



# PCTEST ENGINEERING LABORATORY, INC.

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## CERTIFICATE OF COMPLIANCE FCC PART 15.247 Certification

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

**Date of Testing:**  
October 10, 2006  
**Test Site/Location:**  
PCTEST Lab. Columbia, MD, USA  
**Test Report Serial No.:**  
0610100883

<b>FCC ID:</b>	<b>A3LSCHU520</b>
<b>APPLICANT:</b>	<b>Samsung Electronics, Co. Ltd.</b>

**Model(s):** SCH-U520  
**EUT Type:** Dual-Band CDMA Phone with Bluetooth  
**Max. RF Output Power:** 0.0008 mW (0.88 dBm) Conducted  
**Frequency Range:** 2402 – 2480MHz (Bluetooth for US)  
**FCC Classification:** Part 15 Subpart C (15.247)  
**FCC Rule Part(s):** Part 15 Subpart C (15.247)  
**Class II Permissive Change:** Please see attached.

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: A3LSCHU520		FCC Pt. 15.247 BLUETOOTH SUPPLEMENTAL DATA		Reviewed by: Quality Manager
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## **Radiated Restricted Band Measurements**

### **§15.205 / §15.209**


Special attention is made for the EUT's harmonic and spurious radiated emission in the restricted bands of operations. The EUT was tested from 9kHz and up to the 10<sup>th</sup> 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 A-4 per Section 15.209.

Frequency	Field Strength [ $\mu$ 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 A-4. Radiated Limits**

## **TEST MEASUREMENT EQUIPMENT**

Agilent E4448A	PSA Spectrum Analyzer 3Hz - 50GHz
HP 8566B	Spectrum Analyzer 100 Hz - 22GHz
HP 83017A	Microwave Preamplifier 40dB Gain (0.5 - 26.5GHz)
HP E8257D	PSG Signal Generator (250kHz - 20GHz)
EMCO 3115	Horn Antenna (1 - 18GHz)
EMCO 3116	Horn Antenna (18GHz - 40GHz)
HP 8493B	10dB Attenuator
MicroCoax Cables	Low Loss Microwave Cables (1 - 26.5GHz)

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## Radiated Restricted Band Measurements (Cont'd)

§15.205 / §15.209

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]
2484.20	-109.33	30.81	H	28.48	26.55	-25.50
2485.30	-109.83	30.82	H	27.99	25.09	-25.99
2487.40	-109.53	30.83	H	28.30	26.00	-25.68
2489.30	-109.63	30.83	H	28.20	25.70	-25.78
2490.40	-109.53	30.85	H	28.32	26.06	-25.66
2494.10	-109.33	30.86	H	28.53	26.70	-25.45

**Table A-8. Radiated Restricted Band Measurements at 3-meters**

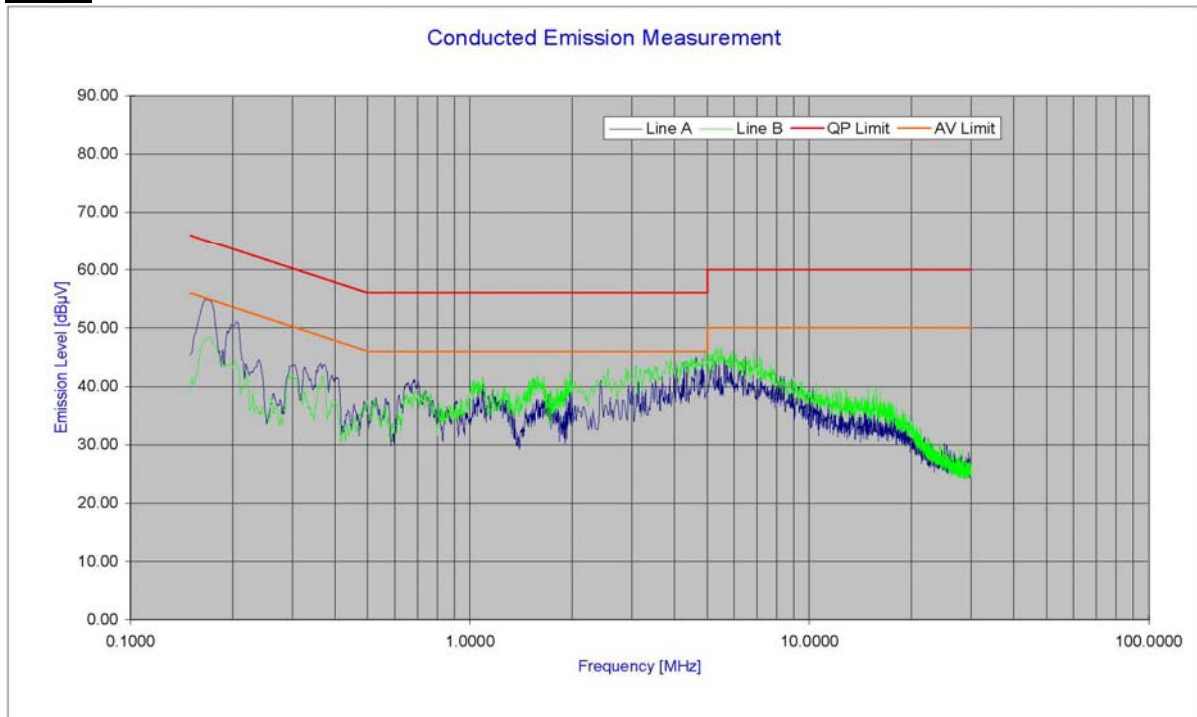
**NOTES:**

1. The antenna is manipulated through typical positions, polarity and length during the testing.
2. The EUT is supplied with the minimal AC voltage or/and a new/fully re-charged battery.
3. The spectrum is measured from 9kHz up to the 10<sup>th</sup> harmonic and the worst-case emissions are reported.
4. Above 1 GHz the limit is 500μV/m.
5. < -135 dBm is below the analyzer measurement floor level.
6. 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



No.	Line	Frequency [MHz]	Factor [dB]	QP [dBμV]	Limit [dBμV]	Margin [dB]	Average [dBμV]	Limit [dBμV]	Margin [dB]
1	A	0.170	8.08	52.05	64.96	-12.91	37.55	54.96	-17.41
2	A	4.601	7.50	36.83	56.00	-19.17	28.99	46.00	-17.01
3	A	4.202	7.49	35.59	56.00	-20.41	27.79	46.00	-18.21
4	A	4.037	7.48	36.15	56.00	-19.85	28.12	46.00	-17.88
5	A	0.203	7.92	46.26	63.48	-17.22	33.99	53.48	-19.49
6	A	3.682	7.47	34.57	56.00	-21.43	27.01	46.00	-18.99
7	A	0.372	7.51	41.32	58.45	-17.13	27.31	48.45	-21.14
8	A	3.104	7.45	33.75	56.00	-22.25	26.01	46.00	-19.99
9	A	0.664	7.38	37.92	56.00	-18.08	25.48	46.00	-20.52
10	A	3.521	7.46	35.48	56.00	-20.52	26.82	46.00	-19.18
11	B	4.998	7.51	39.92	56.00	-16.08	30.57	46.00	-15.43
12	B	3.981	7.48	38.91	56.00	-17.09	29.44	46.00	-16.56
13	B	4.490	7.50	39.63	56.00	-16.37	30.38	46.00	-15.62
14	B	3.818	7.47	38.85	56.00	-17.15	29.36	46.00	-16.64
15	B	4.071	7.48	39.07	56.00	-16.93	29.75	46.00	-16.25
16	B	3.028	7.44	37.49	56.00	-18.51	27.00	46.00	-19.00
17	B	3.448	7.46	37.74	56.00	-18.26	28.15	46.00	-17.85
18	B	3.200	7.45	36.82	56.00	-19.18	27.47	46.00	-18.53
19	B	1.972	7.39	36.34	56.00	-19.66	26.76	46.00	-19.24
20	B	5.381	7.52	40.12	60.00	-19.88	30.75	50.00	-19.25

### 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. Deviations to the Specifications: None.

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## Bluetooth Power Measurements

Frequency [MHz]	Channel No.	Conducted Power	
		[dBm]	[mW]
2402	0	-0.177	0.960
2441	39	0.093	1.022
2480	78	0.053	1.012

## Bluetooth Radiated Harmonics

**Note: Duty Cycle Correction Factor = 0 dB**

### Channel 0

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol. [H/V]	Field Strength [dBμV/m]	Field Strength [μV/m]	Margin [dB]
* 4804.00	-111.41	38.8	H	34.40	52.48	-19.60
7206.00	-135.00	42.4	H	14.41	5.25	-62.79
9608.00	-135.00	45.2	H	17.20	7.24	-60.00
* 12010.00	-135.00	46.6	H	18.63	8.54	-35.37

### Channel 39

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol. [H/V]	Field Strength [dBμV/m]	Field Strength [μV/m]	Margin [dB]
* 4882.00	-111.06	38.95	H	34.89	55.53	-19.11
* 7323.00	-135.00	42.67	H	14.67	5.41	-39.33
9764.00	-135.00	45.36	H	17.36	7.38	-60.11
* 12205.00	-135.00	46.68	H	18.68	8.59	-35.32

### Channel 78

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol. [H/V]	Field Strength [dBμV/m]	Field Strength [μV/m]	Margin [dB]
* 4960.00	-110.95	39.19	H	35.24	57.81	-18.76
* 7440.00	-135.00	43.01	H	15.01	5.63	-38.99
9920.00	-135.00	45.67	H	17.67	7.65	-59.76
12400.00	-135.00	46.61	H	18.61	8.52	-35.39