



PCTEST ENGINEERING LABORATORY, INC.

6660-B Dobbin Road, Columbia, MD 21045 USA

Tel. 410.290.6652 / Fax 410.290.6554

<http://www.pctestlab.com>



CERTIFICATE OF COMPLIANCE FCC Part 22 & 24 Class II Permissive Change

Applicant Name:

Samsung Electronics, Co. Ltd.
18600 Broadwick St.
Rancho Dominguez, CA 90220
United States

Date of Testing:

February 11, 2008

Test Site/Location:

PCTEST Lab., Columbia, MD, USA

Test Report Serial No.:

0802060170.A3L

FCC ID:

A3LSGHA827

APPLICANT:

SAMSUNG ELECTRONICS, CO. LTD.

Application Type:

Class II Permissive Change

FCC Classification:

PCS Licensed Transmitter Held to Ear (PCE)

FCC Rule Part(s):

§2; §22(H), §24(E)

EUT Type:

850/1900 GSM/WCDMA/EDGE Phone with Bluetooth

Model(s):

SGH-A827

Tx Frequency Range:

824.20 - 848.80MHz (Cell. GSM) / 1850.20 - 1909.80MHz (PCS GSM)
826.40 - 846.60MHz (Cell. WCDMA) / 1852.4 - 1907.6MHz (PCS WCDMA)
0.551 W ERP Cell. GSM (27.41 dBm) / 1.626 W EIRP PCS GSM (32.11 dBm)
0.125 W ERP Cell. WCDMA (20.98 dBm) /
0.327 W EIRP PCS WCDMA (25.14 dBm)
0.533 W ERP EDGE850 (27.27 dBm) 1.151 W EIRP EDGE1900 (30.61 dBm)

Emission Designator(s):

250KGXW (Cellular GSM), 250KGXW (PCS GSM)
245KG7W (EDGE850), 248KG7W (EDGE1900)
4M15F9W (Cellular WCDMA), 4M16F9W (PCS WCDMA)

Test Device Serial No.:

identical prototype [S/N: FF-016-A]

Class II Perm. Change:

Please see FCC Change Document

Original Grant Date:

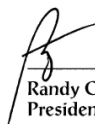
1/10/08

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 §2.947.

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: Power output listed is ERP for Part 22 and EIRP for Part 24.

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: A3LSGHA827		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth		Page 1 of 26

TABLE OF CONTENTS

FCC PART 22 & 24 MEASUREMENT REPORT	3
1.0 INTRODUCTION	4
1.1 SCOPE	4
1.2 TESTING FACILITY	4
2.0 PRODUCT INFORMATION	5
2.1 EQUIPMENT DESCRIPTION	5
2.2 EMI SUPPRESSION DEVICE(S)/MODIFICATIONS	5
2.3 LABELING REQUIREMENTS	5
3.0 DESCRIPTION OF TESTS	6
3.1 MEASUREMENT PROCEDURE	6
3.2 CELLULAR - BASE FREQUENCY BLOCKS	6
3.3 CELLULAR - MOBILE FREQUENCY BLOCKS	6
3.4 PCS - BASE FREQUENCY BLOCKS	7
3.5 PCS - MOBILE FREQUENCY BLOCKS	7
3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL	7
3.7 RADIATED SPURIOUS AND HARMONIC EMISSIONS	7
4.0 TEST EQUIPMENT CALIBRATION DATA	8
5.0 SAMPLE CALCULATIONS	9
6.0 TEST RESULTS	10
6.1 SUMMARY	10
6.2 CONDUCTED OUTPUT POWER	11
6.3 EFFECTIVE RADIATED POWER OUTPUT DATA	12
6.4 EQUIVALENT ISOTROPIC RADIATED POWER OUTPUT DATA	13
6.5 CELLULAR GSM RADIATED MEASUREMENTS	14
6.6 CELLULAR WCDMA RADIATED MEASUREMENTS	17
6.7 PCS GSM RADIATED MEASUREMENTS	20
6.8 PCS WCDMA RADIATED MEASUREMENTS	23
7.0 CONCLUSION	26

FCC ID: A3LSGHA827		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth		Page 2 of 26



MEASUREMENT REPORT

FCC Part 22 & 24



§2.1033 General Information

APPLICANT: Samsung Electronics, Co. Ltd.
APPLICANT ADDRESS: 18600 Broadwick St.
 Rancho Dominguez, CA 90220
TEST SITE: PCTEST ENGINEERING LABORATORY, INC.
TEST SITE ADDRESS: 6660-B Dobbin Road, Columbia, MD 21045 USA
FCC RULE PART(S): §2; §22(H), §24(E)
BASE MODEL : SGH-A827
FCC ID: A3LSGHA827
FCC CLASSIFICATION: PCS Licensed Transmitter Held to Ear (PCE)
EMISSION DESIGNATOR(S): 250KGXW (Cellular GSM), 250KGXW (PCS GSM)
 245KG7W (EDGE850), 248KG7W (EDGE1900)
 4M15F9W (Cellular WCDMA), 4M16F9W (PCS WCDMA)
MODE: GSM/EDGE/WCDMA
FREQUENCY TOLERANCE: $\pm 0.00025\%$ (2.5 ppm)
Test Device Serial No.: FF-016-A ☐ Production ☒ Pre-Production ☐ Engineering
DATE(S) OF TEST: February 11, 2008
TEST REPORT S/N: 0802060170.A3L

Test Facility / Accreditations

Measurements were performed at PCTEST Engineering Lab located in Columbia, MD 21045, U.S.A.



- PCTEST facility is an FCC registered (PCTEST Reg. No. 90864) test facility with the site description report on file and has met all the requirements specified in Section 2.948 of the FCC Rules and Industry Canada (IC-2451).
- PCTEST Lab is accredited to ISO 17025 by U.S. National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP Lab code: 100431-0) in EMC, FCC and Telecommunications.
- PCTEST Lab is accredited to ISO 17025:2005 by the American Association for Laboratory Accreditation (A2LA) in Specific Absorption Rate (SAR) testing, Hearing Aid Compatibility (HAC) testing, CTIA Test Plans, and wireless testing for FCC and Industry Canada Rules.
- PCTEST Lab is a recognized U.S. Conformity Assessment Body (CAB) in EMC and R&TTE (n.b. 0982) under the U.S.-EU Mutual Recognition Agreement (MRA).
- PCTEST TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC Guide 65 by the American National Standards Institute (ANSI) in all scopes of FCC Rules and Industry Canada Standards (RSS).
- PCTEST facility is an IC registered (IC-2451) test laboratory with the site description on file at Industry Canada.
- PCTEST is a CTIA Authorized Test Laboratory (CATL) for AMPS, CDMA, and EvDO wireless devices and for Over-the-Air (OTA) Antenna Performance testing for AMPS, CDMA, GSM, GPRS, EGPRS, UMTS (W-CDMA), CDMA 1xEVDO, and CDMA 1xRTT.

FCC ID: A3LSGHA827		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	 Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth	Page 3 of 26

1.0 INTRODUCTION

1.1 Scope

Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission.

1.2 Testing Facility

The map below shows the location of the PCTEST LABORATORY, its proximity to the FCC Laboratory, the Columbia vicinity are, the Baltimore-Washington Intern't'l (BWI) airport, the city of Baltimore and the Washington, DC area. (see Figure 1-1).

These measurement tests were conducted at the PCTEST Engineering Laboratory, Inc. facility in New Concept Business Park, Guilford Industrial Park, Columbia, Maryland. The site address is 6660-B Dobbin Road, Columbia, MD 21045. The test site is one of the highest points in the Columbia area with an elevation of 390 feet above mean sea level. The site coordinates are 39° 11'15" N latitude and 76° 49'38" W longitude. The facility is 1.5 miles North of the FCC laboratory, and the ambient signal and ambient signal strength are approximately equal to those of the FCC laboratory. There are no FM or TV transmitters within 15 miles of the site. The detailed description of the measurement facility was found to be in compliance with the requirements of § 2.948 according to ANSI C63.4-2003 on January 27, 2006 and Industry Canada.

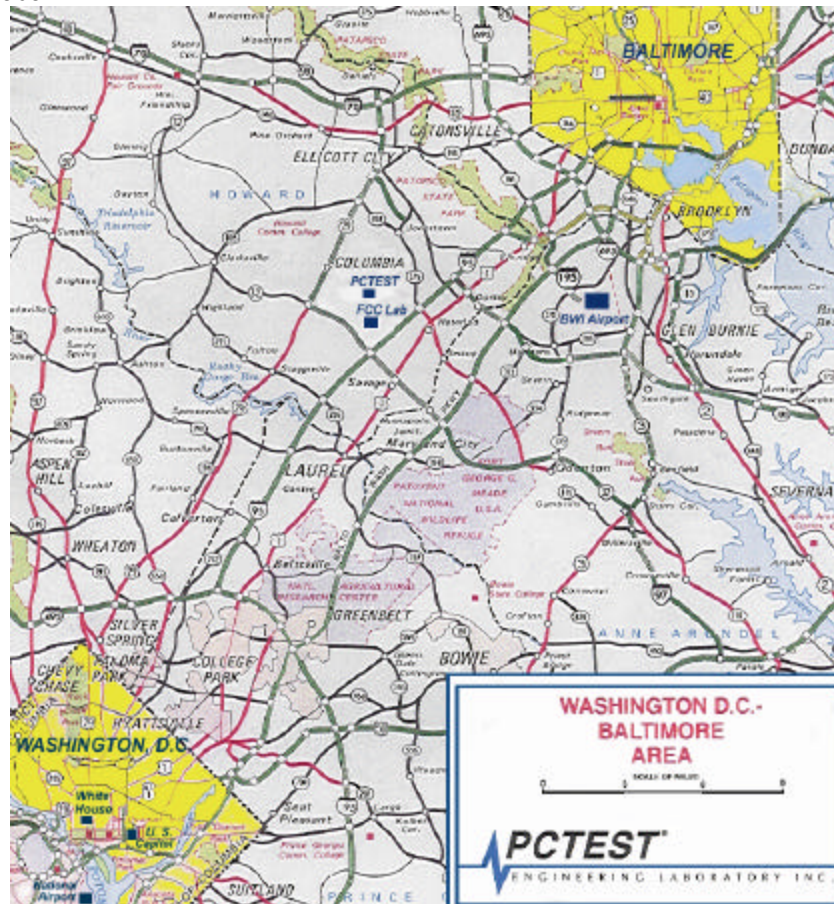


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

FCC ID: A3LSGHA827	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth		Page 4 of 26

2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth FCC ID: A3LSGHA827**. The EUT consisted of the following component(s):

Trade Name / Base Model	FCC ID	Description
Samsung / Model: SGH-A827	A3LSGHA827	850/1900 GSM/WCDMA/EDGE Phone with Bluetooth

Table 2-1. EUT Equipment Description

2.2 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and no modifications were made during testing.

2.3 Labeling Requirements

Per 2.925

The FCC identifier shall be permanently affixed to the equipment and shall be readily visible to the purchaser at the time of purchase.

Per 15.19; Docket 95-19

In addition to this requirement, a device subject to certification shall be labeled as follows:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The label shall be permanently affixed at a conspicuous location on the device; instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase. However, when the device is so small wherein placement of the label with specified statement is not practical, only the trade name and FCC ID must be displayed on the device per Section 15.19(b)(2).

Please see attachment for FCC ID label and label location.

FCC ID: A3LSGHA827		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth		Page 5 of 26

3.0 DESCRIPTION OF TESTS

3.1 Measurement Procedure

The radiated spurious measurements were made outdoors at a 3-meter test range (see Figure 3-1). The equipment under test is placed on a wooden turntable 3-meters from the receive antenna. The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic antenna are taken into consideration.

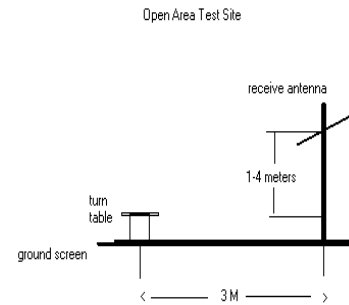
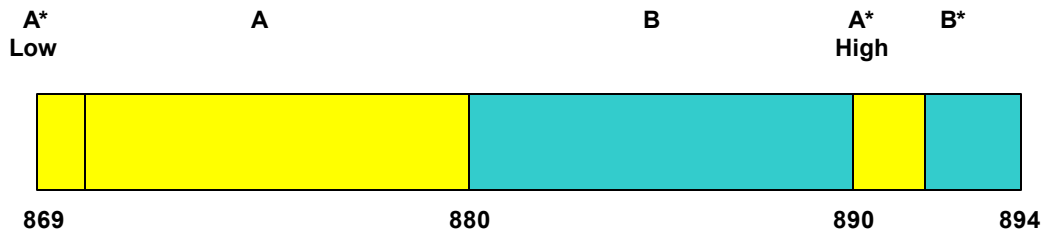


Figure 3-1. Diagram of 3-meter outdoor test range

Deviation from Measurement Procedure.....None

3.2 Cellular - Base Frequency Blocks



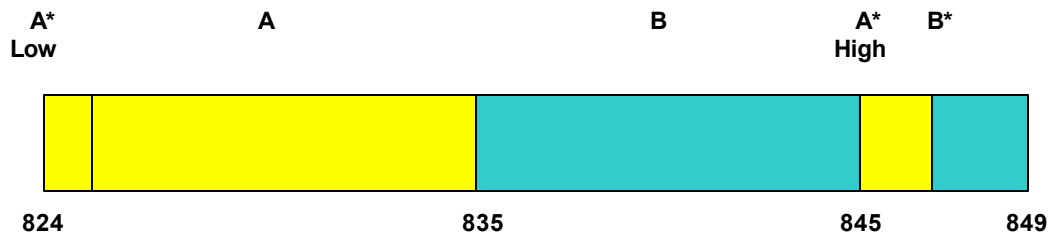
BLOCK 1: 869 – 880 MHz (A* Low + A)

BLOCK 3: 890 – 891.5 MHz (A* High)

BLOCK 2: 880 – 890 MHz (B)

BLOCK 4: 891.5 – 894 MHz (B*)

3.3 Cellular - Mobile Frequency Blocks



BLOCK 1: 824 – 835 MHz (A* Low + A)

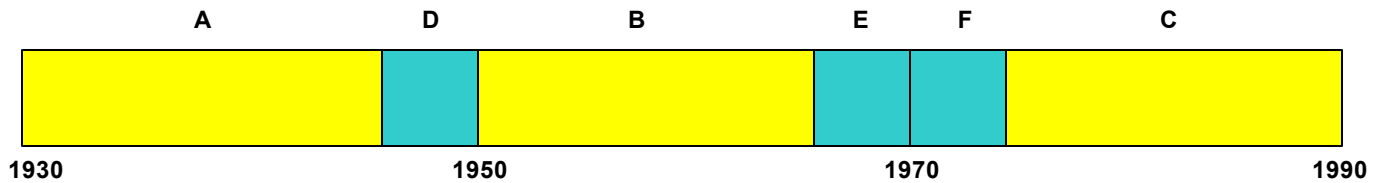
BLOCK 3: 845 – 846.5 MHz (A* High)

BLOCK 2: 835 – 845 MHz (B)

BLOCK 4: 846.5 – 849 MHz (B*)

FCC ID: A3LSGHA827	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth		Page 6 of 26

3.4 PCS - Base Frequency Blocks



BLOCK 1: 1930 – 1945 MHz (A)

BLOCK 4: 1965 – 1970 MHz (E)

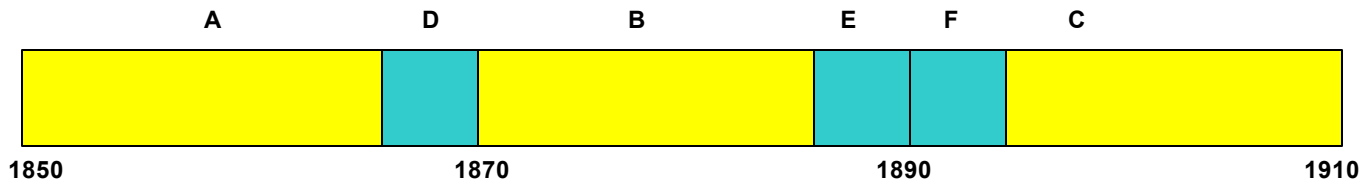
BLOCK 2: 1945 – 1950 MHz (D)

BLOCK 5: 1970 – 1975 MHz (F)

BLOCK 3: 1950 – 1965 MHz (B)

BLOCK 6: 1975 – 1990 MHz (C)

3.5 PCS - Mobile Frequency Blocks



BLOCK 1: 1850 – 1865 MHz (A)

BLOCK 4: 1885 – 1890 MHz (E)

BLOCK 2: 1865 – 1870 MHz (D)

BLOCK 5: 1890 – 1895 MHz (F)

BLOCK 3: 1870 – 1885 MHz (B)

BLOCK 6: 1895 – 1910 MHz (C)

3.6 Spurious and Harmonic Emissions at Antenna Terminal

§2.1051, 22.917(a), 24.238(a)

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic.

3.7 Radiated Spurious and Harmonic Emissions

§2.1053, 22.917(a), 24.238(a)

Spurious and harmonic radiated emissions are measured outdoors at our 3-meter test range. The equipment under test is placed on a wooden turntable 3-meters from the receive antenna. The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive spectrum analyzer reading. This level is recorded. For readings above 1 GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration. This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band.

FCC ID: A3LSGHA827		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth		Page 7 of 26

4.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST).

Manufacturer	Model / Equipment	Calibration Date	Cal Interval	Calibration Due	Serial No.
Agilent	E4407B ESA Spectrum Analyzer	04/29/07	Annual	04/28/08	US39210313
Agilent	E5515C Wireless Communications Test Set	08/31/07	Biennial	08/30/09	GB41450275
Agilent	E5515C Wireless Communications Test Set	10/06/06	Biennial	10/05/08	GB43193972
Agilent	E5515C Wireless Communications Test Set	06/08/07	Biennial	06/07/09	GB46310798
EMCO	Model 3115 (1-18GHz) Horn Antenna	10/04/07	Biennial	10/03/09	9205-3874
EMCO	Model 3115 (1-18GHz) Horn Antenna	09/24/07	Biennial	09/23/09	9704-5182
Rohde & Schwarz	NRVS Power Meter	07/03/07	Biennial	07/02/09	835360/079
Rohde & Schwarz	NRV-Z53 Power Sensor	07/03/07	Biennial	07/02/09	846076/007
Rohde & Schwarz	CMU200 Base Station Simulator	12/06/07	Annual	12/05/08	107826
Rohde & Schwarz	CMU200 Base Station Simulator	09/07/07	Annual	09/06/08	833855/010
Rohde & Schwarz	CMU200 Base Station Simulator	05/24/07	Annual	05/23/08	836371/079
Agilent	E8257D (250kHz-20GHz) Signal Generator	03/08/07	Biennial	03/07/09	MY45470194
Agilent	HP 8449B (1-26.5GHz) Pre-Amplifier	12/13/07	Annual	12/12/08	3008A00985
Agilent	HP 8449B (1-26.5GHz) Pre-Amplifier	12/13/07	Annual	12/12/08	3008A00985
Agilent	HP 11713A Attenuation/Switch Driver	12/13/07	Annual	12/12/08	3439A02645
Agilent	HP 8566B Opt. 462 Impulse Bandwidth	12/13/07	Annual	12/12/08	3701A22204
EMCO	Dipole Pair	09/20/06	Biennial	09/19/08	23951
SOLAR	8012-50 LISN (2)	11/08/07	Biennial	11/07/09	0310233, 0310234
K & L	11SH10 Band Pass Filter	N/A	Annual	N/A	1300/4000
K & L	11SH10 Band Pass Filter	N/A	Annual	N/A	4000/12000
Agilent	HP 8495A (0-70dB) DC-4GHz Attenuator	N/A		N/A	N/A
-	263-10dB (DC-18GHz) 10 dB Attenuator	N/A		N/A	N/A
Pasternack	PE2208-6 Bidirectional Coupler	N/A		N/A	N/A
-	No.165 (30MHz - 1000MHz) RG58 Coax Cable	N/A		N/A	N/A
-	No.166 (1000-26500MHz) Microwave RF Cable	N/A		N/A	N/A
-	No.167 (100kHz - 100MHz) RG58 Coax Cable	N/A		N/A	N/A
Rohde & Schwarz	NRVD Dual Channel Power Meter	12/11/06	Biennial	12/10/08	101695
Rohde & Schwarz	NRV-Z33 Peak Power Sensor (1mW-20W)	11/28/06	Biennial	11/27/08	100004

Table 4-1. Test Equipment

FCC ID: A3LSGHA827		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth	Page 8 of 26	

5.0 SAMPLE CALCULATIONS

GSM Emission Designator

Emission Designator = 250KGXW

GSM BW = 250 kHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

WCDMA Emission Designator

Emission Designator = 4M16F9W

WCDMA BW = 4.16 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data) (Measured at the 99.75% power bandwidth)

Spurious Radiated Emission - PCS Band

Example: GSM Channel 512 PCS Mode 2nd Harmonic (3700.40 MHz)

The receive analyzer reading at 3 meters with the EUT on the turntable was -81.0 dBm. The gain of the substituted antenna is 8.1 dBi. The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of -81.0 dBm on the receive analyzer. The loss of the cable between the signal generator and the terminals of the substituted antenna is 2.0 dB at 3700.40 MHz. So 6.1 dB is added to the signal generator reading of -30.9 dBm yielding -24.80 dBm. The fundamental EIRP was 25.501 dBm so this harmonic was 25.501 dBm - (-24.80) = 50.3 dBc.

FCC ID: A3LSGHA827		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth	Page 9 of 26	

6.0 TEST RESULTS

6.1 Summary

Company Name: Samsung Electronics, Co. Ltd.
 FCC ID: A3LSGHA827
 FCC Classification: PCS Licensed Transmitter Held to Ear (PCE)
 Mode(s): GSM/EDGE/WCDMA

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
<u>TRANSMITTER MODE (TX)</u>					
2.1046	GSM/WCDMA Conducted Output Power	N/A	Conducted	PASS	Section 6.2
22.913(a)(2)	Effective Radiated Power	< 7 Watts max. ERP (<6.3 Watts max. ERP (IC))	RADIATED	PASS	Section 6.3
24.232(c)	Equivalent Isotropic Radiated Power	< 2 Watts max. EIRP		PASS	Section 6.4
2.1053, 22.917(a), 24.238(a)	Undesirable Emissions	< 43 + log ₁₀ (P[Watts]) for all out-of-band emissions		PASS	Sections 6.5, 6.6, 6.7, 6.8
<u>RECEIVER MODE (RX) / DIGITAL EMISSIONS</u>					
15.107	AC Conducted Emissions 150kHz – 30MHz	< FCC 15.107 limits or < RSS-Gen table 2 limits	LINE CONDUCTED	PASS	Pt. 15B Test Report
15.109	General Field Strength Limits (Restricted Bands and Radiated Emissions Limits)	< FCC 15.109 limits or < RSS-210 table 3 limits	RADIATED (30MHz-1GHz) (1-25 GHz)	PASS	Pt. 15B Test Report
<u>RF EXPOSURE (SAR)</u>					
2.1091 / 2.1093	SAR Test	1.6 W/kg (SAR Limit)	SAR	PASS	SAR Report

Table 6-1. Summary of Test Results

FCC ID: A3LSGHA827		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth	Page 10 of 26	

6.2 Conducted Output Power

§2.1046

A base station simulator (Rhode and Schwartz Model: CMU200) was used to establish communication with the **Samsung 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth FCC ID: A3LSGHA827**. The base station simulator parameters were set to produce the maximum power from the EUT. This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. The GSM and WCDMA conducted powers are reported below, respectively.

Band	Channel	GSM		GPRS		EDGE	
		Power Control Level	Conducted Power	Uplink / Downlink Slots Used	Conducted Power	Uplink / Downlink Slots Used	Conducted Power
			[dBm]		[dBm]		[dBm]
Cellular	128	5	31.60	1/1	31.70	1/1	26.23
	190	5	31.80	1/1	31.80	1/1	26.28
	251	5	31.70	1/1	31.70	1/1	26.17
PCS	512	0	28.70	1/1	28.70	1/1	25.19
	661	0	28.40	1/1	28.40	1/1	25.12
	810	0	28.30	1/1	28.40	1/1	25.06

Table 6-2. GSM Conducted Output Powers

Band	Channel	HSDPA Inactive		HSDPA Active	
		12.2 kbps RMC	12.2 kbps AMR	12.2 kbps RMC	12.2 kbps AMR
		[dBm]	[dBm]	[dBm]	[dBm]
Cellular	4132	22.84	22.63	22.69	22.56
	4183	22.95	22.81	22.89	22.78
	4233	22.82	22.74	22.76	22.72
PCS	9262	22.03	21.95	21.92	21.88
	9400	22.06	22.02	21.94	21.85
	9538	20.94	20.89	20.85	20.73

Table 6-3. WCDMA Conducted Output Powers

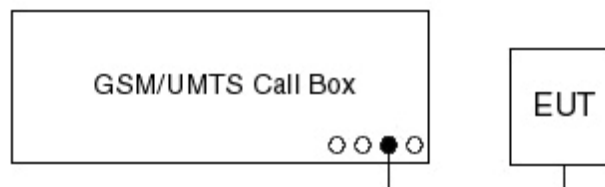


Figure 6-1. GSM/WCDMA Conducted Power Test Setup Diagram

FCC ID: A3LSGHA827		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth	Page 11 of 26	

6.3 Effective Radiated Power Output Data

§22.913(a)(2)

POWER: PCL "5" (Cellular GSM Mode)

Frequency [MHz]	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBd]	Pol [H/V]	ERP [dBm]	ERP [Watts]	Battery Type
824.20	-11.280	27.02	0.00	V	27.02	0.504	Standard
836.60	-10.890	27.41	0.00	V	27.41	0.551	Standard
848.80	-11.340	26.96	0.00	V	26.96	0.497	Standard
EDGE	-11.030	27.27	0.00	V	27.27	0.533	Standard

Table 6-4. Effective Radiated Power Output Data (GSM)

POWER: All "1" bits (Cellular WCDMA Mode)

Frequency [MHz]	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBd]	Pol [H/V]	ERP [dBm]	ERP [Watts]	Battery Type
826.40	-17.990	20.31	0.00	H	20.31	0.107	Standard
836.60	-17.890	20.41	0.00	H	20.41	0.110	Standard
846.60	-17.320	20.98	0.00	H	20.98	0.125	Standard

Table 6-5. Effective Radiated Power Output Data (WCDMA)

NOTES:

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the dipole is measured. The ERP is recorded.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: A3LSGHA827		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth		Page 12 of 26

6.4 Equivalent Isotropic Radiated Power Output Data

§24.232(c)

POWER: PCL "0" (PCS GSM Mode)

Frequency [MHz]	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]	Battery Type
1850.20	-9.570	24.11	8.00	H	32.11	1.626	Standard
1880.00	-12.560	21.12	8.00	H	29.12	0.817	Standard
1909.80	-11.890	21.79	8.00	H	29.79	0.953	Standard
EDGE	-11.070	22.61	8.00	H	30.61	1.151	Standard

Table 6-6. Equivalent Isotropic Radiated Power Output Data (GSM)

POWER: All "1" bits (PCS WCDMA Mode)

Frequency [MHz]	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]	Battery Type
1852.40	-17.120	16.56	8.00	H	24.56	0.286	Standard
1880.00	-16.540	17.14	8.00	H	25.14	0.327	Standard
1907.60	-17.890	15.79	8.00	H	23.79	0.239	Standard

Table 6-7. Equivalent Isotropic Radiated Power Output Data (WCDMA)

NOTES:

Equivalent Isotropic Radiated Power Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. A Horn antenna was substituted in place of the EUT. This Horn antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the Horn antenna is measured. The difference between the gain of the horn and an isotropic antenna is taken into consideration and the EIRP is recorded.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: A3LSGHA827		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth	Page 13 of 26	

6.5 Cellular GSM Radiated Measurements

§2.1053, 22.917(a)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 824.20 MHz
 CHANNEL: 128
 MEASURED OUTPUT POWER: 27.410 dBm = 0.551 W
 MODULATION SIGNAL: GSM (Internal)
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W)$ 40.41 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1648.40	-41.36	6.08	-35.27	H	62.7
2472.60	-37.39	6.53	-30.86	H	58.3
3296.80	-48.26	6.87	-41.39	H	68.8
4121.00	-47.21	7.21	-40.01	H	67.4
4945.20	-48.82	8.37	-40.45	H	67.9

Table 6-8. Radiated Spurious Data (Cellular GSM Mode – Ch. 128)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: A3LSGHA827		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth	Page 14 of 26	

Cellular GSM Radiated Measurements (Cont'd)

§2.1053, 22.917(a)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 836.60 MHz
 CHANNEL: 190
 MEASURED OUTPUT POWER: 27.410 dBm = 0.551 W
 MODULATION SIGNAL: GSM (Internal)
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W)$ 40.41 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1673.20	-43.23	6.09	-37.14	H	64.5
2509.80	-43.01	6.55	-36.45	H	63.9
3346.40	-47.72	6.89	-40.83	H	68.2
4183.00	-41.20	7.43	-33.77	H	61.2
5019.60	-42.17	8.35	-33.82	H	61.2

Table 6-9. Radiated Spurious Data (Cellular GSM Mode – Ch. 190)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: A3LSGHA827		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth	Page 15 of 26	

Cellular GSM Radiated Measurements (Cont'd)

§2.1053, 22.917(a)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 848.80 MHz
 CHANNEL: 251
 MEASURED OUTPUT POWER: 27.410 dBm = 0.551 W
 MODULATION SIGNAL: GSM (Internal)
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W)$ 40.41 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1697.60	-44.30	6.09	-38.21	H	65.6
2546.40	-41.36	6.57	-34.79	H	62.2
3395.20	-45.19	6.91	-38.28	H	65.7
4244.00	-36.79	7.65	-29.13	H	56.5
5092.80	-39.39	8.33	-31.06	H	58.5

Table 6-10. Radiated Spurious Data (Cellular GSM Mode – Ch. 251)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method
according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: A3LSGHA827		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth	Page 16 of 26	

6.6 Cellular WCDMA Radiated Measurements

§2.1053, 22.917(a)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 826.40 MHz
 CHANNEL: 4132
 MEASURED OUTPUT POWER: 20.980 dBm = 0.125 W
 MODULATION SIGNAL: WCDMA (Internal)
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W)$ 33.98 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1652.80	-52.73	6.08	-46.65	H	67.6
2479.20	-44.05	6.54	-37.52	H	58.5
3305.60	-37.23	6.88	-30.36	H	51.3
4132.00	-54.65	7.25	-47.40	H	68.4
4958.40	-91.82	8.37	-83.45	H	104.4

Table 6-11. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4132)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method
 according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: A3LSGHA827		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth		Page 17 of 26

Cellular WCDMA Radiated Measurements (Cont'd)

§2.1053, 22.917(a)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 836.60 MHz
 CHANNEL: 4183
 MEASURED OUTPUT POWER: 20.980 dBm = 0.125 W
 MODULATION SIGNAL: WCDMA (Internal)
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W)$ 33.98 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1673.20	-53.34	6.09	-47.26	H	68.2
2509.80	-36.03	6.55	-29.47	H	50.5
3346.40	-31.54	6.89	-24.65	H	45.6
4183.00	-92.81	7.40	-85.40	H	106.4
5019.60	-91.59	8.35	-83.24	H	104.2

Table 6-12. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4183)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: A3LSGHA827		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth		Page 18 of 26

Cellular WCDMA Radiated Measurements (Cont'd)

§2.1053, 22.917(a)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 846.60 MHz
 CHANNEL: 4233
 MEASURED OUTPUT POWER: 20.980 dBm = 0.125 W
 MODULATION SIGNAL: WCDMA (Internal)
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W)$ 33.98 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1693.20	-50.42	6.09	-44.33	H	65.3
2539.80	-38.59	6.57	-32.02	H	53.0
3386.40	-31.11	6.91	-24.20	H	45.2
4233.00	-93.01	7.62	-85.39	H	106.4
5079.60	-91.28	8.33	-82.94	H	103.9

Table 6-13. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4233)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: A3LSGHA827		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth		Page 19 of 26

6.7 PCS GSM Radiated Measurements

§2.1053, 24.238(a)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1850.20 MHz
 CHANNEL: 512
 MEASURED OUTPUT POWER: 32.110 dBm = 1.626 W
 MODULATION SIGNAL: GSM (Internal)
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W)$ 45.11 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3700.40	-36.42	9.02	-27.41	H	59.5
5550.60	-38.09	10.40	-27.69	H	59.8
7400.80	-32.66	10.50	-22.15	H	54.3
9251.00	-25.11	11.85	-13.26	H	45.4
11101.20	-25.80	12.76	-13.04	H	45.2

Table 6-14. Radiated Spurious Data (PCS GSM Mode – Ch. 512)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: A3LSGHA827		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth	Page 20 of 26	

PCS GSM Radiated Measurements (Cont'd)

§2.1053, 24.238(a)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1880.00 MHz
 CHANNEL: 661
 MEASURED OUTPUT POWER: 32.110 dBm = 1.626 W
 MODULATION SIGNAL: GSM (Internal)
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W)$ 45.11 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3760.00	-31.56	8.99	-22.57	H	54.7
5640.00	-39.86	10.40	-29.46	H	61.6
7520.00	-38.20	10.62	-27.58	H	59.7
9400.00	-24.84	11.70	-13.14	H	45.2
11280.00	-26.77	12.69	-14.08	H	46.2

Table 6-15. Radiated Spurious Data (PCS GSM Mode – Ch. 661)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: A3LSGHA827		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth	Page 21 of 26	

PCS GSM Radiated Measurements (Cont'd)

§2.1053, 24.238(a)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1909.80 MHz
 CHANNEL: 810
 MEASURED OUTPUT POWER: 32.110 dBm = 1.626 W
 MODULATION SIGNAL: GSM (Internal)
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W)$ 45.11 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3819.60	-30.51	8.97	-21.54	H	53.6
5729.40	-40.95	10.40	-30.55	H	62.7
7639.20	-39.42	10.71	-28.71	H	60.8
9549.00	-29.09	11.64	-17.45	H	49.6
11458.80	-29.56	12.62	-16.94	H	49.0

Table 6-16. Radiated Spurious Data (PCS GSM Mode – Ch. 810)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: A3LSGHA827		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth	Page 22 of 26	

6.8 PCS WCDMA Radiated Measurements

§2.1053, 24.238(a)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1852.40 MHz
 CHANNEL: 9262
 MEASURED OUTPUT POWER: 25.140 dBm = 0.327 W
 MODULATION SIGNAL: WCDMA (Internal)
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W)$ 38.14 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3704.80	-31.70	9.01	-22.69	H	47.8
5557.20	-55.06	10.40	-44.66	H	69.8
7409.60	-87.22	10.51	-76.70	H	101.8
9262.00	-86.50	11.83	-74.67	H	99.8
11114.40	-84.01	12.75	-71.26	H	96.4

Table 6-17. Radiated Spurious Data (PCS WCDMA Mode – Ch. 9262)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: A3LSGHA827		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth		Page 23 of 26

PCS WCDMA Radiated Measurements (Cont'd)

§2.1053, 24.238(a)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1880.00 MHz
 CHANNEL: 9400
 MEASURED OUTPUT POWER: 25.140 dBm = 0.327 W
 MODULATION SIGNAL: WCDMA (Internal)
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W)$ 38.14 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3760.00	-26.56	8.99	-17.57	H	42.7
5640.00	-54.06	10.40	-43.66	H	68.8
7520.00	-87.22	10.62	-76.60	H	101.7
9400.00	-86.30	11.70	-74.60	H	99.7
11280.00	-83.32	12.69	-70.63	H	95.8

Table 6-18. Radiated Spurious Data (PCS WCDMA Mode – Ch. 9400)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: A3LSGHA827		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth		Page 24 of 26

PCS WCDMA Radiated Measurements (Cont'd)

§2.1053, 24.238(a)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1907.60 MHz
 CHANNEL: 9538
 MEASURED OUTPUT POWER: 25.140 dBm = 0.327 W
 MODULATION SIGNAL: WCDMA (Internal)
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W)$ 38.14 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3815.20	-31.33	8.97	-22.36	H	47.5
5722.80	-54.17	10.40	-43.77	H	68.9
7630.40	-87.14	10.71	-76.43	H	101.6
9538.00	-86.11	11.63	-74.48	H	99.6
11445.60	-82.63	12.62	-70.01	H	95.2

Table 6-19. Radiated Spurious Data (PCS WCDMA Mode – Ch. 9538)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: A3LSGHA827		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth		Page 25 of 26

7.0 CONCLUSION

The data collected show that the **Samsung 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth FCC ID: A3LSGHA827** complies with all the requirements of Parts 2, 22, and 24 of the FCC rules.

FCC ID: A3LSGHA827		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0802060170.A3L	Test Dates: February 11, 2008	EUT Type: 850/1900 GSM/WCDMA/EDGE Phone with Bluetooth	Page 26 of 26	