

PCTEST ENGINEERING LABORATORY, INC.

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MEASUREMENT REPORT

FCC Part 22, 24

Applicant Name:

Samsung Electronics Co., Ltd. 129, Samsung-ro, Yeongtong-gu Suwon-city, Gyeonggi-do, 443-803 Republic of Korea Date of Testing: February 7-12, 2013 Test Site/Location: PCTEST Lab., Columbia, MD, USA Test Report Serial No.: 0Y1302120251.A3L

FCC ID:

A3LSCHI545

APPLICANT:

SAMSUNG ELECTRONICS CO., LTD.

Application Type: Model(s): EUT Type: FCC Classification: FCC Rule Part(s): Test Procedure(s): Test Device Serial No.: Certification SCH-I545 Portable Handset PCS Licensed Transmitter Held to Ear (PCE) §2 §22(H) §24(E) ANSI/TIA-603-C-2004, KDB 971168 *identical prototype* [S/N: EMC GSM/WCDMA, EMC CDMA]

			ERP/	'EIRP
Mode	Tx Frequency (MHz)	Emission Designator	Max. Power (W)	Max. Power (dBm)
GSM850	824.2 - 848.8	240KGXW	1.379	31.39
EDGE850	824.2 - 848.8	241KG7W	0.394	25.95
GSM1900	1850.2 - 1909.8	241KGXW	0.596	27.75
EDGE1900	1850.2 - 1909.8	243KG7W	0.159	22.01
CDMA850	824.70 - 848.31	1M28F9W	0.282	24.50
CDMA1900	1851.25 - 1908.75	1M28F9W	0.226	23.55
WCDMA850	826.4 - 846.6	4M18F9W	0.161	22.07
WCDMA1900	1852.4 - 1907.6	4M15F9W	0.108	20.32

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. Test results reported herein relate only to the item(s) tested.

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.

Randy Ortanez President



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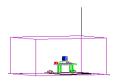


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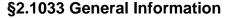
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APPLICANT:	Samsung Electronics Co	o., Ltd.		
APPLICANT ADDRESS:	129, Samsung-ro, Yeon	129, Samsung-ro, Yeongtong-gu		
	Suwon-city, Gyeonggi-d	lo, 443-803, Re	public of Korea	
TEST SITE:	PCTEST ENGINEERING	G LABORATO	RY, INC.	
TEST SITE ADDRESS:	7185 Oakland Mills Roa	id, Columbia, N	ID 21046 USA	
FCC RULE PART(S):	§2 §22(H) §24(E)			
BASE MODEL:	SCH-1545			
FCC ID:	A3LSCHI545			
FCC CLASSIFICATION:	PCS Licensed Transmitt	ter Held to Ear	(PCE)	
MODE:	GSM / EDGE / CDMA /	WCDMA		
FREQUENCY TOLERANCE:	±0.00025 % (2.5 ppm)			
	EMC			
Test Device Serial No.:	GSM/WCDMA, [EMC CDMA	Production	Pre-Production	
DATE(S) OF TEST:	February 7-12, 2013			
TEST REPORT S/N:	0Y1302120251.A3L			

Test Facility / Accreditations

Measurements were performed at PCTEST Engineering Lab located in Columbia, MD 21046, U.S.A.

- PCTEST facility is an FCC registered (PCTEST Reg. No. 159966) 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 (2451B-1).
- 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 (2451B-1) 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.

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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 and the Industry Canada Certification and Engineering Bureau.

1.2 Testing Facility

The map below shows the location of the PCTEST LABORATORY, its proximity to the FCC Laboratory, the Columbia vicinity, the Baltimore-Washington Internt'I (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 located at 7185 Oakland Mills Road, Columbia, MD 21046. The site coordinates are 39° 10'23" N latitude and 76° 49'50" W longitude. The facility is 0.4 miles North of the FCC laboratory, and the ambient signal and ambient signal strength are approximately equal to those of the FCC laboratory. The detailed description of the measurement facility was found to be in compliance with the requirements of § 2.948 according to ANSI C63.4-2009 on February 15, 2012.

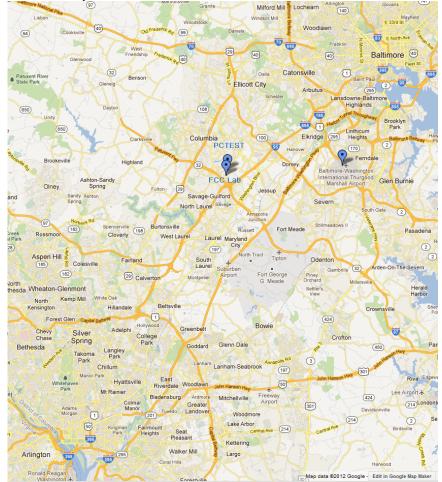


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Portable Handset FCC ID: A3LSCHI545**. The test data contained in this report pertains only to the emissions due to the EUT's 2G/3G licensed transmitters.

2.2 Device Capabilities

This device contains the following capabilities:

850/1900 CDMA/EvDO Rev0/A (BC0, BC1), 850/1900 GSM/GPRS/EDGE, 850/1900 WCDMA/HSPA, Band 4(5,10,15,20 MHz BW), 13 (5,10 MHz BW) LTE, 802.11a/b/g/n/ac WLAN (DTS/NII), Bluetooth (1x,EDR, LE), NFC

2.3 Test Configuration

The Samsung Portable Handset FCC ID: A3LSCHI545 was tested per the guidance of ANSI/TIA-603-C-2004 and KDB 971168. See Section 3.0 of this test report for a description of the radiated and antenna port conducted emissions tests.

This device supports a wireless charging cover. Additional emissions testing was performed per KDB 648474 D03. The handset was placed on the representative charging pad under normal conditions and in a simulated call configuration. The additional worst case emissions are reported herein and identified as WCC.

2.4 EMI Suppression Device(s)/Modifications

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

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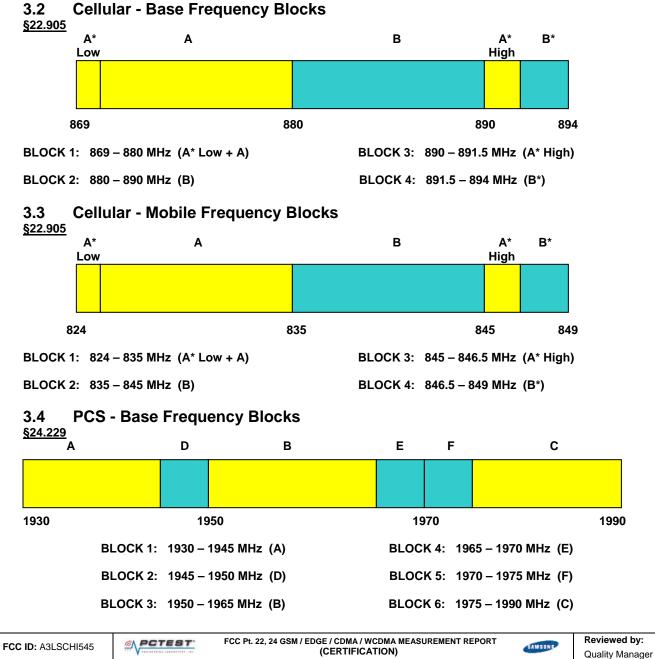


3.0 DESCRIPTION OF TESTS

3.1 Evaluation Procedure

The measurement procedures described in the "Land Mobile FM or PM – Communications Equipment – Measurements and Performance Standards" (ANSI/TIA-603-C-2004) and "Procedures for Compliance Measurement of the Fundamental Emission Power of Licensed Wideband (> 1 MHz) Digital Transmission Systems" were used in the measurement of the measurement of the **Samsung Portable Handset FCC ID: A3LSCHI545.**

Deviation from Measurement Procedure.....None



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<u>§24.22</u>9 D В Ε F С Α 1850 1870 1890 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)

3.5 **PCS - Mobile Frequency Blocks**

3.6 Occupied Bandwidth

§2.1049 RSS-Gen(4.6.1) RSS-133(2.3)

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. The spectrum analyzers' "occupied bandwidth" measurement function was used to record the occupied bandwidth in accordance with KDB 971168.

3.7 Spurious and Harmonic Emissions at Antenna Terminal §2.1051 §22.917(a) §24.238(a) RSS-132(4.5.1) RSS-133(6.5.1)

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. On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log(P) dB. Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater for Part 22 and 1 MHz or greater for Part 24. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.

3.8 Radiated Power and Radiated Spurious Emissions

§2.1053 §22.913(a.2) §22.917(a) §24.232(c) §24.238(a) RSS-132(4.4) RSS-132(4.5.1) RSS-133(6.4) RSS-133(6.5.1)

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. For measurements above 1GHz absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1GHz, the absorbers are removed. An ETS Lindgren Model 2188 raised turntable is used for radiated measurement. It is a continuously rotatable, remote-controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. A 78cm high PVC support structure is placed on top of the turntable. A 3/4" (~1.9cm) sheet of high density polyethylene is used as the table top and is placed on top of the PVC supports to bring the total height of the table to 80cm.

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The equipment under test was transmitting while connected to its integral antenna and is placed on a wooden turntable 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height is adjusted between 1 and 4 meter height, the turntable is rotated through 360 degrees, and the EUT is manipulated through all orthogonal planes representative of its typical use to achieve the highest reading on the receive spectrum analyzer. Radiated power levels are also investigated with the receive antenna horizontally and vertically polarized. The maximized power level is recorded using the spectrum analyzer "Channel Power" function with the integration band set to the emissions' occupied bandwidth, a RMS detector, RBW = 100kHz, VBW = 300kHz, and a 1 second sweep time over a minimum of 10 sweeps, per the guidelines of KDB 971168.

Per the guidance of ANSI/TIA-603-C-2004, a half-wave dipole is then substituted in place of the EUT. For emissions above 1GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive spectrum analyzer level previously recorded from the spurious emission from the EUT. The power of the emission is calculated using the following formula:

 $P_{d [dBm]} = P_{g [dBm]} - cable loss_{[dB]} + antenna gain_{[dBd/dBi]}$

Where, P_d is the dipole equivalent power, P_g is the generator output into the substitution antenna, and the antenna gain is the gain of the substitute antenna used relative to either a half-wave dipole (dBd) or an isotropic source (dBi). The substitute level is equal to $P_{g \text{ [dBm]}}$ – cable loss $_{\text{[dB]}}$.

The calculated P_d levels are then compared to the absolute spurious emission limit of -13dBm which is equivalent to the required minimum attenuation of 43 + 10log₁₀(Power [Watts]) specified in 22.917(a) and 24.238(a).

3.9 Peak-Average Ratio

§24.232(d) RSS-132(5.4) RSS-133(6.4)

A peak to average ratio measurement is performed at the conducted port of the EUT. The spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level.

For pulsed signals, the spectrum analyzer is set to use an internal "RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power. For continuous signals, the trigger is set to "free run" in the CCDF measurement mode.

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3.10 Frequency Stability / Temperature Variation §2.1055 §22.355 §22.863 §22.905 §24.229 §24.235 RSS-132(4.3) RSS-133(6.3)

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-C-2004. The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

Specification – For Part 22, the frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ (± 2.5 ppm) of the center frequency. For Part 24, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Time Period and Procedure:

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).

2. The equipment is turned on in a "standby" condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.

3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

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4.0 TEST EQUIPMENT CALIBRATION DATA

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

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
-	LTx1	Licensed Transmitter Cable Set	1/17/2013	Annual	1/17/2014	N/A
-	RE1	Radiated Emissions Cable Set (UHF/EHF)	7/10/2012	Annual	7/10/2013	N/A
Agilent	N9020A	MXA Signal Analyzer	10/9/2012	Annual	10/9/2013	US46470561
Espec	ESX-2CA	Environmental Chamber	4/4/2012	Annual	4/4/2013	17620
ETS Lindgren	3117	1-18 GHz DRG Horn (Medium)	7/22/2011	Biennial	7/22/2013	125518
ETS Lindgren	3160-09	18-26.5 GHz Standard Gain Horn	5/30/2012	Biennial	5/30/2014	135427
ETS Lindgren	3164-08	Quad Ridge Horn Antenna	11/7/2012	Biennial	11/7/2014	128338
Mini-Circuits	VHF-1200+	High Pass Filter	1/17/2013	Annual	1/17/2014	30923
Mini-Circuits	VHF-3100+	High Pass Filter	1/17/2013	Annual	1/17/2014	30841
Mini-Circuits	SSG-4000HP	Signal Generator	12/1/2012	Annual	12/1/2013	11208010032
Mini-Circuits	WR-SEN-4RM	USB Power Sensor	12/1/2012	Annual	12/1/2013	11210140001
Rohde & Schwarz	CMU200	Base Station Simulator	5/22/2012	Annual	5/22/2013	109892
Rohde & Schwarz	TS-PR18	1-18 GHz Pre-Amplifier	6/26/2012	Annual	6/26/2013	100071
Rohde & Schwarz	TS-PR26	18-26.5 GHz Pre-Amplifier	5/30/2012	Annual	5/30/2013	100040
Rohde & Schwarz	ESU26	EMI Test Receiver	2/15/2012	Annual	2/15/2013	100342
Schwarzbeck	UHA 9105	Dipole Antenna (400 - 1GHz) Rx	11/14/2011	Biennial	11/14/2013	9105-2404
Seekonk	NC-100	Torque Wrench (8" lb)	3/5/2012	Triennial	3/5/2015	N/A
Sunol	JB5	Bi-Log Antenna (30M - 5GHz)	1/26/2012	Biennial	1/26/2014	A051107

Table 4-1. Test Equipment

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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)

CDMA Emission Designator

Emission Designator = 1M25F9W

CDMA BW = 1.25 MHz F = Frequency Modulation 9 = Composite Digital Info W = Combination (Audio/Data) (Measured at the 99.75% power bandwidth)

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

Example: Spurious emission at 3700.40 MHz

The receive spectrum 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 spectrum 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 25.50 dBm so this harmonic was 25.50 dBm -(-24.80) = 50.3 dBc.

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6.0 TEST RESULTS

6.1 Summary

Company Name:	Samsung Electronics Co., Ltd.
FCC ID:	A3LSCHI545
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
Mode(s):	<u>GSM / EDGE / CDMA / WCDMA</u>

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
TRANSMITTER	MODE (TX)				
2.1049	Occupied Bandwidth	N/A		PASS	Section 7.0
2.1051 22.917(a) 24.238(a)	Band Edge / Conducted Spurious Emissions	> 43 + log ₁₀ (P[Watts]) at Band Edge and for all out-of-band emissions	CONDUCTED	PASS	Section 7.0
24.232(d)	Peak-Average Ratio	< 13 dB	CONDUCTED	PASS	Section 7.0
2.1046	Transmitter Conducted Output Power	N/A		PASS	RF Exposure Report
22.913(a.2)	Effective Radiated Power	< 7 Watts max. ERP		PASS	Section 6.2
24.232(c)	Equivalent Isotropic Radiated Power	< 2 Watts max. EIRP		PASS	Section 6.3
2.1053 22.917(a) 24.238(a)	Undesirable Emissions < 43 + log ₁₀ (P[Watts]) for all out- of-band emissions RADIA		RADIATED	PASS	Sections 6.4, 6.5, 6.6, 6.7, 6.8, 6.9
2.1055 22.355 22.863 22.905 24.229 24.235	Frequency Stability	requency Stability <a>< 2.5 ppm (Part 22) Emission must remain in band (Part 24)		PASS	Sections 6.10, 6.11, 6.12, 6.13, 6.14, 6.15

Table 6-1. Summary of Test Results

Notes:

- 1) All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.
- 2) The analyzer plots shown in Section 7.0 were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables, directional couplers, and attenuators used as part of the system to maintain a link between the call box and the EUT at all frequencies of interest.
- 3) All antenna port conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables, attenuators, and couplers.

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6.2 Cellular Effective Radiated Power (ERP) §22.913(a)(2) RSS-132(4.4) [SRSP-503(5.1.3)]

					[dBm]	[dB]
25.68	4.59	V	30.27	1.065	38.45	-8.18
26.57	4.82	V	31.39	1.379	38.45	-7.06
26.05	5.05	V	31.10	1.288	38.45	-7.35
21.13	4.82	V	25.95	0.394	38.45	-12.50
24.05	4.82	Н	28.87	0.772	38.45	-9.58
c	d 26.57 d 26.05 d 21.13 24.05	d 26.57 4.82 d 26.05 5.05 d 21.13 4.82 24.05 4.82	d 26.57 4.82 V d 26.05 5.05 V d 21.13 4.82 V 24.05 4.82 H	d 26.57 4.82 V 31.39 d 26.05 5.05 V 31.10 d 21.13 4.82 V 25.95	d 26.57 4.82 V 31.39 1.379 d 26.05 5.05 V 31.10 1.288 d 21.13 4.82 V 25.95 0.394 24.05 4.82 H 28.87 0.772	d 26.57 4.82 V 31.39 1.379 38.45 d 26.05 5.05 V 31.10 1.288 38.45 d 21.13 4.82 V 25.95 0.394 38.45 24.05 4.82 H 28.87 0.772 38.45

Table 6-2. ERP (Cellular GSM)

Frequency [MHz]	Mode	Back cover	Substitute Level [dBm]	Antenna Gain [dBd]	Pol [H/V]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
824.70	CDMA850	Standard	19.57	4.60	V	24.17	0.261	38.45	-14.28
836.52	CDMA850	Standard	19.68	4.82	V	24.50	0.282	38.45	-13.95
848.31	CDMA850	Standard	18.49	5.04	V	23.53	0.225	38.45	-14.92
836.52	CDMA850	WCC	16.47	4.82	Н	21.29	0.135	38.45	-17.16

Table 6-3. ERP (Cellular CDMA)

Frequency [MHz]	Mode	Back cover	Substitute Level [dBm]	Antenna Gain [dBd]	Pol [H/V]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
826.40	WCDMA850	Standard	17.04	4.63	V	21.67	0.147	38.45	-16.78
836.60	WCDMA850	Standard	17.27	4.80	V	22.07	0.161	38.45	-16.39
846.60	WCDMA850	Standard	17.01	5.01	V	22.02	0.159	38.45	-16.43
836.60	WCDMA850	WCC	13.08	4.80	Н	17.88	0.061	38.45	-20.58

NOTES:

Table 6-4. ERP (Cellular WCDMA)

- 1) This device was tested under all configurations and the highest power is reported in GPRS mode while transmitting with one slot active. This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1."
- 2) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna.
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

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PCS Effective Radiated Power (EIRP) 6.3 §22.913(a)(2) RSS-132(4.4) [SRSP-503(5.1.3)]

Frequency [MHz]	Mode	Back cover	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]					
1850.20	GSM1900	Standard	16.76	9.60	Н	26.36	0.432	33.01	-6.65					
1880.00	GSM1900	Standard	16.99	9.53	Н	26.52	0.449	33.01	-6.49					
1909.80	GSM1900	Standard	18.28	9.47	Н	27.75	0.596	33.01	-5.26					
1909.80	EDGE1900	Standard	12.54	9.47	Н	22.01	0.159	33.01	-11.00					
1909.80	GSM1900	WCC	12.42	9.47	Н	21.89	0.155	33.01	-11.12					
		•	Table 6.4											

Table 6-4. EIRP (PCS GSM)

Frequency [MHz]	Mode	Back cover	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1851.25	CDMA1900	Standard	13.95	9.60	Н	23.55	0.226	33.01	-9.46
1880.00	CDMA1900	Standard	12.82	9.53	Н	22.35	0.172	33.01	-10.66
1908.75	CDMA1900	Standard	12.96	9.47	Н	22.43	0.175	33.01	-10.58
1851.25	CDMA1900	WCC	11.97	9.60	Н	21.57	0.143	33.01	-11.44

Table 6-5. EIRP (PCS CDMA)

Frequency [MHz]	Mode	Back cover	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1852.40	WCDMA1900	Standard	10.73	9.59	Н	20.32	0.108	33.01	-12.69
1880.00	WCDMA1900	Standard	10.33	9.53	Н	19.86	0.097	33.01	-13.15
1907.60	WCDMA1900	Standard	10.46	9.48	Н	19.94	0.099	33.01	-13.07
1852.40	WCDMA1900	WCC	7.57	9.59	Н	17.16	0.052	33.01	-15.85

NOTES:

Table 6-4. EIRP (PCS WCDMA)

- This device was tested under all configurations and the highest power is reported in GPRS mode while 1) transmitting with one slot active. This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1."
- 2) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna.
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

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6.4 Cellular GSM Radiated Measurements §2.1053 §22.917(a) RSS-132(4.5.1)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	824	MHz	
CHANNEL:	128		
MEASURED OUTPUT POWER:	30.27	dBm =	<u>1.065</u> W
MODULATION SIGNAL:	GSM (GMSK)	_	
DISTANCE:	3	meters	
LIMIT:	$43 + 10 \log_{10} (W) =$	43.27	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1648.40	-48.20	2.60	-45.60	V	75.9
2472.60	-37.13	2.90	-34.23	V	64.5
3296.80	-39.15	5.44	-33.71	V	64.0
4121.00	-50.40	7.05	-43.35	V	73.6
4945.20	-81.87	7.86	-74.00	V	104.3

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

- 1) This device was tested under all configurations and the highest power is reported in GPRS mode while transmitting with one slot active.
- 2) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna. The back cover installed does not permit wireless charging of the device.
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

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Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	836.	60	MHz
CHANNEL:	19	0	_
MEASURED OUTPUT POWER:	31.39	dBm =	<u>1.379</u> W
MODULATION SIGNAL:	GSM (GMSK)		
DISTANCE:	3	meters	
LIMIT:	43 + 10 log ₁₀ (W) =	44.39	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1673.20	-47.36	2.60	-44.76	V	76.2
2509.80	-38.52	2.90	-35.62	V	67.0
3346.40	-44.94	5.44	-39.49	V	70.9
4183.00	-51.26	7.05	-44.22	V	75.6
5019.60	-81.77	7.86	-73.90	V	105.3

 Table 6-7. Radiated Spurious Data (Cellular GSM Mode – Ch. 190)

- 1) This device was tested under all configurations and the highest power is reported in GPRS mode while transmitting with one slot active.
- 2) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna. The back cover installed does not permit wireless charging of the device.
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

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Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	848.	80	MHz
CHANNEL:	25	1	
MEASURED OUTPUT POWER:	31.10	dBm =	<u>1.288</u> W
MODULATION SIGNAL:	GSM (GMSK)		
DISTANCE:	3	meters	
LIMIT:	$43 + 10 \log_{10} (W) =$	44.10	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1697.60	-43.63	2.60	-41.03	V	72.1
2546.40	-37.71	2.90	-34.82	V	65.9
3395.20	-46.45	5.44	-41.00	V	72.1
4244.00	-51.23	7.05	-44.18	V	75.3
5092.80	-81.54	7.86	-73.67	V	104.8

Table 6-8. Radiated Spurious Data (Cellular GSM Mode – Ch. 251)

- 1) This device was tested under all configurations and the highest power is reported in GPRS mode while transmitting with one slot active.
- 2) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna. The back cover installed does not permit wireless charging of the device.
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

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Cellular GSM Radiated Measurements (Cont'd) §2.1053 §22.917(a) RSS-132(4.5.1)

Field Strength of SPURIOUS Radiation (with WCC)

OPERATING FREQUENCY:	836.60		MHz
CHANNEL:	190	_	
MEASURED OUTPUT POWER:	28.87	dBm =	0.772 W
MODULATION SIGNAL:	GSM (GMSK)		
DISTANCE:	3	meters	
LIMIT:	43 + 10 log ₁₀ (W) =	41.87	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1673.20	-43.83	2.60	-41.23	V	70.1
2509.80	-39.33	2.90	-36.43	V	65.3
3346.40	-51.46	5.44	-46.01	V	74.9
4183.00	-54.34	7.05	-47.30	V	76.2
5019.60	-81.77	7.86	-73.90	V	102.8

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

- 1) This device was tested under all configurations and the highest power is reported in GPRS mode while transmitting with one slot active.
- 2) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna. The back cover installed permits wireless charging of the device.
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

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6.5 Cellular CDMA Radiated Measurements §2.1053 §22.917(a) RSS-132(4.5.1)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	824.	.70	MHz
CHANNEL:	101	13	_
MEASURED OUTPUT POWER:	24.17	dBm =	<u>0.261</u> W
MODULATION SIGNAL:	CDMA	_	
DISTANCE:	3	meters	
LIMIT:	43 + 10 log ₁₀ (W) =	37.17	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1649.40	-60.17	2.59	-57.58	V	81.8
2474.10	-58.24	2.89	-55.35	V	79.5
3298.80	-82.84	5.45	-77.39	V	101.6
4123.50	-59.04	7.05	-51.99	V	76.2
4948.20	-82.87	7.87	-75.01	V	99.2

Table 6-10. Radiated Spurious Data (Cellular CDMA Mode – Ch. 1013)

- 1) This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits.
- 2) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna. The back cover installed does not permit wireless charging of the device.
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

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Cellular CDMA Radiated Measurements (Cont'd) §2.1053 §22.917(a) RSS-132(4.5.1)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	836.	52	MHz
CHANNEL:	384	4	_
MEASURED OUTPUT POWER:	24.50	dBm =	<u>0.282</u> W
MODULATION SIGNAL:	CDMA		
DISTANCE:	3	meters	
LIMIT:	$43 + 10 \log_{10} (W) =$	37.50	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1673.04	-52.62	2.59	-50.03	V	74.5
2509.56	-56.19	2.89	-53.30	V	77.8
3346.08	-82.96	5.45	-77.51	V	102.0
4182.60	-58.41	7.05	-51.36	V	75.9
5019.12	-82.74	7.87	-74.87	V	99.4

Table 6-11. Radiated Spurious Data (Cellular CDMA Mode – Ch. 384)

- 1) This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits.
- 1) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna. The back cover installed does not permit wireless charging of the device.
- 2) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

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Cellular CDMA Radiated Measurements (Cont'd) §2.1053 §22.917(a) RSS-132(4.5.1)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	848.	31	MHz
CHANNEL:	77	7	
MEASURED OUTPUT POWER:	23.53	dBm =	<u>0.225</u> W
MODULATION SIGNAL:	CDMA		
DISTANCE:	3	meters	
LIMIT:	$43 + 10 \log_{10} (W) =$	36.53	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1696.62	-49.84	2.59	-47.26	V	70.8
2544.93	-55.12	2.89	-52.23	V	75.8
3393.24	-83.07	5.45	-77.62	V	101.1
4241.55	-59.48	7.05	-52.43	V	76.0
5089.86	-82.58	7.87	-74.71	V	98.2

Table 6-12. Radiated Spurious Data (Cellular CDMA Mode – Ch. 777)

- 1) This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits.
- 2) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna. The back cover installed does not permit wireless charging of the device.
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

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Cellular CDMA Radiated Measurements (Cont'd) §2.1053 §22.917(a) RSS-132(4.5.1)

Field Strength of SPURIOUS Radiation (With WCC)

OPERATING FREQUENCY:	836.	52	MHz
CHANNEL:	384	1	
MEASURED OUTPUT POWER:	21.29	dBm =	0.135 W
MODULATION SIGNAL:	CDMA		
DISTANCE:	3	meters	
LIMIT:	$43 + 10 \log_{10} (W) =$	34.29	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1673.04	-41.71	2.59	-39.12	V	60.4
2509.56	-40.29	2.89	-37.40	V	58.7
3346.08	-56.42	5.45	-50.97	V	72.3
4182.60	-83.09	7.05	-76.04	V	97.3
5019.12	-82.74	7.87	-74.87	V	96.2

Table 6-13. Radiated Spurious Data (Cellular CDMA Mode – Ch. 384)

- This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits.
- 3) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna. The back cover installed permits wireless charging of the device.
- 4) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

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6.6 Cellular WCDMA Radiated Measurements §2.1053 §22.917(a) RSS-132(4.5.1)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	826.	40	MHz
CHANNEL:	413	32	_
MEASURED OUTPUT POWER:	21.67	dBm =	<u>0.147</u> W
MODULATION SIGNAL:	WCDMA	_	
DISTANCE:	3	meters	
LIMIT:	43 + 10 log ₁₀ (W) =	34.67	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1652.80	-60.31	2.55	-57.76	V	79.4
2479.20	-56.81	2.86	-53.94	V	75.6
3305.60	-57.43	5.48	-51.95	V	73.6
4132.00	-83.05	7.06	-75.98	V	97.7
4958.40	-82.87	7.88	-74.99	V	96.7

Table 6-14. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4132)

- 1) This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1."
- 2) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna. The back cover installed does not permit wireless charging of the device.
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

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Cellular WCDMA Radiated Measurements (Cont'd) §2.1053 §22.917(a) RSS-132(4.5.1)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	836.	60	MHz
CHANNEL:	418	3	_
MEASURED OUTPUT POWER:	22.07	dBm =	<u>0.161</u> W
MODULATION SIGNAL:	WCDMA		
DISTANCE:	3	meters	
LIMIT:	43 + 10 log ₁₀ (W) =	35.07	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1673.20	-61.81	2.55	-59.26	V	81.3
2509.80	-57.84	2.86	-54.97	V	77.0
3346.40	-57.45	5.48	-51.97	V	74.0
4183.00	-83.05	7.06	-75.98	V	98.0
5019.60	-82.87	7.88	-74.99	V	97.1

Table 6-15. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4183)

- 1) This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1."
- 2) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna. The back cover installed does not permit wireless charging of the device.
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

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Cellular WCDMA Radiated Measurements (Cont'd) §2.1053 §22.917(a) RSS-132(4.5.1)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:		60	MHz
CHANNEL:	423	3	
MEASURED OUTPUT POWER:	22.02	dBm =	<u>0.159</u> W
MODULATION SIGNAL:	WCDMA		
DISTANCE:	3	meters	
LIMIT:	$43 + 10 \log_{10} (W) =$	35.02	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1693.20	-56.83	2.55	-54.28	V	76.3
2539.80	-56.08	2.86	-53.21	V	75.2
3386.40	-57.90	5.48	-52.42	V	74.4
4233.00	-83.05	7.06	-75.98	V	98.0
5079.60	-82.87	7.88	-74.99	V	97.0

Table 6-16. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4233)

- 1) This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1."
- 2) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna. The back cover installed does not permit wireless charging of the device.
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

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Cellular WCDMA Radiated Measurements (Cont'd) §2.1053 §22.917(a) RSS-132(4.5.1)

Field Strength of SPURIOUS Radiation (With WCC)

OPERATING FREQUENCY:	836.	60	MHz
CHANNEL:	418	3	
MEASURED OUTPUT POWER:	17.88	dBm =	0.061 W
MODULATION SIGNAL:	WCDMA		
DISTANCE:	3	meters	
LIMIT:	43 + 10 log ₁₀ (W) =	30.88	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1673.20	-49.53	2.55	-46.98	V	64.9
2509.80	-54.23	2.86	-51.36	V	69.2
3346.40	-57.32	5.48	-51.84	V	69.7
4183.00	-58.52	7.06	-51.45	V	69.3
5019.60	-82.87	7.88	-74.99	V	92.9

Table 6-17. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4183)

- 1) This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1."
- 2) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna. The back cover installed permits wireless charging of the device.
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

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6.7 PCS GSM Radiated Measurements §2.1053 §24.238(a) RSS-133(6.5.2)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1850	.20	MHz
CHANNEL:	512	2	_
MEASURED OUTPUT POWER:	26.36	dBm =	0.432 W
MODULATION SIGNAL:	GSM (GMSK)	-	
DISTANCE:	3	meters	
LIMIT:	43 + 10 log ₁₀ (W) =	39.36	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3700.40	-53.74	8.40	-45.34	Н	71.7
5550.60	-49.14	10.62	-38.52	Н	64.9
7400.80	-56.89	11.82	-45.07	Н	71.4
9251.00	-60.61	13.30	-47.31	Н	73.7
11101.20	-77.86	13.50	-64.36	Н	90.7

Table 6-18. Radiated Spurious Data (PCS GSM Mode – Ch. 512)

- 1) This device was tested under all configurations and the highest power is reported in GPRS mode while transmitting with one slot active.
- 2) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna. The back cover installed does not permit wireless charging of the device.
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

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Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1880	MHz	
CHANNEL:	66	_	
MEASURED OUTPUT POWER:	26.52	dBm =	<u>0.449</u> W
MODULATION SIGNAL:	GSM (GMSK)	_	
DISTANCE:	3	meters	
LIMIT:	$43 + 10 \log_{10} (W) =$	39.52	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3760.00	-55.06	8.40	-46.66	Н	73.2
5640.00	-50.24	10.62	-39.62	Н	66.1
7520.00	-55.29	11.82	-43.46	Н	70.0
9400.00	-60.20	13.30	-46.90	Н	73.4
11280.00	-79.22	13.50	-65.72	Н	92.2

Table 6-19. Radiated Spurious Data (PCS GSM Mode – Ch. 661)

- 1) This device was tested under all configurations and the highest power is reported in GPRS mode while transmitting with one slot active.
- 2) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna. The back cover installed does not permit wireless charging of the device.
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

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Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1909	.80	MHz
CHANNEL:	810	0	
MEASURED OUTPUT POWER:	27.75	dBm =	0.596 W
MODULATION SIGNAL:	GSM (GMSK)		
DISTANCE:	3	meters	
LIMIT:	$43 + 10 \log_{10} (W) =$	40.75	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3819.60	-49.44	8.40	-41.04	Н	68.8
5729.40	-48.56	10.62	-37.94	Н	65.7
7639.20	-58.62	11.82	-46.80	Н	74.6
9549.00	-57.41	13.30	-44.11	Н	71.9
11458.80	-61.48	13.50	-47.98	Н	75.7

Table 6-20. Radiated Spurious Data (PCS GSM Mode – Ch. 810)

- 1) This device was tested under all configurations and the highest power is reported in GPRS mode while transmitting with one slot active.
- 1) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna. The back cover installed does not permit wireless charging of the device.
- 2) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

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PCS GSM Radiated Measurements (Cont'd) §2.1053 §24.238(a) RSS-133(6.5.2)

Field Strength of SPURIOUS Radiation (With WCC)

OPERATING FREQUENCY:	1909	.80	MHz
CHANNEL:	810	0	_
MEASURED OUTPUT POWER:	21.89	dBm =	0.155 W
MODULATION SIGNAL:	GSM (GMSK)		
DISTANCE:	3	meters	
LIMIT:	43 + 10 log ₁₀ (W) =	34.89	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3819.60	-44.62	8.40	-36.22	Н	58.1
5729.40	-59.53	10.62	-48.91	Н	70.8
7639.20	-83.25	11.82	-71.43	Н	93.3
9549.00	-82.62	13.30	-69.32	Н	91.2
11458.80	-79.52	13.50	-66.02	Н	87.9

Table 6-21. Radiated Spurious Data (PCS GSM Mode – Ch. 810)

- 2) This device was tested under all configurations and the highest power is reported in GPRS mode while transmitting with one slot active.
- 3) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna. The back cover installed permits wireless charging of the device.
- 4) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

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6.8 PCS CDMA Radiated Measurements §2.1053 §24.238(a) RSS-133(6.5.2)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1851	.25	MHz
CHANNEL:	25	;	_
MEASURED OUTPUT POWER:	23.55	dBm =	<u>0.226</u> W
MODULATION SIGNAL:	CDMA		
DISTANCE:	3	meters	
LIMIT:	$43 + 10 \log_{10} (W) =$	36.55	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3702.50	-51.46	8.40	-43.06	Н	66.6
5553.75	-58.69	10.62	-48.07	Н	71.6
7405.00	-81.21	11.82	-69.39	Н	92.9
9256.25	-58.20	13.30	-44.91	Н	68.5
11107.50	-52.85	13.50	-39.35	H Ch 25)	62.9

Table 6-22. Radiated Spurious Data (PCS CDMA Mode – Ch. 25)

- 1) This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits.
- 2) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna. The back cover installed does not permit wireless charging of the device.
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

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PCS CDMA Radiated Measurements (Cont'd) §2.1053 §24.238(a) RSS-133(6.5.2)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1880	.00	MHz
CHANNEL:	661		
MEASURED OUTPUT POWER:	22.35	dBm =	<u>0.172</u> W
MODULATION SIGNAL:	CDMA		
DISTANCE:	3	meters	
LIMIT:	$43 + 10 \log_{10} (W) =$	35.35	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3760.00	-56.13	8.40	-47.73	Н	70.1
5640.00	-57.73	10.62	-47.11	Н	69.5
7520.00	-81.21	11.82	-69.39	н	91.7
9400.00	-81.01	13.30	-67.72	Н	90.1
11280.00	-75.54	13.50	-62.04	Н	84.4

Table 6-23. Radiated Spurious Data (PCS CDMA Mode – Ch. 600)

- 1) This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits.
- 2) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna. The back cover installed does not permit wireless charging of the device.
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

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Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1908.75		MHz
CHANNEL:	117	5	
MEASURED OUTPUT POWER:	22.43	dBm =	<u>0.175</u> W
MODULATION SIGNAL:	CDMA		
DISTANCE:	3	meters	
LIMIT:	$43 + 10 \log_{10} (W) =$	35.43	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3817.50	-48.77	8.40	-40.37	Н	62.8
5726.25	-57.61	10.62	-46.99	Н	69.4
7635.00	-81.21	11.82	-69.39	Н	91.8
9543.75	-55.79	13.30	-42.50	Н	64.9
11452.50	-51.51	13.50	-38.01	Н	60.4

Table 6-24. Radiated Spurious Data (PCS CDMA Mode – Ch. 1175)

- 1) This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits.
- 2) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna. The back cover installed does not permit wireless charging of the device.
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

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PCS CDMA Radiated Measurements (Cont'd) §2.1053 §24.238(a) RSS-133(6.5.2)

Field Strength of SPURIOUS Radiation (With WCC)

OPERATING FREQUENCY:	1851.	.25	MHz
CHANNEL:	25		
MEASURED OUTPUT POWER:	21.57	dBm =	0.143 W
MODULATION SIGNAL:	CDMA		
DISTANCE:	3	meters	
LIMIT:	43 + 10 log ₁₀ (W) =	34.57	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3702.50	-49.33	8.40	-40.93	Н	62.5
5553.75	-59.15	10.62	-48.53	Н	70.1
7405.00	-54.46	11.82	-42.64	Н	64.2
9256.25	-56.51	13.30	-43.22	Н	64.8
11107.50	-75.54	13.50	-62.04	Н	83.6

Table 6-25. Radiated Spurious Data (PCS CDMA Mode – Ch. 1175)

- 1) This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits.
- 2) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna. The back cover installed permits wireless charging of the device.
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

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6.9 **PCS WCDMA Radiated Measurements** §2.1053 §24.238(a) RSS-133(6.5.2)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1852	.40	MHz
CHANNEL:	9262		_
MEASURED OUTPUT POWER:	20.32	dBm =	<u>0.108</u> W
MODULATION SIGNAL:	WCDMA	_	
DISTANCE:	3	meters	
LIMIT:	43 + 10 log ₁₀ (W) =	33.32	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3704.80	-59.74	8.40	-51.34	Н	71.7
5557.20	-58.06	10.62	-47.44	н	67.8
7409.60	-51.28	11.83	-39.45	н	59.8
9262.00	-57.94	13.30	-44.64	н	65.0
11114.40	-75.36	13.50	-61.86	H	82.2

Table 6-26. Radiated Spurious Data (PCS WCDMA Mode – Ch. 9262)

- 1) This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1."
- 2) This unit was tested with a battery (Model No: B600BU) which incorporates a RFID anntenna. The back cover installed does not permit wireless charging of the device.
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

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Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1880	.00	MHz
CHANNEL:	9400		_
MEASURED OUTPUT POWER:	19.86	dBm =	<u>0.097</u> W
MODULATION SIGNAL:	WCDMA		
DISTANCE:	3	meters	
LIMIT:	$43 + 10 \log_{10} (W) =$	32.86	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3760.00	-59.34	8.40	-50.94	Н	70.8
5640.00	-56.96	10.62	-46.34	Н	66.2
7520.00	-50.44	11.83	-38.61	н	58.5
9400.00	-58.08	13.30	-44.78	Н	64.6
11280.00	-75.36	13.50	-61.86	Н	81.7

Table 6-27. Radiated Spurious Data (PCS WCDMA Mode - Ch. 9400)

- 1) This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1."
- 2) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna. The back cover installed does not permit wireless charging of the device.
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager
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Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1907	.60	MHz
CHANNEL:	953	8	_
MEASURED OUTPUT POWER:	19.94	dBm =	<u>0.099</u> W
MODULATION SIGNAL:	WCDMA		
DISTANCE:	3	meters	
LIMIT:	$43 + 10 \log_{10} (W) =$	32.94	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3815.20	-59.86	8.40	-51.46	н	71.4
5722.80	-58.31	10.62	-47.69	н	67.6
7630.40	-51.04	11.83	-39.21	н	59.1
9538.00	-57.10	13.30	-43.80	н	63.7
11445.60	-75.36	13.50	-61.86	Н	81.8

Table 6-28. Radiated Spurious Data (PCS WCDMA Mode – Ch. 9538)

NOTES:

- 1) This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1."
- 2) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna. The back cover installed does not permit wireless charging of the device.
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	MSUNE	Reviewed by: Quality Manager
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PCS WCDMA Radiated Measurements (Cont'd) §2.1053 §24.238(a) RSS-133(6.5.2)

Field Strength of SPURIOUS Radiation (With WCC)

OPERATING FREQUENCY:	1852.	MHz	
CHANNEL:	926	_	
MEASURED OUTPUT POWER:	17.16	dBm =	0.052 W
MODULATION SIGNAL:	WCDMA		
DISTANCE:	3	meters	
LIMIT:	43 + 10 log ₁₀ (W) =	30.16	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3704.80	-57.30	8.40	-48.90	Н	66.1
5557.20	-57.98	10.62	-47.36	Н	64.5
7409.60	-54.98	11.83	-43.15	Н	60.3
9262.00	-56.21	13.30	-42.91	Н	60.1
11114.40	-75.36	13.50	-61.86	Н	79.0

Table 6-29. Radiated Spurious Data (PCS WCDMA Mode – Ch. 9538)

NOTES:

- 1) This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1."
- 2) This unit was tested with a battery(Model No: B600BU) which incorporates a RFID anntenna. The back cover installed permits wireless charging of the device.
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup for cellular band and horizontal setup for PCS band. The data reported in the table above was measured in this test setup.

FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager
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6.10 Cellular GSM Frequency Stability Measurements §2.1055 §22.355 §22.863 §22.905 RSS-132(4.3)

OPERATING FREQUENCY: 836,600,000 Hz CHANNEL: 190

REFERENCE VOLTAGE: 3.8 VDC

DEVIATION LIMIT:	± 0.00025	% or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	836,600,009	9	0.0000011
100 %		- 30	836,599,973	-27	-0.0000032
100 %		- 20	836,599,999	-1	-0.0000001
100 %		- 10	836,600,028	28	0.0000033
100 %		0	836,600,025	25	0.0000030
100 %		+ 10	836,600,000	0	0.0000000
100 %		+ 20	836,600,002	2	0.0000002
100 %		+ 30	836,600,005	5	0.0000006
100 %		+ 40	836,600,028	28	0.0000033
100 %		+ 50	836,599,997	-3	-0.0000004
115 %	4.37	+ 20	836,600,015	15	0.0000018
BATT. ENDPOINT	3.25	+ 20	836,600,001	1 Mada Ch 1	0.0000001

Table 6-30. Frequency Stability Data (Cellular GSM Mode – Ch. 190)

FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	INC	Reviewed by: Quality Manager
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Cellular GSM Frequency Stability Measurements (Cont'd) §2.1055 §22.355 §22.863 §22.905 RSS-132(4.3)

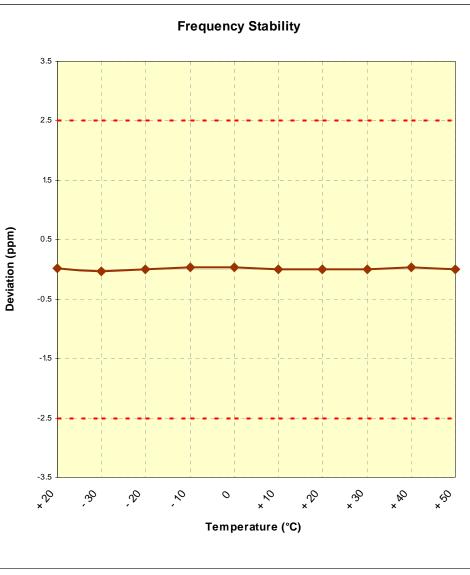


Figure 6-1. Frequency Stability Graph (Cellular GSM Mode – Ch. 190)

FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager
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6.11 Cellular CDMA Frequency Stability Measurements §2.1055 §22.355 §22.863 §22.905 RSS-132(4.3)

OPERATING FREQUENCY: 836,520,000 Hz

CHANNEL: 384

REFERENCE VOLTAGE: 3.8 VDC

DEVIATION LIMIT:	± 0.00025	% or 2.5 ppm
------------------	-----------	--------------

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	836,519,983	-17	-0.0000020
100 %		- 30	836,519,997	-3	-0.0000004
100 %		- 20	836,519,984	-16	-0.0000019
100 %		- 10	836,520,017	17	0.0000020
100 %		0	836,519,975	-25	-0.0000030
100 %		+ 10	836,520,028	28	0.0000033
100 %		+ 20	836,519,996	-4	-0.0000005
100 %		+ 30	836,520,025	25	0.0000030
100 %		+ 40	836,519,997	-3	-0.0000004
100 %		+ 50	836,520,002	2	0.0000002
115 %	4.37	+ 20	836,519,973	-27	-0.0000032
BATT. ENDPOINT	3.25	+ 20	836,520,018	18 Mada Ch (0.0000022

Table 6-31. Frequency Stability Data (Cellular CDMA Mode – Ch. 384)

FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager	
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Cellular CDMA Frequency Stability Measurements (Cont'd) §2.1055 §22.355 §22.863 §22.905 RSS-132(4.3)

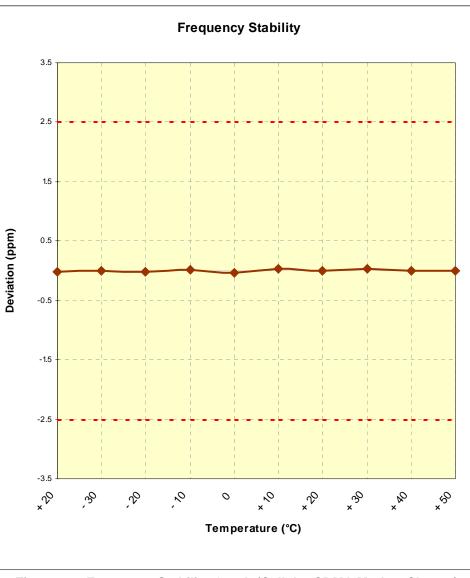


Figure 6-2. Frequency Stability Graph (Cellular CDMA Mode – Ch. 384)

FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	SAMSONG	Reviewed by: Quality Manager	
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6.12 Cellular WCDMA Frequency Stability Measurements §2.1055 §22.355 §22.863 §22.905 RSS-132(4.3)

OPERATING FREQUENCY: 836,600,000 Hz

CHANNEL: 4183

REFERENCE VOLTAGE: <u>3.8</u> VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	836,600,002	2	0.0000002
100 %		- 30	836,599,995	-5	-0.0000006
100 %		- 20	836,599,970	-30	-0.0000036
100 %		- 10	836,600,001	1	0.0000001
100 %		0	836,599,974	-26	-0.0000031
100 %		+ 10	836,599,971	-29	-0.0000035
100 %		+ 20	836,600,029	29	0.0000035
100 %		+ 30	836,600,011	11	0.0000013
100 %		+ 40	836,599,985	-15	-0.0000018
100 %		+ 50	836,599,982	-18	-0.0000022
115 %	4.37	+ 20	836,599,985	-15	-0.0000018
BATT. ENDPOINT	3.25	+ 20	836,599,973	-27	-0.0000032

Table 6-32. Frequency Stability Data (Cellular WCDMA Mode – Ch. 4183)

FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager
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Cellular WCDMA Frequency Stability Measurements (Cont'd) §2.1055 §22.355 §22.863 §22.905 RSS-132(4.3)

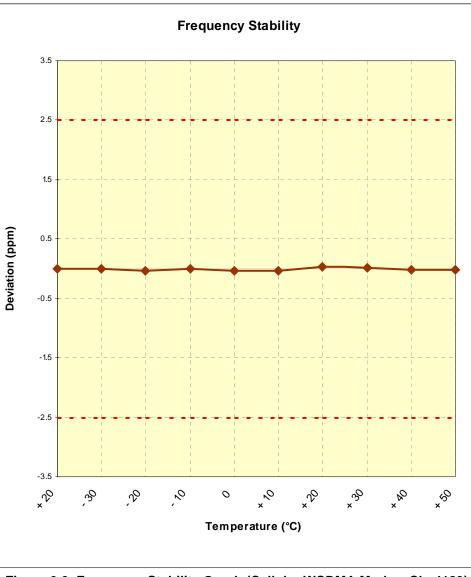


Figure 6-3. Frequency Stability Graph (Cellular WCDMA Mode – Ch. 4183)

FCC ID: A3LSCHI545	<u>PCTEST</u>	FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager
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6.13 PCS GSM Frequency Stability Measurements §2.1055 §22.355 §24.229 §24.235 RSS-139(6.3)

OPERATING FREQUENCY: 1,880,000,000 Hz

CHANNEL: 661

 REFERENCE VOLTAGE:
 3.8
 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	1,879,999,986	-14	-0.0000007
100 %		- 30	1,880,000,013	13	0.0000007
100 %		- 20	1,879,999,978	-22	-0.0000012
100 %		- 10	1,880,000,014	14	0.0000007
100 %		0	1,880,000,027	27	0.0000014
100 %		+ 10	1,879,999,998	-2	-0.0000001
100 %		+ 20	1,880,000,019	19	0.0000010
100 %		+ 30	1,879,999,979	-21	-0.0000011
100 %		+ 40	1,879,999,975	-25	-0.0000013
100 %		+ 50	1,880,000,019	19	0.0000010
115 %	4.37	+ 20	1,879,999,997	-3	-0.0000002
BATT. ENDPOINT	3.25	+ 20	1,879,999,985	-15	-0.0000008

Table 6-33. Frequency Stability Data (PCS GSM Mode – Ch. 661)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain inband when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager
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PCS GSM Frequency Stability Measurements (Cont'd) §2.1055 §22.355 §24.229 §24.235 RSS-139(6.3)

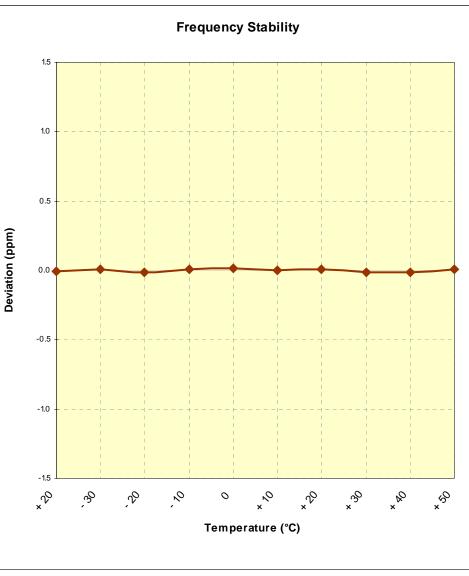


Figure 6-4. Frequency Stability Graph (PCS GSM Mode – Ch. 661)

FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager
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6.14 PCS CDMA Frequency Stability Measurements §2.1055 §22.355 §24.229 §24.235 RSS-139(6.3)

OPERATING FREQUENCY: 1,880,000,000 Hz

CHANNEL: 661

REFERENCE VOLTAGE: 3.8 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	1,880,000,017	17	0.0000009
100 %		- 30	1,880,000,008	8	0.0000004
100 %		- 20	1,880,000,026	26	0.0000014
100 %		- 10	1,879,999,988	-12	-0.0000006
100 %		0	1,879,999,973	-27	-0.0000014
100 %		+ 10	1,879,999,994	-6	-0.0000003
100 %		+ 20	1,879,999,974	-26	-0.0000014
100 %		+ 30	1,880,000,002	2	0.0000001
100 %		+ 40	1,880,000,028	28	0.0000015
100 %		+ 50	1,879,999,998	-2	-0.0000001
115 %	4.37	+ 20	1,880,000,022	22	0.0000012
BATT. ENDPOINT	3.25	+ 20	1,879,999,976	-24	-0.0000013

Table 6-34. Frequency Stability Data (PCS CDMA Mode – Ch. 600)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain inband when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager
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PCS CDMA Frequency Stability Measurements (Cont'd) §2.1055 §22.355 §24.229 §24.235 RSS-139(6.3)

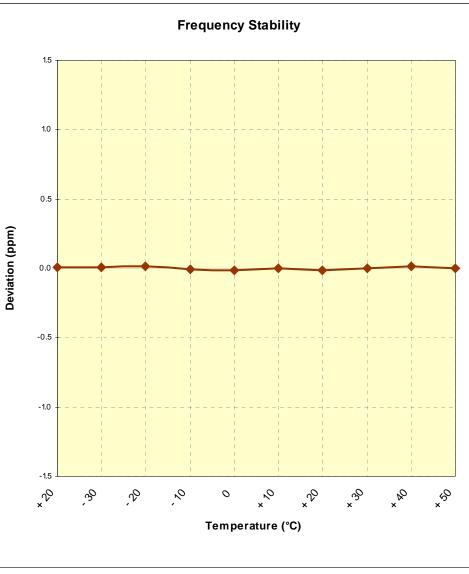


Figure 6-5. Frequency Stability Graph (PCS CDMA Mode – Ch. 600)

FCC ID: A3LSCHI545	PCTEST	FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager
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6.15 PCS WCDMA Frequency Stability Measurements §2.1055 §22.355 §24.229 §24.235 RSS-139(6.3)

OPERATING FREQUENCY: 1,880,000,000 Hz

CHANNEL: 9400

REFERENCE VOLTAGE: <u>3.8</u> VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	1,880,000,025	25	0.0000013
100 %		- 30	1,879,999,972	-28	-0.0000015
100 %		- 20	1,880,000,003	3	0.0000002
100 %		- 10	1,880,000,001	1	0.0000001
100 %		0	1,879,999,992	-8	-0.0000004
100 %		+ 10	1,880,000,029	29	0.0000015
100 %		+ 20	1,880,000,020	20	0.0000011
100 %		+ 30	1,880,000,020	20	0.0000011
100 %		+ 40	1,879,999,995	-5	-0.0000003
100 %		+ 50	1,880,000,028	28	0.0000015
115 %	4.37	+ 20	1,879,999,982	-18	-0.0000010
BATT. ENDPOINT	3.25	+ 20	1,879,999,986	-14	-0.0000007

Table 6-35. Frequency Stability Data (PCS WCDMA Mode - Ch. 9400)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain inband when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager	
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PCS WCDMA Frequency Stability Measurements (Cont'd) §2.1055 §22.355 §24.229 §24.235 RSS-139(6.3)

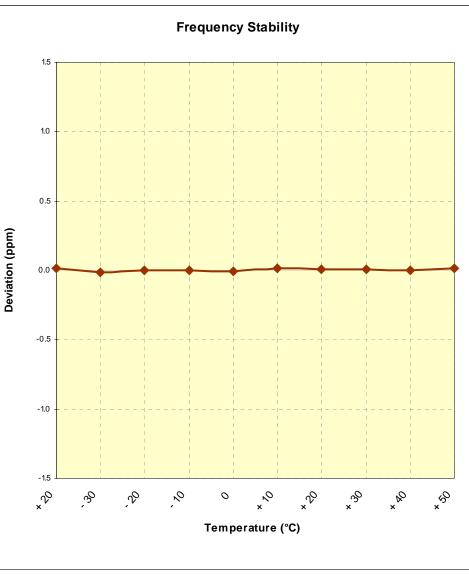


Figure 6-6. Frequency Stability Graph (PCS WCDMA Mode – Ch. 9400)

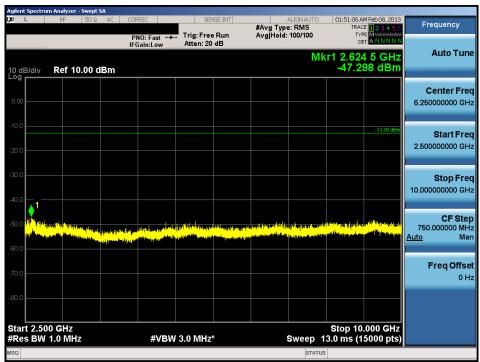
FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager	
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7.0 PLOTS OF EMISSIONS

Agilent Spectru LXI L	m Analyzer - Swept RF 50 Ω		REC	SEL	SE:INT		ALIGNAUTO	01:50:40.4	M Feb 08, 2013	
	14 00 1		IO: Fast ↔	Trig: Free	Run	#Avg Typ Avg Hold:	e: RMS	TRAC		Frequency
10 dB/div	Ref 30.00 d		ain:Low	Atten: 40	dB		Mkr	1 2.303	87 GHz 20 dBm	Auto Tune
20.0										Center Fred 1.265000000 GHz
0.00										Start Free 30.000000 MH
-10.0									-13.00 dBm	Stop Fred 2.500000000 GHz
h Brunnelle	delimine (a. l. b) and the second	anish jiri _{se} stari) terhiji Taki tera _t ak _i teta s ^{ala}	eri Ani ani fairtean An agus dheana	teleko aren matetako Kongoren jaretakon eta	Alexandra a Data a Data Manga da Sanga da San	r Hannard V Tarang Mara 19 ga an Ional Astronom	i tering bili bila Tering a si anti i si	den provinse en la		CF Step 247.000000 MH: <u>Auto</u> Mar
-40.0										Freq Offse 0 H
-60.0	au 1									
Start 30 N #Res BW			#VBW	/ 3.0 MHz	*		Sweep 4		.500 GHz 5000 pts)	
MSG							STATUS			

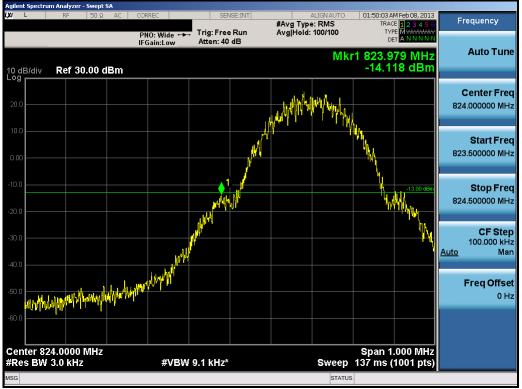
Plot 7-1. Conducted Spurious Plot (Cellular GSM Mode – Ch. 128)



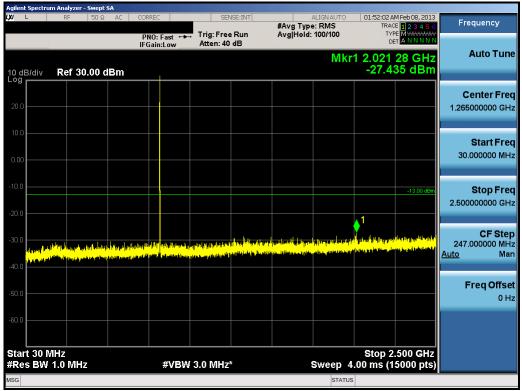
Plot 7-2. Conducted Spurious Plot (Cellular GSM Mode – Ch. 128)

FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	SAMSONE	Reviewed by: Quality Manager	
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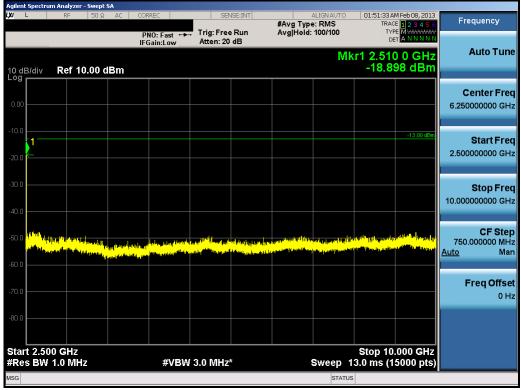
Plot 7-3. Band Edge Plot (Cellular GSM Mode - Ch. 128)



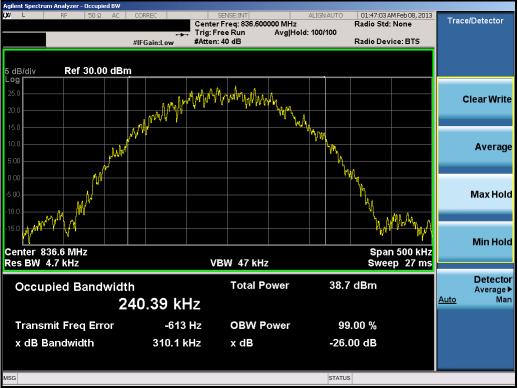
Plot 7-4. Conducted Spurious Plot (Cellular GSM Mode - Ch. 190)

FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager	
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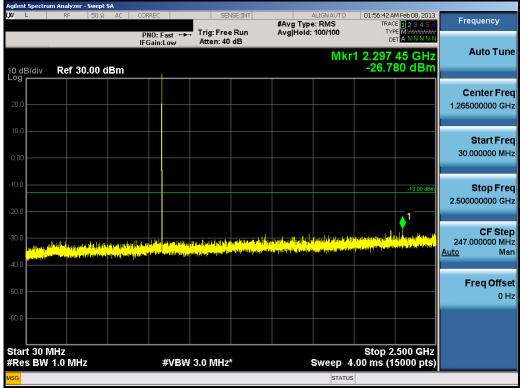




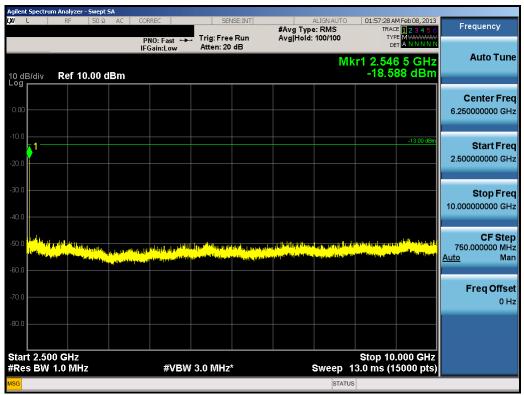
Plot 7-6. Occupied Bandwidth Plot (Cellular GSM Mode - Ch. 190)

FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	SAMSUNC	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 53 of 85
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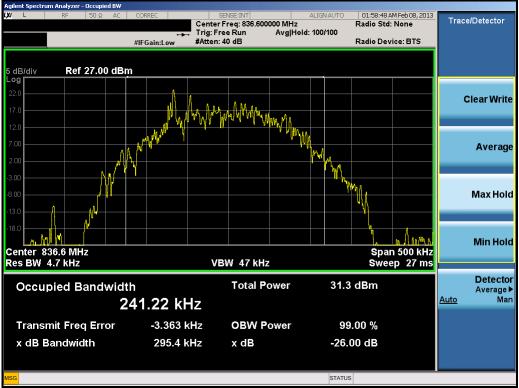
Plot 7-8. Conducted Spurious Plot (Cellular GSM Mode - Ch. 251)

FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Plot 7-10. Occupied Bandwidth Plot (EDGE850 Mode – Ch. 190)

FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager	
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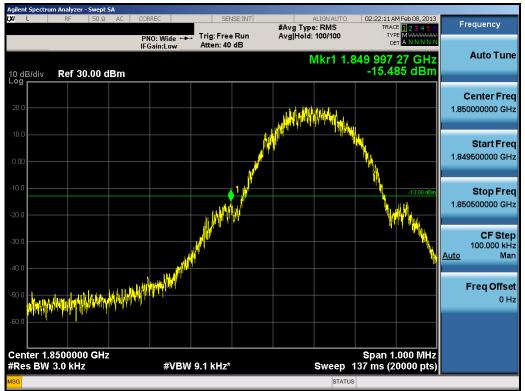


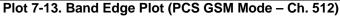


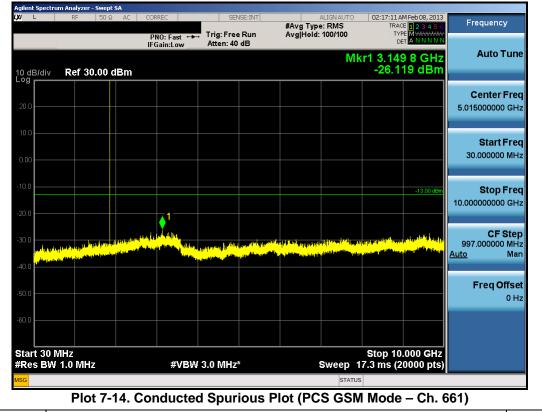


FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	SAMSUNE	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 56 of 85
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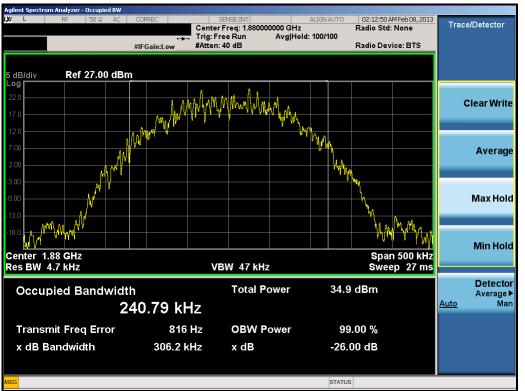


FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager		
Test Report S/N:	Test Dates:	EUT Type:	Page 57 of 85		
0Y1302120251.A3L	February 7-12, 2013	Portable Handset	Fage 57 01 65		





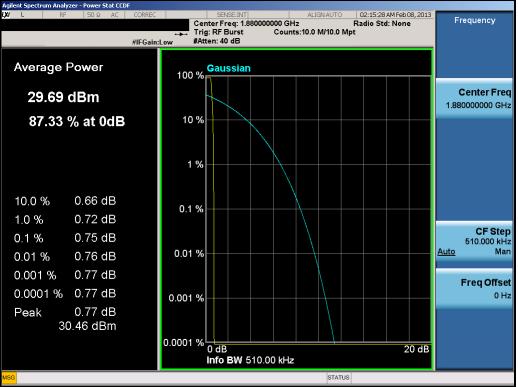




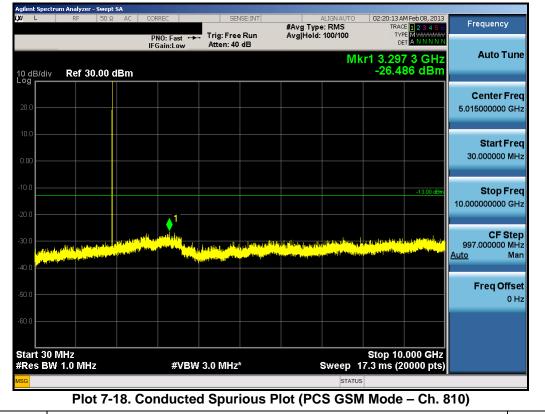
Plot 7-16. Occupied Bandwidth Plot (PCS GSM Mode - Ch. 661)

FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager	
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0Y1302120251.A3L	February 7-12, 2013	Portable Handset	Fage 56 01 65	





Plot 7-17. Peak-Average Ratio Plot (PCS GSM Mode - Ch. 661)

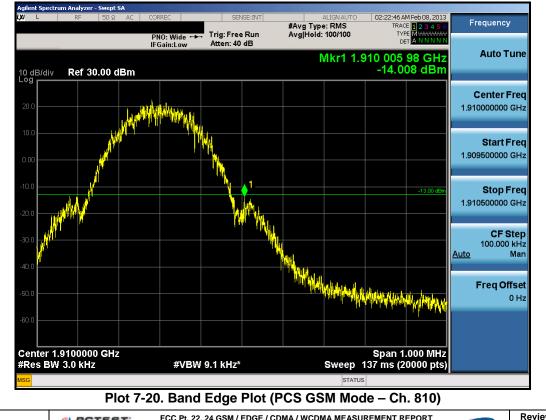


FCC ID: A3LSCHI545	<u>PCTEST</u>	FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	MSONC	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 59 of 85
0Y1302120251.A3L	February 7-12, 2013	Portable Handset		Fage 59 01 65
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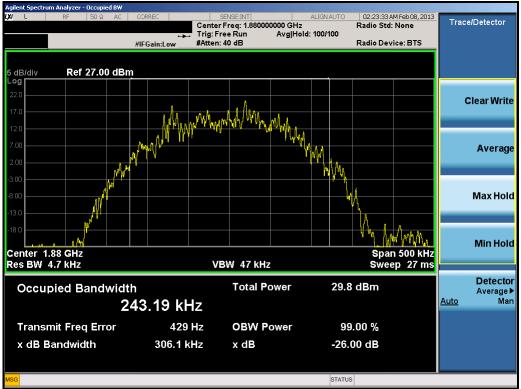
U L	RF 50 Ω	AC CORREC		NSE:INT	#Avg Type		TRAC	M Feb 08, 2013 E <mark>1 2 3 4 5 6</mark>	Frequency
		PNO: Fast IFGain:Lov			Avg Hold:		^{DE} 1 16.914	3 GHz	Auto Tune
0 dB/div	Ref 10.00 dE	3m					-36.5	93 dBm	
									Center Fre
0.00									15.000000000 GH
10.0								-13.00 dBm	Otent Eng
20.0									Start Fre 10.000000000 G⊢
20.0									
30.0						1			Stop Fre
40.0					a almante sara				20.000000000 GH
	and the second s			and a second	and the state of the				CF Ste
50.0 <mark>dintificat</mark>		NI AND DESCRIPTION OF A DE							1.000000000 GH Auto Ma
60.0									
70.0									Freq Offse
70.0									0 H
80.0									
tart 10.0 Res BW	00 GHz 1.0 MHz	#V	BW 3.0 MHz	*		Sweep_2	Stop 20. 5.3 ms (2	.000 GHz 0000 pts)	
SG						STATUS			





FCC ID: A3LSCHI545	PCTEST	FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 60 of 85
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Plot 7-21. Occupied Bandwidth Plot (EDGE1900 Mode - Ch. 661)



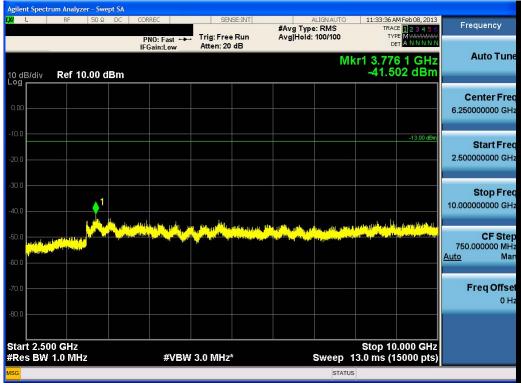
Plot 7-22. Peak-Average Ratio Plot (EDGE1900 Mode - Ch. 661)

FCC ID: A3LSCHI545	<u>«NPCTEST</u>	FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	SUNC	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 61 of 85
0Y1302120251.A3L	February 7-12, 2013	Portable Handset		Fage 61 01 65
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L	RF 5	0Ω DC	CORREC	SEN	ISE:INT	#Avg Typ	ALIGNAUTO		AM Feb 08, 2013	Frequenc	v
			PNO: Fast + IFGain:Low	Trig: Free Atten: 40		#Avg Typ Avg Hold:		TY	CE 1 2 3 4 5 6 PE M WWWWWW DET A N N N N N		,
) dB/div	Ref 30.0	0 dBm					Mkr	1 2.020 -28.9	62 GHz 98 dBm	Auto 1	Гun
										Center 1.26500000	
.00										Start 30.000000	
0.0									-13.00 dBm	Stop	
0.0 1111111111		nt at filiaith ait fan y fili gwy flyn y can y can firmau			na a dalimità sella Versi a della dalla d	a dal a dal manifiziti di Renga da manga da manifiziti Renga da manga da manifiziti	d al can fashasan fi rayan sa ta shafa da shafa		endada barransetertikası Daraya generi ayır taraşını 12.	CF : 247.000000 <u>Auto</u>	
0.0										Freq O	offs 0
0.0 tart 30 M								Stop 2	2.500 GHz		
Res BW	1.0 MHz		#VB	W 3.0 MHz			Sweep 4	-	5000 pts)		





Plot 7-24. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 1013)

FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	MSUNE	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 62 of 85
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Plot 7-25. Band Edge Plot (Cellular CDMA Mode - Ch. 1013)



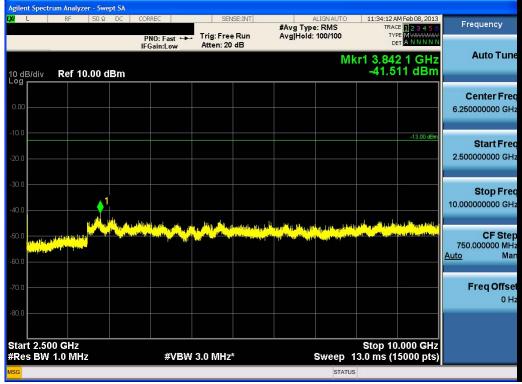
Plot 7-26. 4MHz Span Plot (Cellular CDMA Mode - Ch. 1013)

FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	SUNC	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 63 of 85
0Y1302120251.A3L	February 7-12, 2013	Portable Handset		raye 03 01 85
© 2013 PCTEST Engineering	aboratory Inc	•		V 2 4



L	RF 50 9	DC (CORREC	SE	NSE:INT		ALIGNAUTO		M Feb 08, 2013	Frequency
			PNO: Fast + IFGain:Low	Trig: Fre		#Avg Typ Avg Hold:		TYP	E 1 2 3 4 5 6 E M WWWW T A N N N N N	
) dB/div	Ref 30.00	dBm					Mkr	1 2.089 -27.7	46 GHz 11 dBm	Auto Tu
20.0										Center Fr 1.265000000 G
0.0										Start Fre 30.000000 Mi
0.0								<u></u>	-13.00 dBm	Stop Fr 2.500000000 G
0.0 <mark>ulliustatut</mark> 0.0 <mark>ulliustatut</mark>			that is not a state of all		l (de tribu det	النزية الطورية المن النفل جميع من المن المن المن النفل			rein mailean ann 14 Ann ann 16an Ann 14 Fraintean 16an Ann 14	CF St 247.000000 M <u>Auto</u> M
0.0										Freq Offs 0
0.0 tart 30 N								Stop 2	.500 GHz	
Res BW	1.0 MHz		#VB	W 3.0 MHz	*		Sweep 4	.00 ms (1:	5000 pts)	

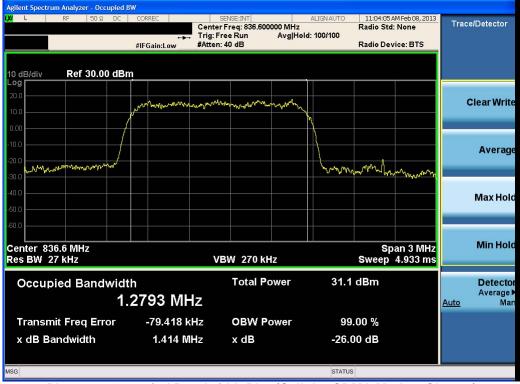




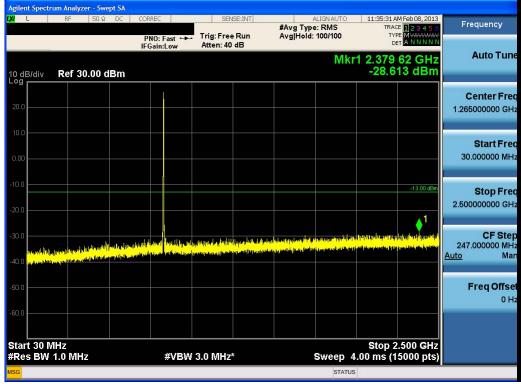
Plot 7-28. Conducted Spurious Plot (Cellular CDMA Mode - Ch. 384)

FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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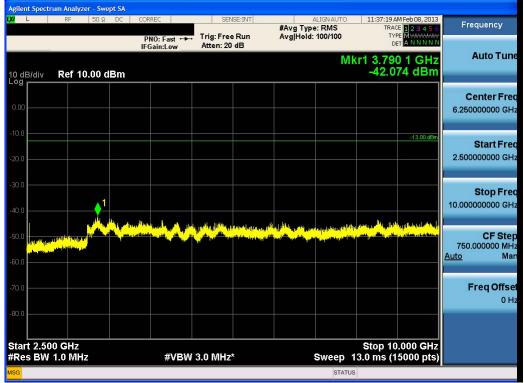




Plot 7-30. Conducted Spurious Plot (Cellular CDMA Mode - Ch. 777)

FCC ID: A3LSCHI545	<u> PCTEST</u>	FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 65 of 85
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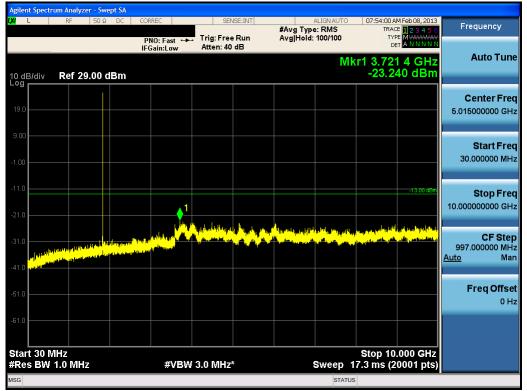
Plot 7-32. Band Edge Plot (Cellular CDMA Mode - Ch. 777)

FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager
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L	RF 50 Ω D	C CORREC	SENSE:INT	ALIGNAUTO	11:04:57 AM Feb 08, 2013	Frequency
		PNO: Wide ++ IFGain:Low	. Trig: Free Run Atten: 40 dB	#Avg Type: RMS	TRACE 123456 TYPE A WWWW DET A N N N N N	
0 dB/div R	ef 30.00 dBr	n		Mki	1 850.040 MHz -30.99 dBm	Auto Tur
20.0						Center Fre 852.000000 MH
10.0 D.00						Start Fre 850.000000 MH
20.0					-13.00 dBm	Stop Fre 854.000000 MH
0.0		to reason where the				CF Ste 400.000 ki <u>Auto</u> M
0.0			and a second and a s			Freq Offs 0 F
tart 850.000 Res BW 100		#VBW	/ 300 kHz	#Sweet	Stop 854.000 MHz 5 3.00 s (1001 pts)	





Plot 7-34. Conducted Spurious Plot (PCS CDMA Mode - Ch. 25)

FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	AMSONE	Reviewed by: Quality Manager			
Test Report S/N:	Test Dates:	EUT Type:		Dogo 67 of 95			
0Y1302120251.A3L	February 7-12, 2013	Portable Handset	Page 67 of 85				
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Agilent Spectr <mark>XI</mark> L	r <mark>um Analyzer - S</mark> RF 50		CORREC	SE	NSE:INT		ALIGNAUTO		M Feb 08, 2013	Frequency
			PNO: Fast ← IFGain:Low	Trig: Fre		#Avg Ty Avg Hol	pe: RMS d: 100/100	TYF DE	Е <mark>1</mark> 23456 РЕМ <i>ШИНИИ</i> ТАЛЛЛЛЛЛ	Troquency
10 dB/div Log	Ref 0.00 (dBm					Mkr	1 19.11 -50.1	8 0 GHz 72 dBm	Auto Tuno
-10.0									-13.00 dBm	Center Fred 15.000000000 GH
20.0 30.0										Start Fre 10.000000000 GH
40.0									↓1	Stop Fre 20.000000000 G⊦
50.0 * 10	ter _{a b} anda <mark>d</mark> a stificia di Anglego di Anggana anggana pana pana da kanggana Anggana anggana pana pana da kanggana pana	di jada ya kata di k		d light of the property of the <mark>also bey well as a start of the property of th</mark>				month and a second	na in an	CF Ste 1.000000000 GH <u>Auto</u> Ма
30.0										Freq Offs 0 H
90.0 Start 10.0								Stop 20	.000 GHz	
Res BW	1.0 MHz		#VB	N 3.0 MHz	*		Sweep 1	7.3 ms (2	0001 pts)	

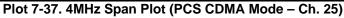


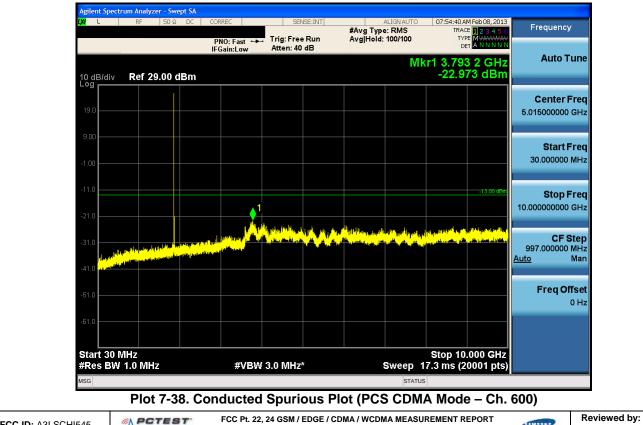


FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager					
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0Y1302120251.A3L	February 7-12, 2013	Portable Handset	Fage 00 01 05					



Agilent Spectr XI L	um Analyzer - Swept S RF 50 Ω D0		SENSE:INT	ALIGNAUTO	07:51:24 AM Feb 08, 2013	
		PNO: Wide 🔸	Trig: Free Run Atten: 36 dB	#Avg Type: RMS	TRACE 123456 TYPE MWWWW DET A N N N N N	Frequency
10 dB/div	Ref 25.00 dBr	n		Mkr1	1.848 996 GHz -18.39 dBm	Auto Tune
15.0						Center Fred 1.847000000 GH:
5.00						Start Fre 1.845000000 GH
25.0					-13.00 c 1	Stop Fre 1.849000000 GH
35.0 45.0						CF Ste 400.000 kH <u>Auto</u> Ma
55.0						Freq Offs o 이 H
65.0 Start 1.84 Res BW	5000 GHz	#\/P\//	3.0 MHz	S #Swoor	top 1.849000 GHz 0 1.00 s (1001 pts)	
		#4844	5.0 19112	#Sweep		





FCC ID: A3LSCHI545		(CERTIFICATION)	Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 69 of 85
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gilent Spectrum Analyzer - Swep L RF 50 Ω	DC CORREC	SENSE:INT	ALIGNAUTO	07:57:20 AM Feb 08, 2013	
	PNO: Fast IFGain:Low		#Avg Type: RMS Avg Hold: 100/100	07:57:20 AM FED 08, 2013 TRACE 1 2 3 4 5 6 TYPE M WWWW DET A N N N N N	Frequency
0 dB/div Ref 0.00 dB	m		Mkr	1 19.798 5 GHz -51.353 dBm	Auto Tun
0.0				-13.00 dBm	Center Fre 15.000000000 GF
0.0					Start Fre 10.000000000 G⊦
0.0					Stop Fre 20.00000000 GH
		up a de la tipe d'a de la de la seconda d La seconda de la seconda de	a di patinin di Gina di Gina di Gina di Angela. A di angenera di Gina da di Angela di Ang	Albentigen om at Hand Andrea Anna Anti- Anna Anna Anna Anna Anna Anna Anna Anna	CF Ste 1.000000000 GI Auto Mi
0.0					Freq Offs
0.0					
tart 10.000 GHz Res BW 1.0 MHz	#VBW	3.0 MHz*	Sweep 1	Stop 20.000 GHz 7.3 ms (20001 pts)	
G			STATUS		

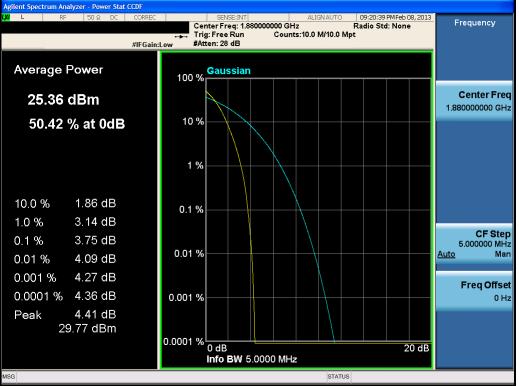




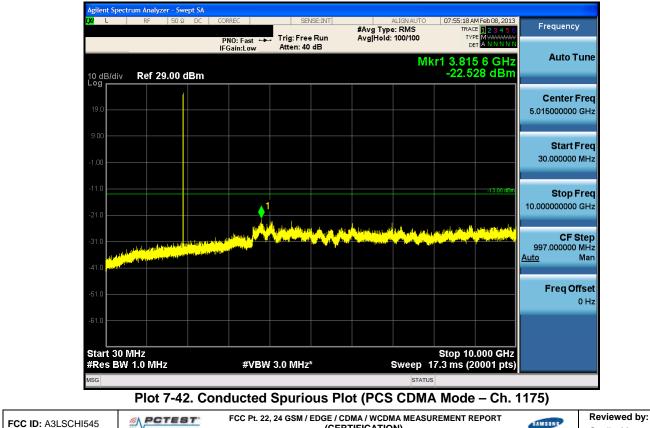
Plot 7-40. Occupied Bandwidth Plot (PCS CDMA Mode - Ch. 600)

FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager			
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© 2012 DCTEST Engineering Lo	horoton Inc		V 2 4



L	RF 50)Ω DC	CORREC	SE	INSE:INT	#Avg Typ	ALIGNAUTO	TRACE	1 Feb 08, 2013	Frequency
			PNO: Fast IFGain:Low	Atten: 1		Avg Hold		TYPE DE1	ANNNN	
0 dB/div og reserved	Ref 0.00	dBm					Mkr	1 19.451 -51.33	5 GHz 6 dBm	Auto Tun
10.0									-13.00 dBm	Center Fre 15.000000000 G⊢
80.0										Start Fre 10.000000000 G⊦
10.0 50.0									1	Stop Fre 20.000000000 GF
:0.0 ******		elegy of the tell and the second s		in li la a shi ila a sanda. Anna iza sa ƙwalari		i y dan da kana kana da kana da Kana da kana da	i a killer i di ilian i Angeler i anti dan serie i angeler i ange		(1), 1), 1), 1), 1), 1), 1), 1), 1), 1),	CF Ste 1.000000000 GH <u>Auto</u> Ma
0.0										Freq Offs 0 F
10.0	00 GHz							Stop 20.	000 GHz	
	1.0 MHz		#VE	3W 3.0 MH:	z *		Sweep 1	7.3 ms (20	0001 pts)	



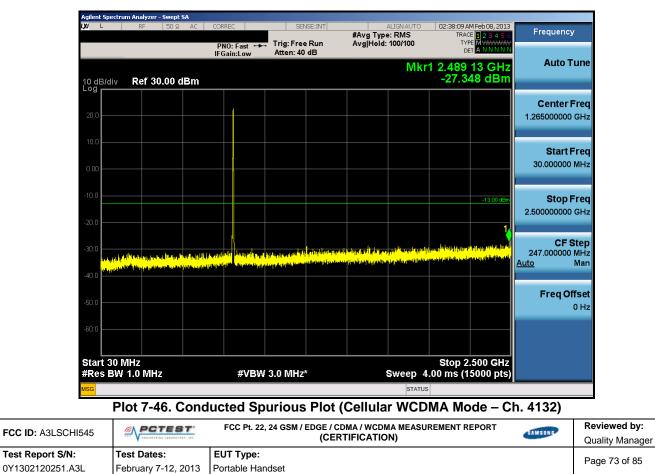


FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager				
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L RF 50Ω	DC CORREC	SE	VSE:INT		ALIGN AUTO	07:50:28 AM F	eb 08, 2013	
		/ide 🛶 Trig: Fre	e Run	#Avg Type			23456 1000000000000000000000000000000000000	Frequency
0 dB/div Ref 25.00 c		LUW Hitten. or			Mkr1	1.911 004 -19.94	4 GHz	Auto Tune
-								Center Fred 1.913000000 GH:
5.00							-13.00 dBm	Start Fre 1.911000000 GH
25.0							-13.00 ubm	Stop Fre 1.915000000 G⊢
15.0	a far a f	Tangatakan Antoneshadara		***	**********	The second se	an a	CF Ste 400.000 kH <u>Auto</u> Ma
55.0								Freq Offso 0 ⊦
tart 1.911000 GHz Res BW 1.0 MHz		#VBW 3.0 MHz			St #Sween	op 1.9150 1.00 s (10	00 GHz	

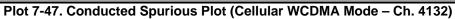




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	um Analyzer - Swept SA					
LXI L	RF 50Ω AC	CORREC	SENSE:INT	ALIGN AUTO #Avg Type: RMS	02:38:31 AM Feb 08, 2013 TRACE 1 2 3 4 5 6	Frequency
		PNO: Fast 🔸 IFGain:Low	. Trig: Free Run Atten: 20 dB	Avg Hold: 100/100	DET A N N N N N	Auto Tune
10 dB/div	Ref 10.00 dBm			MI	(r1 9.137 4 GHz -47.660 dBm	Auto Tune
0.00						Center Freq 6.25000000 GHz
-10.0					-13.00 dBm	Start Freq 2.500000000 GHz
-30.0						Stop Freq 10.000000000 GHz
-50.0 		Herbrey (a) Witten (a) en Witten 1990 - Alexandra Maria, and Antonio and A	un e aller die ander	<mark>nga di panangan kangan kan Kangan kangan kangan</mark>	a for the second se The first the second	CF Step 750.000000 MHz <u>Auto</u> Man
-70.0						Freq Offset 0 Hz
-80.0 Start 2.5					Stop 10.000 GHz	
	/ 1.0 MHz	#VBW	3.0 MHz*		13.0 ms (15000 pts)	
MSG				STATU	8	



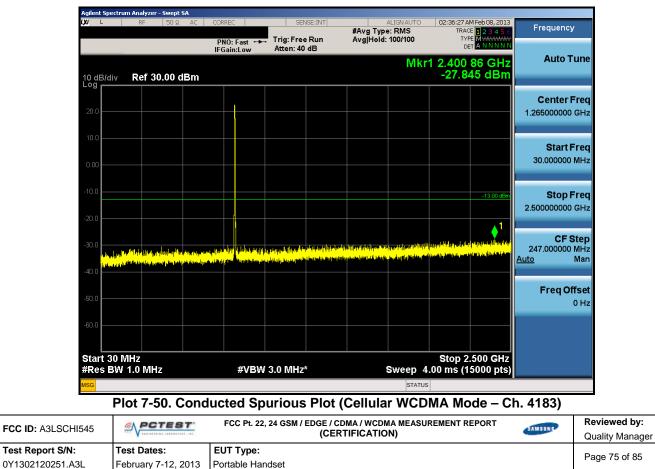


FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 74 of 85
0Y1302120251.A3L	February 7-12, 2013	Portable Handset	raye 74 01 05
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L	RF 50 Ω AC	CORREC	SEN	ISE:INT		ALIGN AUTO		M Feb 08, 2013	Frequency
		PNO: Wide 🔸 IFGain:Low	. Trig: Free Atten: 40		#Avg Typ	e: RMS	TYF	E 123456 E MWWWW A N N N N N	
0 dB/div	Ref 30.00 dBm					Mkr	1 822.8 -34.3	48 MHz 36 dBm	Auto Tur
20.0									Center Fre 821.000000 MH
0.0									Start Fre 819.000000 MH
0.0								-13.00 dBm	Stop Fre 823.000000 MH
0.0						And the second second second	مەرمىلىقى بىلى مەللىقىدىرى	1-	CF Ste 400.000 kł <u>Auto</u> Ma
).0 <mark></mark>	arter fellen gegen geste die syn gester er felst er felste gegen geste die syn geste felste gegen geste die syn		U						Freq Offs 0 I
o.o enter 82	1.000 MHz						Span 4	.000 MHz	
tes BW	100 kHz	#VBW	300 kHz			#Sweep	3.00 s (1001 pts)	

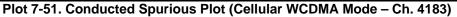
Plot 7-49. 4MHz Span Plot (Cellular WCDMA Mode – Ch. 4132)

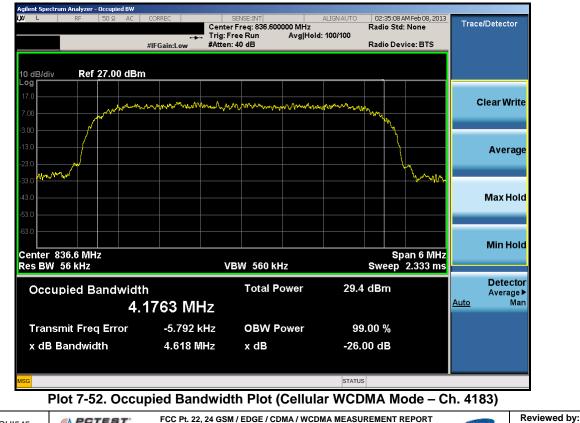


0Y1302120251.A3L	February 7-12, 2013
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gilent Spectro XI L	um Analyzer - Swep		000050	051	05.11.27			00.07.00.0		
KU L	RF 50 :	Ω AC (CORREC	SEN	ISE:INT	#Avg Typ		TRAC	M Feb 08, 2013	Frequency
			PNO: Fast ++	Trig: Free Atten: 20		Avg Hold	: 100/100	T YF DE	E M WWWWW A N N N N N	
			IFGain:Low	Atten: 20	40		ML	(r1 2.50)		Auto Tune
10 dB/div	Ref 10.00	dBm					IVIP	-46.4	93 dBm	
- ^{og} [
										Center Fre
0.00										6.250000000 GH
-10.0									-13.00 dBm	Start Fre
										2.500000000 GH
-20.0										2.000000000000
-30.0										Stop Fre
-40.0										10.000000000 GH
1										
-50.0				dent to a				a lakata a sa		CF Ste
Station .		an he an he doubt					a de la cale de la cale Na cale de la	aliante propio de la composición de la	-	750.000000 MH <u>Auto</u> Ma
-60.0		No. of the local division of the local divis	MD							
										Freq Offse
-70.0										0 H
										UN
-80.0										
Start 2.5	00 GH7							Stop 10	.000 GHz	
	1.0 MHz		#VBW	3.0 MHz*	*		Sweep 1	13.0 ms (1	5000 pt <u>s)</u>	
ISG							STATUS			

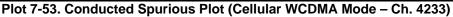


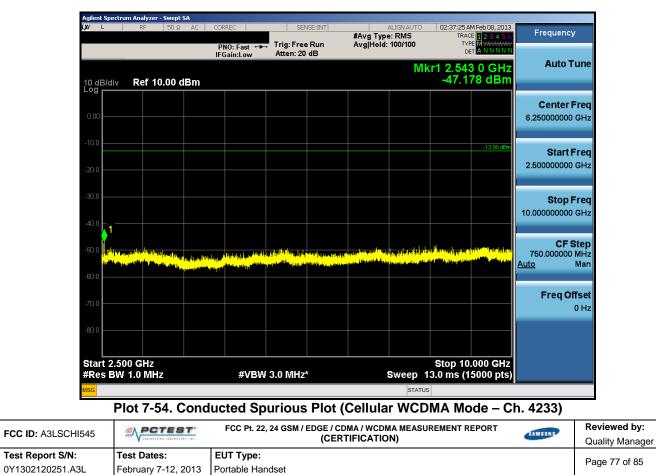


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	m Analyzer - Swept SA								
LXIL	RF 50 Ω	AC CORREC	S	ENSE:INT	#Avg Type	ALIGN AUTO	02:37:41 AM F	eb 08, 2013	Frequency
10 dB/div	Ref 30.00 dB	PNO: Fas IFGain:Lo			Avg Hold:	100/100	TYPE	0 GHz	Auto Tune
20.0									Center Freq 1.265000000 GHz
0.00									Start Freq 30.000000 MHz
-10.0								-13.00 dBm	Stop Freq 2.500000000 GHz
-30.0 1 ¹¹ 00011	NATANYA MANANA MANA Manana manana	alish oly should be a state of the state of	e de parte por la presida da de la compaña de terres de la compaña da de la compaña de la compaña de la compaña	en pour les propositions en pour les propositions en pour les propositions	lingun förar og lega för straga förar og lega för		1 Bahallag bayiya gul da Jac dayan ya ya dayan da	en de la	CF Step 247.000000 MHz <u>Auto</u> Man
-40.0									Freq Offset 0 Hz
-60.0	лн ₂						Stop 2.5	00 GHz	
#Res BW		#1	VBW 3.0 MH	Z*		Sweep 4	.00 ms (150	000 pts)	
MSG						STATUS			









Plot 7-55. Band Edge Plot (Cellular WCDMA Mode – Ch. 4233)

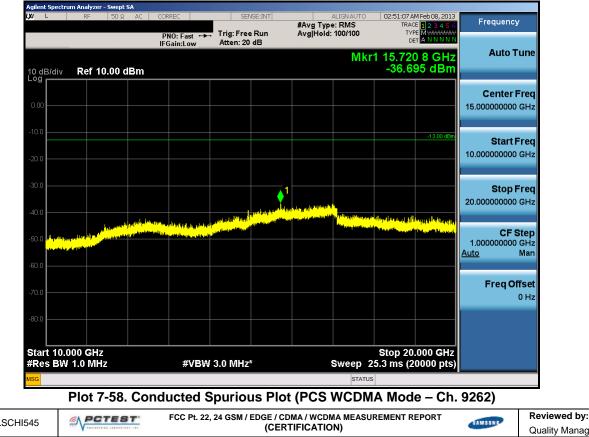


FCC ID: A3LSCHI545		FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager	
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L RF 50 Ω AC	CORREC PNO: Fast ↔	Trig: Free	Run A	Avg Type: F Avg Hold: 10		TRACE TYPE	Feb 08, 2013 1 2 3 4 5 6 M	Frequency
0 dB/div Ref 30.00 dBm	IFGain:Low	Atten: 40 d	1 B		Mkr	1 3.437	4 GHz 1 dBm	Auto Tun
20.0								Center Fre 5.015000000 G⊦
0.00								Start Fre 30.000000 M⊦
20.0	1						-13.00 dBm	Stop Fre 10.000000000 G⊦
				a da bargatear (da bing ^{ten} tre _{sto, al} a para anti	and the state of the state	an an an Anna Anna Anna Anna Anna Anna	a la sulla di la sua di la sua di la sua di la sulla di la sua di la sulla di la sua di la sua di la sua di la Inggana di ^{di sulla} sulla di la sulla di Inggana di la sulla di la su	CF Ste 997.000000 MH <u>Auto</u> Ma
.0.0								Freq Offs 0 H
tart 30 MHz Res BW 1.0 MHz		3.0 MHz*				Stop 10.0	000 GHz 000 pts)	



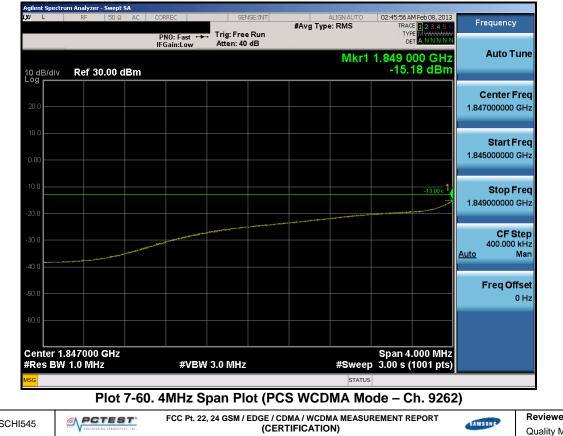


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XI L	m Analyzer - Swept SA RF 50 Ω AC	CORREC			#Avg Typ	ALIGN AUTO e: RMS		M Feb 08, 2013 E 1 2 3 4 5 6 E M WWWWW	Freq	uency
10 dB/div	Ref 30.00 dBm	PNO: Wide 🕶 IFGain:Low	Atten: 40			Mkr1	DE	00 GHz 79 dBm	A	uto Tune
20.0										nter Fre 00000 GH
0.00							an a			tart Fre 00000 GH
20.0				1				-13.00 dBm		top Fre 00000 G⊢
40.0	and a stand of the stand of t	^α διάλι η Lean ₍₁₉₉₇ δ. δ. γ. δ. γ. μαλιου γ. σ. γ. σ. γ.	Maria and a start of the start						40 <u>Auto</u>	CF Ste 00.000 k⊦ Ma
50.0									Fr	e q Offs o 0 ⊦
60.0	350000 GHz						Span 4	.000 MHz		
Res BW	100 kHz	#VBW	300 kHz			#Sweep	3.00 s (1001 pts)		

Plot 7-59. Band Edge Plot (PCS WCDMA Mode - Ch. 9262)

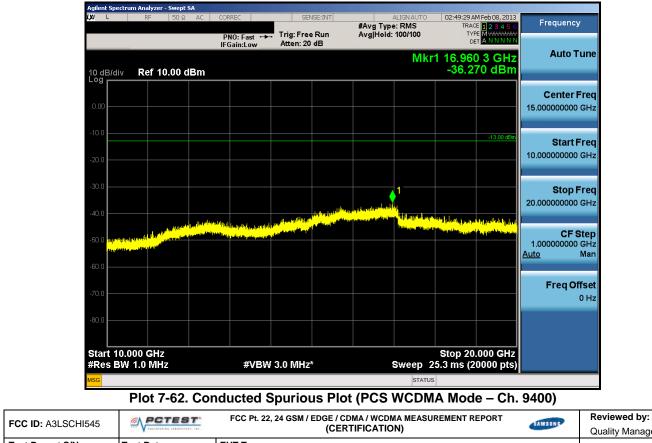


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Agilent Spectro	um Analyzer - Swe RF 50		CORREC	CEN	ISE:INT		ALIGNAUTO	02:50:00 A	M Feb 08, 2013	
	NI 30	M AC	PNO: Fast ++ IFGain:Low	.	Run	#Avg Typ Avg Hold:	e: RMS	TRAC	E 1 2 3 4 5 6 E MWWWWW T A N N N N N	Frequency
10 dB/div	Ref 30.00	dBm					MI	(r1 3.28) -27.4	54GHz 90dBm	Auto Tune
20.0										Center Fre 5.015000000 GH
0.00										Start Fre 30.000000 MH
-10.0			.1						-13.00 dBm	Stop Fre 10.000000000 GH
30.0 1000	(Dan te del terret ble ble better General de poster de la company de la comp			a fan her it fer oak fan tij Maar op de terre af statege		n falla Million a film y s In Anni Malij _{je} meni kom	anan an	e (1. an air i fi f	Here Hiller Aberline ,	CF Ste 997.000000 M⊢ <u>Auto</u> Ma
50.0										Freq Offso 0 ⊦
-60.0 Start 30	MHz 1.0 MHz		#\/B\A	/ 3.0 MHz	*		Sween 1	Stop 10	.000 GHz 0000 pts)	
ISG	1.0 19112			7 3.0 14112			STATUS		oooo praj	



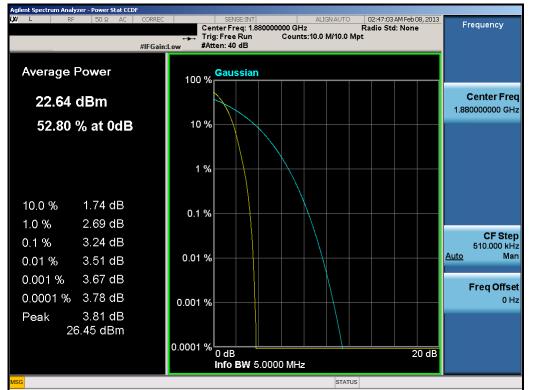


	···· V manatana anonarani, m.	(CERTIFICATION)	Quality Manager
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Agilent Spectrum Analyzer - Occupied BW						
LX/L RF 50Ω AC	C	SENSE:INT enter Freq: 1.880000000 GHz	Radio St	5 AM Feb 08, 2013 :d: None	Trace/Detector	
		rig: Free Run Avg Hol Atten: 40 dB	d: 100/100 Radio De	evice: BTS		
10 dB/div Ref 27.00 dE	3m					
17.0						
7.00	with man and man	when how when the weather when the	Marmonnon		Clear Write	
-3.00			- Jones			
-13.0				\	•	
				man	Average	
-23.0				- Co have		
-43.0					Max Hold	
-53.0					Max Hold	
-63.0						
-0310					Min Hold	
Center 1.88 GHz			S	pan 6 MHz		
Res BW 56 kHz		VBW 560 kHz	sweep	2.333 ms		
Occupied Bandwic	ith	Total Power	29.6 dBm		Detector Average►	
4.1528 MHz						
Transmit Freg Error	-6.029 kHz	OBW Power	99.00 %			
x dB Bandwidth	4.622 MHz	x dB	-26.00 dB			
MSG			STATUS			



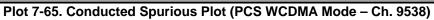


Plot 7-64. Peak-Average Ratio Plot (PCS WCDMA Mode - Ch. 9400)

FCC ID: A3LSCHI545	PCTEST	FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	MSUNC	Reviewed by: Quality Manager
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Agilent Spectrum Analyzer - Swept SA					
XIL RF 50Ω AC	CORREC	SENSE:INT	ALIGNAUTO	02:48:38 AM Feb 08, 2013 TRACE 1 2 3 4 5 6	Frequency
10 dB/div Ref 30.00 dBm	PNO: Fast +++ Trig: F IFGain:Low Atten:	ree Run 🛛 🗛	vg Hold: 100/100	1 3.288 4 GHz -26.597 dBm	Auto Tune
					Center Freq 5.015000000 GHz
0.00					Start Freq 30.000000 MHz
-10.0				-13.00 dBm	Stop Freq 10.000000000 GHz
			radik yeseyat da dala di karangan Karangan yang	n ja sin kanalari a ta sa kanalari sa kanalari sa	CF Step 997.000000 MH2 <u>Auto</u> Mar
-50.0					Freq Offse 0 H:
-60.0				Stop 10.000 GHz	
#Res BW 1.0 MHz	#VBW 3.0 MH	IZ*	Sweep 17	.3 ms (20000 pts)	
MSG			STATUS		





Plot 7-66. Conducted Spurious Plot (PCS WCDMA Mode - Ch. 9538)

FCC ID: A3LSCHI545	PCTEST	FCC Pt. 22, 24 GSM / EDGE / CDMA / WCDMA MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager				
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gilent Spectrum Analyzer - Swept SA K/ L RF 50 Ω AC	CORREC	SEN	SE:INT	#Avg Typ			M Feb 08, 2013 E <mark>1 2 3 4 5 6</mark>	Frequency
	PNO: Wide 🔸	Trig: Free Atten: 40		#Avg iyp	e. Rivis	TYF	E MWWWW A N N N N N	
10 dB/div Ref 30.00 dBm					Mkr1	1.910 0 -24.3	00 GHz 32 dBm	Auto Tuno
20.0								Center Free 1.910000000 GH
0.00	and have a set of the							Start Fre 1.908000000 GH
20.0			,1				-13.00 dBm	Stop Fre 1.912000000 GH
30.0				al vere population parent	an stand and a second secon	un an	v Bilde og belære er versjok of steranoge	CF Ste 400.000 kH <u>Auto</u> Ma
50.0								Freq Offs 0 F
©						Span 4	.000 MHz	
Res BW 100 kHz	#VBW	300 kHz			#Sweep	3.00 s (1001 pts)	

Plot 7-67. Band Edge Plot (PCS WCDMA Mode - Ch. 9538)



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8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSCHI545** complies with all the requirements of Parts 2, 22, 24 of the FCC rules.

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