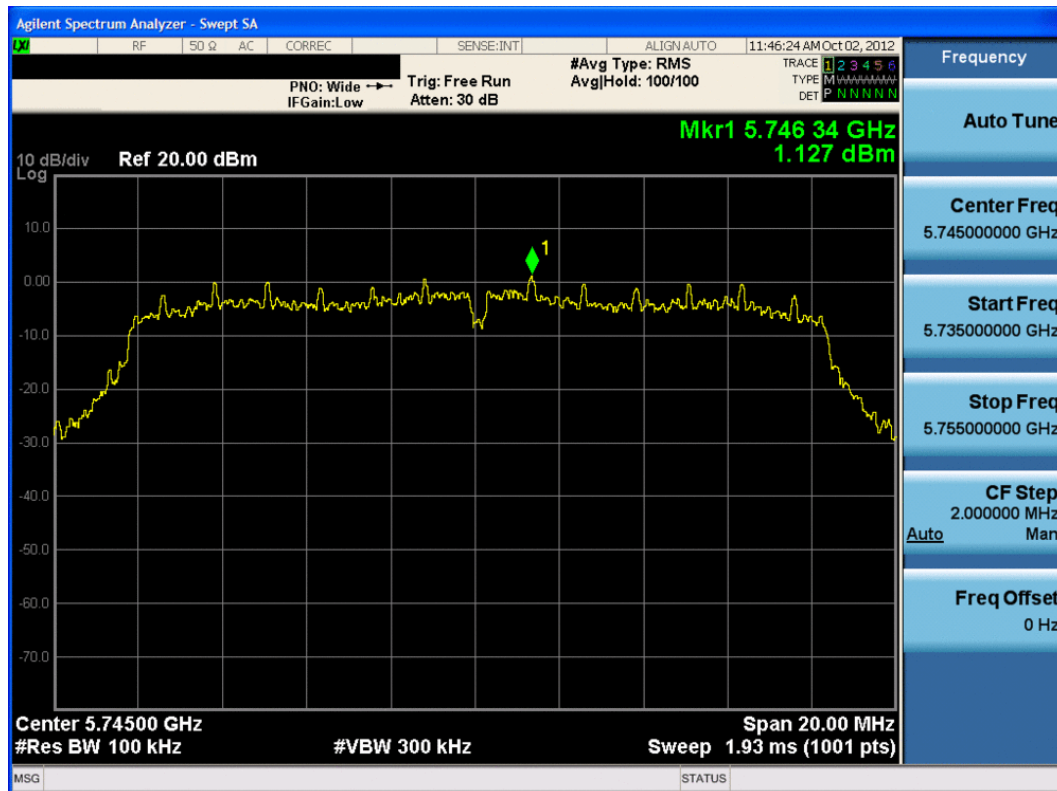


Plot 6-25. Power Spectral Density Plot (802.11n (2.4GHz) – Ch. 6)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 27 of 62

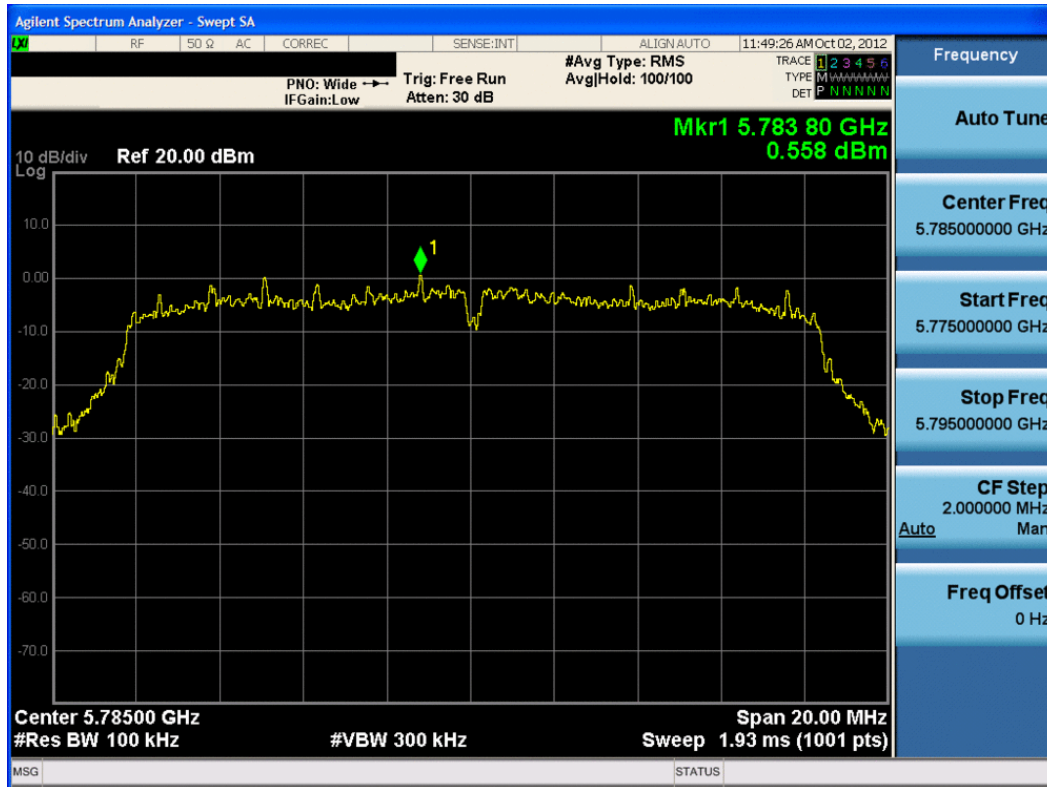


Plot 6-26. Power Spectral Density Plot (802.11n (2.4GHz) – Ch. 11)

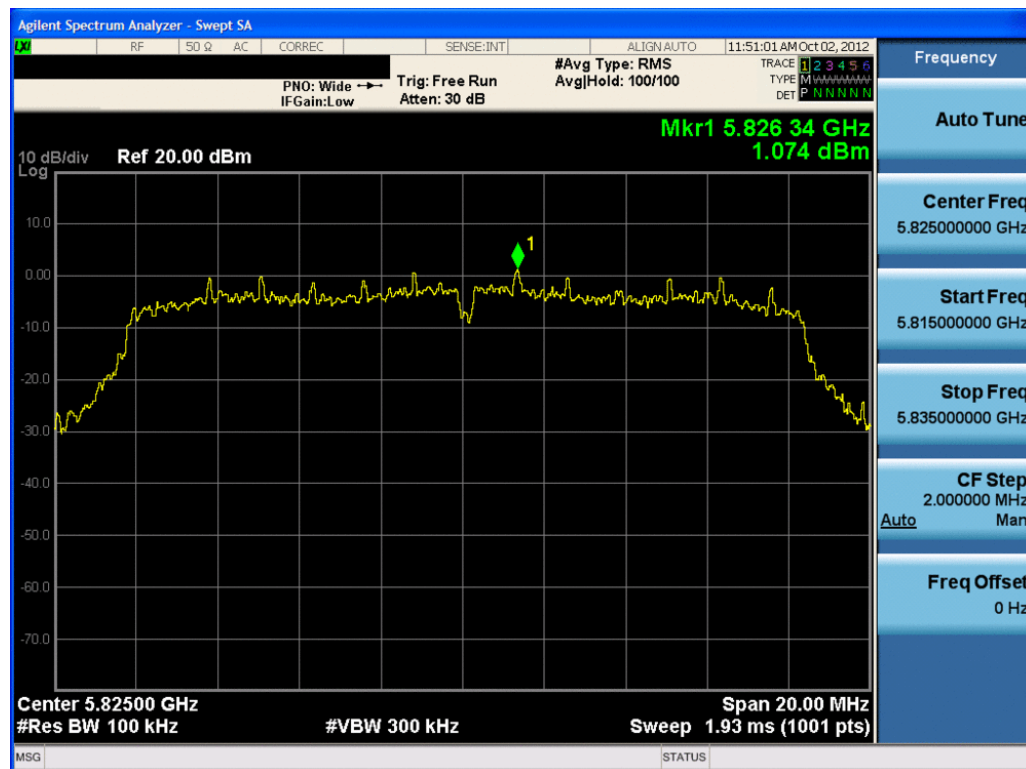


Plot 6-27. Power Spectral Density Plot (802.11a – Ch. 149)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 28 of 62

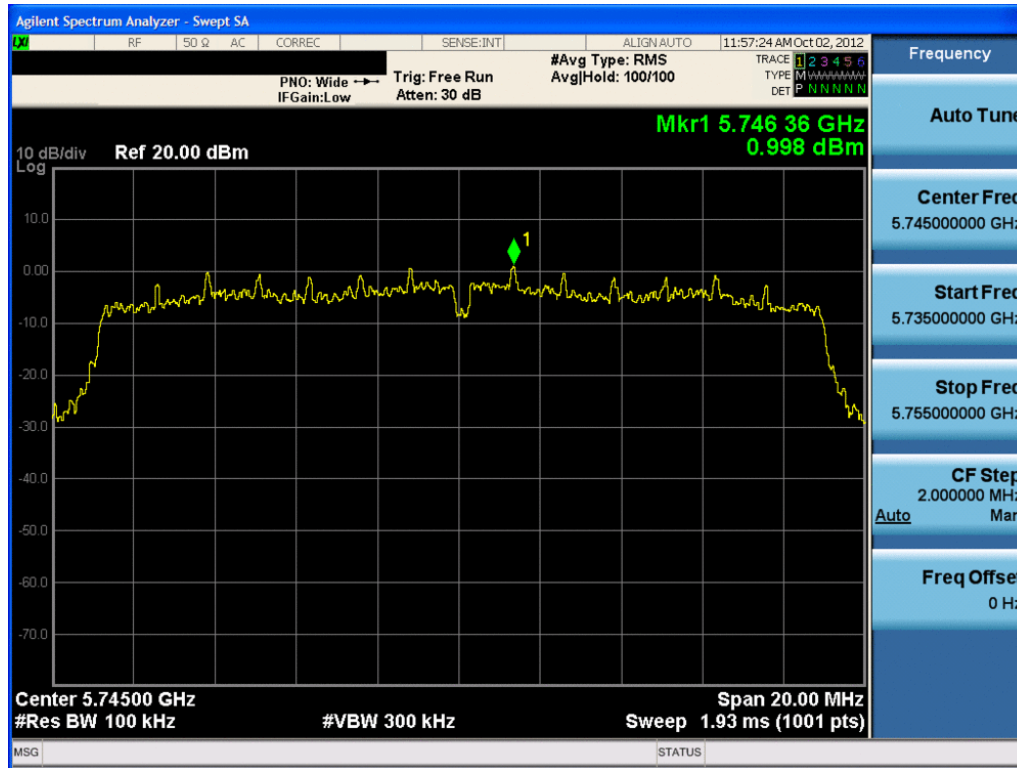


Plot 6-28. Power Spectral Density Plot (802.11a – Ch. 157)

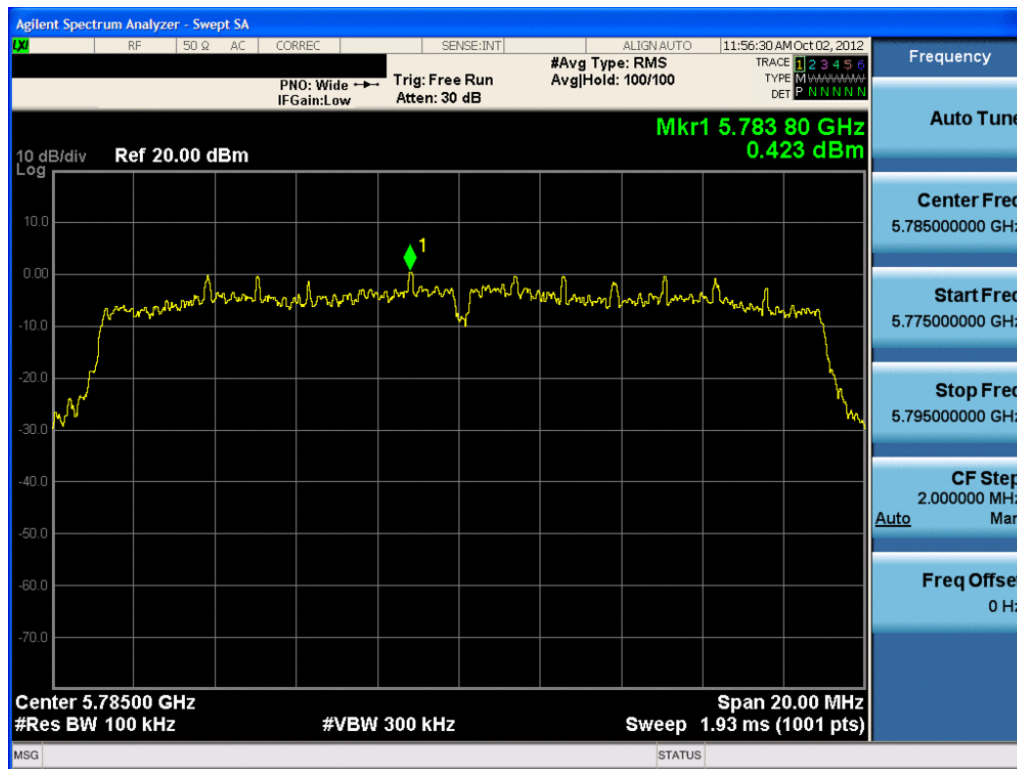


Plot 6-29. Power Spectral Density Plot (802.11a – Ch. 165)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 29 of 62

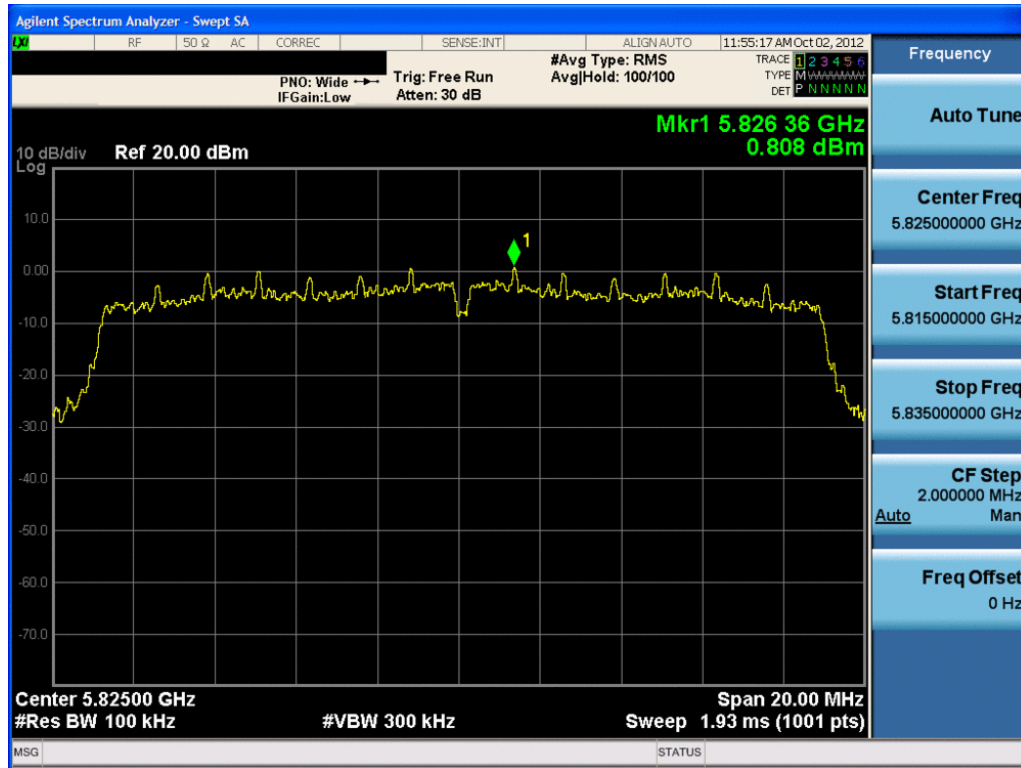


Plot 6-30. Power Spectral Density Plot (20MHz BW 802.11n (5.8GHz) – Ch. 149)

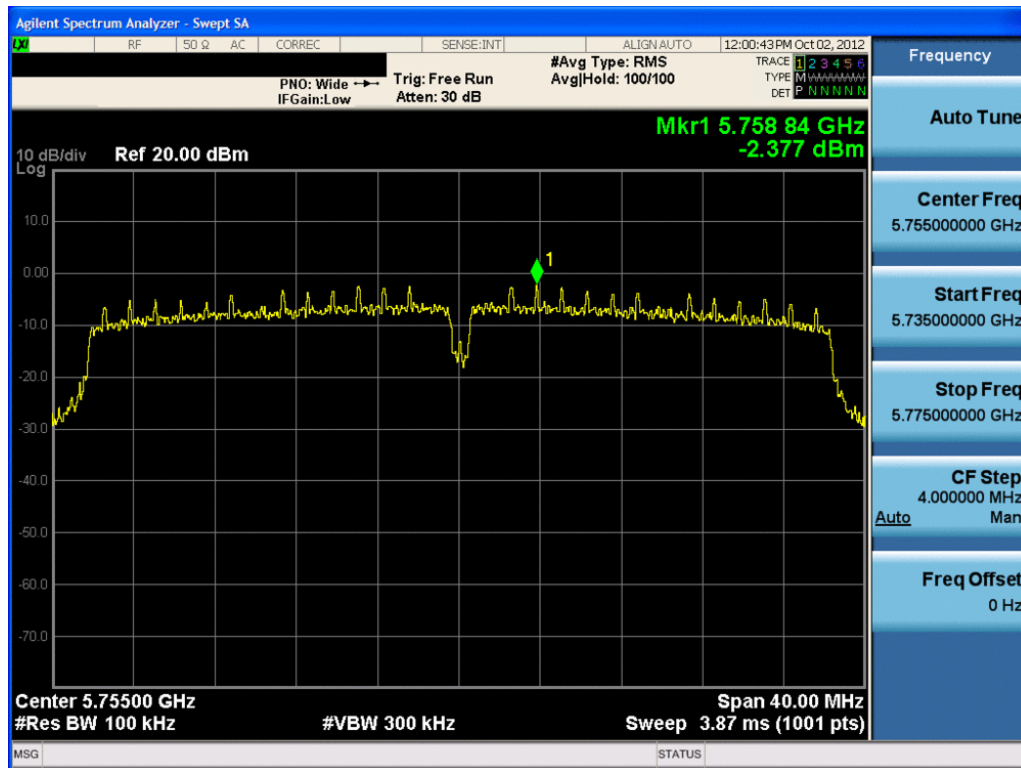


Plot 6-31. Power Spectral Density Plot (20MHz BW 802.11n (5.8GHz) – Ch. 157)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 30 of 62

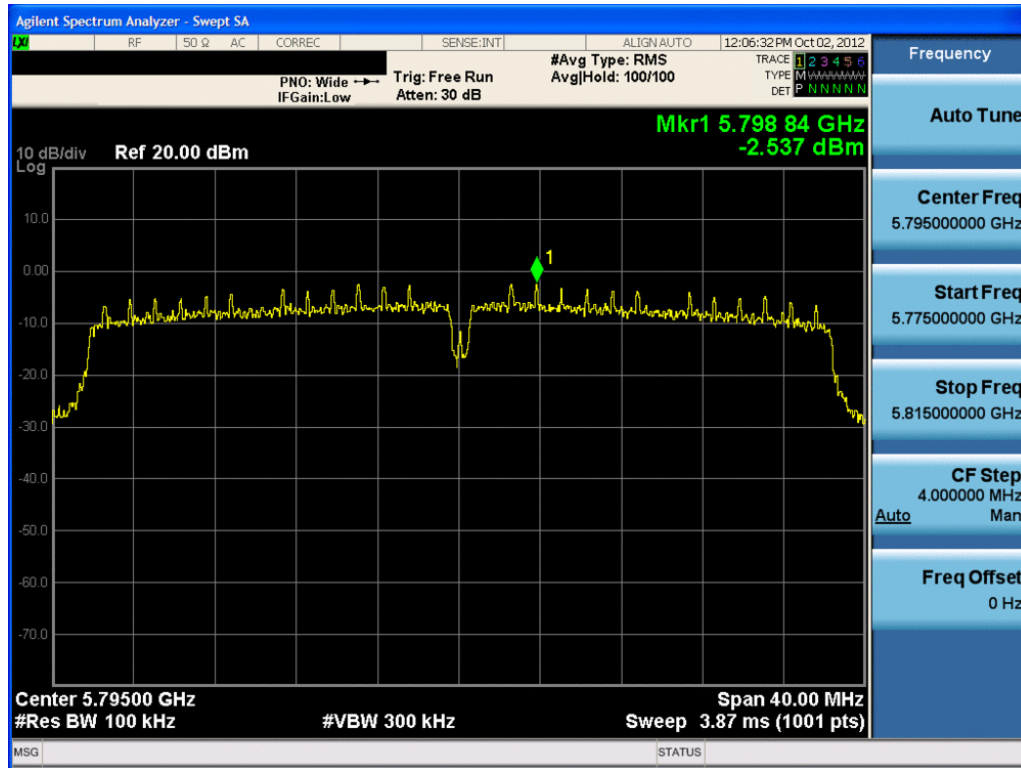


Plot 6-32. Power Spectral Density Plot (20MHz BW 802.11n (5.8GHz) – Ch. 165)



Plot 6-33. Power Spectral Density Plot (40MHz BW 802.11n (5.8GHz) – Ch. 151)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 31 of 62



Plot 6-34. Power Spectral Density Plot (40MHz BW 802.11n (5.8GHz) – Ch. 159)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 32 of 62

6.6 Conducted Emissions at the Band Edge

§15.247(d); RSS-210 [A8.5]

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, and 6.5/7.2Mbps for “n” mode. 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 measured in a 100kHz bandwidth.

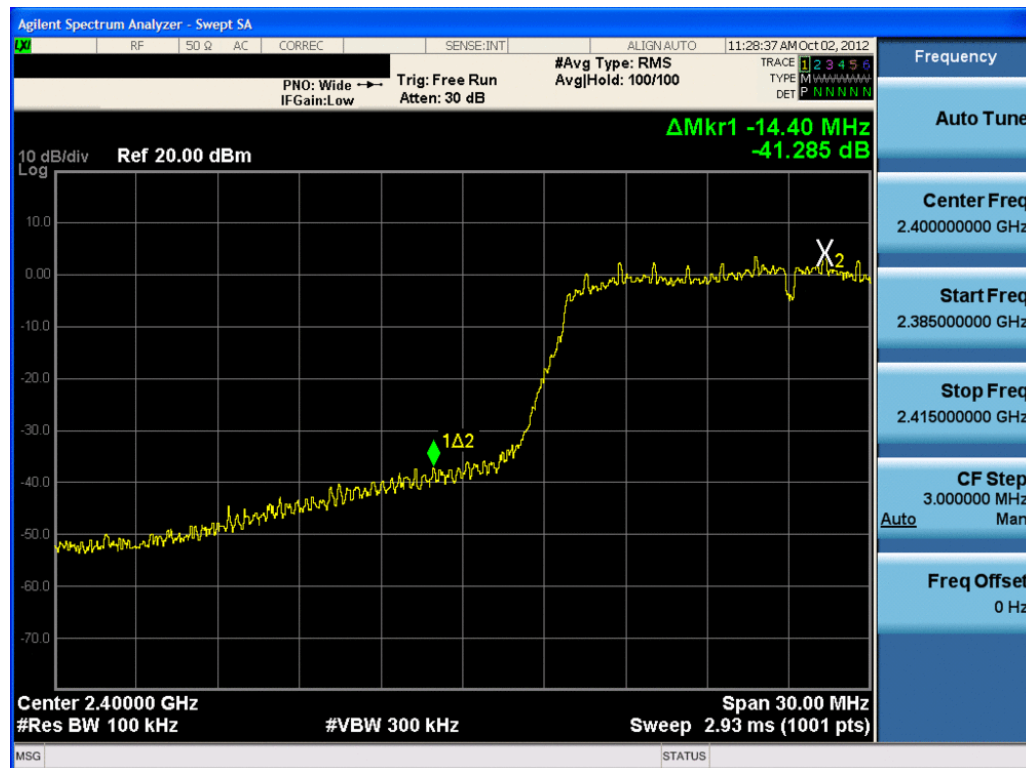


Plot 6-35. Band Edge Plot (802.11b – Ch. 1)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 33 of 62

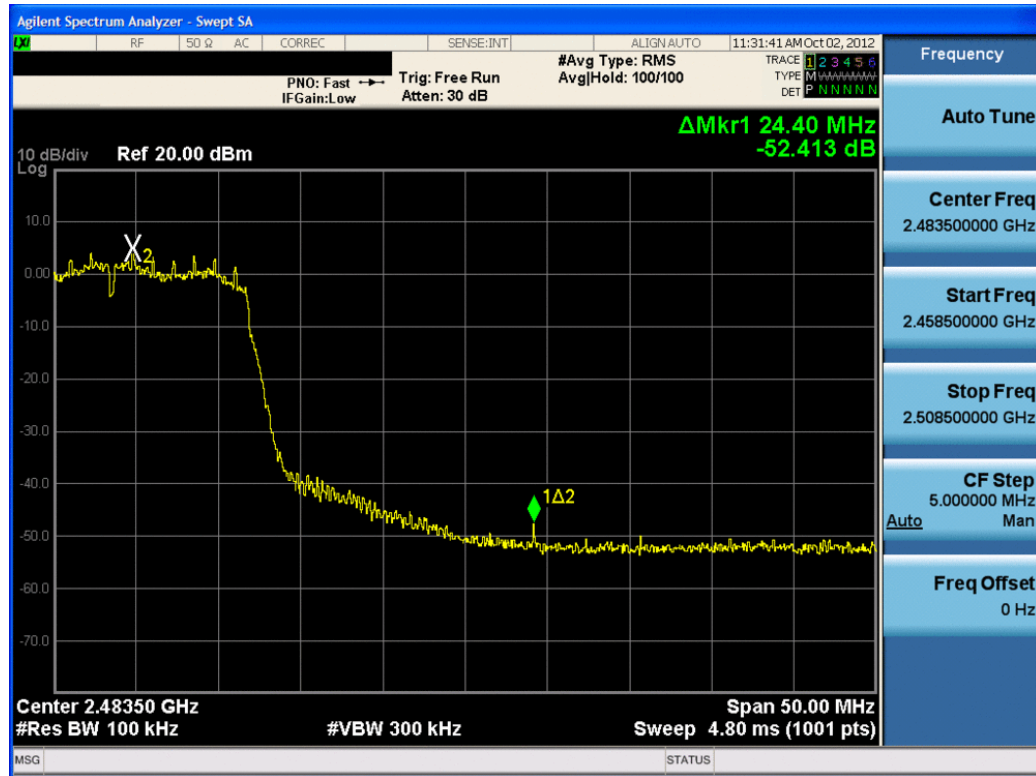


Plot 6-36. Band Edge Plot (802.11b – Ch. 11)

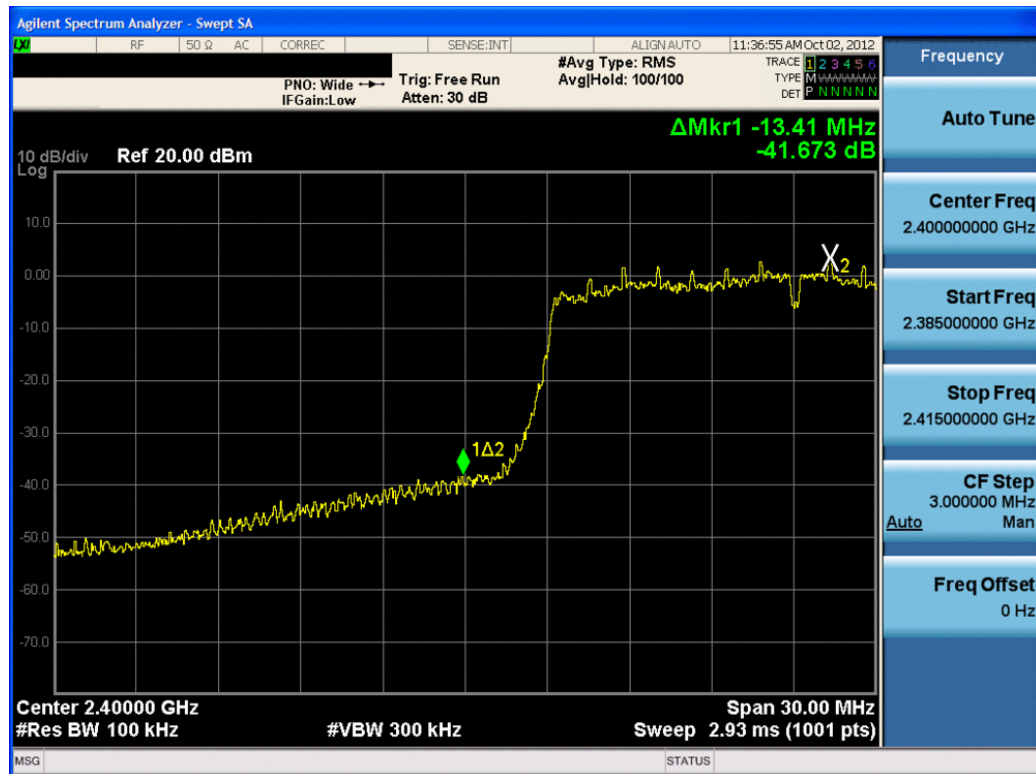


Plot 6-37. Band Edge Plot (802.11g– Ch. 1)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 34 of 62

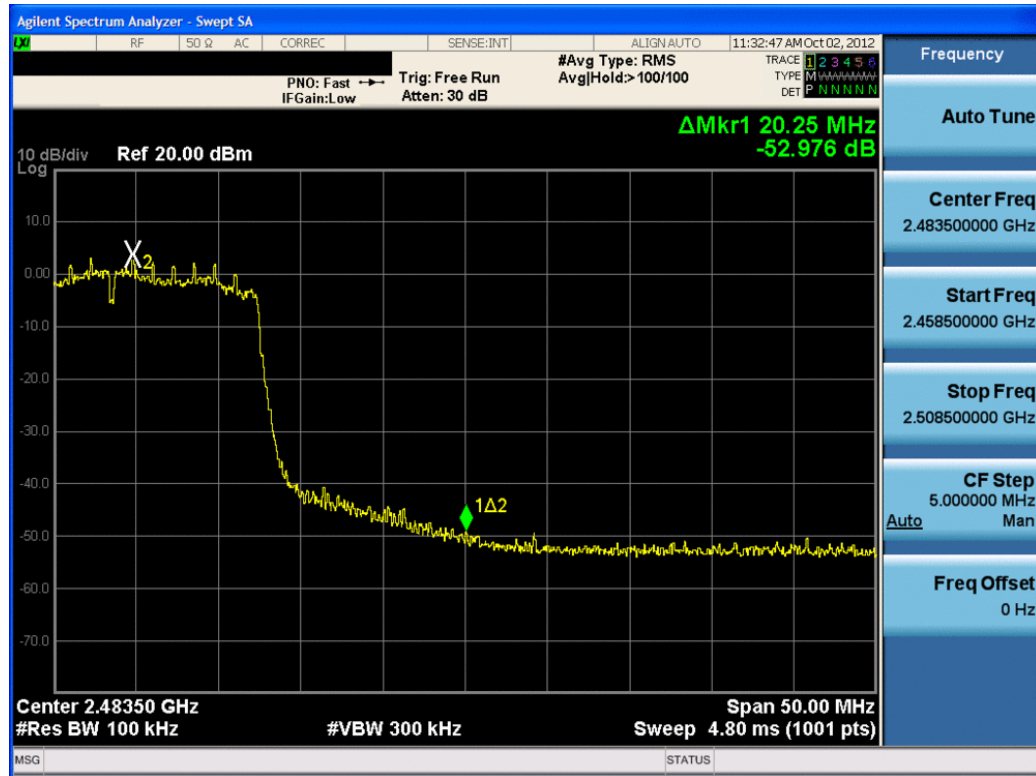


Plot 6-38. Band Edge Plot (802.11g – Ch. 11)



Plot 6-39. Band Edge Plot (802.11n (2.4GHz) – Ch. 1)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 35 of 62



Plot 6-40. Band Edge Plot (802.11n (2.4GHz) – Ch. 11)

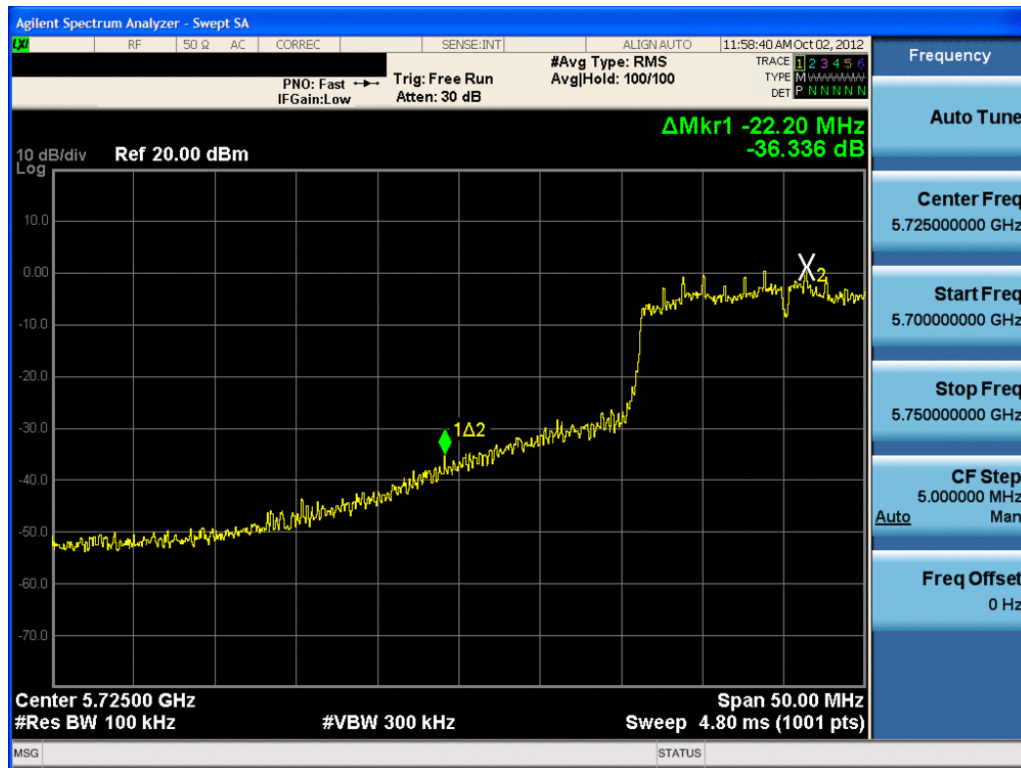


Plot 6-41. Band Edge Plot (802.11a – Ch. 149)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 36 of 62



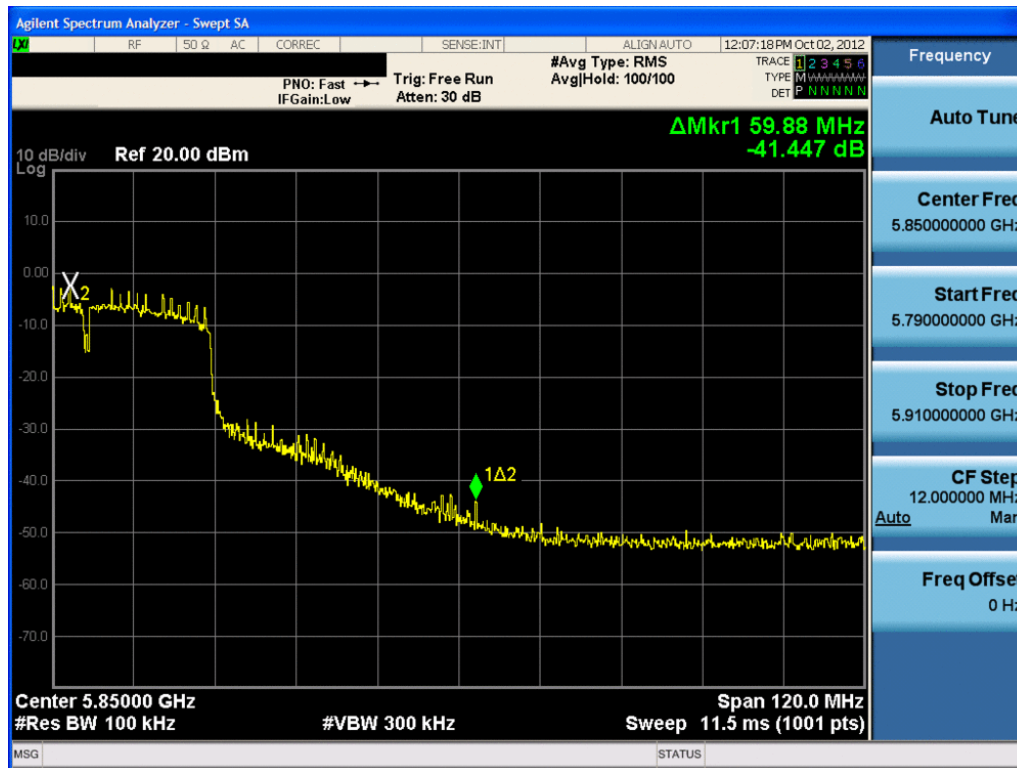
Plot 6-42. Band Edge Plot (802.11a – Ch. 165)



Plot 6-43. Band Edge Plot (20MHz BW 802.11n (5.8GHz) – Ch. 149)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 37 of 62





Plot 6-46. Band Edge Plot (40MHz BW 802.11n (5.8GHz) – Ch. 159)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 39 of 62

6.7 Conducted Spurious Emissions

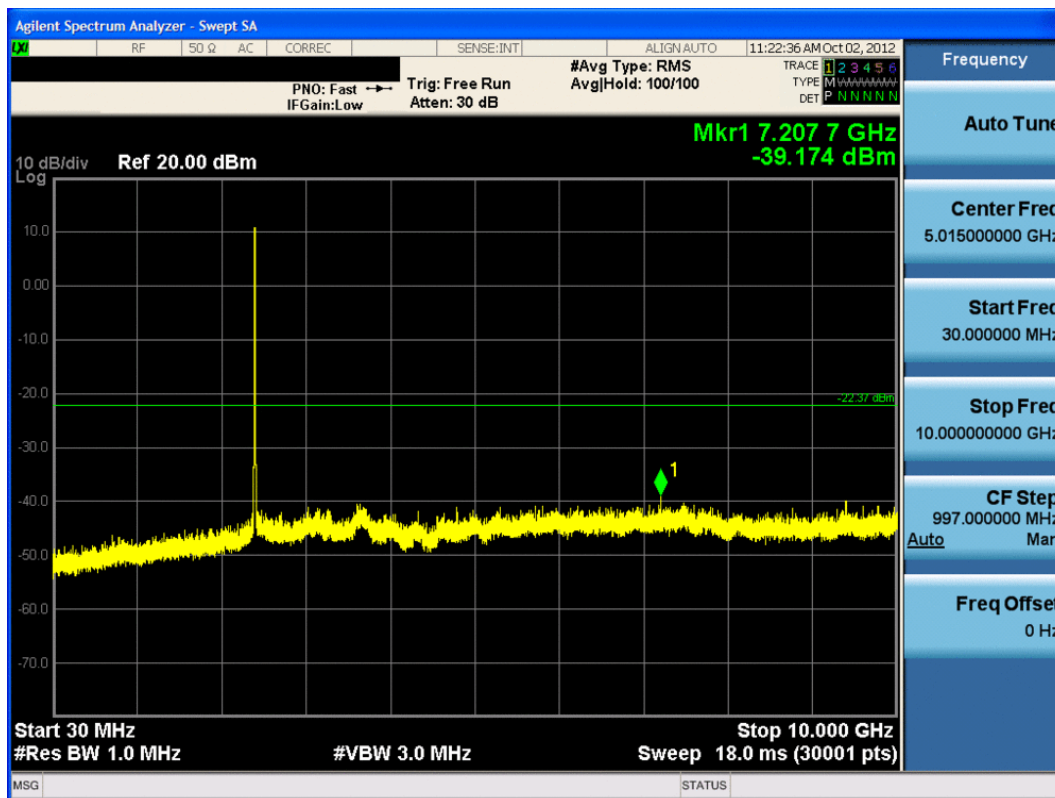
§15.247(d); RSS-210 [A8.5]

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 6.5 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.

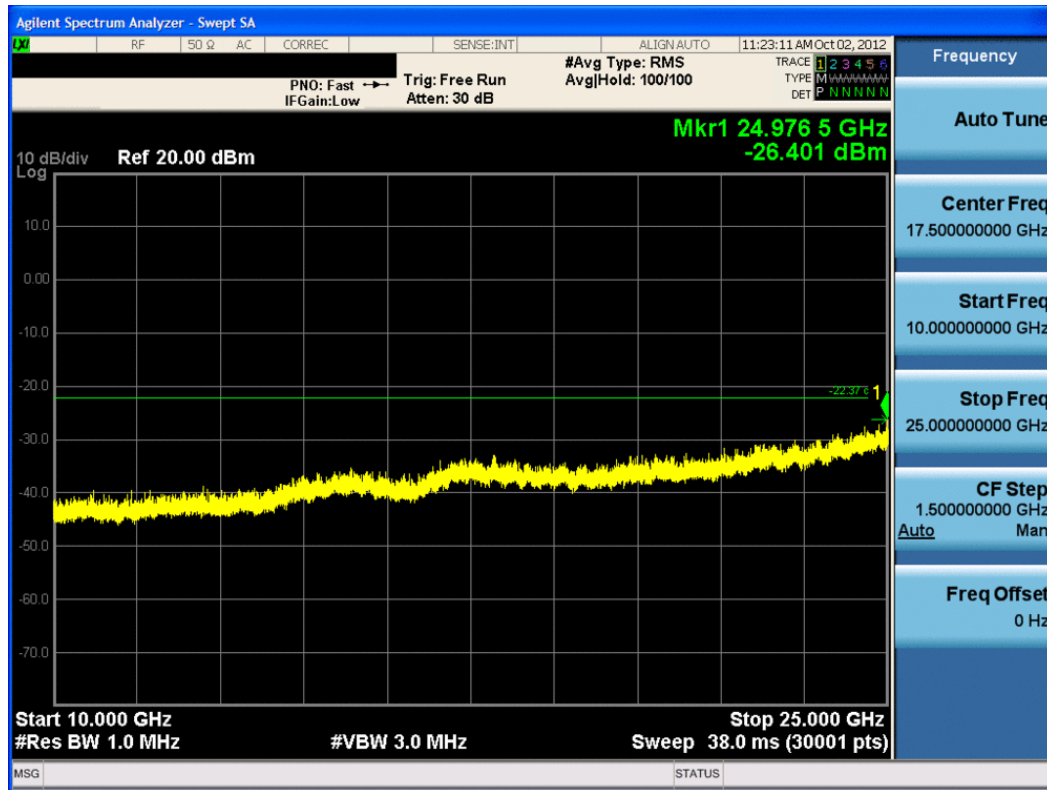
For plots showing conducted spurious emissions near the limit, the frequencies were investigated with a reduced RBW to ensure that no emissions were present.

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.



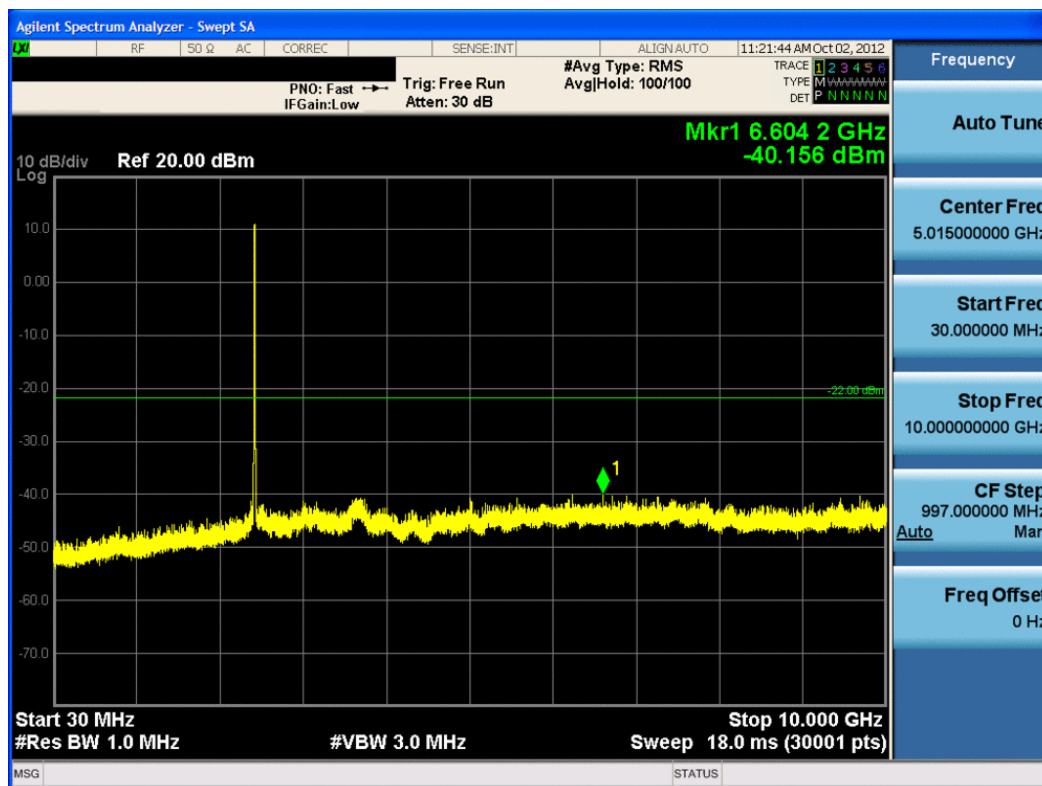
Plot 6-47. Conducted Spurious Plot (802.11b – Ch. 1)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 40 of 62

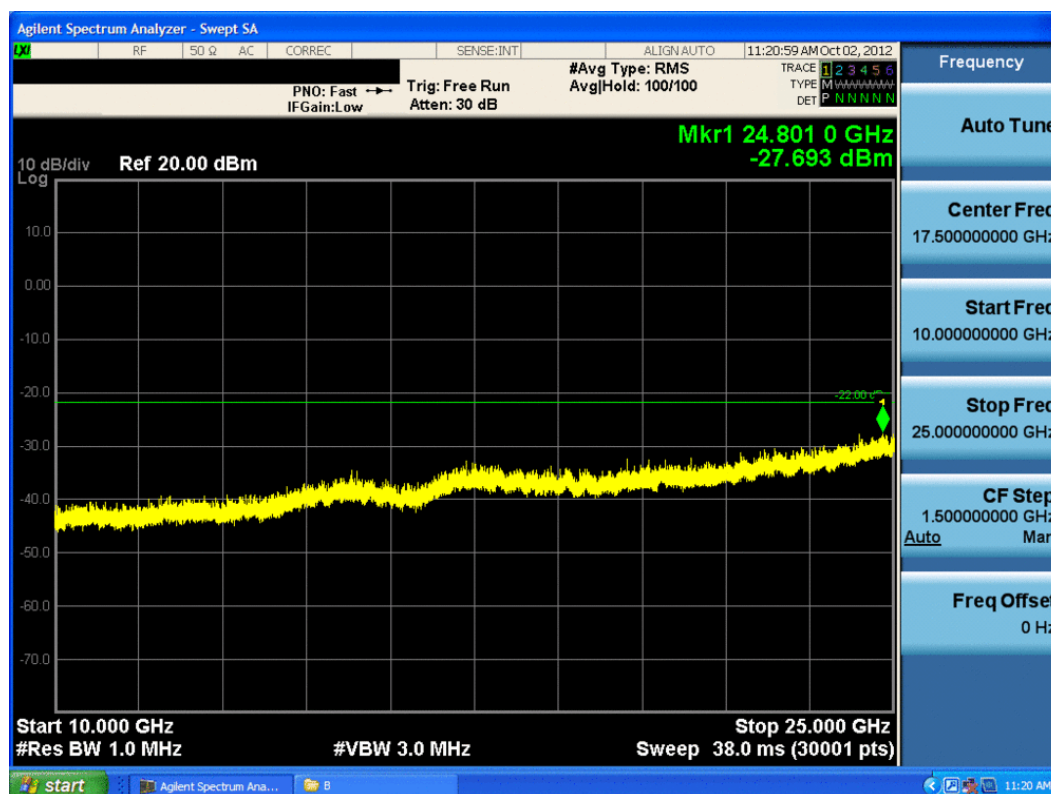


Plot 6-48. Conducted Spurious Plot (802.11b – Ch. 1)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 41 of 62

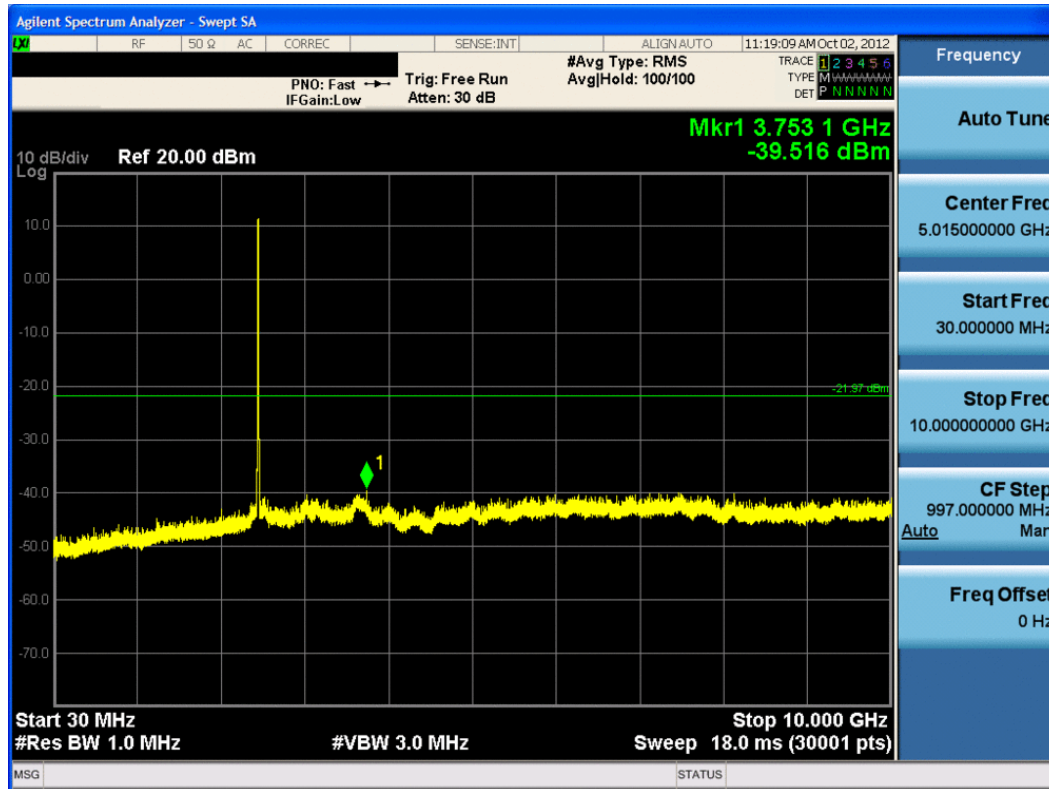


Plot 6-49. Conducted Spurious Plot (802.11b – Ch. 6)

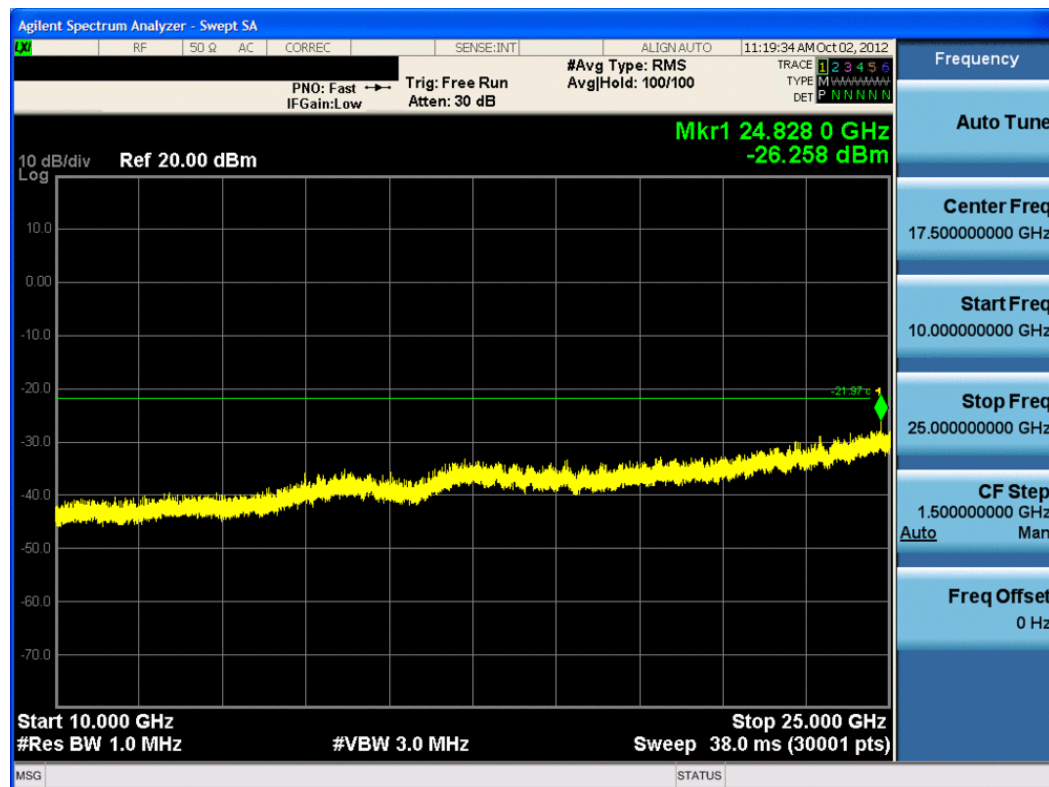


Plot 6-50. Conducted Spurious Plot (802.11b – Ch. 6)

FCC ID: A3LGTI8190N	 FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset	Page 42 of 62

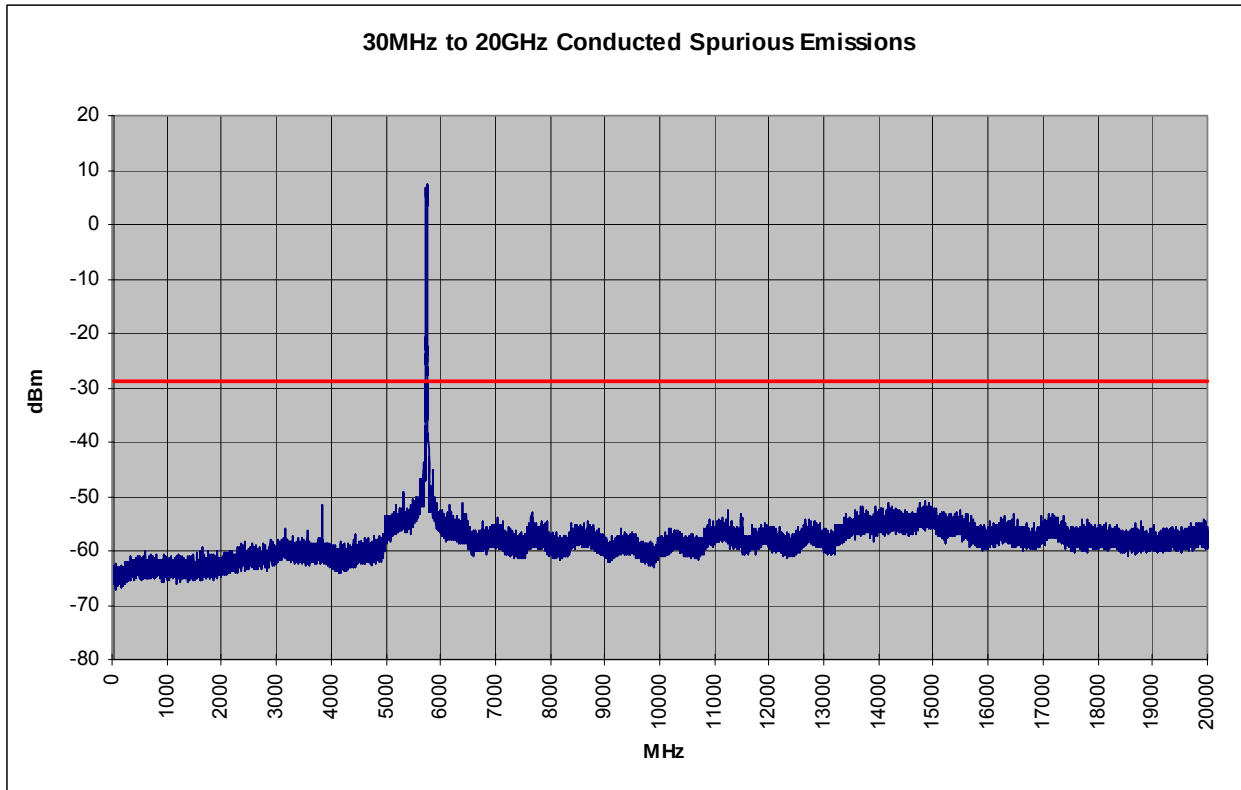


Plot 6-51. Conducted Spurious Plot (802.11b – Ch. 11)

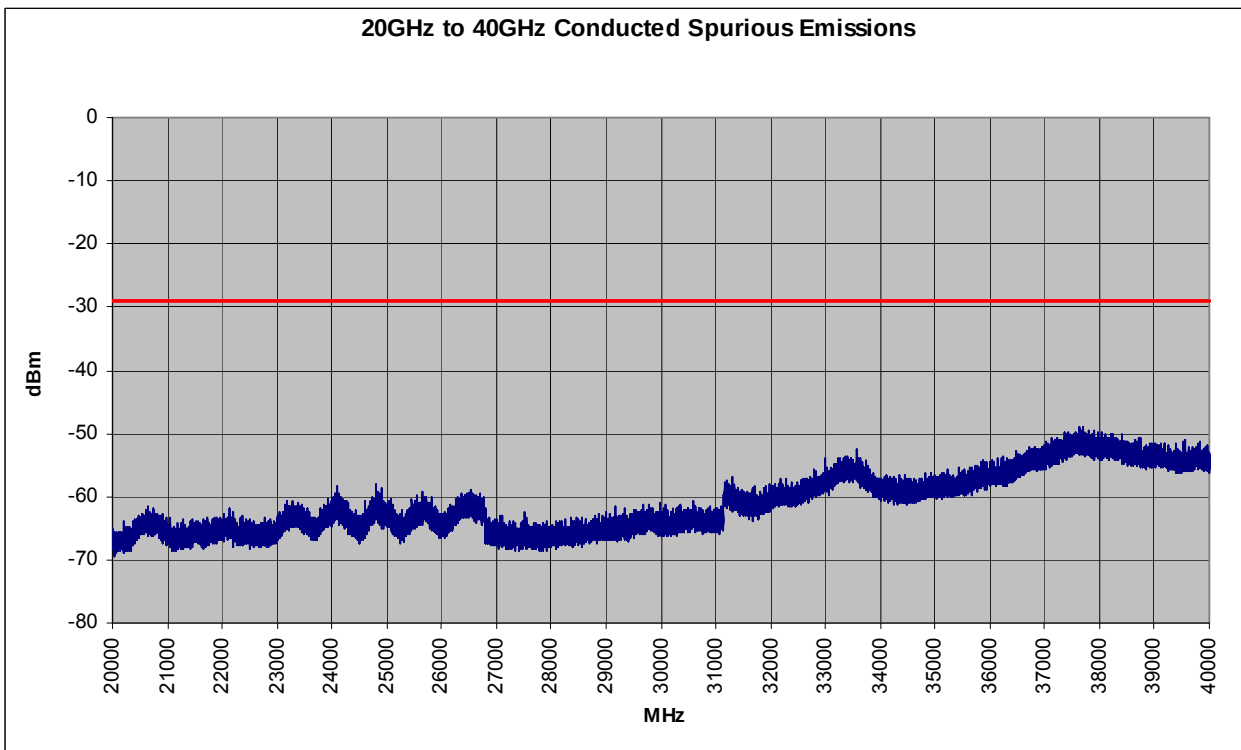


Plot 6-52. Conducted Spurious Plot (802.11b – Ch. 11)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 43 of 62

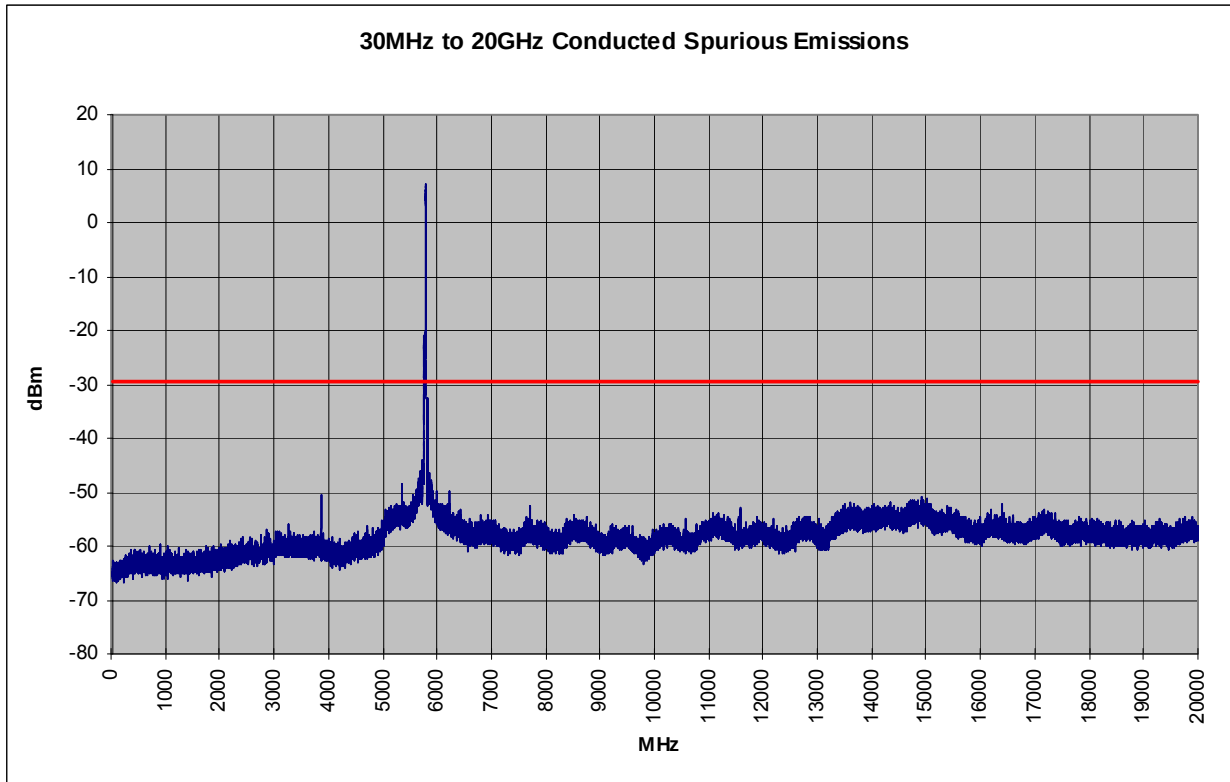


Plot 6-53. Conducted Spurious Plot (802.11a – Ch. 149)

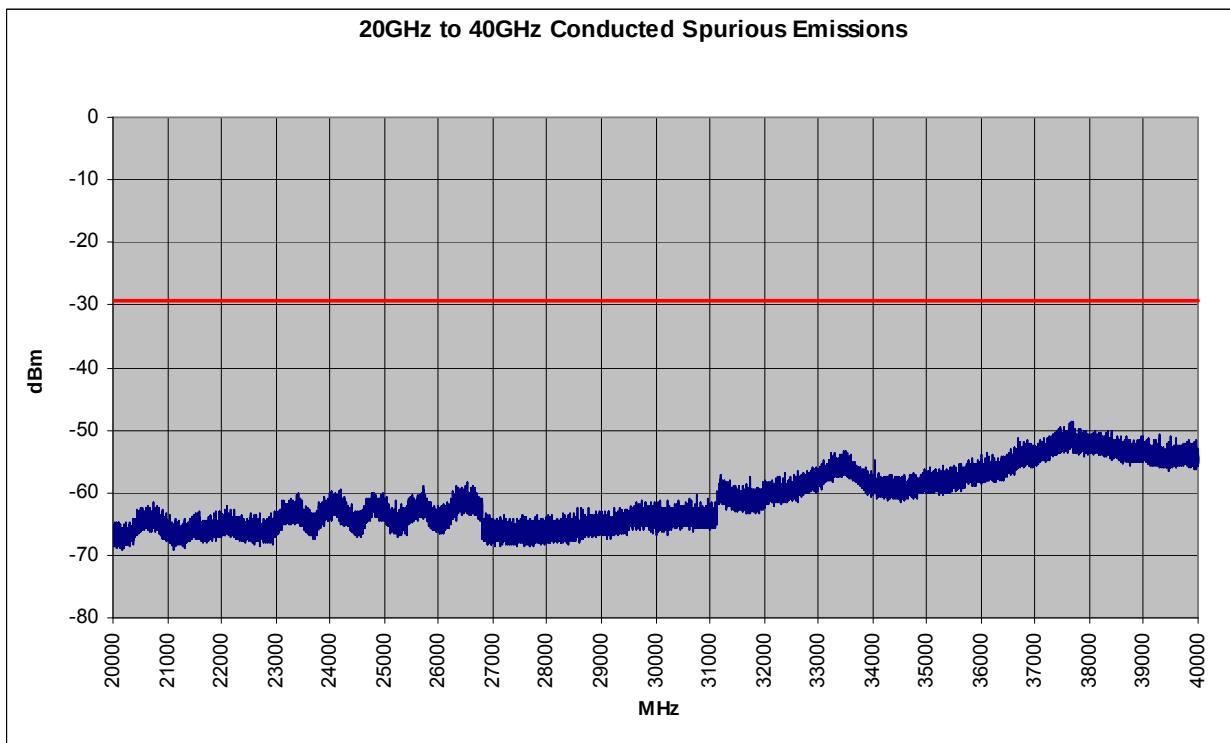


Plot 6-54. Conducted Spurious Plot (802.11a – Ch. 149)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 44 of 62

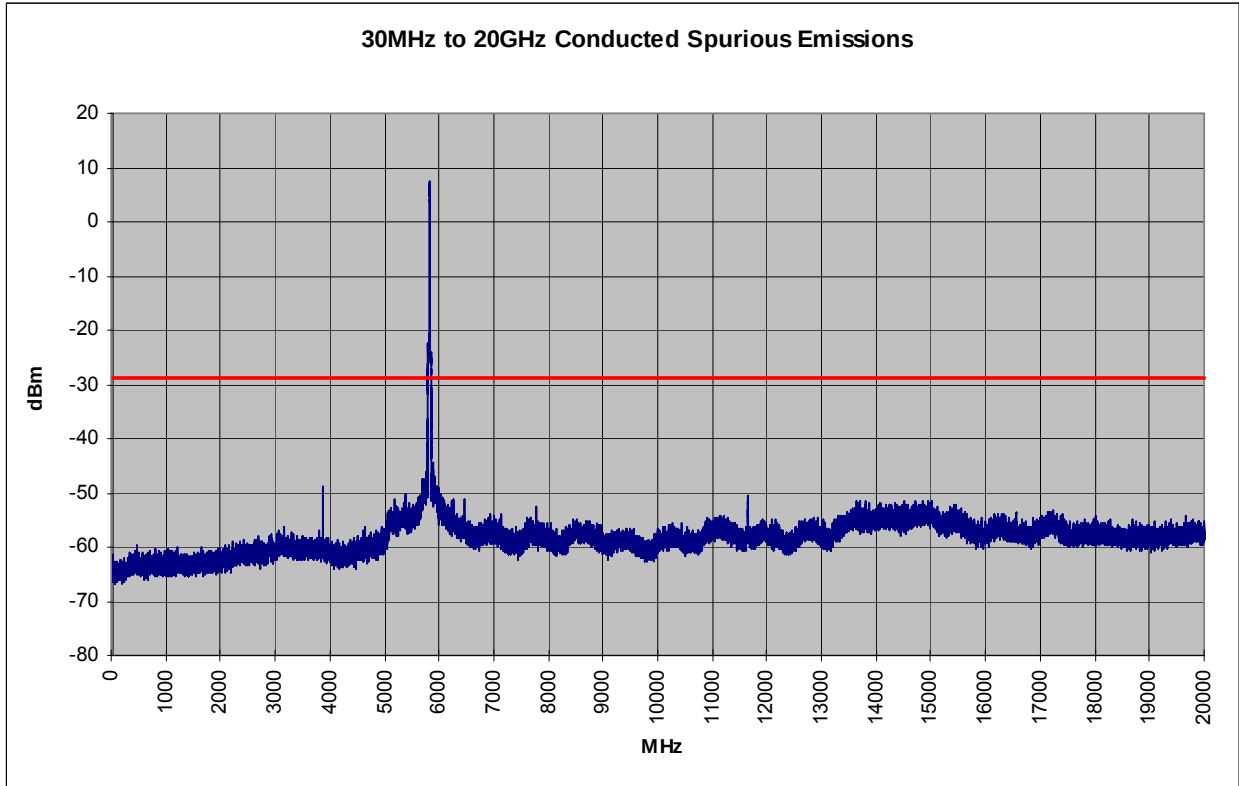


Plot 6-55. Conducted Spurious Plot (802.11a – Ch. 157)

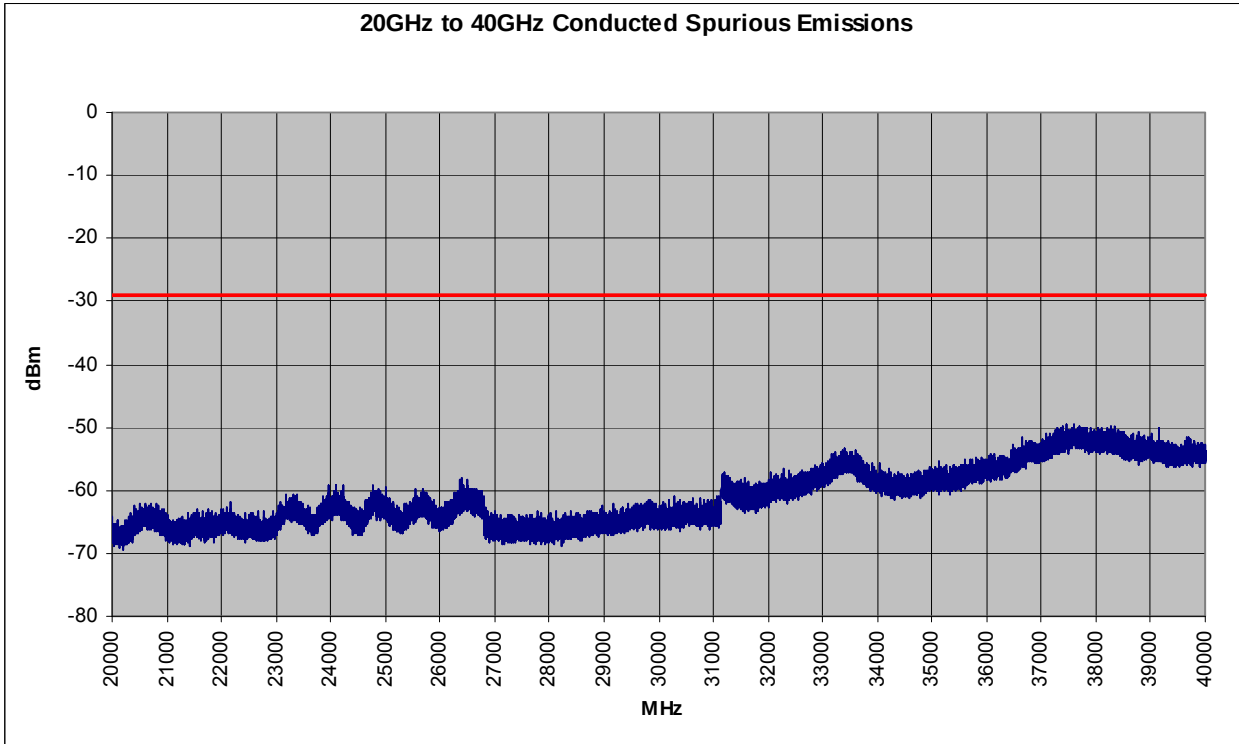


Plot 6-56. Conducted Spurious Plot (802.11a – Ch. 157)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 45 of 62



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



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

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 46 of 62

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 [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 6-10. Radiated Limits

Sample Calculation

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

FCC ID: A3LGTI8190N		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 47 of 62

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 [dBμV/m]	Limit [dBμV/m]	Margin [dB]
3617.95	-105.55	Avg	H	38.66	40.10	53.98	-13.88
3617.95	-97.37	Peak	H	38.66	48.28	73.98	-25.70
4824.00	-107.18	Avg	H	39.46	39.28	53.98	-14.70
4824.00	-98.35	Peak	H	39.46	48.11	73.98	-25.87

Table 6-11. Radiated Measurements

NOTES:

1. All emissions shown lie in the restricted bands specified in §15.205 are below the limit shown in Table 6-10.
2. For frequencies > 1GHz, average measurements are recorded using the slow sweep time procedure specified in Section 8.2.2 (Option 2) of KDB 558074 with 1001 data points. Peak measurements are performed using the procedure specified in Section 8.1.1 (Option 1) of KDB 558074 with RBW = 1MHz.
3. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
4. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
5. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. 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.
7. Average levels at -135dBm and peak levels at -125dBm represent the analyzer noise floor and signify that no emission was detected.
8. Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated.

FCC ID: A3LGTI8190N		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 48 of 62

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 [dBμV/m]	Limit [dBμV/m]	Margin [dB]
4874.00	-103.09	Avg	H	39.48	43.39	53.98	-10.59
4874.00	-97.03	Peak	H	39.48	49.45	73.98	-24.53
7311.00	-135.00	Avg	H	42.37	14.37	53.98	-39.61
7311.00	-125.00	Peak	H	42.37	24.37	73.98	-49.61
12185.00	-135.00	Avg	H	50.28	22.28	53.98	-31.70
12185.00	-125.00	Peak	H	50.28	32.28	73.98	-41.70

Table 6-12. Radiated Measurements

NOTES:

1. All emissions shown lie in the restricted bands specified in §15.205 are below the limit shown in Table 6-10.
2. For frequencies > 1GHz, average measurements are recorded using the slow sweep time procedure specified in Section 8.2.2 (Option 2) of KDB 558074 with 1001 data points. Peak measurements are performed using the procedure specified in Section 8.1.1 (Option 1) of KDB 558074 with RBW = 1MHz.
3. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
4. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
5. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. 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.
7. Average levels at -135dBm and peak levels at -125dBm represent the analyzer noise floor and signify that no emission was detected.
8. Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated.

FCC ID: A3LGTI8190N		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 49 of 62

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 [dBμV/m]	Limit [dBμV/m]	Margin [dB]
4924.00	-102.90	Avg	H	39.50	43.60	53.98	-10.38
4924.00	-97.25	Peak	H	39.50	49.25	73.98	-24.73
7386.00	-135.00	Avg	H	42.48	14.48	53.98	-39.50
7386.00	-125.00	Peak	H	42.48	24.48	73.98	-49.50
12310.00	-135.00	Avg	H	50.74	22.74	53.98	-31.24
12310.00	-125.00	Peak	H	50.74	32.74	73.98	-41.24

Table 6-13. Radiated Measurements

NOTES:

1. All emissions shown lie in the restricted bands specified in §15.205 are below the limit shown in Table 6-10.
2. For frequencies > 1GHz, average measurements are recorded using the slow sweep time procedure specified in Section 8.2.2 (Option 2) of KDB 558074 with 1001 data points. Peak measurements are performed using the procedure specified in Section 8.1.1 (Option 1) of KDB 558074 with RBW = 1MHz.
3. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
4. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
5. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. 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.
7. Average levels at -135dBm and peak levels at -125dBm represent the analyzer noise floor and signify that no emission was detected.
8. Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated.

FCC ID: A3LGTI8190N		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 50 of 62

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: 1 & 3 Meters

Operating Frequency: 5745MHz

Channel: 149

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
11490.00	-115.60	Avg	H	47.34	0.00	38.7	53.98	-15.24
11490.00	-100.59	Peak	H	47.34	0.00	53.7	73.98	-20.23
22980.00	-111.43	Avg	H	38.97	-9.54	25.0	53.98	-28.98
22980.00	-102.15	Peak	H	38.97	-9.54	34.3	73.98	-39.70

Table 6-14. Radiated Measurements

NOTES:

1. All emissions shown lie in the restricted bands specified in §15.205 are below the limit shown in Table 6-10.
2. For frequencies > 1GHz, average measurements are recorded using the slow sweep time procedure specified in Section 8.2.2 (Option 2) of KDB 558074 with 1001 data points. Peak measurements are performed using the procedure specified in Section 8.1.1 (Option 1) of KDB 558074 with RBW = 1MHz.
3. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
4. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
5. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. 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.
7. Average levels at -135dBm and peak levels at -125dBm represent the analyzer noise floor and signify that no emission was detected.
8. Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated.

FCC ID: A3LGTI8190N		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 51 of 62

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: 1 & 3 Meters

Operating Frequency: 5785MHz

Channel: 157

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
11570.00	-115.81	Avg	H	47.40	38.59	53.98	-15.39
11570.00	-101.63	Peak	H	47.40	52.77	73.98	-21.21

Table 6-15. Radiated Measurements

NOTES:

1. All emissions shown lie in the restricted bands specified in §15.205 are below the limit shown in Table 6-10.
2. For frequencies > 1GHz, average measurements are recorded using the slow sweep time procedure specified in Section 8.2.2 (Option 2) of KDB 558074 with 1001 data points. Peak measurements are performed using the procedure specified in Section 8.1.1 (Option 1) of KDB 558074 with RBW = 1MHz.
3. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
4. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
5. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. 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.
7. Average levels at -135dBm and peak levels at -125dBm represent the analyzer noise floor and signify that no emission was detected.
8. Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated.

FCC ID: A3LGTI8190N		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 52 of 62

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: 1 & 3 Meters

Operating Frequency: 5825MHz

Channel: 165

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
11650.00	-116.18	Avg	H	47.50	38.32	53.98	-15.66
11650.00	-100.80	Peak	H	47.50	53.70	73.98	-20.28

Table 6-16. Radiated Measurements

NOTES:

1. All emissions shown lie in the restricted bands specified in §15.205 are below the limit shown in Table 6-10.
2. For frequencies > 1GHz, average measurements are recorded using the slow sweep time procedure specified in Section 8.2.2 (Option 2) of KDB 558074 with 1001 data points. Peak measurements are performed using the procedure specified in Section 8.1.1 (Option 1) of KDB 558074 with RBW = 1MHz.
3. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
4. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
5. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. 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.
7. Average levels at -135dBm and peak levels at -125dBm represent the analyzer noise floor and signify that no emission was detected.
8. Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated.

FCC ID: A3LGTI8190N		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 53 of 62

6.9 Radiated Restricted Band Edge Measurements

§15.205 / §15.209; RSS-210 [A8.5]

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

The amplitude offset shown in the following plots was calculated using the formula:

$$\text{Offset (dB)} = (\text{Antenna Factor} + \text{Cable Loss} + 10 \text{ dB Attenuator}) - \text{Preamplifier Gain} = 11.9 \text{ dB}$$

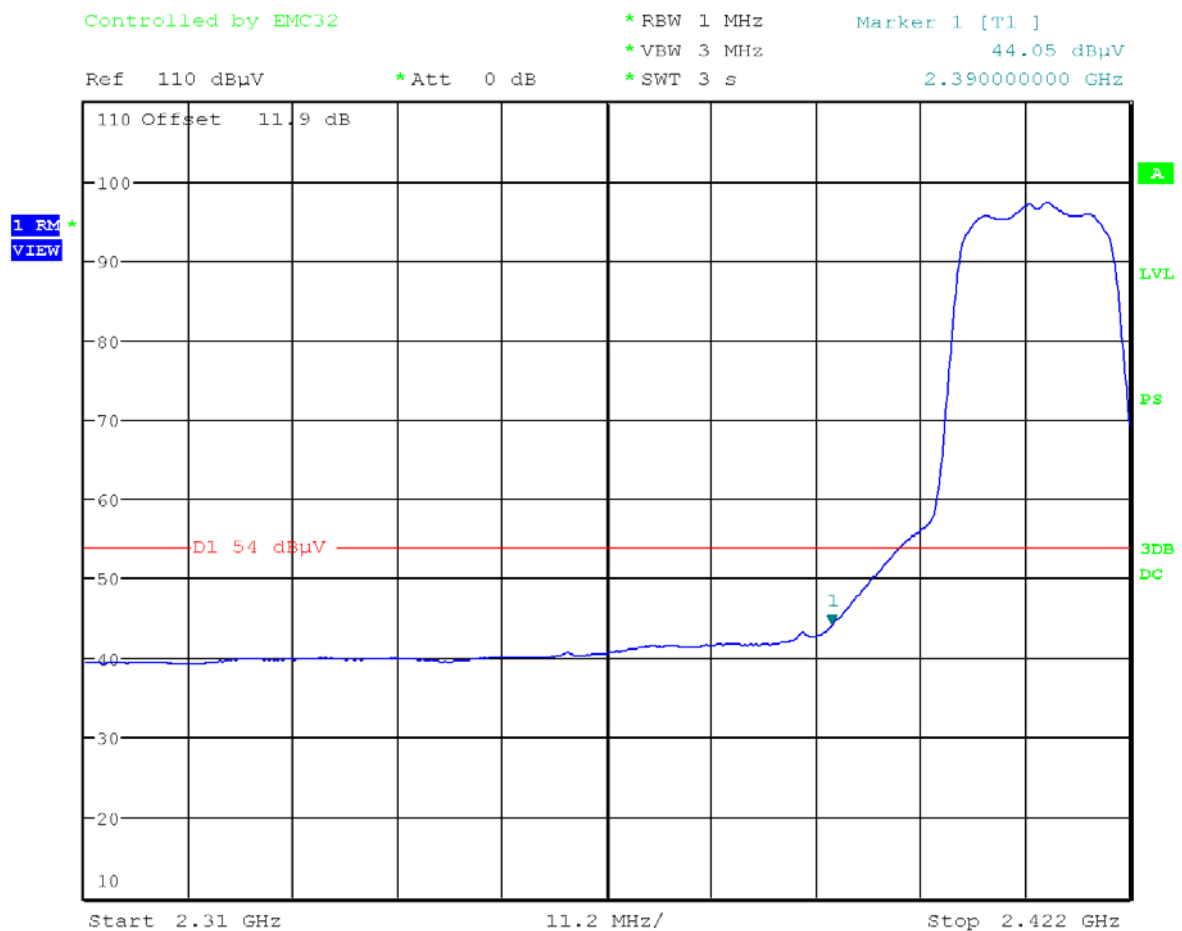
Worst Case Mode: 802.11g

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 2412MHz

Channel: 1

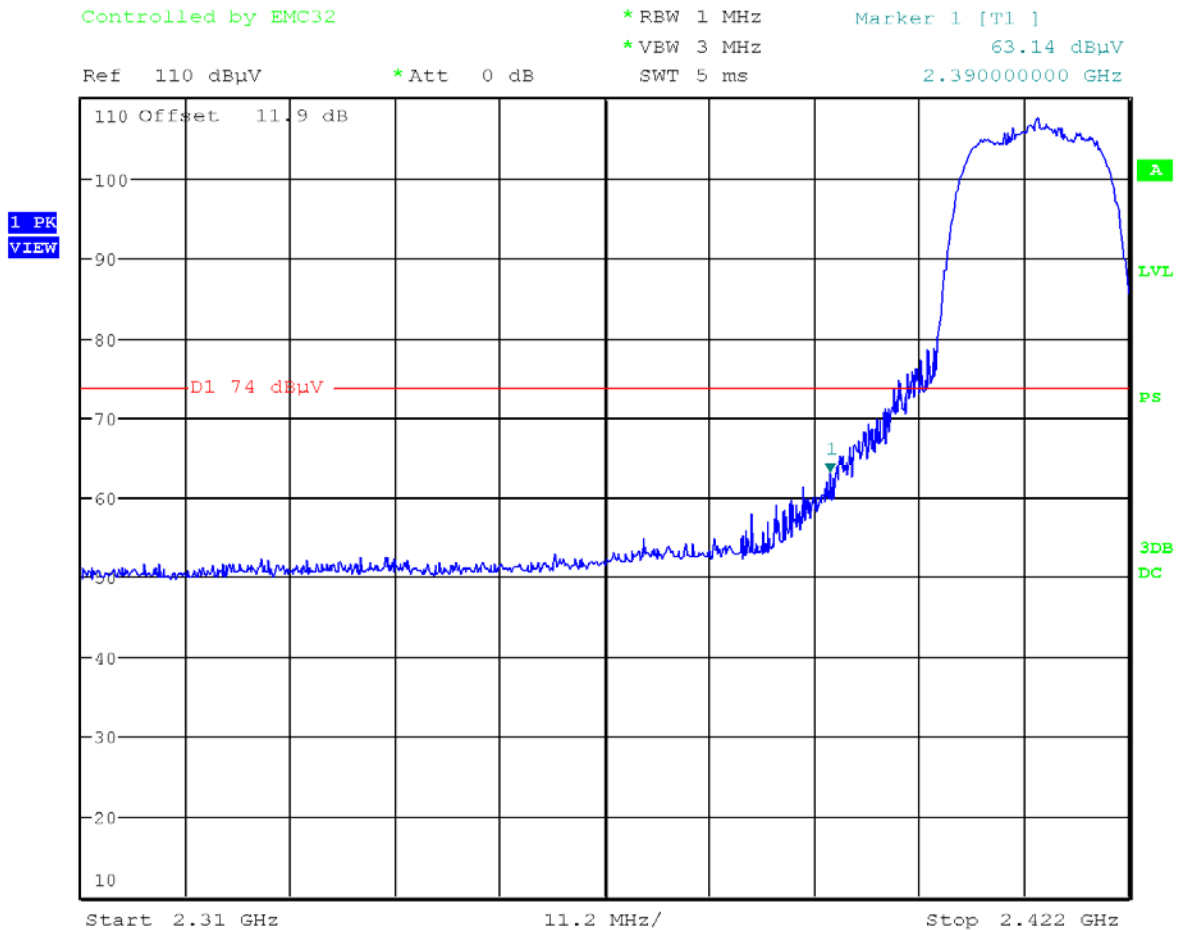


Plot 6-59. Radiated Restricted Lower Band Edge Measurement (Average)

FCC ID: A3LGT8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 54 of 62

Radiated Restricted Band Edge Measurements (Cont'd)

§15.205 / §15.209; RSS-210 [A8.5]



Plot 6-60. Radiated Restricted Lower Band Edge Measurement (Peak)

NOTES:

1. All emissions shown lie in the restricted bands specified in §15.205 and are tested to the radiated emission limits specified in §15.209.
2. Average measurements are recorded using the slow sweep time procedure specified in Section 8.2.2 (Option 2) of KDB 558074 with 1001 data points. Peak measurements are performed using the procedure specified in Section 8.1.1 (Option 1) of KDB 558074 with RBW = 1MHz.
3. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
4. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 55 of 62

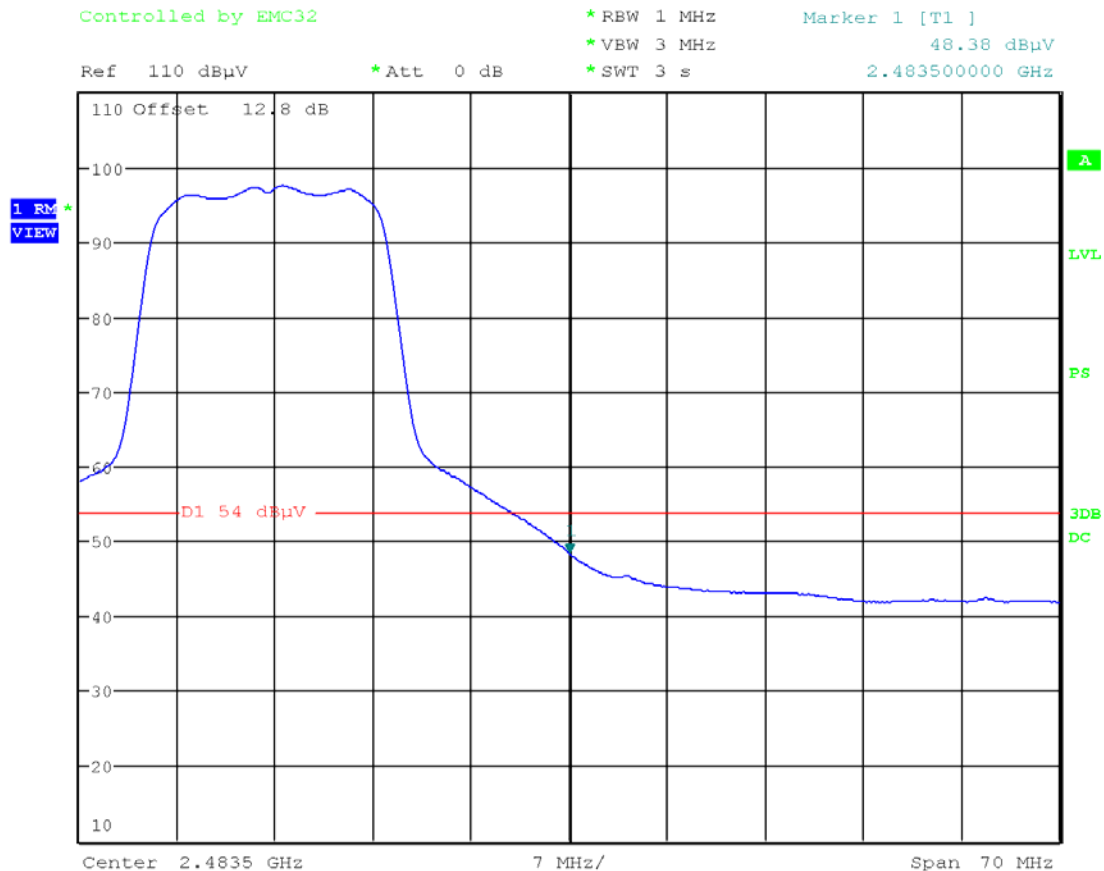
Radiated Restricted Band Edge Measurements (Cont'd)

§15.205 / §15.209; RSS-210 [A8.5]

The amplitude offset shown in the following plots was calculated using the formula:

$$\text{Offset (dB)} = (\text{Antenna Factor} + \text{Cable Loss} + 10 \text{ dB Attenuator}) - \text{Preamplifier Gain} = 12.8 \text{ dB}$$

Worst Case Mode:	802.11g
Worst Case Transfer Rate:	6Mbps
Distance of Measurements:	3 Meters
Operating Frequency:	2462MHz
Channel:	11

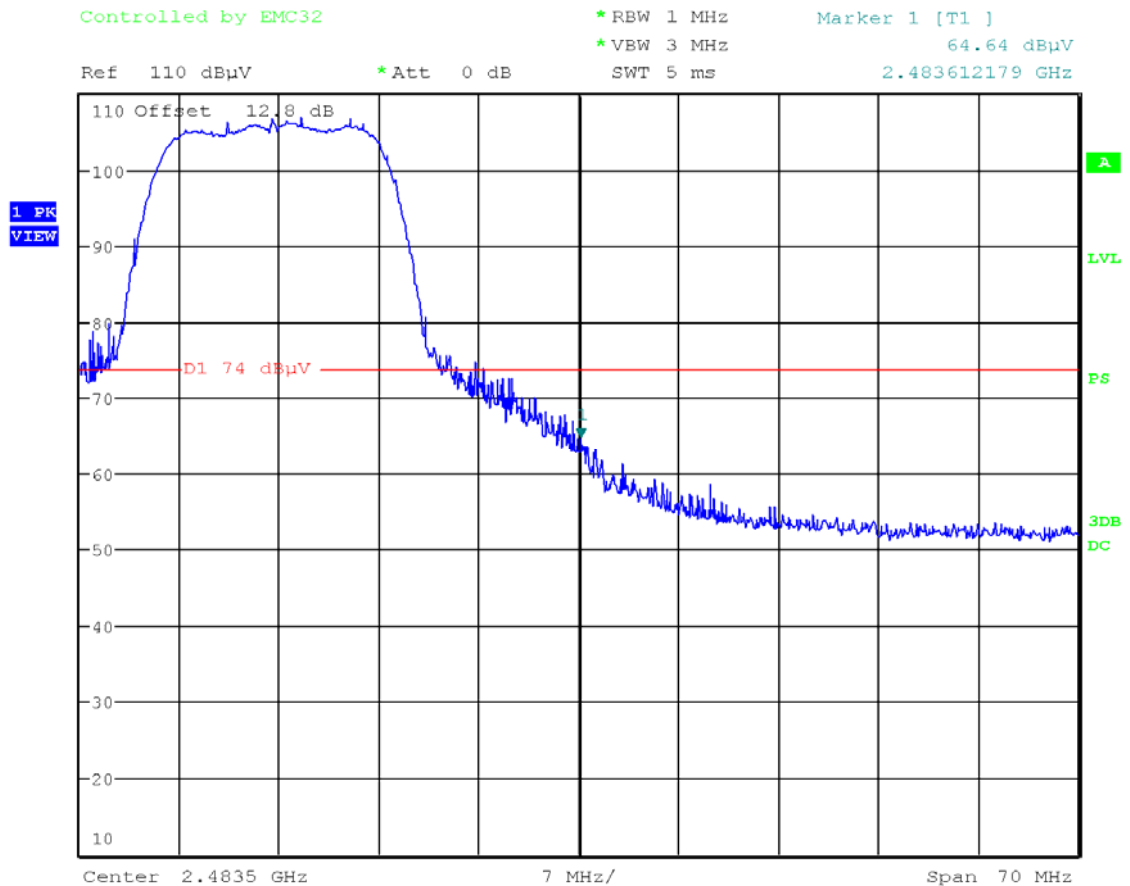


Plot 6-61. Radiated Restricted Upper Band Edge Measurement (Average)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 56 of 62

Radiated Restricted Band Edge Measurements (Cont'd)

§15.205 / §15.209; RSS-210 [A8.5]



Plot 6-62. Radiated Restricted Upper Band Edge Measurement (Peak)

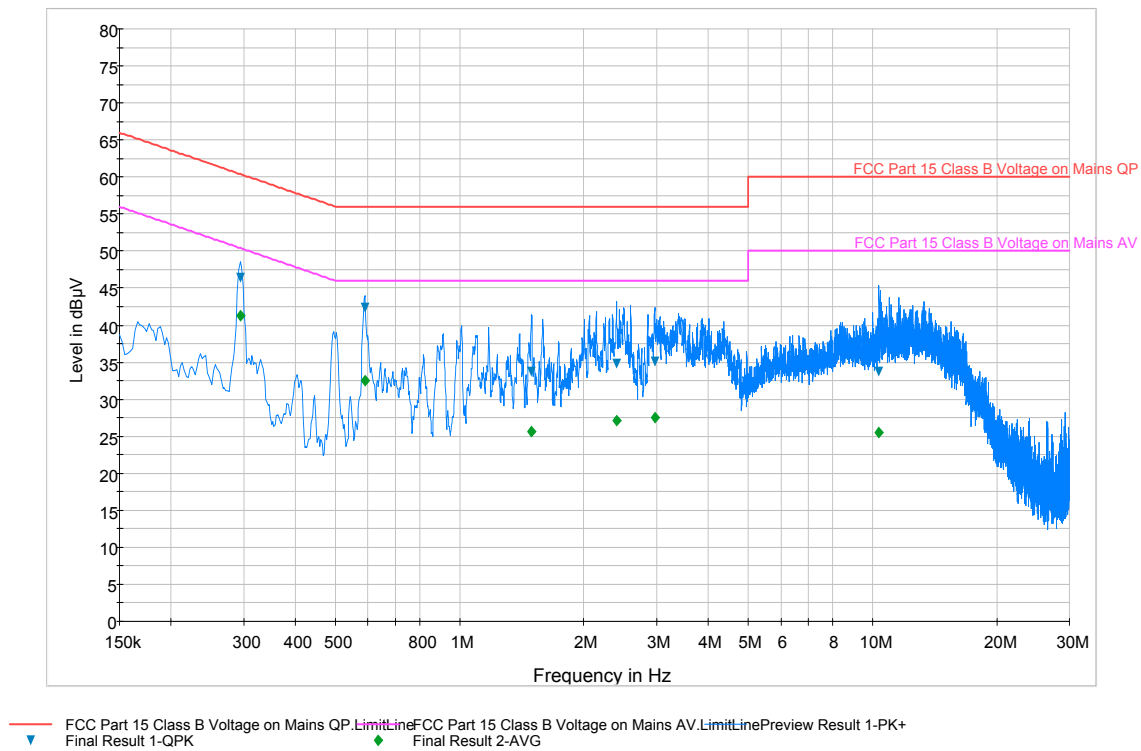
NOTES:

1. All emissions shown lie in the restricted bands specified in §15.205 and are tested to the radiated emission limits specified in §15.209.
2. Average measurements are recorded using the slow sweep time procedure specified in Section 8.2.2 (Option 2) of KDB 558074 with 1001 data points. Peak measurements are performed using the procedure specified in Section 8.1.1 (Option 1) of KDB 558074 with RBW = 1MHz.
3. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
4. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 57 of 62

6.10 Line-Conducted Test Data

§15.207; RSS-Gen [7.2.2]



Plot 6-63. 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	46.40	60.40	14.00	41.30	50.40	9.10
0.589	L1	0.1	42.30	56.00	13.70	32.60	46.00	13.40
1.491	L1	0.2	33.80	56.00	22.20	25.70	46.00	20.30
2.400	L1	0.2	34.80	56.00	21.20	27.10	46.00	18.90
2.969	L1	0.2	35.00	56.00	21.00	27.50	46.00	18.50
10.379	L1	0.4	33.70	60.00	26.30	25.50	50.00	24.50

Table 6-17. Line Conducted Data with 802.11b (L1)

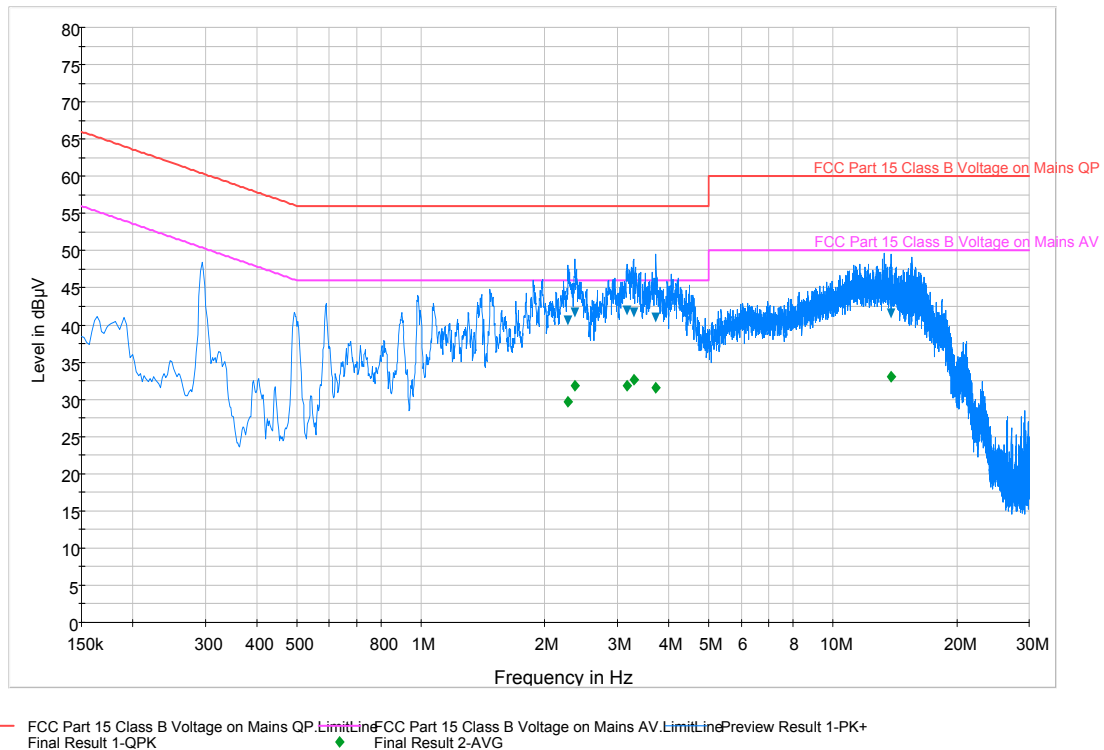
Notes:

- 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: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 58 of 62

Line-Conducted Test Data (Cont'd)

§15.207; RSS-Gen [7.2.2]



Plot 6-64. Line Conducted Plot with 802.11b (N)

Frequency MHz	Line	Corr. dB	QuasiPeak dBµV	Limit dBµV	Margin dB	Average dBµV	Limit dBµV	Margin dB
2.276	N	0.2	40.60	56.00	15.40	29.70	46.00	16.30
2.369	N	0.2	41.60	56.00	14.40	31.80	46.00	14.20
3.167	N	0.2	42.00	56.00	14.00	31.80	46.00	14.20
3.284	N	0.2	41.70	56.00	14.30	32.60	46.00	13.40
3.723	N	0.2	41.10	56.00	14.90	31.60	46.00	14.40
13.835	N	0.5	41.50	60.00	18.50	33.10	50.00	16.90

Table 6-18. Line Conducted Data with 802.11b (N)

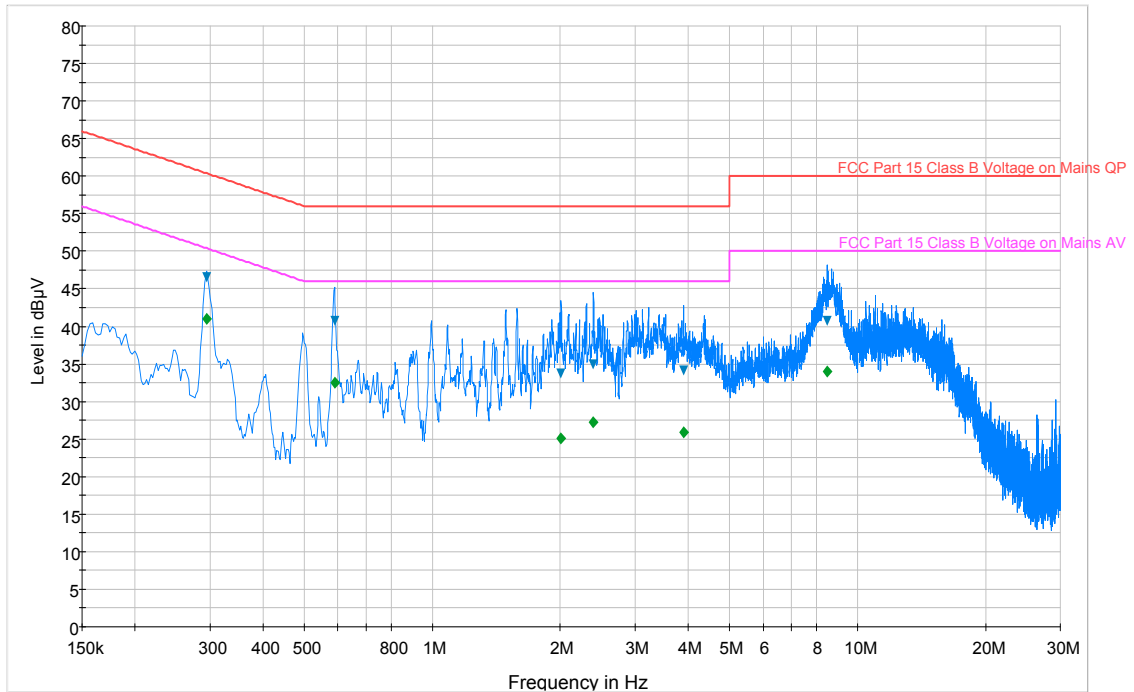
Notes:

- 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: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 59 of 62

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 6-65. Line Conducted Plot with 802.11a (L1)

Frequency MHz	Line	Corr. dB	QuasiPeak dBμV	Limit dBμV	Margin dB	Average dBμV	Limit dBμV	Margin dB
0.294	L1	0.1	46.50	60.40	13.90	41.00	50.40	9.40
0.589	L1	0.1	40.80	56.00	15.20	32.50	46.00	13.50
2.011	L1	0.2	33.70	56.00	22.30	25.10	46.00	20.90
2.393	L1	0.2	34.90	56.00	21.10	27.20	46.00	18.80
3.903	L1	0.2	34.10	56.00	21.90	25.90	46.00	20.10
8.498	L1	0.3	40.70	60.00	19.30	34.00	50.00	16.00

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

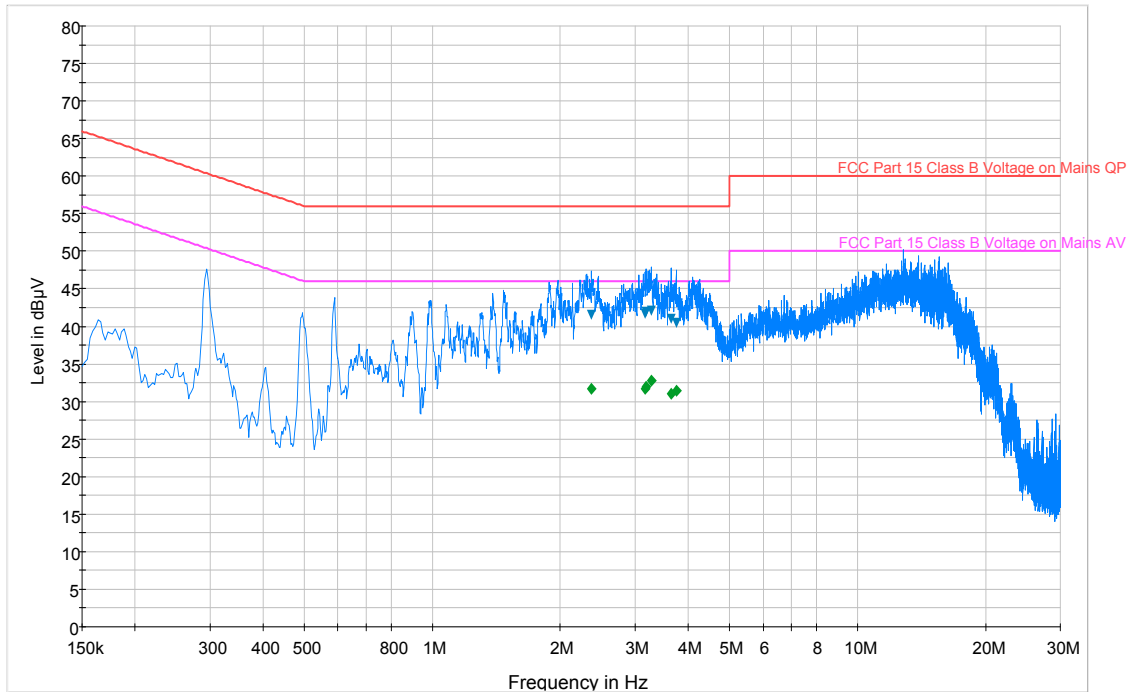
Notes:

- 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: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 60 of 62

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 6-66. Line Conducted Plot with 802.11a (N)

Frequency MHz	Line	Corr. dB	QuasiPeak dBμV	Limit dBμV	Margin dB	Average dBμV	Limit dBμV	Margin dB
2.369	N	0.2	41.60	56.00	14.40	31.70	46.00	14.30
3.165	N	0.2	41.70	56.00	14.30	31.70	46.00	14.30
3.183	N	0.2	41.90	56.00	14.10	32.00	46.00	14.00
3.273	N	0.2	42.10	56.00	13.90	32.70	46.00	13.30
3.647	N	0.2	41.10	56.00	14.90	31.00	46.00	15.00
3.748	N	0.2	40.40	56.00	15.60	31.40	46.00	14.60

Table 6-20. 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: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 61 of 62

7.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LGTI8190N** is in compliance with Part 15C of the FCC Rules and RSS-210 of the Industry Canada Rules.

FCC ID: A3LGTI8190N		FCC Pt. 15.247 802.11a/b/g/n MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1211071603.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 62 of 62