



PCTEST ENGINEERING LABORATORY, INC.

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CERTIFICATE OF COMPLIANCE FCC PART 15.247 Class II Permissive Change

Applicant Name:
Samsung Electronics, Co. Ltd.
18600 Broadwick St.
Rancho Dominguez, CA 90220 USA

Date of Testing:
November 21, 2006
Test Site/Location:
PCTEST Lab. Columbia, MD, USA
Test Report Serial No.:
0611201004

FCC ID: A3LSCHW531

APPLICANT: Samsung Electronics, Co. Ltd.

Model(s): SCH-W531
EUT Type: Single-Mode Cellular Phone with Bluetooth
Max. RF Output Power: 1.19 mW (0.77 dBm) Conducted
Frequency Range: 2402 – 2480MHz (Bluetooth for US)
FCC Classification: FCC Part 15 Frequency Hopping Spread Spectrum Transceiver (DSS)
FCC Rule Part(s): Part 15 Subpart C (15.247)
Class II Permissive Change: Please see attached Samsung documents
Original Grant Date: 10/27/2006

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4-2003.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Grant Conditions: Listed output power is conducted.

PCTEST certifies that no party to this application has been denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 862.


Randy Ortanez
President



FCC ID: A3LSCHW531		FCC Pt. 15.247 BLUETOOTH SUPPLEMENTAL DATA (Class II Permissive Change)		Reviewed by: Quality Manager
Test Report S/N: 0611201004	Test Dates: November 21, 2006	EUT Type: Single-Mode Cellular Phone with Bluetooth		Page 1 of 8

Radiated Harmonic Measurements

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

The EUT was tested from 9kHz and up to the 10th harmonic of the fundamental frequency of the transmitter using CISPR quasi peak detector below 1GHz. Above 1 GHz, average measurement was used, using RBW = 1MHz, VBW = 10Hz and linearly polarized horn antennas. All harmonics/spurs are at least 20dB below the highest emission in the authorized band using RBW = 100kHz. In addition, peak measurements were taken to ensure that the peak levels are not more than 20dB above the average limit. All out of band emissions, other than those created by the spreading sequence, data sequence, and the carrier modulation must not exceed the limits show in Table 1 per Section 15.209.

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

Table 1. Radiated Limits

FCC ID: A3LSCHW531		FCC Pt. 15.247 BLUETOOTH SUPPLEMENTAL DATA (Class II Permissive Change)		Reviewed by: Quality Manager
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Radiated Harmonic Measurements (Cont'd)

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

Mode: Bluetooth

Measurement Distance: 3 Meters

Operating Frequency: 2402MHz

Channel: 0

	Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol. [H/V]	Field Strength [dBμV/m]	Field Strength [μV/m]	Margin [dB]
*	4804.00	-107.41	38.8	H	38.40	83.18	-15.60
	7206.00	-115.58	42.4	H	33.83	49.15	-31.67
	9608.00	-135.00	45.2	H	17.20	7.24	-48.30
*	12010.00	-135.00	46.6	H	18.63	8.54	-35.37

Table 2. Harmonic Measurements

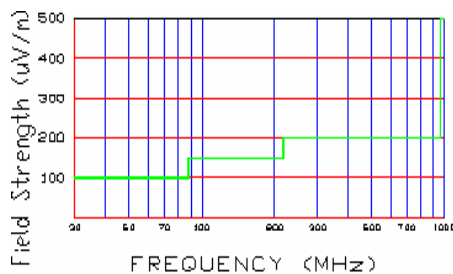


Figure 1. Radiated limits at 3 meters.

NOTES:

1. All harmonics in the restricted bands specified in §15.205 are below the limit shown in Table 6-4. (Note: * = Restricted Band measured frequency)
2. All harmonics/spurs are at least 20 dB below the highest emission in the authorized band using RBW = 100kHz
3. Average Measurements > 1GHz using RBW = 1MHz VBW = 10Hz
4. The peak emissions above 1GHz are not more than 20dB above the average limit.
5. The antenna is manipulated through typical positions, polarity and length during the tests.
6. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
7. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported.
8. < - 135 dBm are below the analyzer floor level.
9. Above 1GHz, the limit is 500 μV/m (54dBμ/m) at 3 meters radiated.

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Radiated Harmonic Measurements (Cont'd)

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

Mode: Bluetooth

Measurement Distance: 3 Meters

Operating Frequency: 2441MHz

Channel: 39

	Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol. [H/V]	Field Strength [dBμV/m]	Field Strength [μV/m]	Margin [dB]
*	4882.00	-107.16	38.95	H	38.79	87.00	-15.21
*	7323.00	-116.38	42.67	H	33.29	46.18	-20.71
	9764.00	-135.00	45.36	H	17.36	7.38	-48.61
*	12205.00	-135.00	46.68	H	18.68	8.59	-35.32

Table 3. Harmonic Measurements

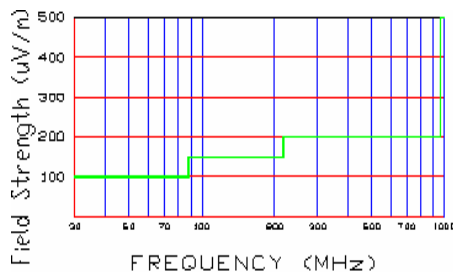


Figure 2. Radiated limits at 3 meters.

NOTES:

1. All harmonics in the restricted bands specified in §15.205 are below the limit shown in Table 6-4. (Note: * = Restricted Band measured frequency)
2. All harmonics/spurs are at least 20 dB below the highest emission in the authorized band using RBW = 100kHz
3. Average Measurements > 1GHz using RBW = 1MHz VBW = 10Hz
4. The peak emissions above 1GHz are not more than 20dB above the average limit.
5. The antenna is manipulated through typical positions, polarity and length during the tests.
6. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
7. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported.
8. < - 135 dBm are below the analyzer floor level.
9. Above 1GHz, the limit is 500 μV/m (54dBμ/m) at 3 meters radiated.

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Radiated Harmonic Measurements (Cont'd)

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

Mode: Bluetooth

Measurement Distance: 3 Meters

Operating Frequency: 2480MHz

Channel: 78

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol. [H/V]	Field Strength [dBμV/m]	Field Strength [μV/m]	Margin [dB]
* 4960.00	-106.75	39.19	H	39.44	93.76	-14.56
* 7440.00	-114.83	43.01	H	35.18	57.41	-18.82
9920.00	-135.00	45.67	H	17.67	7.65	-48.46
12400.00	-135.00	46.61	H	18.61	8.52	-35.39

Table 4. Harmonic Measurements

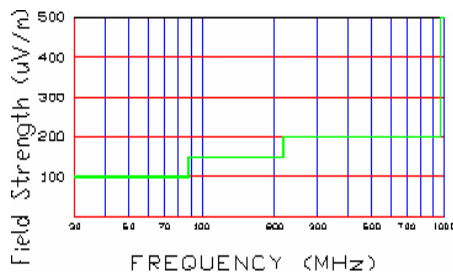


Figure 3. Radiated limits at 3 meters.

NOTES:

1. All harmonics in the restricted bands specified in §15.205 are below the limit shown in Table 6-4. (Note: * = Restricted Band measured frequency)
2. All harmonics/spurs are at least 20 dB below the highest emission in the authorized band using RBW = 100kHz
3. Average Measurements > 1GHz using RBW = 1MHz VBW = 10Hz
4. The peak emissions above 1GHz are not more than 20dB above the average limit.
5. The antenna is manipulated through typical positions, polarity and length during the tests.
6. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
7. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported.
8. < - 135 dBm are below the analyzer floor level.
9. Above 1GHz, the limit is 500 μV/m (54dBμ/m) at 3 meters radiated.

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Radiated Restricted Band Measurements

§15.205 / §15.209; RSS-210 (A8.5)

- Special attention is paid to the EUT's harmonic and spurious radiated emissions in the restricted bands of operations.

Mode: Bluetooth

Measurement Distance: 3 Meters

Operating Frequency: 2480MHz

Channel: 78

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol. [H/V]	Field Strength [dBμV/m]	Field Strength [μV/m]	Margin [dB]
2483.59	-114.53	30.81	H	23.28	14.59	-30.70
2487.62	-115.03	30.82	H	22.79	13.79	-31.19
2488.11	-115.23	30.83	H	22.60	13.49	-31.38
2491.24	-114.43	30.83	H	23.40	14.79	-30.58
2493.97	-114.93	30.85	H	22.92	14.00	-31.06
2494.17	-115.53	30.86	H	22.33	13.08	-31.65

Table 5. Radiated Restricted Band Measurements at 3-meters

NOTES:

- The antenna is manipulated through typical positions, polarity and length during the testing.
- The EUT is supplied with the minimal AC voltage or/and a new/fully re-charged battery.
- The spectrum is measured from 9kHz up to the 10th harmonic and the worst-case emissions are reported.
- Above 1 GHz the limit is 500μV/m.
- < -135 dBm is below the analyzer measurement floor level.
- The peak emissions above 1 GHz are not more than 20 dB above the average limit.

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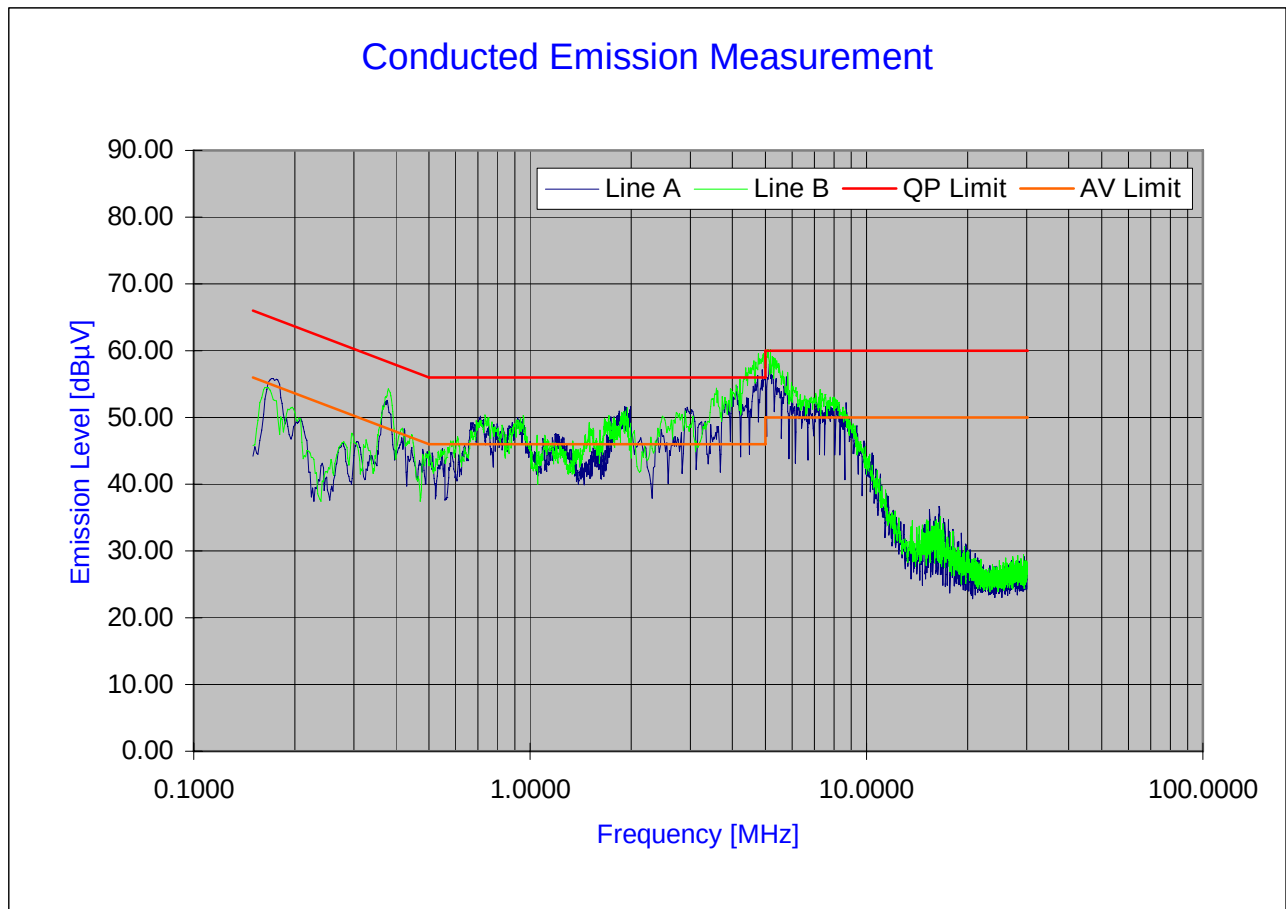


Line-Conducted Test Data
§15.207; RSS-Gen (7.2.2)

PCTEST Engineering Laboratory Inc.

Company : Samsung Electronics
Model Number : SCH-W531
FCC ID Code : A3LSCHW531
Standard : FCC Part 15B class B

Power Source : AC120V/60Hz
Tested Date : 11/21/2006
Note : Class II Permissive Change
Bluetooth ON



Plot 1. Line Conducted Plot with Bluetooth

Notes:

1. All Modes of operation were investigated and the worst-case emissions are reported.
2. The limit for Class B device(s) from 150kHz to 30MHz are Specified in EN55022.
3. Line A = Phase; Line B = Neutral
4. Traces shown in plot are made using a peak detector.
5. Deviations to the Specifications: None.

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Line-Conducted Test Data §15.207; RSS-Gen (7.2.2)

Nb.	Line	Frequency [MHz]	Factor [dB]	QP [dBμV]	Limit [dBμV]	Margin [dB]	Average [dBμV]	Limit [dBμV]	Margin [dB]
1	A	1.824	7.38	47.08	56.00	-8.92	35.65	46.00	-10.35
2	A	1.908	7.38	46.94	56.00	-9.06	35.89	46.00	-10.11
3	A	1.936	7.39	47.07	56.00	-8.93	35.82	46.00	-10.18
4	A	1.975	7.39	46.15	56.00	-9.85	35.02	46.00	-10.98
5	A	2.931	7.44	47.45	56.00	-8.55	36.18	46.00	-9.82
6	A	3.848	7.48	49.01	56.00	-6.99	38.07	46.00	-7.93
7	A	4.043	7.48	49.46	56.00	-6.54	38.26	46.00	-7.74
8	A	4.913	7.51	52.94	56.00	-3.06	41.69	46.00	-4.31
9	A	5.133	7.51	52.86	60.00	-7.14	41.75	50.00	-8.25
10	A	5.713	7.53	49.91	60.00	-10.09	38.50	50.00	-11.50
11	B	0.371	7.51	52.44	58.48	-6.04	42.90	48.48	-5.58
12	B	1.913	7.38	40.97	56.00	-15.03	26.92	46.00	-19.08
13	B	1.926	7.39	43.22	56.00	-12.78	28.02	46.00	-17.98
14	B	2.797	7.43	42.54	56.00	-13.46	31.29	46.00	-14.71
15	B	3.547	7.46	48.17	56.00	-7.83	34.79	46.00	-11.21
16	B	4.035	7.48	47.93	56.00	-8.07	36.44	46.00	-9.56
17	B	4.154	7.49	50.33	56.00	-5.67	37.72	46.00	-8.28
18	B	4.979	7.51	53.98	56.00	-2.02	42.65	46.00	-3.35
19	B	5.330	7.52	52.95	60.00	-7.05	40.93	50.00	-9.07
20	B	5.883	7.53	49.06	60.00	-10.94	36.96	50.00	-13.04

Table 6. Line Conducted Data with Bluetooth

Notes:

1. All Modes of operation were investigated and the worst-case emissions are reported.
2. The limit for Class B device(s) from 150kHz to 30MHz are Specified in EN55022.
3. Line A = Phase; Line B = Neutral
4. Traces shown in plot are made using a peak detector.
5. Deviations to the Specifications: None.

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