

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: 03/08 - 03/13/2013 Test Site/Location: PCTEST Lab., Columbia, MD, USA Test Report Serial No.: 0Y1303130489.A3L

FCC ID:

A3LSHVE300SA

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 SHV-E300S, SHV-E300K 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: 95126968_1_4ID24]

			ERP/	EIRP
Mode	Tx Frequency	Emission	Max.	Max.
wode	(MHz)	Designator	Power	Power
			(W)	(dBm)
GSM1900	1850.2 - 1909.8	251KGXW	0.776	28.90
WCDMA850	826.4 - 846.6	4M23F9W	0.102	20.10
WCDMA1900	1852.4 - 1907.6	4M23F9W	0.186	22.68

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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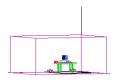


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MEASUREMENT REPORT FCC Part 22 & 24

§2.1033 General Information

APPLICANT:	Samsung Electronics Co., Ltd.
APPLICANT ADDRESS:	129, Samsung-ro, Yeongtong-gu
	Suwon-city, Gyeonggi-do, 443-803, Republic of Korea
TEST SITE:	PCTEST ENGINEERING LABORATORY, INC.
TEST SITE ADDRESS:	7185 Oakland Mills Road, Columbia, MD 21046 USA
FCC RULE PART(S):	§2 §22(H) §24(E)
BASE MODEL:	SHV-E300S
FCC ID:	A3LSHVE300SA
FCC CLASSIFICATION:	PCS Licensed Transmitter Held to Ear (PCE)
MODE:	GSM / WCDMA
Test Device Serial No.:	95126968_1_4ID24 Production Pre-Production Engineering
DATE(S) OF TEST:	03/08 - 03/13/2013
TEST REPORT S/N:	0Y1303130489.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
 - 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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INTRODUCTION 1.0

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.

Testing Facility 1.2

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.

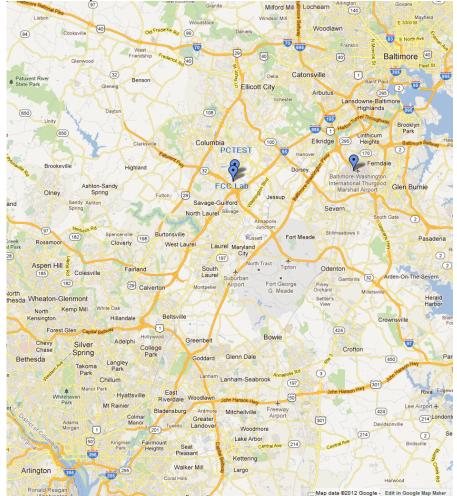


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Portable Handset FCC ID: A3LSHVE300SA**. 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:

1900 GSM/GPRS, 850/1900 WCDMA/HSPA, Band 5 , 17 (5/10MHz) LTE, 802.11a/ac/b/g/n WLAN (DTS/NII), Bluetooth (1x,EDR, LE), NFC

2.3 Test Configuration

The Samsung Portable Handset FCC ID: A3LSHVE300SA 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.

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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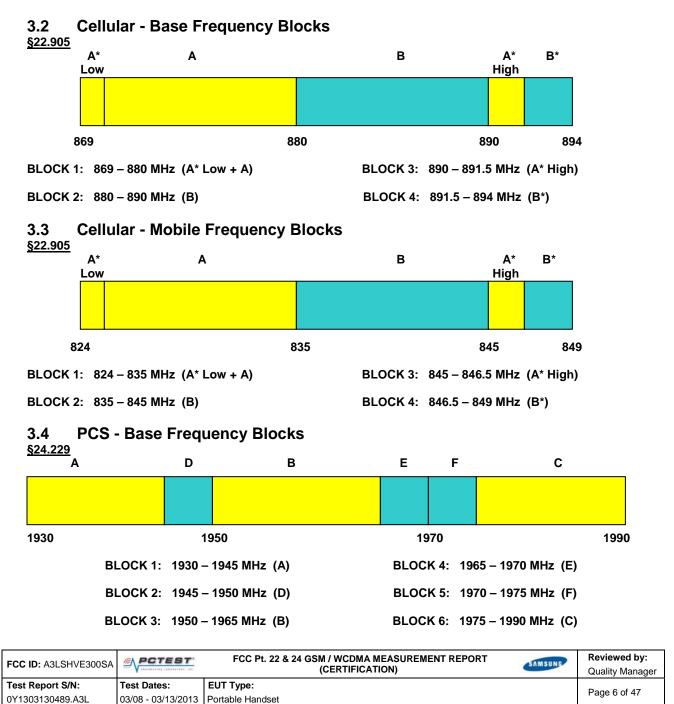


3.0 DESCRIPTION OF TESTS

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: A3LSHVE300SA.**

Deviation from Measurement Procedure.....None



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§24.229 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	E8267C	Vector Signal Generator	10/10/2011	Biennial	10/10/2013	US42340152
Agilent	N9020A	MXA Signal Analyzer	10/9/2012	Annual	10/9/2013	US46470561
Anritsu	MA2411B	Pulse Sensor	9/19/2012	Annual	9/19/2013	1027293
Anritsu	ML2495A	Power Meter	10/11/2012	Annual	10/11/2013	1039008
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	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
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	ESU26	EMI Test Receiver	2/25/2013	Annual	2/25/2014	100342
Schwarzbeck	UHA 9105	Dipole Antenna (400 - 1GHz) Rx	10/3/2011	Biennial	10/3/2013	91052523RX
Seekonk	NC-100	Torque Wrench (8" lb)	3/5/2012	Triennial	3/5/2015	N/A

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)

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:	A3LSHVE300SA
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
Mode(s):	<u>GSM / WCDMA</u>

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
TRANSMITTER					
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	RADIATED	PASS	Sections, 6.4, 6.5, 6.6
2.1055 22.355 22.863 22.905 24.229 24.235	Frequency Stability	< 2.5 ppm (Part 22) Emission must remain in band (Part 24)		PASS	Sections, 6.7, 6.8, 6.9

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)]

Frequency [MHz]	Mode	Battery Type	Substitute Level [dBm]	Antenna Gain [dBd]	Pol [H/V]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
826.40	WCDMA850	Standard	15.44	4.63	V	20.07	0.102	38.45	-18.38
836.60	WCDMA850	Standard	15.30	4.80	V	20.10	0.102	38.45	-18.36
846.60	WCDMA850	Standard	14.87	5.01	V	19.88	0.097	38.45	-18.57

Table 6-4. ERP (Cellular WCDMA)

- 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 its standard battery.
- 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 horizontal setup for the PCS bands and the vertical setup for the cell band. The data reported in the table above was measured in this test setup.

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

Frequency [MHz]	Mode	Battery Type	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1850.20	GSM1900	Standard	18.87	9.60	Н	28.47	0.703	33.01	-4.54
1880.00	GSM1900	Standard	19.37	9.53	Н	28.90	0.776	33.01	-4.11
1909.80	GSM1900	Standard	18.64	9.47	Н	28.11	0.648	33.01	-4.90

Table 6-2. EIRP (PCS GSM)

Mode	Battery Type	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
WCDMA1900	Standard	13.09	9.59	н	22.68	0.186	33.01	-10.33
WCDMA1900	Standard	11.22	9.53	Н	20.75	0.119	33.01	-12.26
WCDMA1900	Standard	10.82	9.48	Н	20.30	0.107	33.01	-12.71
	WCDMA1900 WCDMA1900	Mode Type WCDMA1900 Standard WCDMA1900 Standard	ModeBattery TypeLevel [dBm]WCDMA1900Standard13.09WCDMA1900Standard11.22	ModeBattery TypeLevel [dBm]Gain [dBi]WCDMA1900Standard13.099.59WCDMA1900Standard11.229.53	ModeBattery TypeLevel [dBm]Gain [dBi]Pol [H/V]WCDMA1900Standard13.099.59HWCDMA1900Standard11.229.53H	ModeBattery TypeLevel [dBm]Gain [dBi]Pol [H/V]EIRP [dBm]WCDMA1900Standard13.099.59H22.68WCDMA1900Standard11.229.53H20.75	ModeBattery TypeLevel [dBm]Gain [dBi]Pol [H/V]EIRP [dBm]EIRP [Watts]WCDMA1900Standard13.099.59H22.680.186WCDMA1900Standard11.229.53H20.750.119	ModeBattery TypeLevel [dBm]Gain [dBi]Pol [H/V]EIRP [dBm]EIRP [Watts]Limit [dBm]WCDMA1900Standard13.099.59H22.680.18633.01WCDMA1900Standard11.229.53H20.750.11933.01

Table 6-4. EIRP (PCS WCDMA)

NOTES:

- 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 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 its standard battery.
- 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 horizontal setup for the PCS bands and the vertical setup for the cell band. The data reported in the table above was measured in this test setup.

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

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	826.4	40	MHz
CHANNEL:	413	2	
MEASURED OUTPUT POWER:	20.07	dBm =	0.102 W
MODULATION SIGNAL:	WCDMA		
DISTANCE:	3	meters	
LIMIT:	43 + 10 log ₁₀ (W) =	33.07	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1652.80	-57.00	4.70	-52.30	V	72.4
2479.20	-51.91	5.01	-46.90	V	67.0
3305.60	-55.89	7.63	-48.26	V	68.3
4132.00	-84.36	9.21	-75.15	V	95.2
4958.40	-84.03	10.03	-73.99	V	94.1

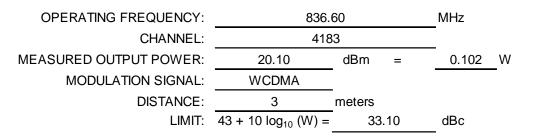
 Table 6-3. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4132)

- 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 its standard battery.
- 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 horizontal setup for the PCS bands and the vertical setup for the cell 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



FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1673.20	-55.72	4.52	-51.20	V	71.3
2509.80	-49.44	4.95	-44.49	V	64.6
3346.40	-55.98	7.77	-48.22	V	68.3
4183.00	-84.43	9.28	-75.15	V	95.2
5019.60	-84.10	10.11	-73.99	V	94.1

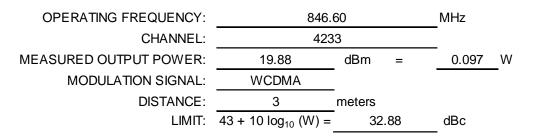
Table 6-4. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4183)

- 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 its standard battery.
- 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 horizontal setup for the PCS bands and the vertical setup for the cell 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



FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1693.20	-56.26	4.28	-51.98	V	71.9
2539.80	-52.72	5.26	-47.45	V	67.3
3386.40	-56.64	7.95	-48.69	V	68.6
4233.00	-84.52	9.37	-75.15	V	95.0
5079.60	-84.16	10.16	-73.99	V	93.9

Table 6-5. 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 its standard battery.
- 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 horizontal setup for the PCS bands and the vertical setup for the cell band. The data reported in the table above was measured in this test setup.

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6.5 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:	28.47	dBm =	0.703 W
MODULATION SIGNAL:	GSM (GMSK)	_	
DISTANCE:	3	meters	
LIMIT:	43 + 10 log ₁₀ (W) =	41.47	dBc

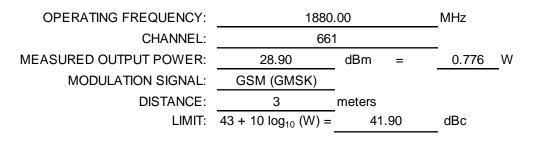
FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3700.40	-45.00	8.40	-36.60	н	65.1
5550.60	-39.90	10.62	-29.28	н	57.8
7400.80	-50.36	11.82	-38.54	н	67.0
9251.00	-54.76	13.30	-41.46	н	69.9
11101.20	-77.86	13.50	-64.36	Н	92.8

Table 6-6. 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 its standard battery.
- 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 horizontal setup for the PCS bands and the vertical setup for the cell band. The data reported in the table above was measured in this test setup.

FCC ID: A3LSHVE300SA		FCC Pt. 22 & 24 GSM / WCDMA MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Field Strength of SPURIOUS Radiation



FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3760.00	-44.47	8.42	-36.05	Н	64.9
5640.00	-36.21	10.66	-25.55	Н	54.5
7520.00	-50.07	11.92	-38.14	Н	67.0
9400.00	-52.34	13.24	-39.10	Н	68.0
11280.00	-79.20	13.49	-65.72	Н	94.6

Table 6-7. 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 its standard battery.
- 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 horizontal setup for the PCS bands and the vertical setup for the cell 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:	81	0	_
MEASURED OUTPUT POWER:	28.11	dBm =	0.648 W
MODULATION SIGNAL:	GSM (GMSK)	_	
DISTANCE:	3	meters	
LIMIT:	43 + 10 log ₁₀ (W) =	41.11	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3819.60	-42.21	8.57	-33.64	Н	61.7
5729.40	-58.54	10.69	-47.85	Н	76.0
7639.20	-83.49	12.07	-71.43	Н	99.5
9549.00	-82.52	13.20	-69.32	Н	97.4
11458.80	-79.43	13.42	-66.02	Н	94.1

Table 6-8. 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 its standard battery.
- 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 horizontal setup for the PCS bands and the vertical setup for the cell band. The data reported in the table above was measured in this test setup.

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6.6 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:	926		
MEASURED OUTPUT POWER:	22.68	dBm =	0.186 W
MODULATION SIGNAL:	WCDMA		
DISTANCE:	3	meters	
LIMIT:	43 + 10 log ₁₀ (W) =	35.68	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3704.80	-54.42	8.40	-46.02	н	68.7
5557.20	-47.12	10.62	-36.50	н	59.2
7409.60	-49.07	11.83	-37.24	н	59.9
9262.00	-50.94	13.30	-37.64	н	60.3
11114.40	-75.36	13.50	-61.86	Н	84.5

Table 6-9. 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 its standard battery.
- 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 horizontal setup for the PCS bands and the vertical setup for the cell 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:	940	0	_
MEASURED OUTPUT POWER:	20.75	dBm =	<u>0.119</u> W
MODULATION SIGNAL:	WCDMA		
DISTANCE:	3	meters	
LIMIT:	43 + 10 log ₁₀ (W) =	33.75	dBc

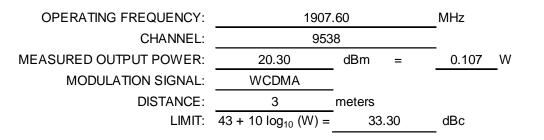
FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3760.00	-55.99	8.42	-47.56	Н	68.3
5640.00	-44.18	10.66	-33.52	Н	54.3
7520.00	-54.27	11.92	-42.34	Н	63.1
9400.00	-52.39	13.24	-39.15	Н	59.9
11280.00	-75.35	13.49	-61.86	Н	82.6

 Table 6-10. 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 its standard battery.
- 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 horizontal setup for the PCS bands and the vertical setup for the cell band. The data reported in the table above was measured in this test setup.

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Field Strength of SPURIOUS Radiation



FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3815.20	-55.14	8.57	-46.57	Н	66.9
5722.80	-40.95	10.69	-30.26	Н	50.6
7630.40	-54.75	12.07	-42.68	Н	63.0
9538.00	-53.31	13.20	-40.11	Н	60.4
11445.60	-75.27	13.42	-61.86	Н	82.2

Table 6-11. Radiated Spurious Data (PCS WCDMA Mode – Ch. 9538)

- 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 its standard battery.
- 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 horizontal setup for the PCS bands and the vertical setup for the cell band. The data reported in the table above was measured in this test setup.

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6.7 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: 3.8 VDC

DEVIATION LIMIT: <u>±0.00025</u>% or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+20 (Ref)	836,599,993	-7	-0.0000086
100 %		- 30	836,599,984	-16	-0.00000190
100 %		- 20	836,599,999	-1	-0.00000007
100 %		- 10	836,599,995	-5	-0.00000065
100 %		0	836,599,996	-4	-0.00000053
100 %		+ 10	836,599,984	-16	-0.00000189
100 %		+ 20	836,599,981	-19	-0.00000223
100 %		+ 30	836,599,984	-16	-0.00000193
100 %		+ 40	836,599,998	-2	-0.00000018
100 %		+ 50	836,599,983	-17	-0.00000200
115 %	4.37	+ 20	836,599,983	-17	-0.00000208
BATT. ENDPOINT	3.46	+ 20	836,599,997	-3	-0.00000040

 Table 6-12. Frequency Stability Data (Cellular WCDMA Mode – Ch. 4183)

FCC ID: A3LSHVE300SA		FCC Pt. 22 & 24 GSM / WCDMA MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	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)

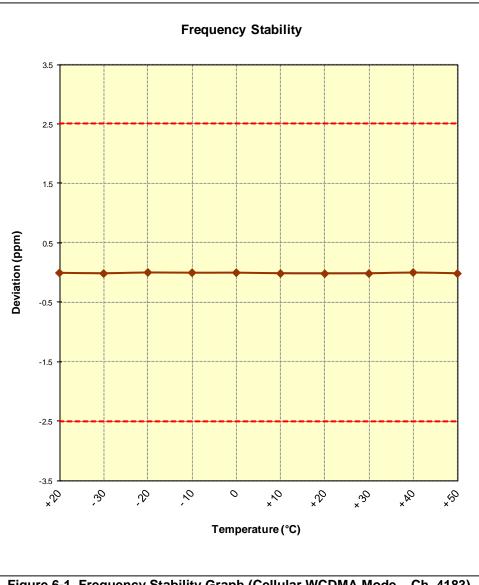


Figure 6-1. Frequency Stability Graph (Cellular WCDMA Mode – Ch. 4183)

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6.8 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)	1,879,999,994	-6	-0.00000034
100 %		- 30	1,879,999,996	-4	-0.00000021
100 %		- 20	1,879,999,985	-15	-0.00000078
100 %		- 10	1,879,999,982	-18	-0.00000097
100 %		0	1,879,999,980	-20	-0.00000104
100 %		+ 10	1,879,999,990	-10	-0.00000051
100 %		+ 20	1,879,999,982	-18	-0.00000098
100 %		+ 30	1,879,999,988	-12	-0.00000066
100 %		+ 40	1,879,999,981	-19	-0.00000102
100 %		+ 50	1,879,999,998	-2	-0.00000010
115 %	4.37	+ 20	1,880,000,000	0	-0.00000001
BATT. ENDPOINT	3.46	+ 20	1,879,999,990	-10	-0.00000051

Table 6-13. Frequency Stability Data (PCS GSM Mode - Ch. 661)

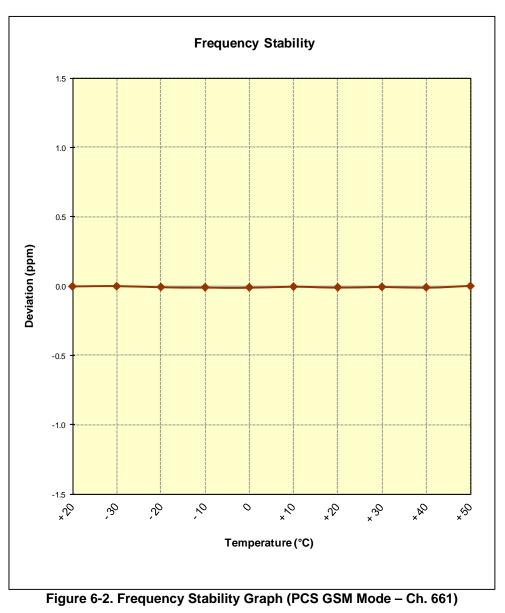
Note:

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.

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PCS GSM Frequency Stability Measurements (Cont'd) §2.1055 §22.355 §24.229 §24.235 RSS-139(6.3)



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6.9 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: 3.8 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+20 (Ref)	1,879,999,993	-7	-0.00000037
100 %		- 30	1,879,999,997	-3	-0.00000016
100 %		- 20	1,879,999,987	-13	-0.00000072
100 %		- 10	1,879,999,995	-5	-0.00000027
100 %		0	1,879,999,995	-5	-0.00000027
100 %		+ 10	1,879,999,981	-19	-0.00000099
100 %		+ 20	1,879,999,982	-18	-0.00000093
100 %		+ 30	1,879,999,981	-19	-0.00000101
100 %		+ 40	1,879,999,999	-1	-0.00000007
100 %		+ 50	1,879,999,989	-11	-0.00000057
115 %	4.37	+ 20	1,879,999,997	-3	-0.00000016
BATT. ENDPOINT	3.46	+ 20	1,879,999,989	-11	-0.00000061

Table 6-14. 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.

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PCS WCDMA Frequency Stability Measurements (Cont'd) §2.1055 §22.355 §24.229 §24.235 RSS-139(6.3)

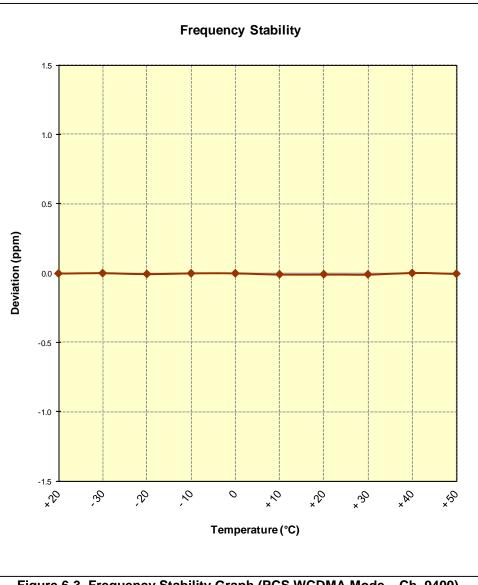
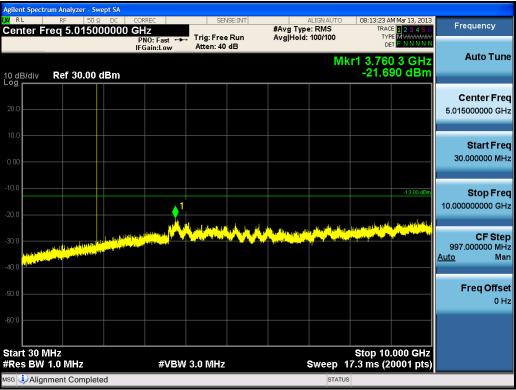


Figure 6-3. Frequency Stability Graph (PCS WCDMA Mode – Ch. 9400)

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7.0 PLOTS OF EMISSIONS



Plot 7-1. Conducted Spurious Plot (PCS GSM Mode - Ch. 512)

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	pectrum Analy										
(X) RL Cente	r Freg 15		DC COR 0000 G			ISE:INT	#Avg Type		TRAC	M Mar 13, 2013	Frequency
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								Mk	r1 16.38	0 0 GHz	Auto Tune
10 dB/d Log	liv Ref 5	i.00 dBn	n						-38.5	45 dBm	
											Center Freq
-5.00											15.000000000 GHz
-15.0										-13.00 dBm	
-15.0											Start Freq
-25.0 —											10.00000000 GHz
							4				
-35.0							─ �!──				Stop Freq
-45.0		Latanhaita		e or her and her her he	<u>, ka Upp di Astron</u>			a dethelating to		della della sudical	20.00000000 GHz
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-65.0											
-75.0											Freq Offset
											0 Hz
-85.0											
	0.000 GH								Stop 20	.000 GHz	
	3W 1.0 MH	12		#VBW	3.0 MHz				17.3 ms (2	ooot pts)	
MSG								STATU	15		



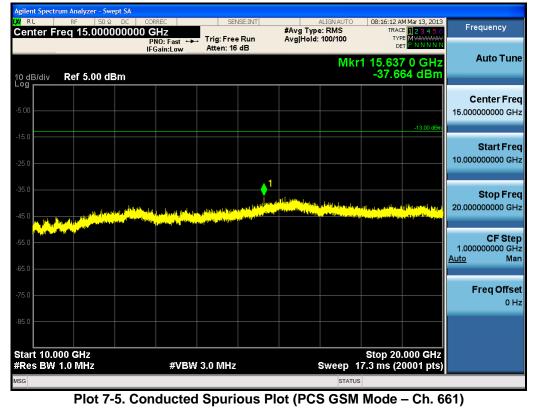


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	um Analyzer - Swe									
Center E	RF 50 Ω req 5.01500			SEN	ISE:INT	#Avg Typ	ALIGNAUTO		M Mar 13, 2013	Frequency
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10 dB/div Log	Ref 30.00 d	Bm					M	kr1 3.700 -21.5	6 4 GHz 72 dBm	Auto Tune
20.0										Center Freq 5.015000000 GHz
0.00										Start Freq 30.000000 MHz
-10.0			∮ ¹						-13.00 dBm	Stop Freq 10.000000000 GHz
-30.0 Abate (1971) -40.0					l Ayryny		and the second	ili and in a differential diffe		CF Step 997.000000 MHz <u>Auto</u> Man
-50.0										Freq Offset 0 Hz
-60.0 Start 30 M								Stop 10	.000 GHz	
#Res BW				3.0 MHz				17.3 ms (2	0001 pts)	
MSG Point	ts changed; all tr	races cleare	ea				STATU	s		





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Plot 7-6. Occupied Bandwidth Plot (PCS GSM Mode - Ch. 661)



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

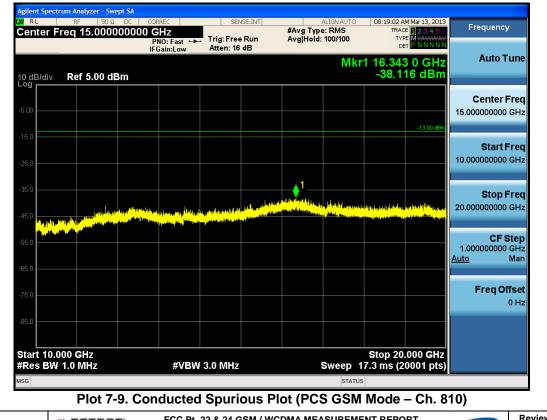
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	um Analyzer - Sw	ept SA								
	RF 50 Ω req 5.01500		RREC	SEN	ISE:INT	#Avg Type	ALIGNAUTO P. RMS		M Mar 13, 2013	Frequency
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10 dB/div Log	Ref 30.00 (dBm					MI	(r1 3.82) -21.7	7 1 GHz 68 dBm	Auto Tune
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0.00										Start Freq 30.000000 MHz
-10.0			1						-13.00 dBm	Stop Freq 10.000000000 GHz
-30.0 11, 11, 11, 11, 11, 11, 11, 11, 11, 11,			<mark>elenen</mark> ¹⁹ 9		WAY4					CF Step 997.000000 MHz <u>Auto</u> Man
-50.0										Freq Offset 0 Hz
-60.0 Start 30 IV								Stop 10	.000 GHz	
#Res BW				3.0 MHz					0001 pts)	
MSG VPoint	is changed; all	traces clear	ed				STATU	5		

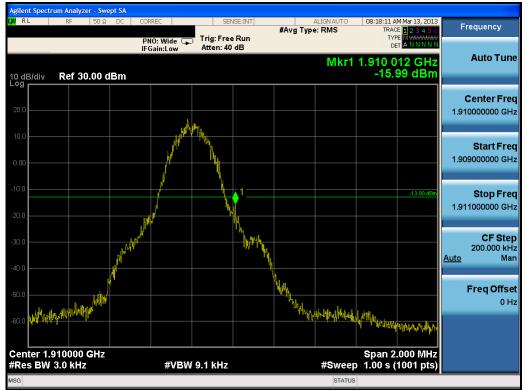


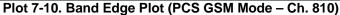


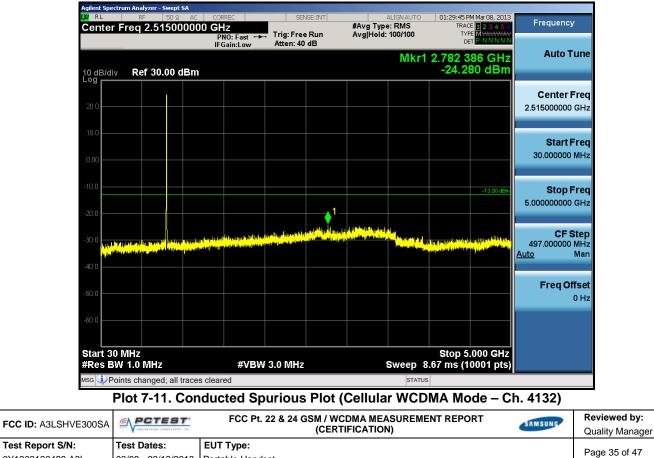
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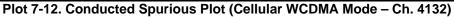


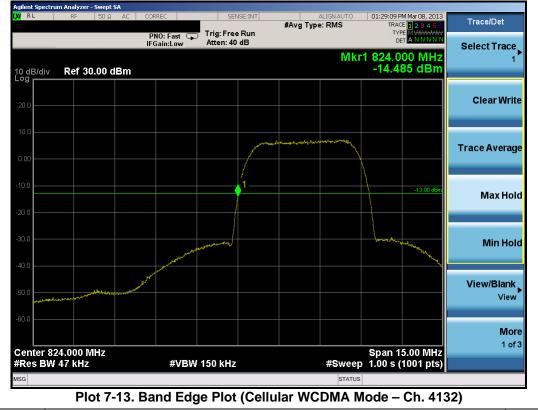


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MSG							STATUS			



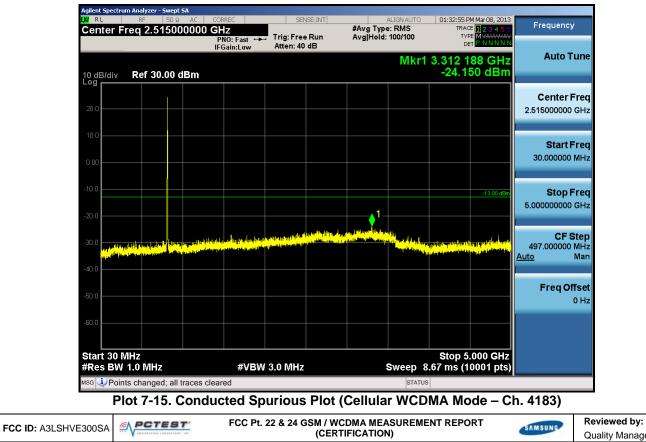


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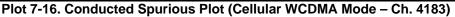


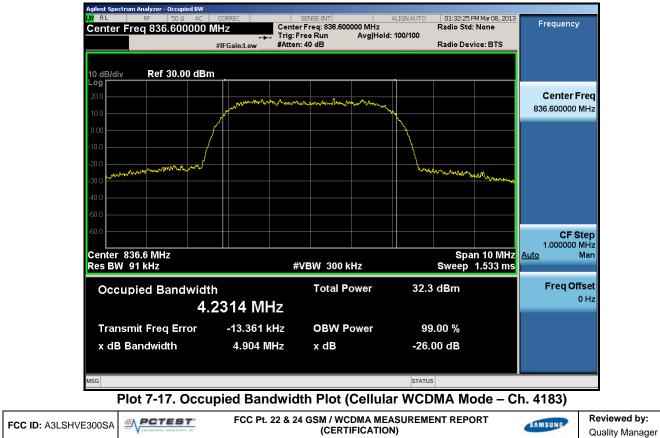
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-50.0										Freq Offset 0 Hz
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#Res BW			#VBW	3.0 MHz			Sweep 8	.67 ms (1	0001 pts)	
MSG							STATUS			





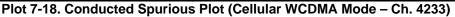
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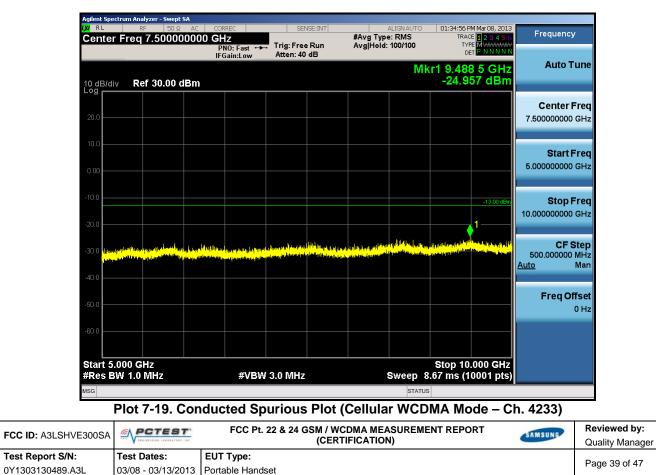
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Center Freq 2.515000000 GHz IFGain:Low Trig: Free Run Atten: 40 dB #Avg Type: RMS Avg Hold: 100/100 Trig: 6 2.34 Group Frequency 0 dB/div Ref 30.00 dBm	Agilent Spectru	m Analyzer - Swep		POEC	CE1	CC INT			01-04-46 P	MM00-0010	
Mkr1 3.275 410 GHz Auto Tune 0 dB/div Ref 30.00 dBm -24.641 dBm 0 dB/div Ref 30.00 dBm -24.641 dBm 0 dB/div Image: Start Start Free 2.515000000 GHz 10 m Image: Start Start Free 30.00000 MHz 10 m Image: Start Start Free 30.00000 MHz 10 m Image: Start Start Free 30.00000 GHz 10 m Image: Start Start Free 30.000000 GHz 10 m Image: Start Start Free 30.00000 GHz 10 m Image: Start			00000 GI	Iz NO: Fast ↔	Trig: Free	Run	#Avg Type	e: RMS	TRAC TYP	E 123456 E MWWWWW	Frequency
Center Free 200 200 200 200 200 200 200 200 200 2	10 dB/div Log	Ref 30.00		Gain:Low	Atten: 40			Mkr1	3.275 4 -24.64	10 GHz 41 dBm	Auto Tune
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Auto Mar Auto Mar Freq Offse 0 H Start 30 MHz #VBW 3.0 MHz \$	-10.0						1_			-13.00 dBm	Stop Freq 5.000000000 GHz
60.0 Freq Offse 60.0 Freq Offse 60.0 Start 30 MHz Start 30 MHz Sweep 8.67 ms (10001 pts)	ALL OF THE			a Jani da kar materia kar ka Roman (1997) and a kar kar Roman (1997)	(dailath ann) athra bh Israige tarraige anns an Stairtea		dia itera di alar Pasa di alar		ana		CF Step 497.000000 MHz <u>Auto</u> Mar
Start 30 MHz Stop 5.000 GHz Res BW 1.0 MHz #VBW 3.0 MHz Sweep 8.67 ms (10001 pts)	-50.0										Freq Offse 0 H:
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	1		traces clear		5.0 WHZ					0001 pts)	





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				Points
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#Res BW 47 kHz	#VBW 150 kHz	#Sweep	Span 15.00 MHz 3.00 s (1001 pts)	
MSG		STATUS		

Plot 7-20. Band Edge Plot (Cellular WCDMA Mode – Ch. 4233)



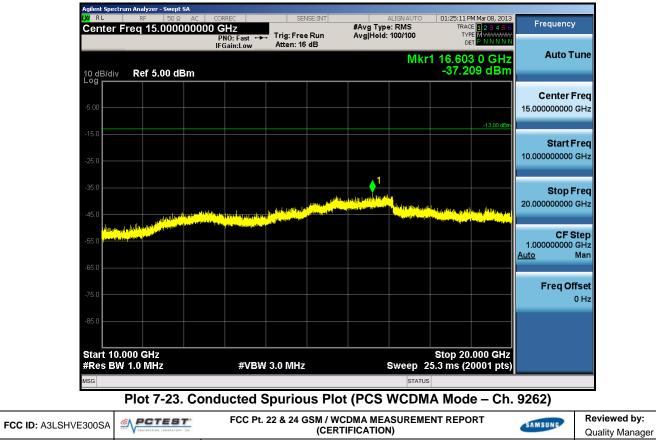
FCC ID: A3LSHVE300SA		FCC Pt. 22 & 24 GSM / WCDMA MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager	
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	m Analyzer - Swep									
IXI RL	RF 50 Ω req 5.0150		RREC	SEN	ISE:INT	#Avg Typ	ALIGNAUTO e: RMS	TRAC	M Mar 08, 2013	Frequency
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										Center Freq
20.0										5.015000000 GHz
10.0										Start Freq
0.00										30.000000 MHz
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	ts changed; all	traces clear					STATU			





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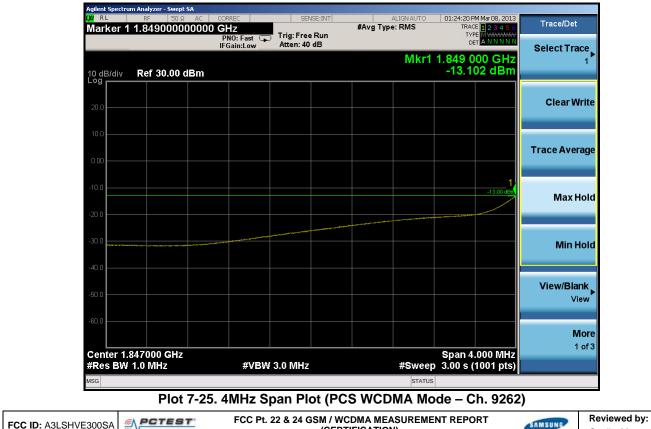
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Agilent Spectru	m Analyzer - Swept SA RF 50 Ω AC	CORREC	CEA	ISE:INT		ALIGNAUTO	01/22/22.0	M Mar 08, 2013	
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	Ref 25.00 dBm	PNO: Wide 🆵 IFGain:Low	Atten: 36			Mkr1	DE	00 GHz 73 dBm	Auto Tune
10 dB/div Log 15.0									Center Freq 1.85000000 GHz
-5.00				1	and when a film of a standa	an a	~ શાન્ક્રોમાં નગુડાં ક્રિક્સમંદ્રમન્	-13.00 kBm	Start Freq 1.845000000 GHz
-15.0									Stop Freq 1.855000000 GHz
-35.0		and a second a second a second a	and a						CF Step 1.000000 MH: <u>Auto</u> Mar
-55.0									Freq Offse 0 H:
-65.0 Center 1.3 #Res BW	850000 GHz	#\/B\A(150 kHz			#Sween	Span 1	0.00 MHz 1001 pts)	
ARCS DW	57 M12	#4044	150 KHZ			STATUS	3.00 S (Toorpis)	

Plot 7-24. Band Edge Plot (PCS WCDMA Mode - Ch. 9262)



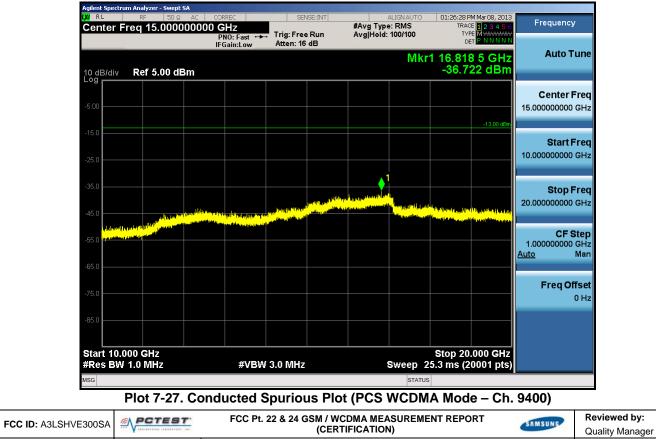
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	m Analyzer - Swept S							-		
(XIRL	RF 50 Ω req 5.015000			SEN	ISE:INT	#Avg Typ	ALIGNAUTO P. RMS		M Mar 08, 2013	Frequency
	leq 5.01500	PN	Z IO: Fast ↔ iain:Low	. Trig: Free Atten: 40		Avg Hold:		TYP		
10 dB/div Log	Ref 30.00 dl	Bm					Mk	(r1 3.28) -23.4	2 7 GHz 95 dBm	Auto Tune
20.0										Center Freq 5.015000000 GHz
0.00										Start Freq 30.000000 MHz
-10.0			1						-13.00 dBm	Stop Freq 10.000000000 GHz
-30.0		a da da kana kata ang sang sang sang sang sang sang sang		an a		n an	a dan da tanah karta Tana ang tanah karta		ann de ^{sa} lden de la <mark>de s</mark> <mark>Senare de senare de s</mark>	CF Step 997.000000 MHz <u>Auto</u> Man
-50.0										Freq Offset 0 Hz
-60.0	ЛН7 —							Stop 10	.000 GHz	
#Res BW			#VBW	3.0 MHz			Sweep 1	7.3 ms (2	0001 pts)	
мsg 🗼 Poin	ts changed; all tr	aces cleare	ed				STATUS	6		





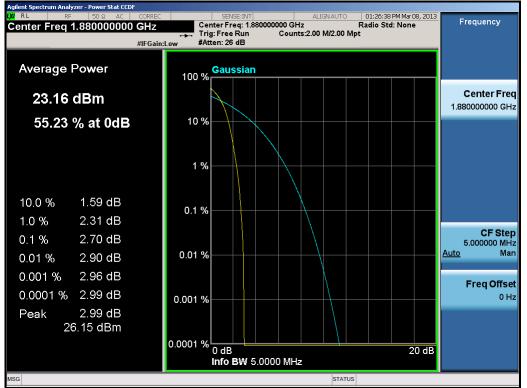
	The American Constraint, or	(CERTIFICATION)	Quality Manage
Test Report S/N:	Test Dates:	EUT Type:	Page 43 of 47
0Y1303130489.A3L	03/08 - 03/13/2013	Portable Handset	Fage 43 01 47
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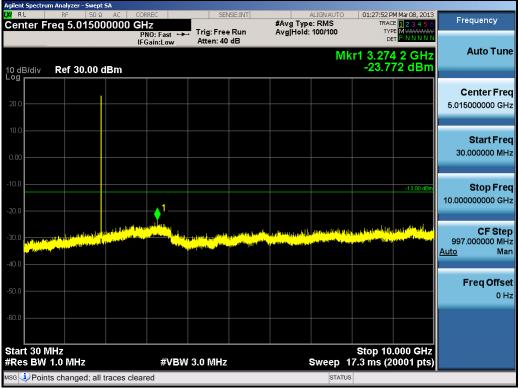


Plot 7-29. Peak-Average Ratio Plot (PCS WCDMA Mode - Ch. 9400)

FCC ID: A3LSHVE300SA		FCC Pt. 22 & 24 GSM / WCDMA MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager		
Test Report S/N:	Test Dates:	EUT Type:		Page 44 of 47		
0Y1303130489.A3L	03/08 - 03/13/2013	Portable Handset	set			
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Plot 7-31. Conducted Spurious Plot (PCS WCDMA Mode - Ch. 9538)

FCC ID: A3LSHVE300SA		FCC Pt. 22 & 24 GSM / WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager		
Test Report S/N:	Test Dates:	EUT Type:		Dogo 45 of 47		
0Y1303130489.A3L	03/08 - 03/13/2013	Portable Handset		Page 45 of 47		
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Plot 7-33. 4MHz Span Plot (PCS WCDMA Mode - Ch. 9538)

FCC ID: A3LSHVE300SA		FCC Pt. 22 & 24 GSM / WCDMA MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dega 46 of 47	
0Y1303130489.A3L	03/08 - 03/13/2013	Portable Handset		Page 46 of 47	
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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: A3LSHVE300SA** complies with all the requirements of Parts 2, 22, 24 of the FCC rules.

FCC ID: A3LSHVE300SA		FCC Pt. 22 & 24 GSM / WCDMA MEASUREMENT REPORT (CERTIFICATION)	MSUNG	Reviewed by: Quality Manager		
Test Report S/N:	Test Dates:	EUT Type:		Dogo 47 of 47		
0Y1303130489.A3L	03/08 - 03/13/2013	Portable Handset		Page 47 of 47		
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