



# PCTEST ENGINEERING LABORATORY, INC.

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http://www.pctestlab.com



## MEASUREMENT REPORT FCC Part 22 & 24 / IC RSS-129/RSS-133

**Applicant Name:**

Samsung Electronics Co., Ltd.  
416 Maetan 3-Dong, Yeongtong-gu  
Suwon-si, Gyeonggi-do  
443-742, Republic of Korea

**Date of Testing:**

June 21 - 27, 2012

**Test Site/Location:**

PCTEST Lab., Columbia, MD, USA

**Test Report Serial No.:**

0Y1206140815.A3L

**FCC ID:****A3LSPHM400****APPLICANT:****SAMSUNG ELECTRONICS CO., LTD.****Application Type:**

Certification

**Model(s):**

SPH-M400

**EUT Type:**

Portable Handset

**FCC Classification:**

PCS Licensed Transmitter Held to Ear (PCE)

**FCC Rule Part(s):**

§2; §22(H), §24(E)

**IC Specification(s):**

RSS-129 Issue 2; RSS-133 Issue 5

**Test Procedure(s):**

ANSI/TIA-603-C-2004, KDB 971168

**Test Device Serial No.:**

identical prototype [S/N: FJ-166-A]

| Mode     | Tx Frequency<br>(MHz) | Emission<br>Designator | ERP/EIRP             |                        |
|----------|-----------------------|------------------------|----------------------|------------------------|
|          |                       |                        | Max.<br>Power<br>(W) | Max.<br>Power<br>(dBm) |
| CDMA850  | 824.70 - 848.31       | 1M27F9W                | 0.156                | 21.93                  |
| CDMA1900 | 1851.25 - 1908.75     | 1M29F9W                | 0.302                | 24.80                  |

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.

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

  
Randy Ortanez  
President

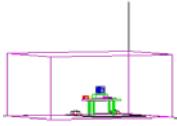


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|---------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------|
| <b>FCC ID:</b><br>A3LSPHM400                |  | <b>FCC Pt. 22/24 CDMA MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |  | <b>Reviewed by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>0Y1206140815.A3L | <b>Test Dates:</b><br>June 21 - 27, 2012                                            | <b>EUT Type:</b><br>Portable Handset                             |                                                                                       | Page 1 of 36                           |

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## MEASUREMENT REPORT

### FCC Part 22 & 24

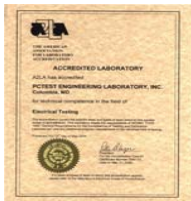


#### §2.1033 General Information

**APPLICANT:** Samsung Electronics Co., Ltd.  
**APPLICANT ADDRESS:** 416 Maetan 3-Dong, Yeongtong-gu  
 Suwon-si, Gyeonggi-do, 443-742, 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)  
**IC SPECIFICATION(S):** RSS-129 Issue 2; RSS-133 Issue 5  
**BASE MODEL:** SPH-M400  
**FCC ID:** A3LSPHM400  
**FCC CLASSIFICATION:** PCS Licensed Transmitter Held to Ear (PCE)  
**MODE:** CDMA  
**FREQUENCY TOLERANCE:**  $\pm 0.00025\%$  (2.5 ppm) for cellular band only.  
**Test Device Serial No.:** FJ-166-A ☐ Production ☒ Pre-Production ☐ Engineering  
**DATE(S) OF TEST:** June 21 - 27, 2012  
**TEST REPORT S/N:** 0Y1206140815.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'l (BWI) airport, the city of Baltimore and the Washington, DC area. (See Figure 1-1).

These measurement tests were conducted at the PCTEST Engineering Laboratory, Inc. facility 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 C63.4-2003 on February 15, 2012.

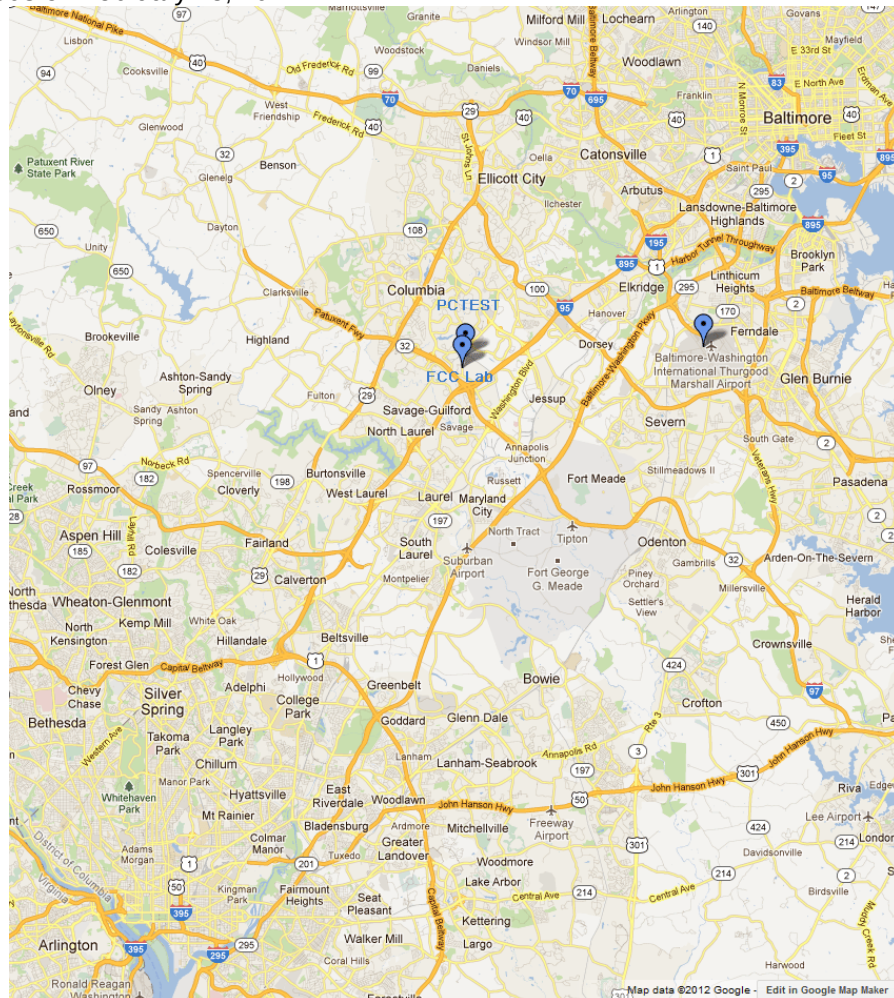


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

|                                      |                                               |                                                          |                |                                 |
|--------------------------------------|-----------------------------------------------|----------------------------------------------------------|----------------|---------------------------------|
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## 2.0 PRODUCT INFORMATION

### 2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Portable Handset FCC ID: A3LSPHM400**. The test data contained in this report pertains only to the emissions due to the EUT's licensed transmitter.

### 2.2 Device Capabilities

This device contains the following capabilities:

850/1900 CDMA (BC0, BC1, BC10), Bluetooth (1x,EDR)

### 2.3 Test Configuration

The Samsung Portable Handset FCC ID: A3LSPHM400 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.

### 2.5 Labeling Requirements

Per 2.925

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

Per 15.19; Docket 95-19

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

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

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

Please see attachment for FCC ID label and label location.

|                                      |                                                                                     |                                                          |                                                                                       |                                 |
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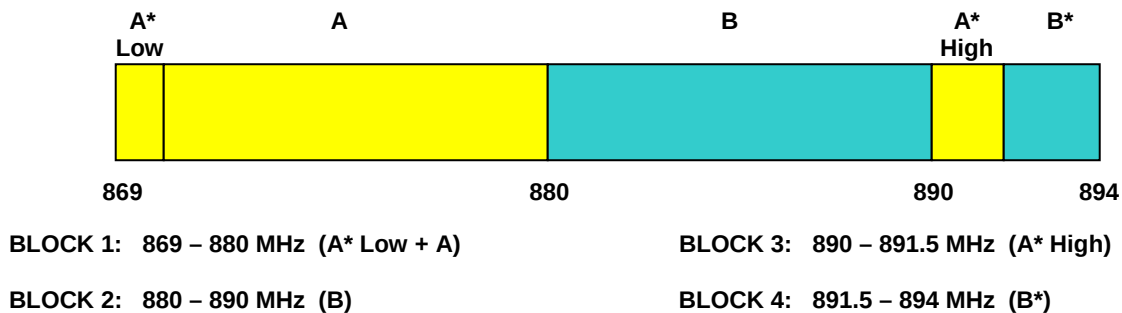
## 3.0 DESCRIPTION OF TESTS

### 3.1 Evaluation Procedure

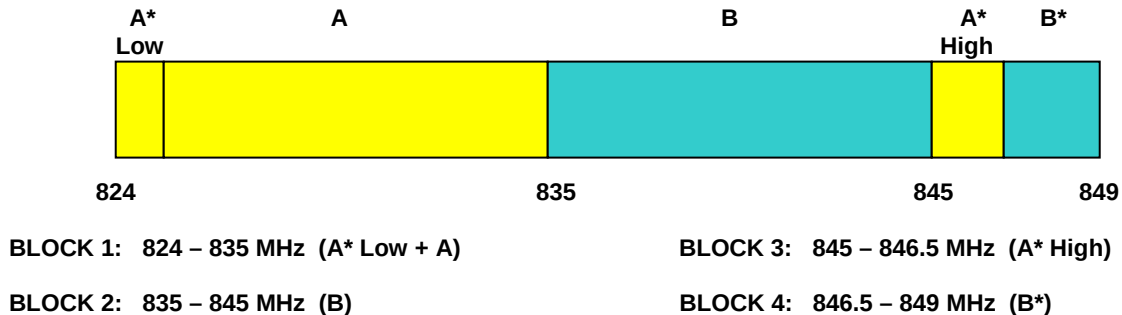
The measurement procedures described in the "Land Mobile FM or PM – Communications Equipment – Measurements and Performance Standards" (ANSI/TIA-603-C-2004) and "Procedures for Compliance Measurement of the Fundamental Emission Power of Licensed Wideband (> 1 MHz) Digital Transmission Systems" were used in the measurement of the measurement of the **Samsung Portable Handset FCC ID: A3LSPHM400**.

Deviation from Measurement Procedure.....None

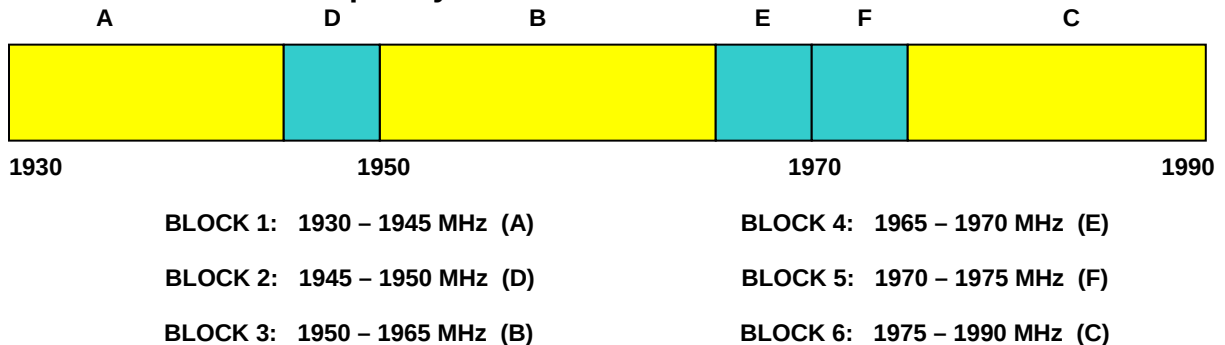
### 3.2 Cellular - Base Frequency Blocks



### 3.3 Cellular - Mobile Frequency Blocks

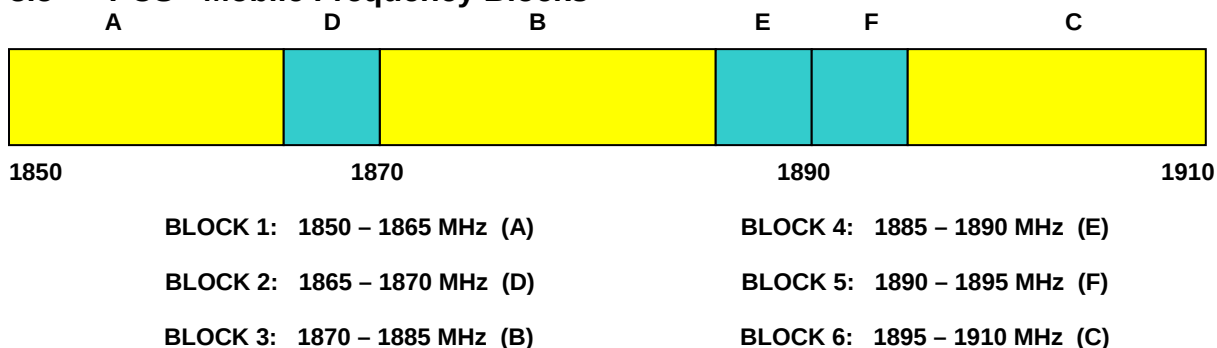


### 3.4 PCS - Base Frequency Blocks



|                                      |                                               |                                                          |                |                                 |
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### 3.5 PCS - Mobile Frequency Blocks



### 3.6 Occupied Bandwidth

#### §2.1049, RSS-Gen (4.6.1)

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)(b); 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 10<sup>th</sup> 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 1 MHz or greater. 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.

|                                      |                                                                                     |                                                          |                                                                                       |                                 |
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### 3.8 Radiated Power and Radiated Spurious Emissions

§22.913(a)(2), 22.917(a), 24.232(c), 24.238(a), RSS-129 (8.1.1), 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 ¾" (~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.

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:

$$P_d \text{ [dBm]} = P_g \text{ [dBm]} - \text{cable loss [dB]} + \text{antenna gain [dBd/dBi]}$$

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  $P_g \text{ [dBm]} - \text{cable loss [dB]}$ .

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  $43 + 10\log_{10}(\text{Power}_{\text{[Watts]}})$  specified in 22.917(a) and 24.238(a).

|                                      |                                                                                     |                                                          |                                                                                       |                                 |
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### 3.9 Peak-Average Ratio

#### §24.232(d), RSS-133 (6.4)

A peak to average ratio measurement is performed at the conducted port of the EUT. For CDMA signals, 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.

### 3.10 Frequency Stability / Temperature Variation

#### §2.1055, 22.355, 24.235, RSS-129 (9.2.1), 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  $\pm 0.00025\%$  ( $\pm 2.5$  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 sufficient stabilization period at each temperature shall be used prior to each frequency requirement.

|                                      |                                                                                     |                                                          |                                                                                       |                                 |
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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 |
|-----------------|-----------|----------------------------------------|------------|--------------|------------|---------------|
| -               | RE1       | Radiated Emissions Cable Set (UHF/EHF) | 7/7/2011   | Annual       | 7/7/2012   | N/A           |
| -               | RE2       | Radiated Emissions Cable Set (VHF/UHF) | 2/13/2012  | Annual       | 2/13/2013  | N/A           |
| Agilent         | E8267C    | Vector Signal Generator                | 10/10/2011 | Biennial     | 10/10/2013 | US42340152    |
| Agilent         | N9020A    | MXA Signal Analyzer                    | 10/10/2011 | Annual       | 10/10/2012 | US46470561    |
| Agilent         | 8447D     | Broadband Amplifier                    | 5/8/2012   | Annual       | 5/8/2013   | 1937A03348    |
| 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  | Annual       | 7/22/2012  | 125518        |
| ETS Lindgren    | 3160-09   | 18-26.5 GHz Standard Gain Horn         | 5/30/2012  | Annual       | 5/30/2013  | 135427        |
| Mini-Circuits   | VHF-1300+ | High Pass Filter                       | 2/7/2012   | Annual       | 2/7/2013   | 30716         |
| Mini-Circuits   | VHF-3100+ | High Pass Filter                       | 2/7/2012   | Annual       | 2/7/2013   | 31144         |
| Pasternack      | PE2208-6  | Bidirectional Coupler                  | 6/3/2012   | Annual       | 6/3/2013   | N/A           |
| Rohde & Schwarz | CMU200    | Base Station Simulator                 | N/A        |              | N/A        | 836536/0005   |
| Rohde & Schwarz | TS-PR18   | 1-18 GHz Pre-Amplifier                 | 6/9/2012   | Annual       | 6/9/2013   | 100071        |
| Rohde & Schwarz | ESU26     | EMI Test Receiver                      | 12/15/2011 | Annual       | 12/15/2012 | 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

### 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)

### Spurious Radiated Emission - PCS Band

**Example: Channel 25 PCS Mode 2<sup>nd</sup> Harmonic (3702.50 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 3702.50 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.

|                                      |                                                                                     |                                                          |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID:<br>A3LSPHM400                |  | FCC Pt. 22/24 CDMA MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1206140815.A3L | Test Dates:<br>June 21 - 27, 2012                                                   | EUT Type:<br>Portable Handset                            |                                                                                       | Page 11 of 36                   |

## 6.0 TEST RESULTS

### 6.1 Summary

Company Name: Samsung Electronics Co., Ltd.  
 FCC ID: A3LSPHM400  
 FCC Classification: PCS Licensed Transmitter Held to Ear (PCE)  
 Mode(s): CDMA

| FCC Part Section(s)          | RSS Sections                        | Test Description                         | Test Limit                                                                           | Test Condition | Test Result | Reference          |
|------------------------------|-------------------------------------|------------------------------------------|--------------------------------------------------------------------------------------|----------------|-------------|--------------------|
| <b>TRANSMITTER MODE (TX)</b> |                                     |                                          |                                                                                      |                |             |                    |
| 2.1049, 22.917(a), 24.238(a) | RSS-Gen (4.6.1)<br>RSS-133 (2.3)    | Occupied Bandwidth                       | N/A                                                                                  | CONDUCTED      | PASS        | Section 7.0        |
| 2.1051, 22.917(a), 24.238(a) | RSS-129 (8.1.1)<br>RSS-133 (6.5.1)  | Band Edge / Conducted Spurious Emissions | < 43 + 10log <sub>10</sub> (P[Watts]) at Band Edge and for all out-of-band emissions |                | PASS        | Section 7.0        |
| 24.232(d)                    | RSS-133 (6.4)                       | Peak-Average Ratio                       | < 13 dB                                                                              |                | PASS        | Section 7.0        |
| 2.1046                       | RSS-132 (4.4)<br>RSS-133 (4.1)      | Transmitter Conducted Output Power       | N/A                                                                                  |                | PASS        | RF Exposure Report |
| 22.913(a)(2)                 | RSS-129 (9.1)                       | Effective Radiated Power                 | < 7 Watts max. ERP                                                                   | RADIATED       | PASS        | Section 6.2        |
| 24.232(c)                    | RSS-133 (6.4)<br>[SRSP-510 (5.1.2)] | Equivalent Isotropic Radiated Power      | < 2 Watts max. EIRP                                                                  |                | PASS        | Section 6.3        |
| 2.1053, 22.917(a), 24.238(a) | RSS-129 (8.1.1)<br>RSS-133 (6.5.1)  | Undesirable Emissions                    | < 43 + 10log <sub>10</sub> (P[Watts]) for all out-of-band emissions                  |                | PASS        | Sections 6.4, 6.5  |
| 2.1055, 22.355, 24.235       | RSS-129 (9.2.1)<br>RSS-133 (6.3)    | Frequency Stability                      | < 2.5 ppm (Part 22)<br>Emission must remain in band (Part 24)                        |                | PASS        | Sections 6.6, 6.7  |

**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.

|                                      |                                                                                     |                                                          |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID:<br>A3LSPHM400                |  | FCC Pt. 22/24 CDMA MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1206140815.A3L | Test Dates:<br>June 21 - 27, 2012                                                   | EUT Type:<br>Portable Handset                            | Page 12 of 36                                                                         |                                 |

## 6.2 Effective Radiated Power Output Data

§22.913(a)(2), RSS-129 (9.1)

| Frequency [MHz] | Mode    | Battery Type | Substitute Level [dBm] | Antenna Gain [dBd] | Pol [H/V] | ERP [dBm] | ERP [Watts] | ERP Limit [dBm] | Margin [dB] |
|-----------------|---------|--------------|------------------------|--------------------|-----------|-----------|-------------|-----------------|-------------|
| 824.70          | CDMA850 | Standard     | 14.71                  | 4.66               | H         | 19.37     | 0.086       | 38.45           | -19.08      |
| 836.52          | CDMA850 | Standard     | 17.13                  | 4.80               | H         | 21.93     | 0.156       | 38.45           | -16.52      |
| 848.31          | CDMA850 | Standard     | 16.10                  | 4.95               | H         | 21.05     | 0.127       | 38.45           | -17.40      |

**Table 6-2. Effective Radiated Power Output Data**

## 6.3 Equivalent Isotropic Radiated Power Output Data

§24.232(c), RSS-133 (6.4) [SRSP-510 (5.1.2)]

| Frequency [MHz] | Mode     | Battery Type | Substitute Level [dBm] | Antenna Gain [dBi] | Pol [H/V] | EIRP [dBm] | EIRP [Watts] | EIRP Limit [dBm] | Margin [dB] |
|-----------------|----------|--------------|------------------------|--------------------|-----------|------------|--------------|------------------|-------------|
| 1851.25         | CDMA1900 | Standard     | 11.80                  | 8.56               | V         | 20.36      | 0.109        | 33.01            | -12.65      |
| 1880.00         | CDMA1900 | Standard     | 16.25                  | 8.55               | V         | 24.80      | 0.302        | 33.01            | -8.21       |
| 1908.75         | CDMA1900 | Standard     | 15.74                  | 8.53               | V         | 24.27      | 0.268        | 33.01            | -8.74       |

**Table 6-3. Equivalent Isotropic Radiated Power Output Data**

### NOTES:

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 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 cellular band, and the vertical setup for PCS band. The data reported in the table above was measured in this test setup.

|                                      |                                                                                     |                                                          |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID:<br>A3LSPHM400                |  | FCC Pt. 22/24 CDMA MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1206140815.A3L | Test Dates:<br>June 21 - 27, 2012                                                   | EUT Type:<br>Portable Handset                            |                                                                                       | Page 13 of 36                   |

## 6.4 Cellular CDMA Radiated Measurements

§2.1053, 22.917(a), RSS-129 (8.1.1)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 824.70 MHz  
 CHANNEL: 1013  
 MEASURED OUTPUT POWER: 19.37 dBm = 0.086 W  
 MODULATION SIGNAL: CDMA  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10}(W) =$  32.37 dBc

| FREQUENCY (MHz) | LEVEL @ ANTENNA TERMINALS (dBm) | SUBSTITUTE ANTENNA GAIN (dBd) | SPURIOUS EMISSION LEVEL (dBm) | POL (H/V) | (dBc) |
|-----------------|---------------------------------|-------------------------------|-------------------------------|-----------|-------|
| 1649.40         | -53.87                          | 2.59                          | -51.28                        | H         | 70.7  |
| 2474.10         | -45.72                          | 2.89                          | -42.83                        | H         | 62.2  |
| 3298.80         | -93.89                          | 5.45                          | -88.44                        | H         | 107.8 |
| 4123.50         | -93.73                          | 7.05                          | -86.68                        | H         | 106.1 |
| 4948.20         | -92.75                          | 7.87                          | -84.89                        | H         | 104.3 |

Table 6-4. Radiated Spurious Data (Cellular CDMA Mode – Ch. 1013)

#### NOTES:

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 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. The data reported in the table above was measured in this test setup.

|                                      |                                                                                     |                                                          |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID:<br>A3LSPHM400                |  | FCC Pt. 22/24 CDMA MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1206140815.A3L | Test Dates:<br>June 21 - 27, 2012                                                   | EUT Type:<br>Portable Handset                            |                                                                                       | Page 14 of 36                   |

## Cellular CDMA Radiated Measurements (Cont'd)

§2.1053, 22.917(a), RSS-129 (8.1.1)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 836.52 MHz  
 CHANNEL: 384  
 MEASURED OUTPUT POWER: 21.93 dBm = 0.156 W  
 MODULATION SIGNAL: CDMA  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  34.93 dBc

| FREQUENCY (MHz) | LEVEL @ ANTENNA TERMINALS (dBm) | SUBSTITUTE ANTENNA GAIN (dBd) | SPURIOUS EMISSION LEVEL (dBm) | POL (H/V) | (dBc) |
|-----------------|---------------------------------|-------------------------------|-------------------------------|-----------|-------|
| 1673.04         | -53.68                          | 2.34                          | -51.34                        | H         | 73.3  |
| 2509.56         | -91.36                          | 2.84                          | -88.52                        | H         | 110.5 |
| 3346.08         | -94.09                          | 5.64                          | -88.45                        | H         | 110.4 |
| 4182.60         | -93.77                          | 7.14                          | -86.63                        | H         | 108.6 |
| 5019.12         | -92.74                          | 7.97                          | -84.77                        | H         | 106.7 |

**Table 6-5. Radiated Spurious Data (Cellular CDMA Mode – Ch. 384)**

### NOTES:

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 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. The data reported in the table above was measured in this test setup.

|                                      |                                                                                     |                                                          |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID:<br>A3LSPHM400                |  | FCC Pt. 22/24 CDMA MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1206140815.A3L | Test Dates:<br>June 21 - 27, 2012                                                   | EUT Type:<br>Portable Handset                            |                                                                                       | Page 15 of 36                   |

## Cellular CDMA Radiated Measurements (Cont'd)

§2.1053, 22.917(a), RSS-129 (8.1.1)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 848.31 MHz  
 CHANNEL: 777  
 MEASURED OUTPUT POWER: 21.05 dBm = 0.127 W  
 MODULATION SIGNAL: CDMA  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  34.05 dBc

| FREQUENCY<br>(MHz) | LEVEL @<br>ANTENNA<br>TERMINALS<br>(dBm) | SUBSTITUTE<br>ANTENNA GAIN<br>(dBd) | SPURIOUS<br>EMISSION<br>LEVEL<br>(dBm) | POL<br>(H/V) | (dBc) |
|--------------------|------------------------------------------|-------------------------------------|----------------------------------------|--------------|-------|
| 1696.62            | -37.20                                   | 2.09                                | -35.11                                 | H            | 56.2  |
| 2544.93            | -91.90                                   | 3.16                                | -88.74                                 | H            | 109.8 |
| 3393.24            | -94.29                                   | 5.83                                | -88.46                                 | H            | 109.5 |
| 4241.55            | -93.79                                   | 7.24                                | -86.55                                 | H            | 107.6 |
| 5089.86            | -92.59                                   | 8.02                                | -84.57                                 | H            | 105.6 |

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

### NOTES:

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 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. The data reported in the table above was measured in this test setup.

|                                      |                                                                                     |                                                          |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID:<br>A3LSPHM400                |  | FCC Pt. 22/24 CDMA MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1206140815.A3L | Test Dates:<br>June 21 - 27, 2012                                                   | EUT Type:<br>Portable Handset                            |                                                                                       | Page 16 of 36                   |

## 6.5 PCS CDMA Radiated Measurements

§2.1053, 24.238(a), RSS-133 (6.5.1)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1851.25 MHz  
 CHANNEL: 25  
 MEASURED OUTPUT POWER: 20.36 dBm = 0.109 W  
 MODULATION SIGNAL: CDMA  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  33.36 dBc

| FREQUENCY (MHz) | LEVEL @ ANTENNA TERMINALS (dBm) | SUBSTITUTE ANTENNA GAIN (dBi) | SPURIOUS EMISSION LEVEL (dBm) | POL (H/V) | (dBc) |
|-----------------|---------------------------------|-------------------------------|-------------------------------|-----------|-------|
| 3702.50         | -57.63                          | 8.40                          | -49.23                        | H         | 69.6  |
| 5553.75         | -67.33                          | 10.62                         | -56.71                        | H         | 77.1  |
| 7405.00         | -92.61                          | 11.82                         | -80.78                        | H         | 101.1 |
| 9256.25         | -92.07                          | 13.30                         | -78.78                        | H         | 99.1  |
| 11107.50        | -62.40                          | 13.50                         | -48.90                        | H         | 69.3  |

Table 6-7. Radiated Spurious Data (PCS CDMA Mode – Ch. 25)

#### NOTES:

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 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. The data reported in the table above was measured in this test setup.

|                                      |                                                                                     |                                                          |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID:<br>A3LSPHM400                |  | FCC Pt. 22/24 CDMA MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1206140815.A3L | Test Dates:<br>June 21 - 27, 2012                                                   | EUT Type:<br>Portable Handset                            |                                                                                       | Page 17 of 36                   |

## PCS CDMA Radiated Measurements (Cont'd)

§2.1053, 24.238(a), RSS-133 (6.5.1)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1880.00 MHz  
 CHANNEL: 600  
 MEASURED OUTPUT POWER: 24.80 dBm = 0.302 W  
 MODULATION SIGNAL: CDMA  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  37.80 dBc

| FREQUENCY (MHz) | LEVEL @ ANTENNA TERMINALS (dBm) | SUBSTITUTE ANTENNA GAIN (dBi) | SPURIOUS EMISSION LEVEL (dBm) | POL (H/V) | (dBc) |
|-----------------|---------------------------------|-------------------------------|-------------------------------|-----------|-------|
| 3760.00         | -56.83                          | 8.42                          | -48.41                        | H         | 73.2  |
| 5640.00         | -67.30                          | 10.66                         | -56.65                        | H         | 81.4  |
| 7520.00         | -92.59                          | 11.92                         | -80.66                        | H         | 105.5 |
| 9400.00         | -91.89                          | 13.24                         | -78.65                        | H         | 103.4 |
| 11280.00        | -62.35                          | 13.49                         | -48.86                        | H         | 73.7  |

**Table 6-8. Radiated Spurious Data (PCS CDMA Mode – Ch. 600)**

### NOTES:

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 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. The data reported in the table above was measured in this test setup.

|                                      |                                                                                     |                                                          |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID:<br>A3LSPHM400                |  | FCC Pt. 22/24 CDMA MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1206140815.A3L | Test Dates:<br>June 21 - 27, 2012                                                   | EUT Type:<br>Portable Handset                            |                                                                                       | Page 18 of 36                   |

## PCS CDMA Radiated Measurements (Cont'd)

### §2.1053, 24.238(a), RSS-133 (6.5.1)

#### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1908.75 MHz  
 CHANNEL: 1175  
 MEASURED OUTPUT POWER: 24.27 dBm = 0.268 W  
 MODULATION SIGNAL: CDMA  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  37.27 dBc

| FREQUENCY (MHz) | LEVEL @ ANTENNA TERMINALS (dBm) | SUBSTITUTE ANTENNA GAIN (dBi) | SPURIOUS EMISSION LEVEL (dBm) | POL (H/V) | (dBc) |
|-----------------|---------------------------------|-------------------------------|-------------------------------|-----------|-------|
| 3817.50         | -56.07                          | 8.57                          | -47.50                        | H         | 71.8  |
| 5726.25         | -65.90                          | 10.69                         | -55.21                        | H         | 79.5  |
| 7635.00         | -92.64                          | 12.06                         | -80.58                        | H         | 104.9 |
| 9543.75         | -91.62                          | 13.20                         | -78.42                        | H         | 102.7 |
| 11452.50        | -62.24                          | 13.42                         | -48.82                        | H         | 73.1  |

**Table 6-9. Radiated Spurious Data (PCS CDMA Mode – Ch. 1175)**

#### NOTES:

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 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. The data reported in the table above was measured in this test setup.

|                                      |                                                                                     |                                                          |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID:<br>A3LSPHM400                |  | FCC Pt. 22/24 CDMA MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1206140815.A3L | Test Dates:<br>June 21 - 27, 2012                                                   | EUT Type:<br>Portable Handset                            |                                                                                       | Page 19 of 36                   |

## 6.6 Cellular CDMA Frequency Stability Measurements

### §2.1055, 22.355, RSS-129 (9.2.1)

OPERATING FREQUENCY: 836,520,000 Hz

CHANNEL: 384

REFERENCE VOLTAGE: 3.7 VDC

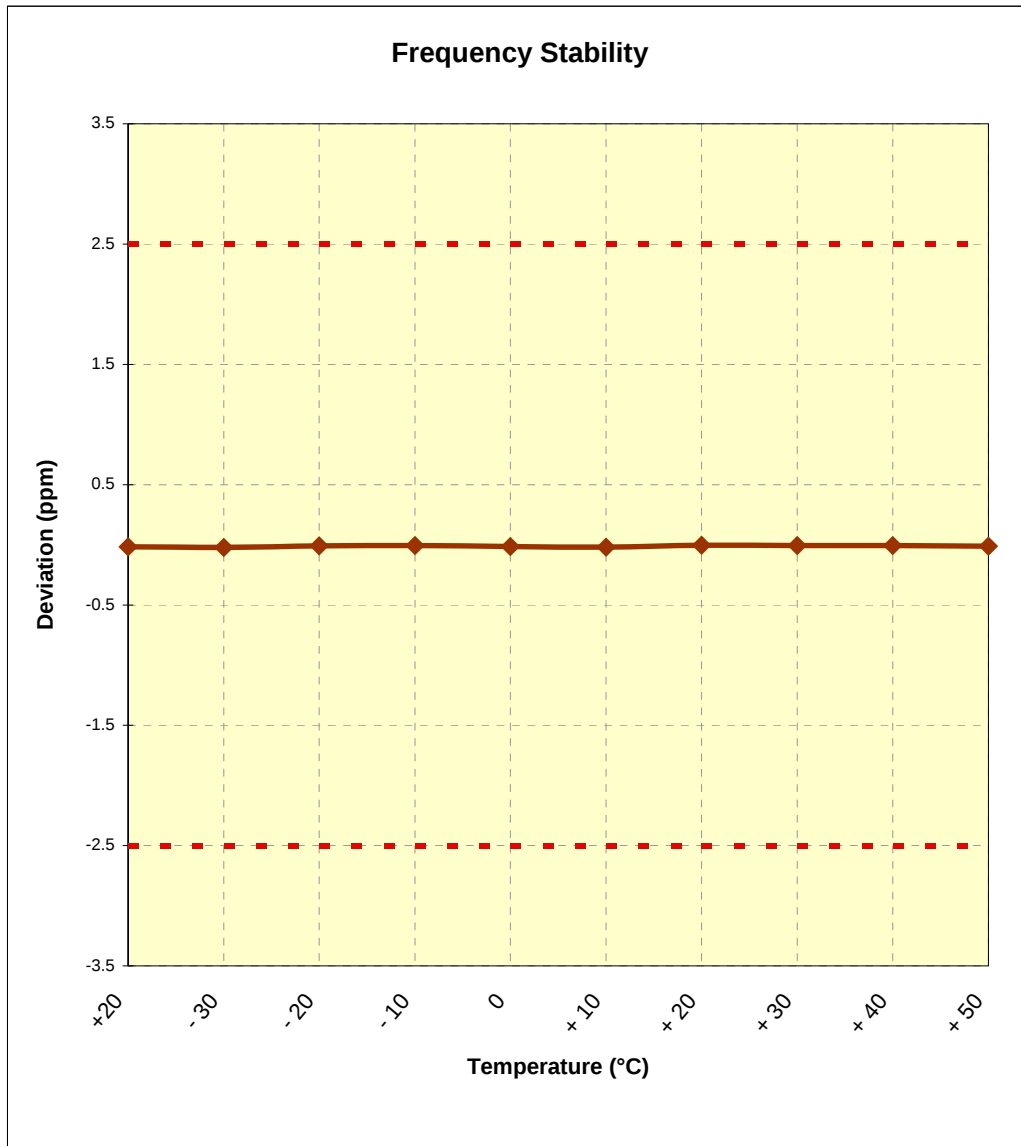
DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

| VOLTAGE (%)    | POWER (VDC) | TEMP (°C)  | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|------------|----------------|-----------------|---------------|
| 100 %          | 3.70        | + 20 (Ref) | 836,519,987    | -13             | -0.0000016    |
| 100 %          |             | - 30       | 836,519,982    | -18             | -0.0000022    |
| 100 %          |             | - 20       | 836,519,993    | -7              | -0.0000008    |
| 100 %          |             | - 10       | 836,519,996    | -4              | -0.0000005    |
| 100 %          |             | 0          | 836,519,988    | -12             | -0.0000014    |
| 100 %          |             | + 10       | 836,519,984    | -16             | -0.0000020    |
| 100 %          |             | + 20       | 836,519,998    | -2              | -0.0000002    |
| 100 %          |             | + 30       | 836,519,995    | -5              | -0.0000006    |
| 100 %          |             | + 40       | 836,519,996    | -4              | -0.0000005    |
| 100 %          |             | + 50       | 836,519,991    | -9              | -0.0000011    |
| 115 %          | 4.26        | + 20       | 836,519,995    | -5              | -0.0000006    |
| BATT. ENDPOINT | 3.39        | + 20       | 836,519,992    | -8              | -0.0000010    |

**Table 6-10. Frequency Stability Data (Cellular CDMA Mode – Ch. 384)**

## Cellular CDMA Frequency Stability Measurements (Cont'd)

§2.1055, 22.355, RSS-129 (9.2.1)



**Figure 6-1. Frequency Stability Graph (Cellular CDMA Mode – Ch. 384)**

|                                      |                                               |                                                          |                |                                 |
|--------------------------------------|-----------------------------------------------|----------------------------------------------------------|----------------|---------------------------------|
| FCC ID:<br>A3LSPHM400                | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 22/24 CDMA MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1206140815.A3L | Test Dates:<br>June 21 - 27, 2012             | EUT Type:<br>Portable Handset                            |                | Page 21 of 36                   |

## 6.7 PCS CDMA Frequency Stability Measurements

§2.1055, 24.235, RSS-133 (6.3)

OPERATING FREQUENCY: 1,880,000,000 Hz

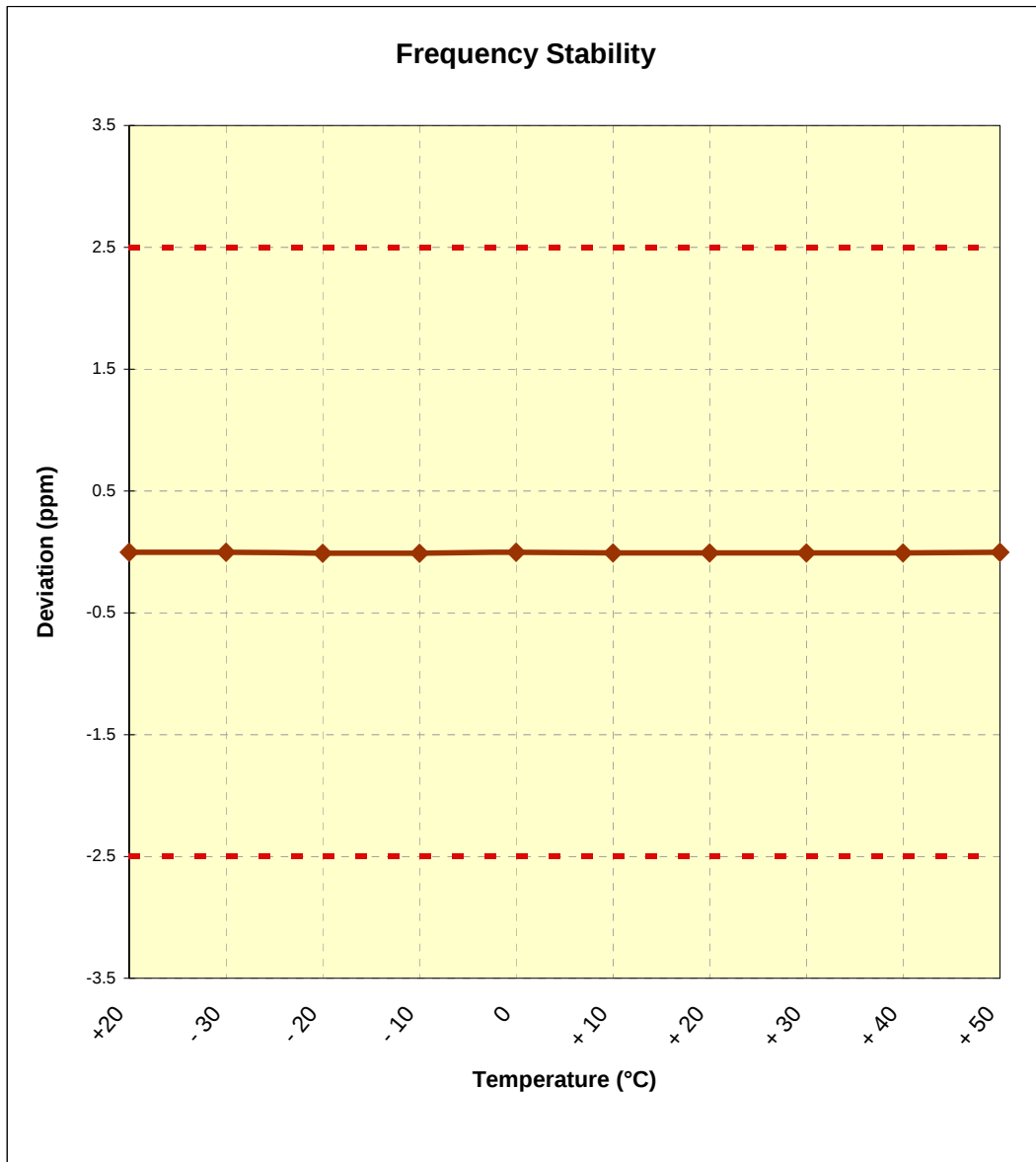
CHANNEL: 600

REFERENCE VOLTAGE: 3.7 VDC

| VOLTAGE (%)    | POWER (VDC) | TEMP (°C)  | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|------------|----------------|-----------------|---------------|
| 100 %          | 3.70        | + 20 (Ref) | 1,879,999,994  | -6              | -0.0000003    |
| 100 %          |             | - 30       | 1,879,999,994  | -7              | -0.0000003    |
| 100 %          |             | - 20       | 1,879,999,980  | -20             | -0.0000010    |
| 100 %          |             | - 10       | 1,879,999,980  | -20             | -0.0000011    |
| 100 %          |             | 0          | 1,879,999,994  | -6              | -0.0000003    |
| 100 %          |             | + 10       | 1,879,999,986  | -14             | -0.0000007    |
| 100 %          |             | + 20       | 1,879,999,984  | -16             | -0.0000008    |
| 100 %          |             | + 30       | 1,879,999,984  | -17             | -0.0000009    |
| 100 %          |             | + 40       | 1,879,999,986  | -14             | -0.0000007    |
| 100 %          |             | + 50       | 1,879,999,997  | -3              | -0.0000002    |
| 115 %          | 4.26        | + 20       | 1,879,999,988  | -13             | -0.0000007    |
| BATT. ENDPOINT | 3.39        | + 20       | 1,879,999,985  | -15             | -0.0000008    |

**Table 6-11. Frequency Stability Data (PCS CDMA Mode – Ch. 600)**

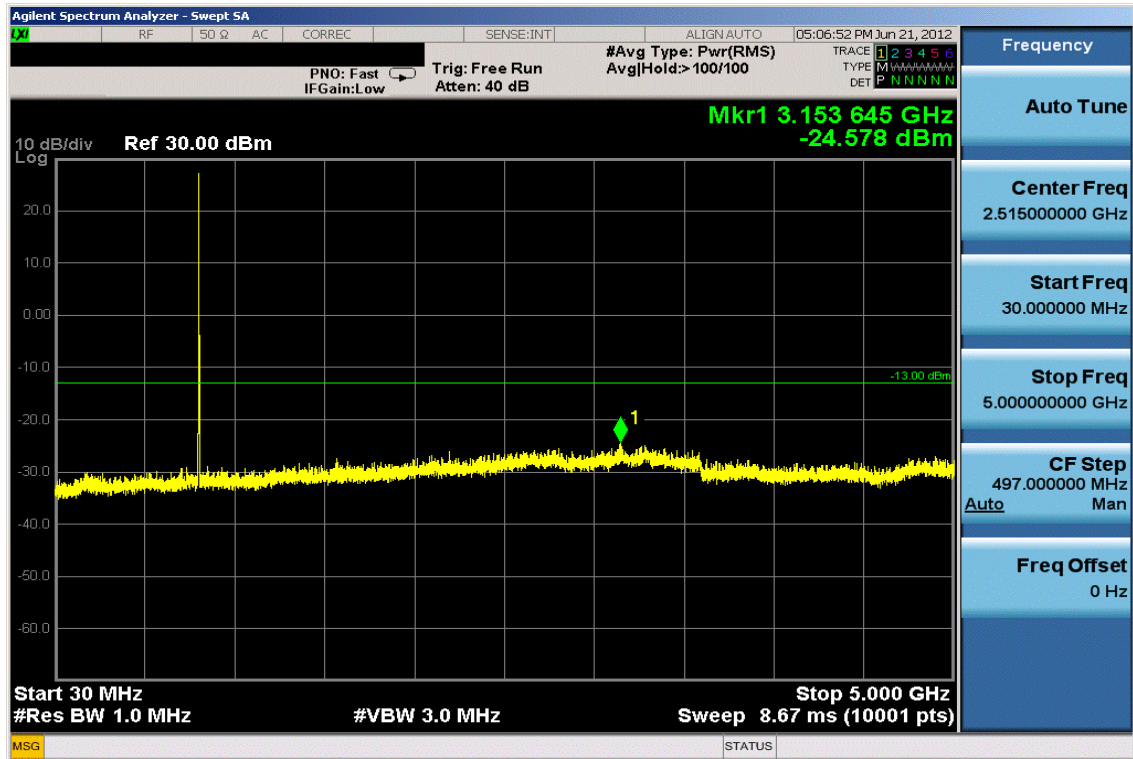
**PCS CDMA Frequency Stability Measurements (Cont'd)**  
**§2.1055, 24.235, RSS-133 (6.3)**



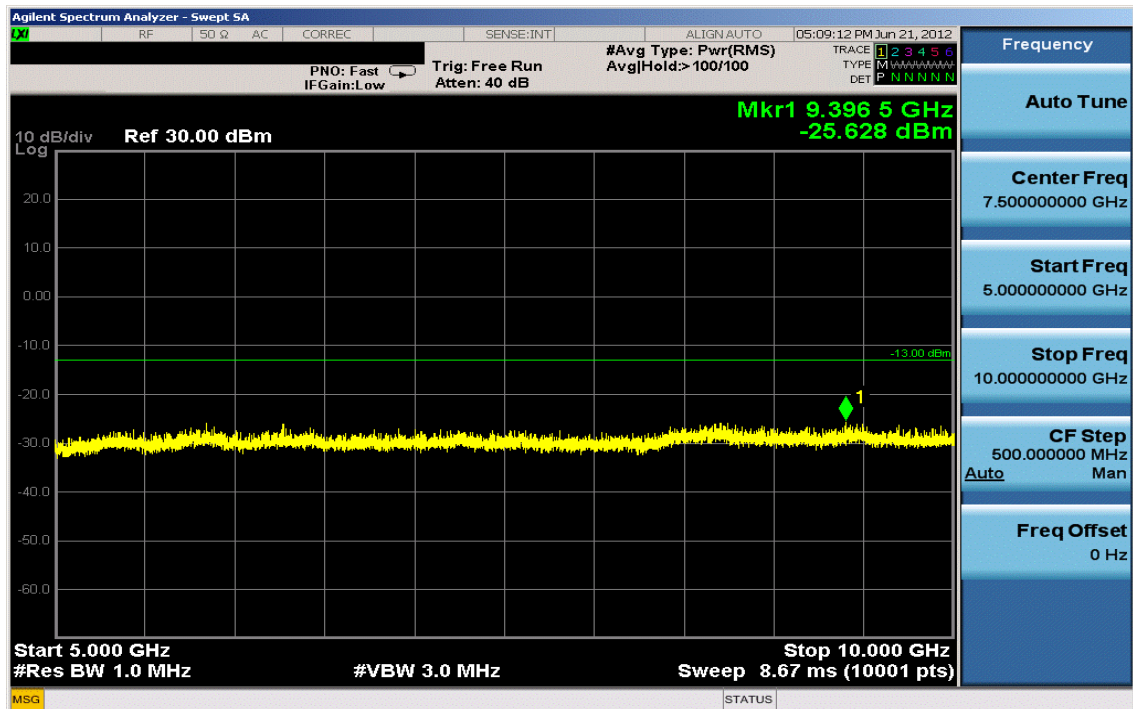
**Figure 6-2. Frequency Stability Graph (PCS CDMA Mode – Ch. 600)**

|                                      |                                               |                                                          |                |                                 |
|--------------------------------------|-----------------------------------------------|----------------------------------------------------------|----------------|---------------------------------|
| FCC ID:<br>A3LSPHM400                | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 22/24 CDMA MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1206140815.A3L | Test Dates:<br>June 21 - 27, 2012             | EUT Type:<br>Portable Handset                            |                | Page 23 of 36                   |

## 7.0 PLOT(S) OF EMISSIONS

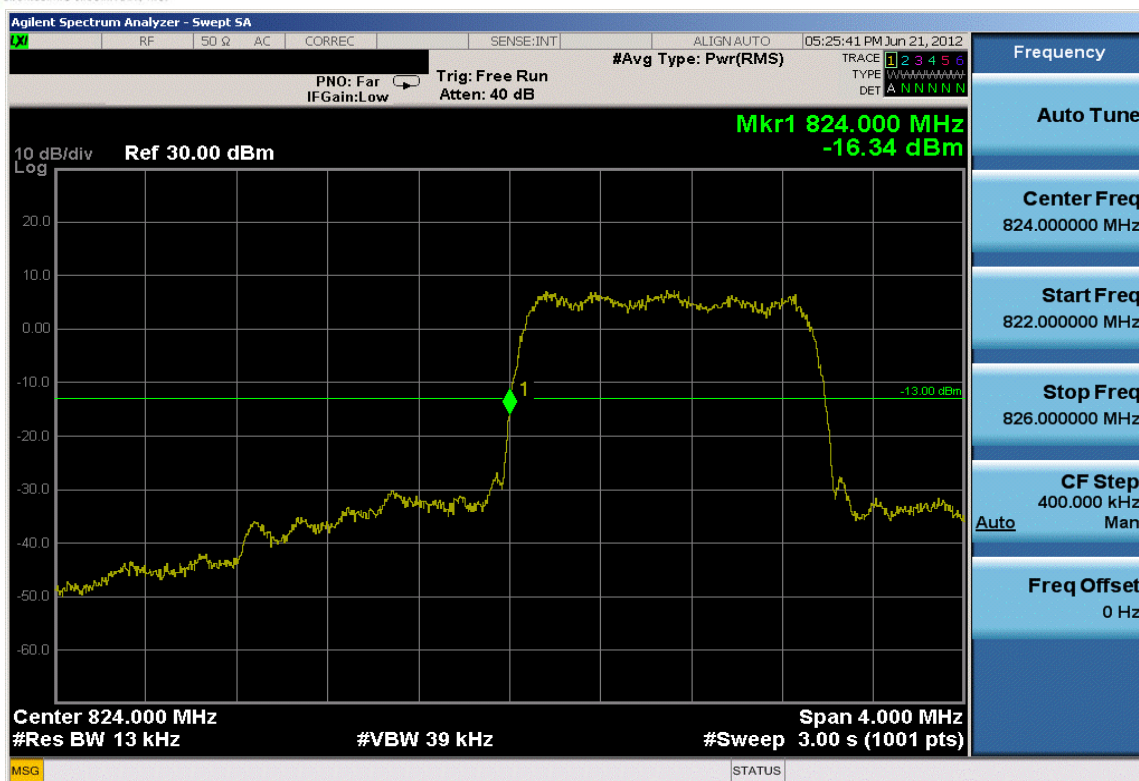


Plot 7-1. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 1013)



Plot 7-2. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 1013)

|                                      |                                               |                                                          |                |                                 |
|--------------------------------------|-----------------------------------------------|----------------------------------------------------------|----------------|---------------------------------|
| FCC ID:<br>A3LSPHM400                | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 22/24 CDMA MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1206140815.A3L | Test Dates:<br>June 21 - 27, 2012             | EUT Type:<br>Portable Handset                            |                | Page 24 of 36                   |

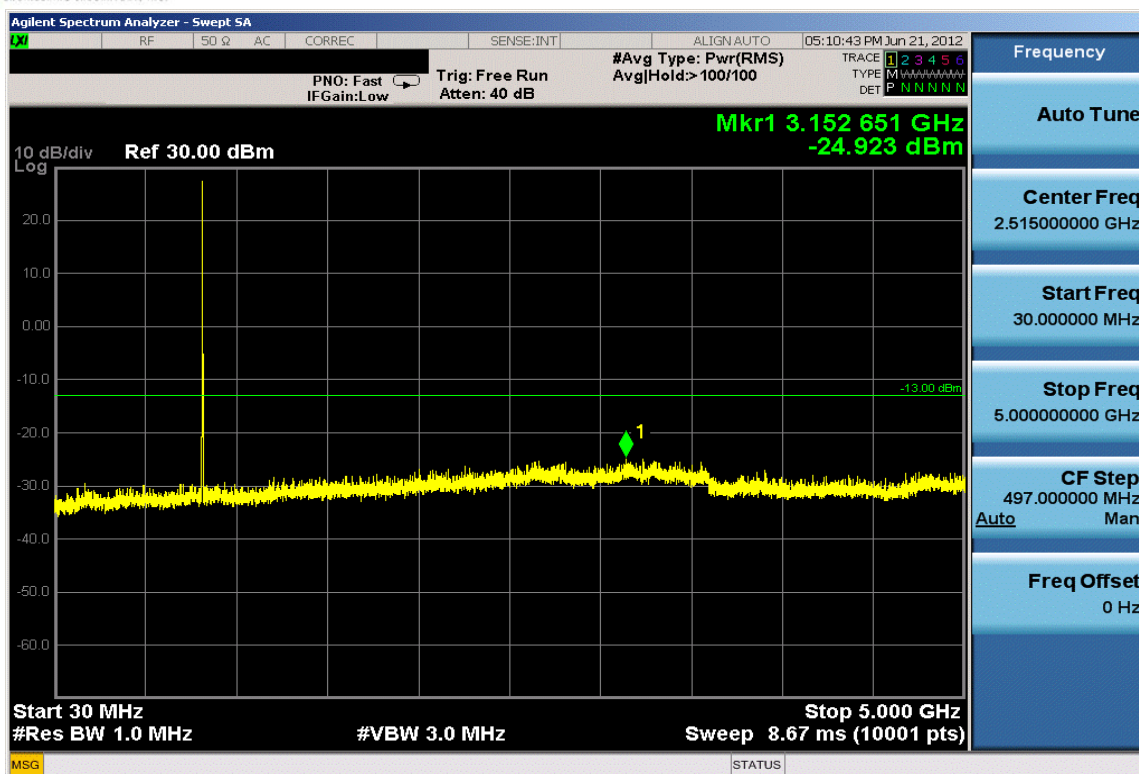


Plot 7-3. Band Edge Plot (Cellular CDMA Mode – Ch. 1013)

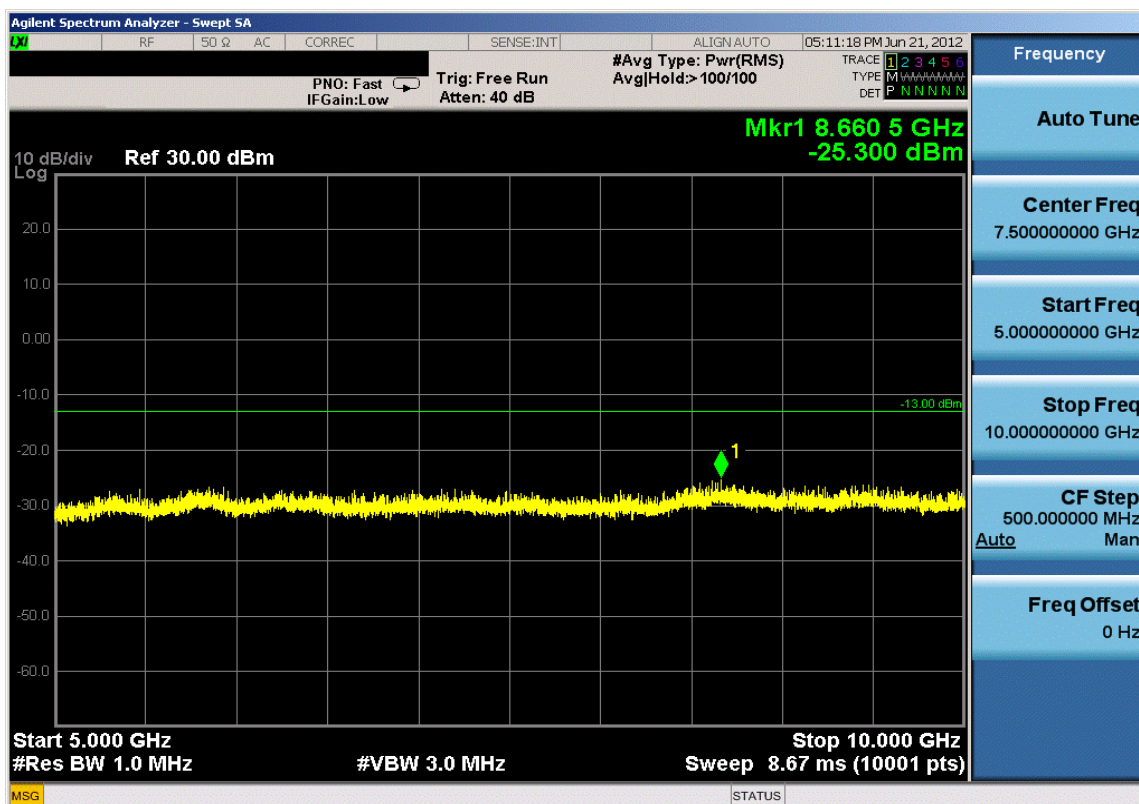


Plot 7-4. 4MHz Span Plot (Cellular CDMA Mode – Ch. 1013)

|                                      |                                               |                                                          |                |                                 |
|--------------------------------------|-----------------------------------------------|----------------------------------------------------------|----------------|---------------------------------|
| FCC ID:<br>A3LSPHM400                | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 22/24 CDMA MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1206140815.A3L | Test Dates:<br>June 21 - 27, 2012             | EUT Type:<br>Portable Handset                            |                | Page 25 of 36                   |

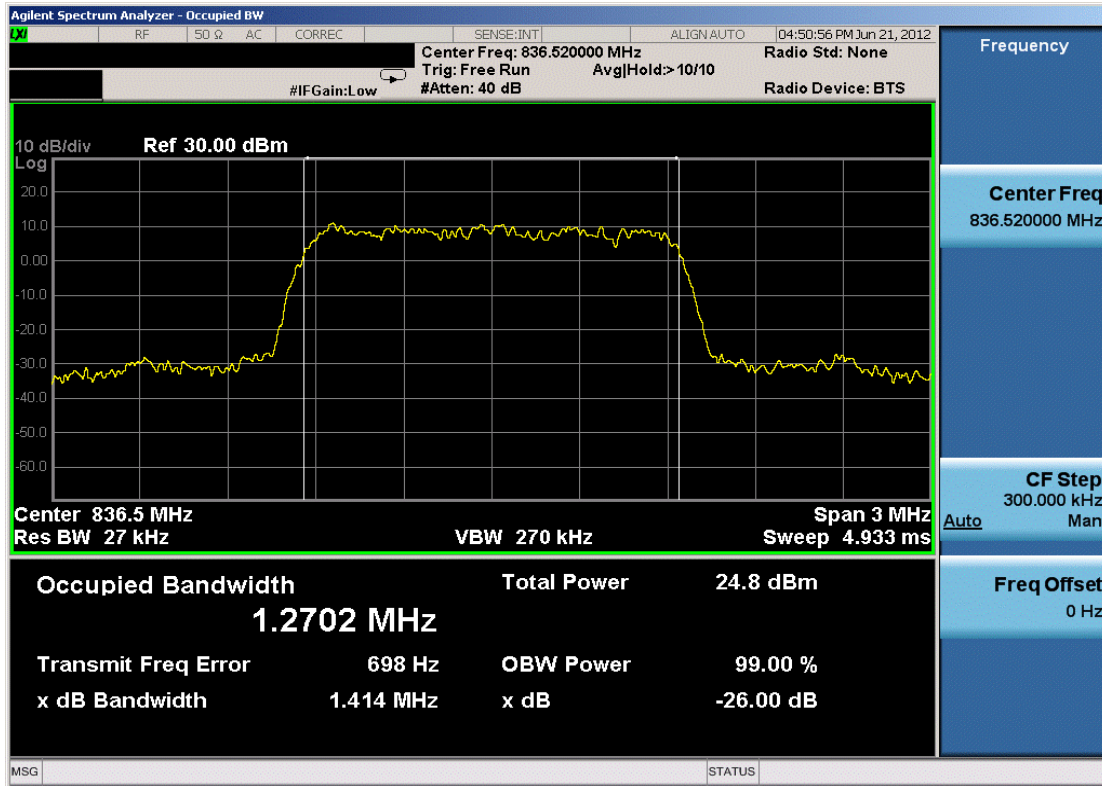


Plot 7-5. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 384)

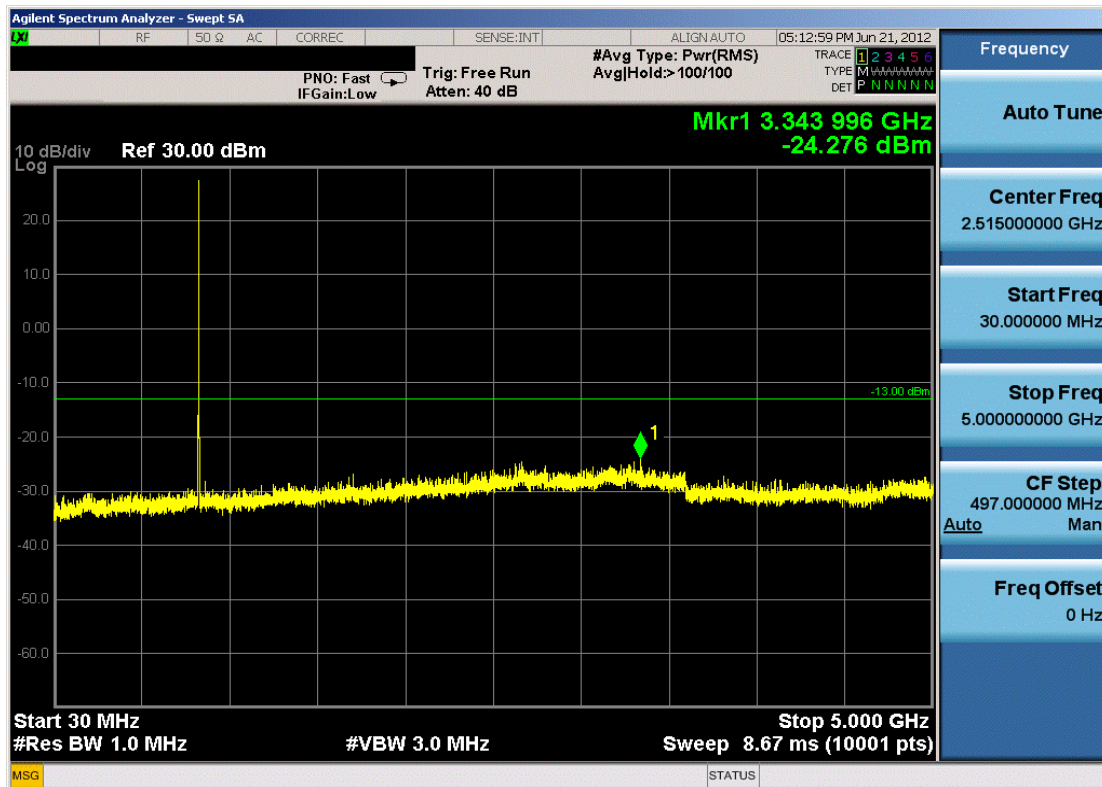


Plot 7-6. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 384)

|                                      |                                               |                                                          |                |                                 |
|--------------------------------------|-----------------------------------------------|----------------------------------------------------------|----------------|---------------------------------|
| FCC ID:<br>A3LSPHM400                | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 22/24 CDMA MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1206140815.A3L | Test Dates:<br>June 21 - 27, 2012             | EUT Type:<br>Portable Handset                            |                | Page 26 of 36                   |

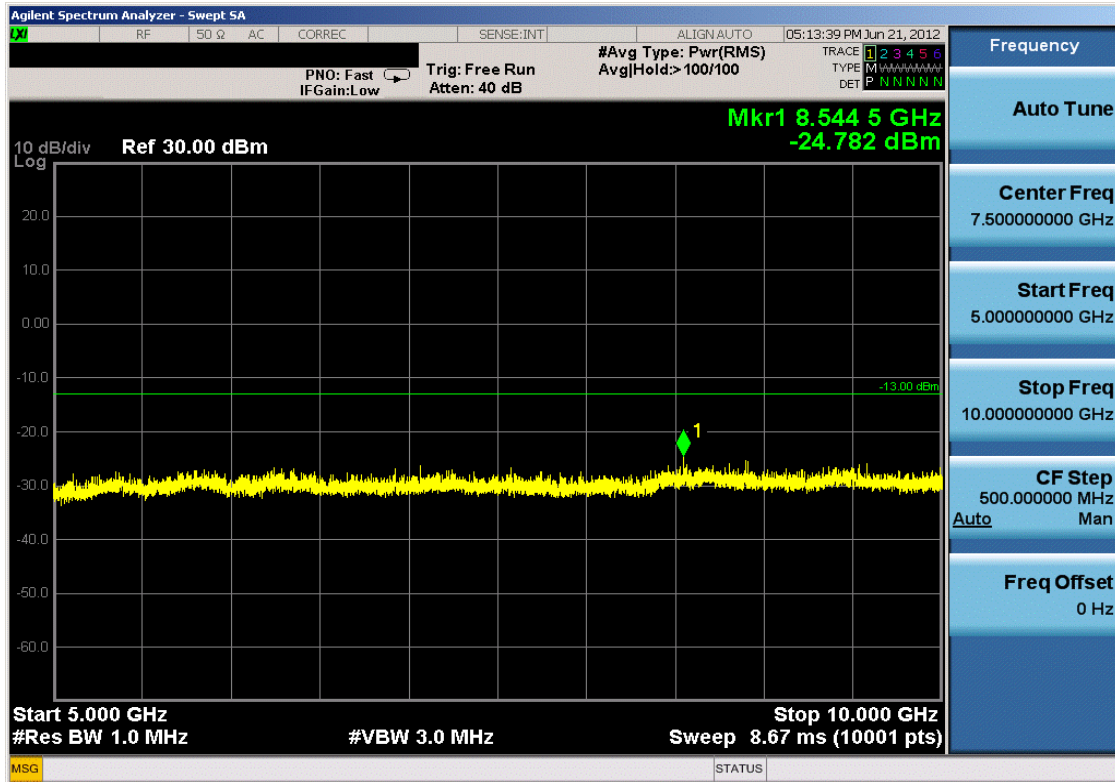


Plot 7-7. Occupied Bandwidth Plot (Cellular CDMA Mode – Ch. 384)

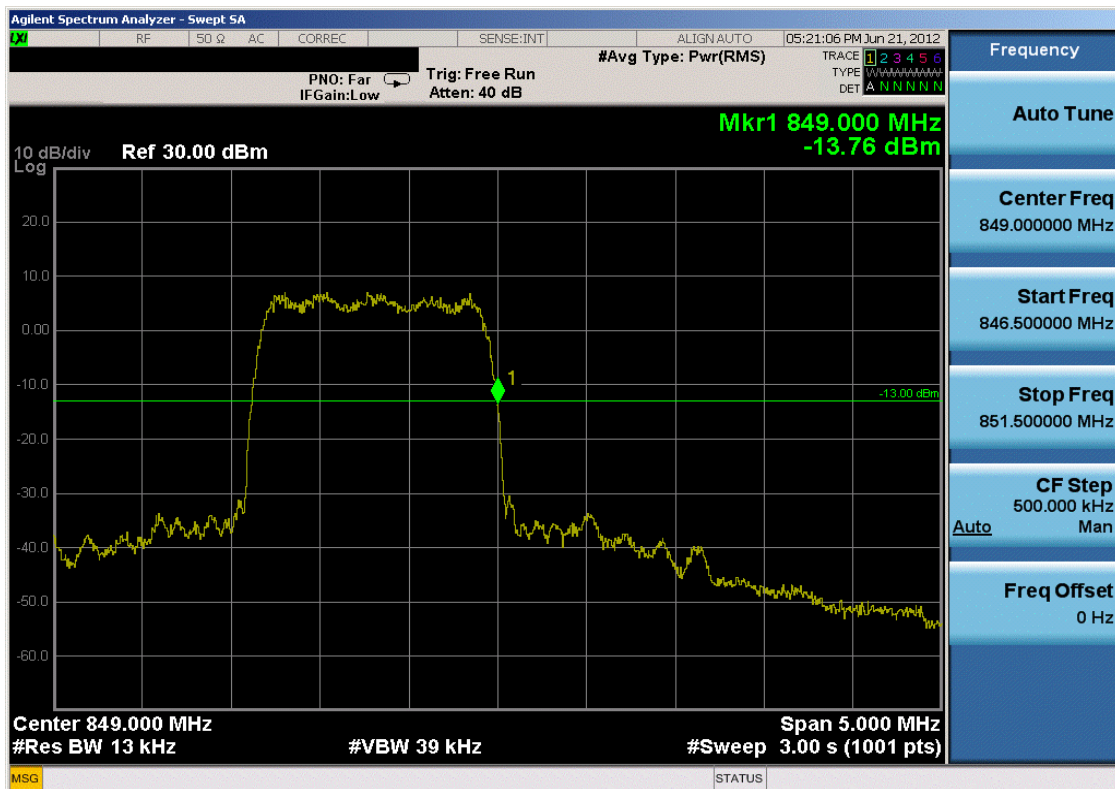


Plot 7-8. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 777)

|                                      |                                               |                                                          |                |                                 |
|--------------------------------------|-----------------------------------------------|----------------------------------------------------------|----------------|---------------------------------|
| FCC ID:<br>A3LSPHM400                | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 22/24 CDMA MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1206140815.A3L | Test Dates:<br>June 21 - 27, 2012             | EUT Type:<br>Portable Handset                            |                | Page 27 of 36                   |

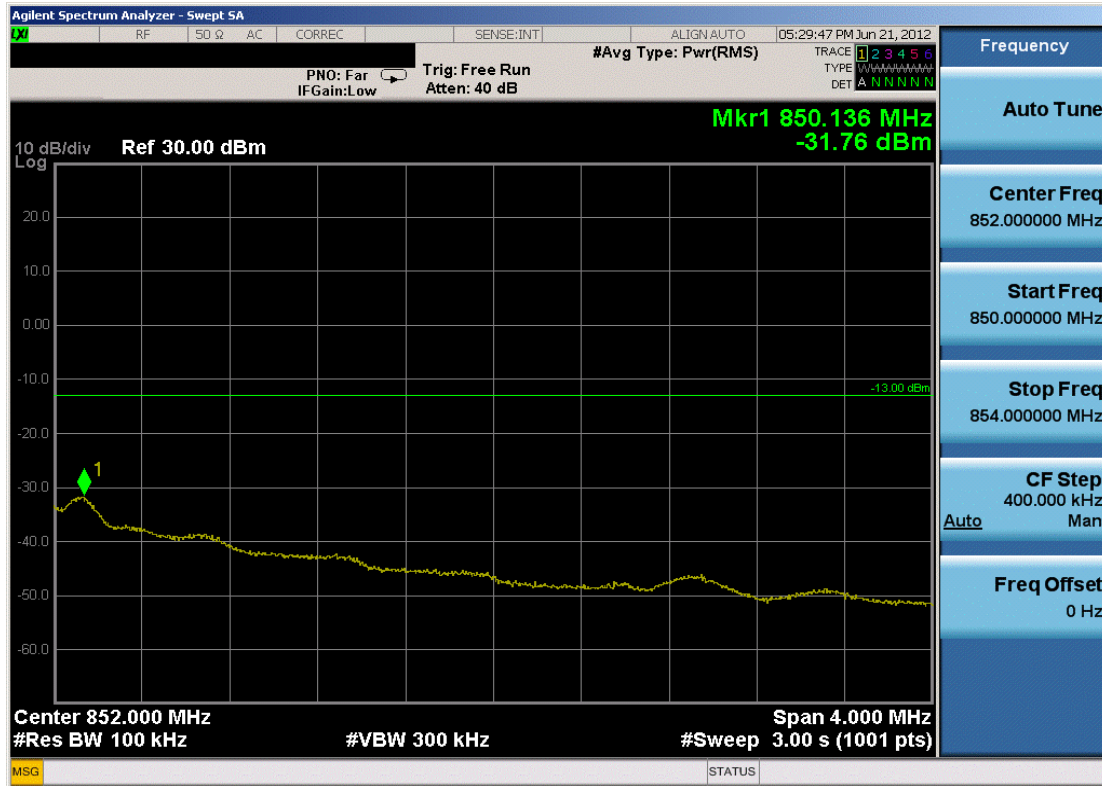


Plot 7-9. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 777)

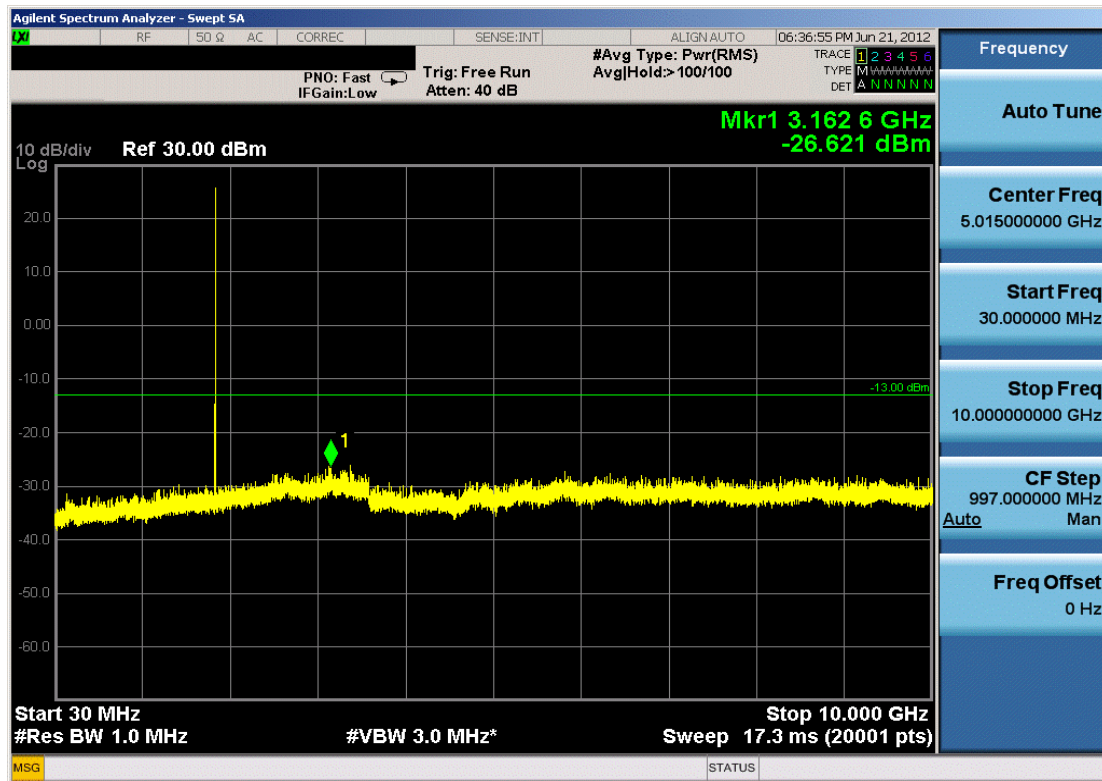


Plot 7-10. Band Edge Plot (Cellular CDMA Mode – Ch. 777)

|                                      |                                               |                                                          |                |                                 |
|--------------------------------------|-----------------------------------------------|----------------------------------------------------------|----------------|---------------------------------|
| FCC ID:<br>A3LSPHM400                | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 22/24 CDMA MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1206140815.A3L | Test Dates:<br>June 21 - 27, 2012             | EUT Type:<br>Portable Handset                            |                | Page 28 of 36                   |

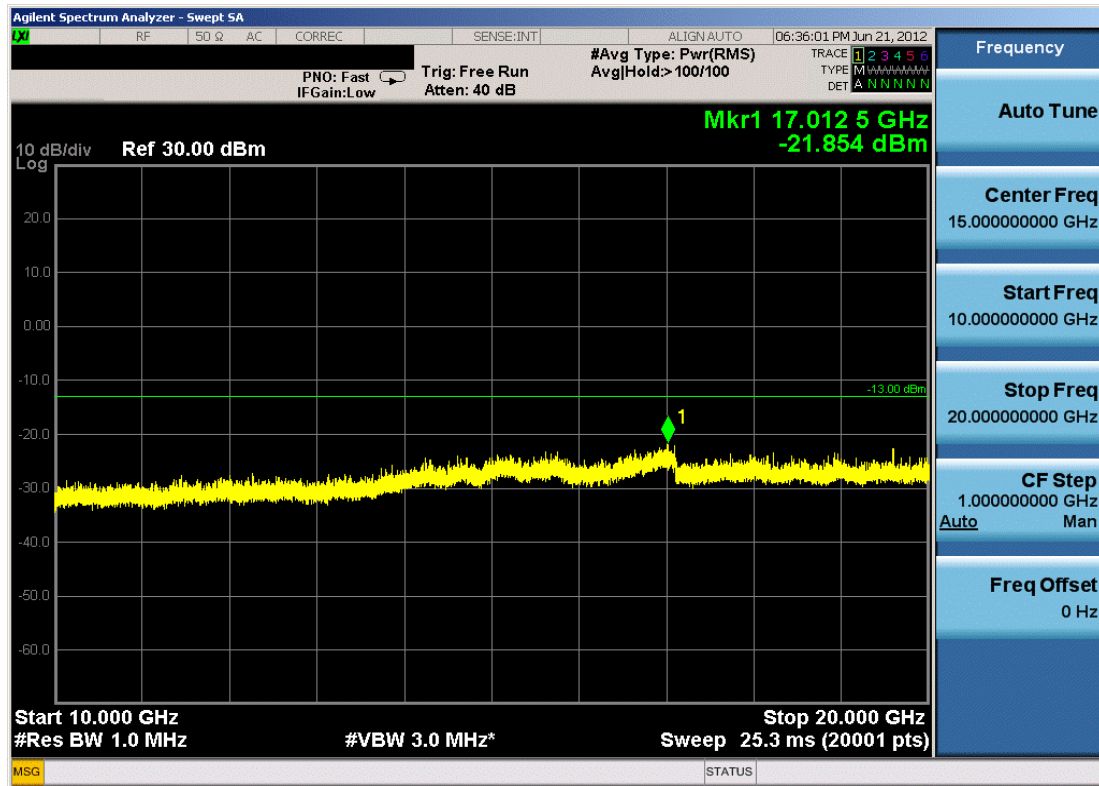


Plot 7-11. 4MHz Span Plot (Cellular CDMA Mode – Ch. 777)

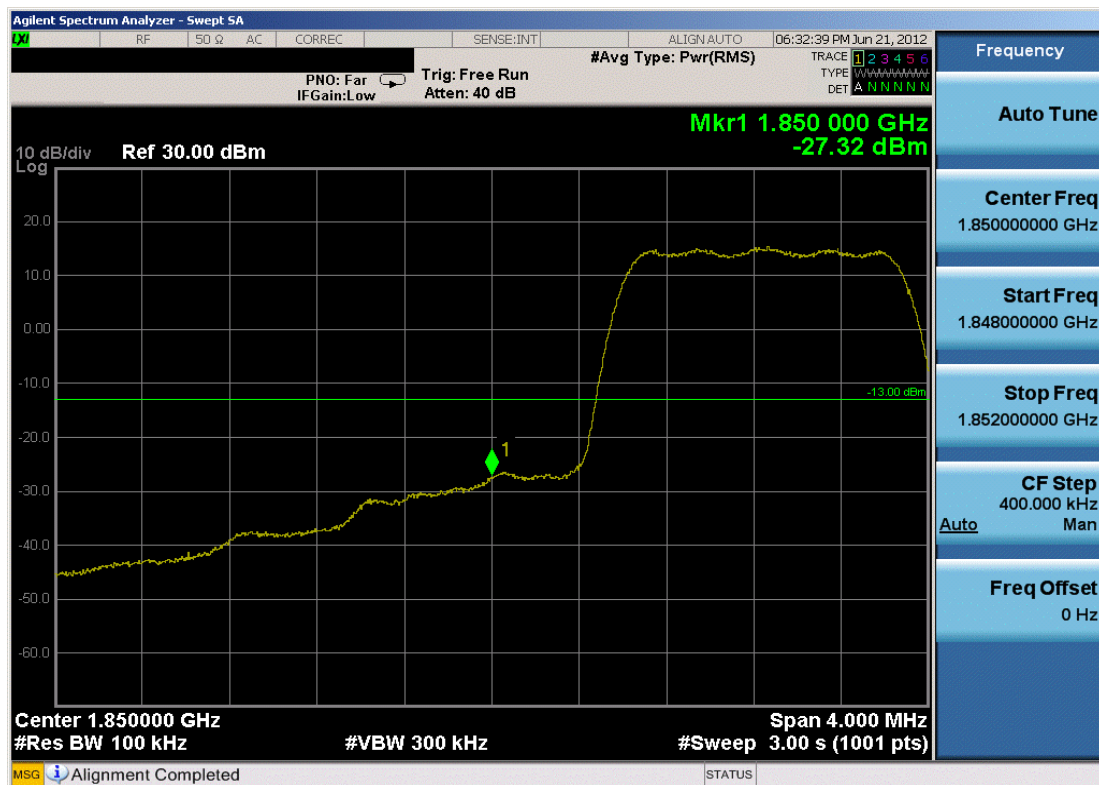


Plot 7-12. Conducted Spurious Plot (PCS CDMA Mode – Ch. 25)

|                                      |                                               |                                                          |                |                                 |
|--------------------------------------|-----------------------------------------------|----------------------------------------------------------|----------------|---------------------------------|
| FCC ID:<br>A3LSPHM400                | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 22/24 CDMA MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1206140815.A3L | Test Dates:<br>June 21 - 27, 2012             | EUT Type:<br>Portable Handset                            |                | Page 29 of 36                   |

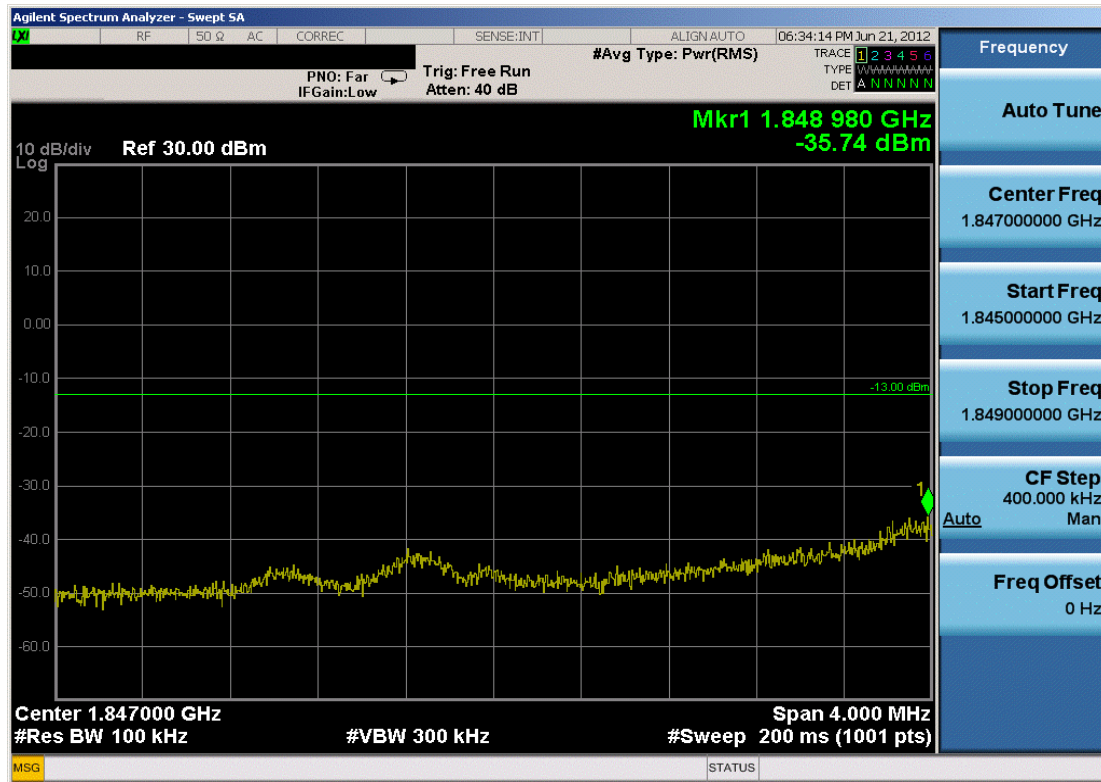


### Plot 7-13. Conducted Spurious Plot (PCS CDMA Mode – Ch. 25)

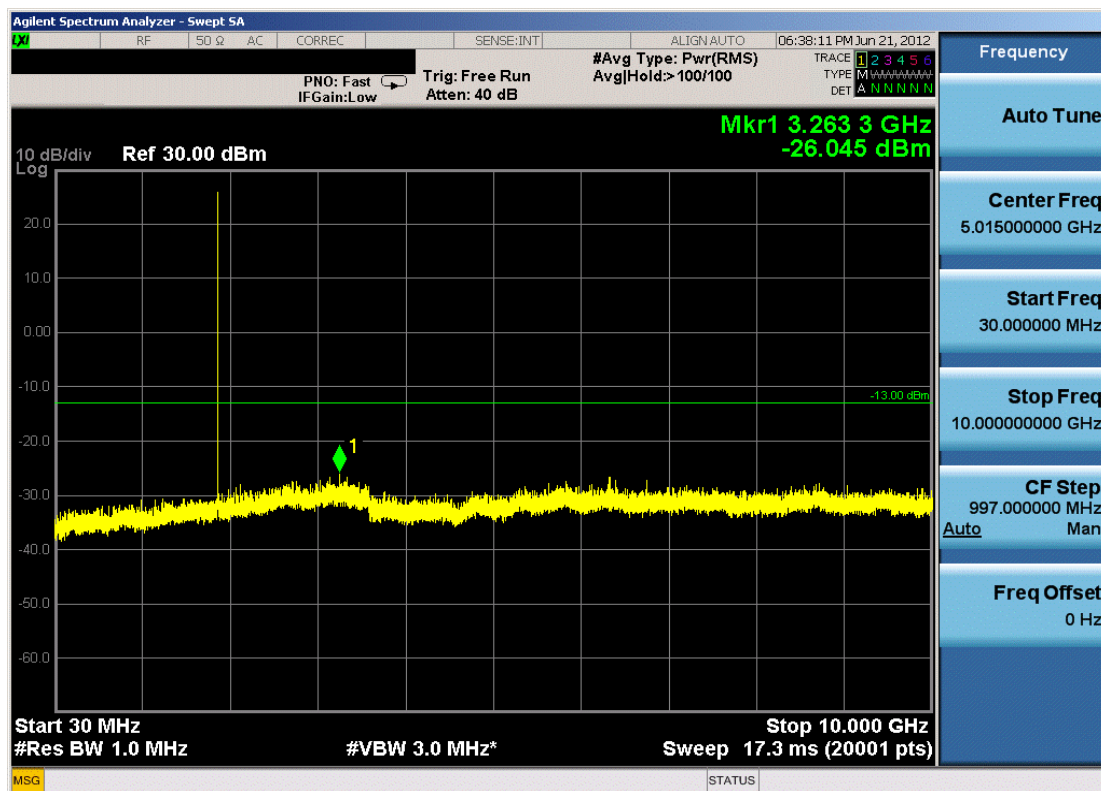


### Plot 7-14. Band Edge Plot (PCS CDMA Mode – Ch. 25)

|                                      |                                                                                                                                                                                                                                            |                               |                                 |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID:<br>A3LSPHM400                |  <b>FCC Pt. 22/24 CDMA MEASUREMENT REPORT<br/>(CERTIFICATION)</b>  |                               | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1206140815.A3L | Test Dates:<br>June 21 - 27, 2012                                                                                                                                                                                                          | EUT Type:<br>Portable Handset | Page 30 of 36                   |

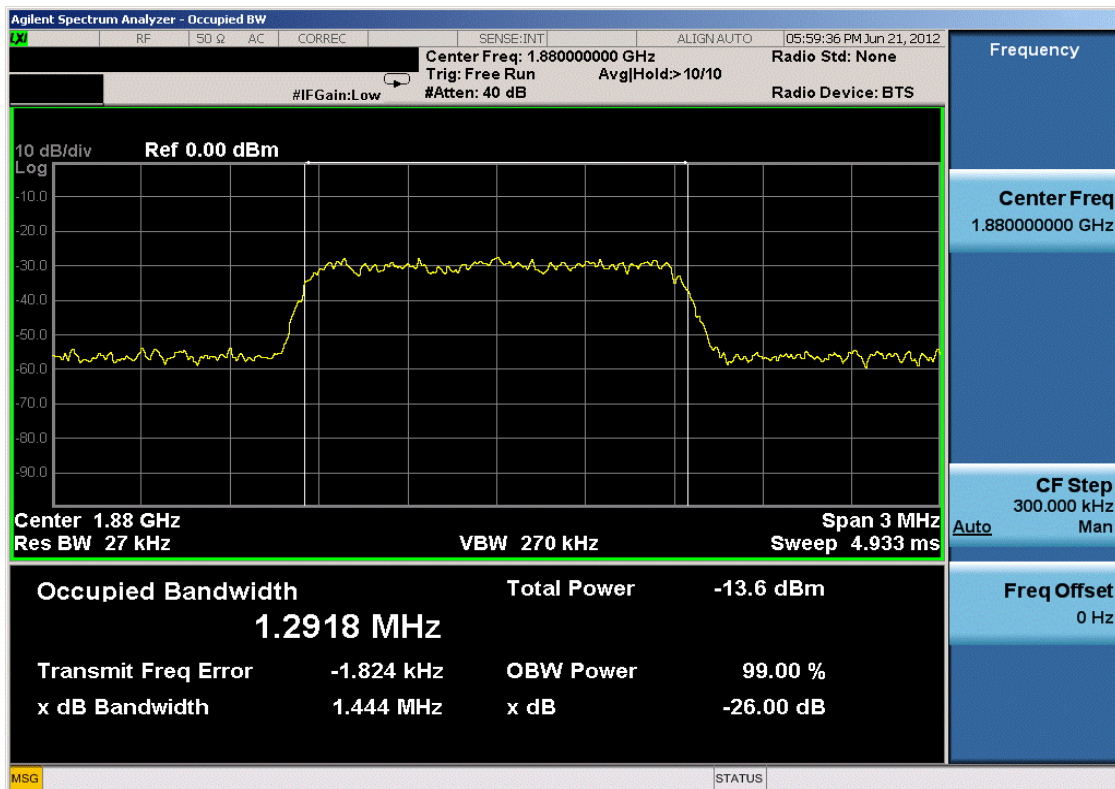


Plot 7-15. 4MHz Span Plot (PCS CDMA Mode – Ch. 25)

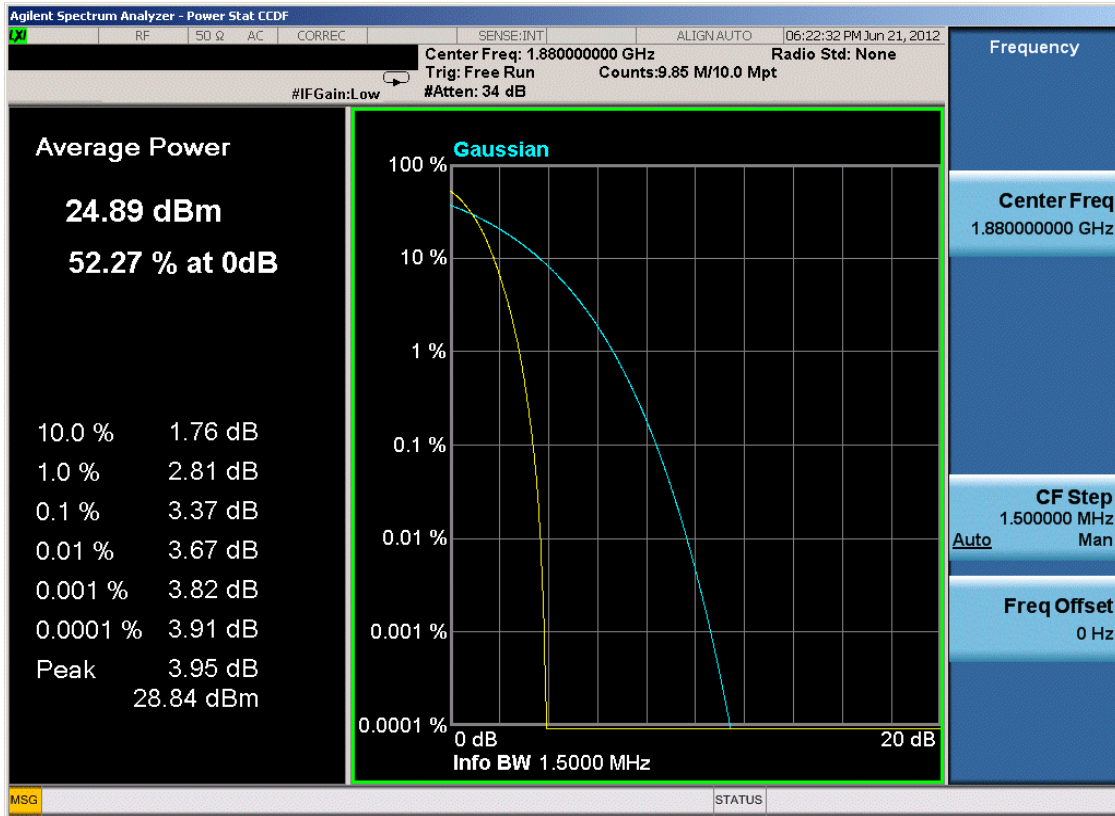


Plot 7-16. Conducted Spurious Plot (PCS CDMA Mode – Ch. 600)

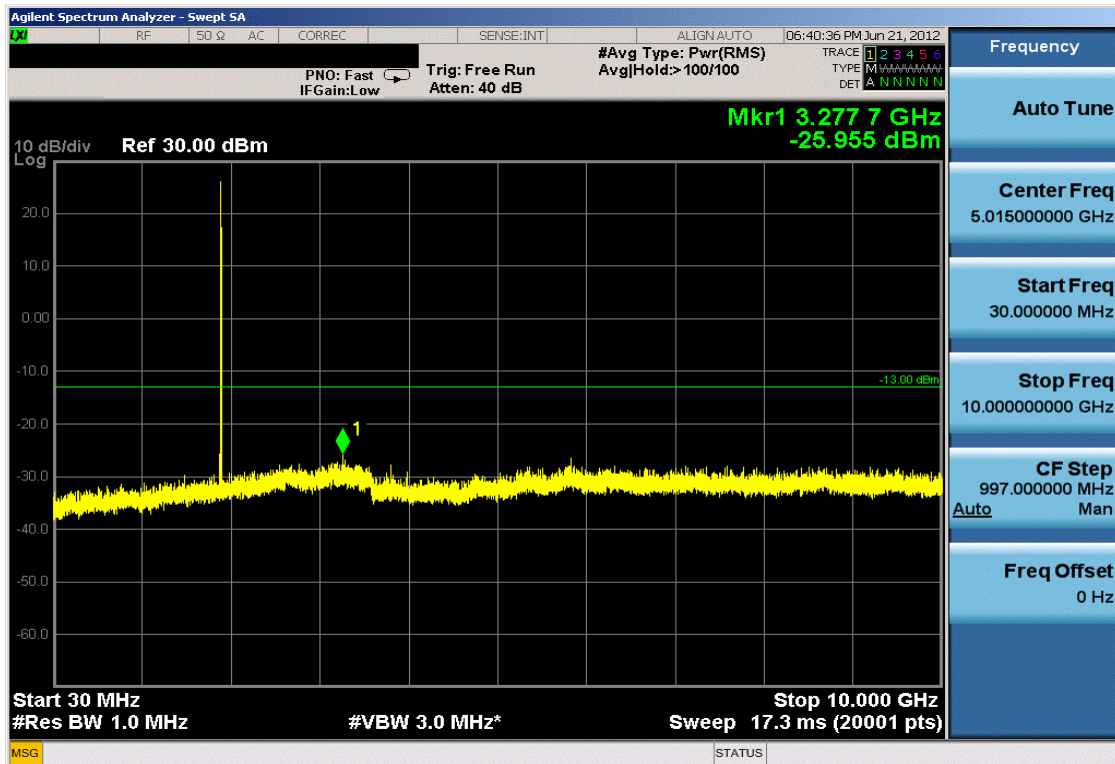
|                                      |                                               |                                                          |                |                                 |
|--------------------------------------|-----------------------------------------------|----------------------------------------------------------|----------------|---------------------------------|
| FCC ID:<br>A3LSPHM400                | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 22/24 CDMA MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1206140815.A3L | Test Dates:<br>June 21 - 27, 2012             | EUT Type:<br>Portable Handset                            |                | Page 31 of 36                   |



|                                      |                                                                                                                                                                                                                                            |                               |                                 |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID:<br>A3LSPHM400                |  <b>FCC Pt. 22/24 CDMA MEASUREMENT REPORT<br/>(CERTIFICATION)</b>  |                               | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1206140815.A3L | Test Dates:<br>June 21 - 27, 2012                                                                                                                                                                                                          | EUT Type:<br>Portable Handset | Page 32 of 36                   |

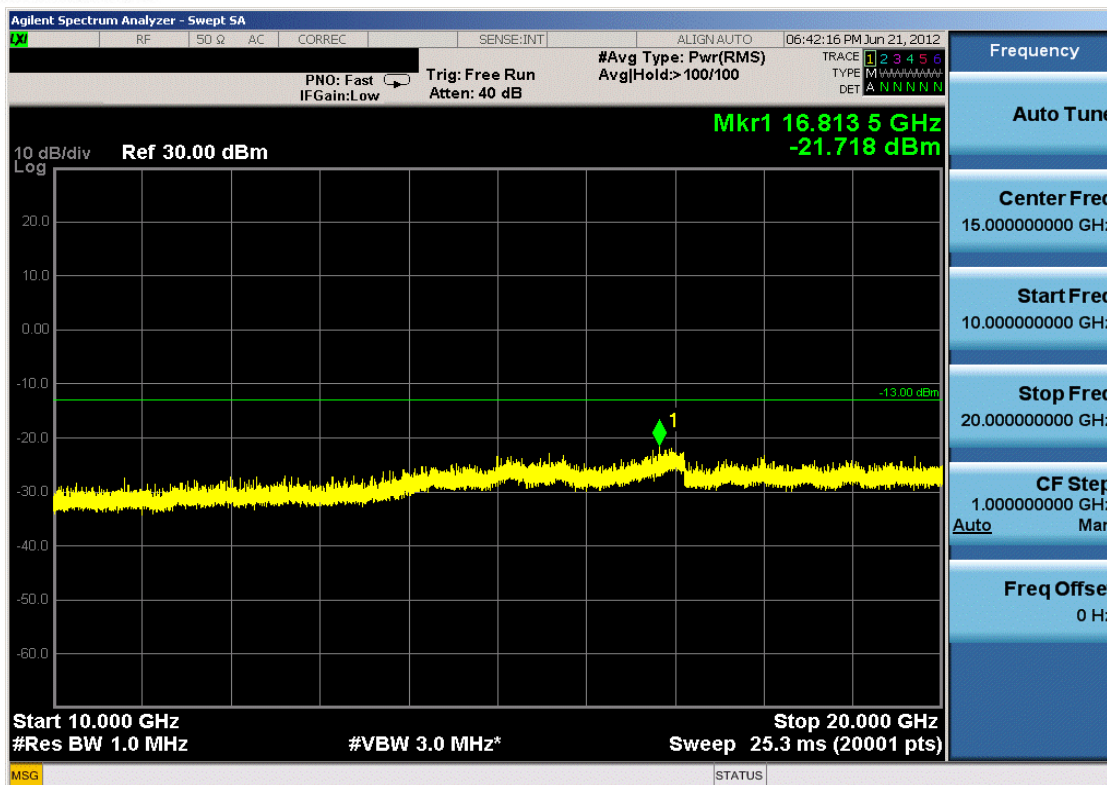


Plot 7-19. Peak-Average Ratio Plot (PCS CDMA Mode – Ch. 600)



Plot 7-20. Conducted Spurious Plot (PCS CDMA Mode – Ch. 1175)

|                                      |                                               |                                                          |                |                                 |
|--------------------------------------|-----------------------------------------------|----------------------------------------------------------|----------------|---------------------------------|
| FCC ID:<br>A3LSPHM400                | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 22/24 CDMA MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1206140815.A3L | Test Dates:<br>June 21 - 27, 2012             | EUT Type:<br>Portable Handset                            |                | Page 33 of 36                   |

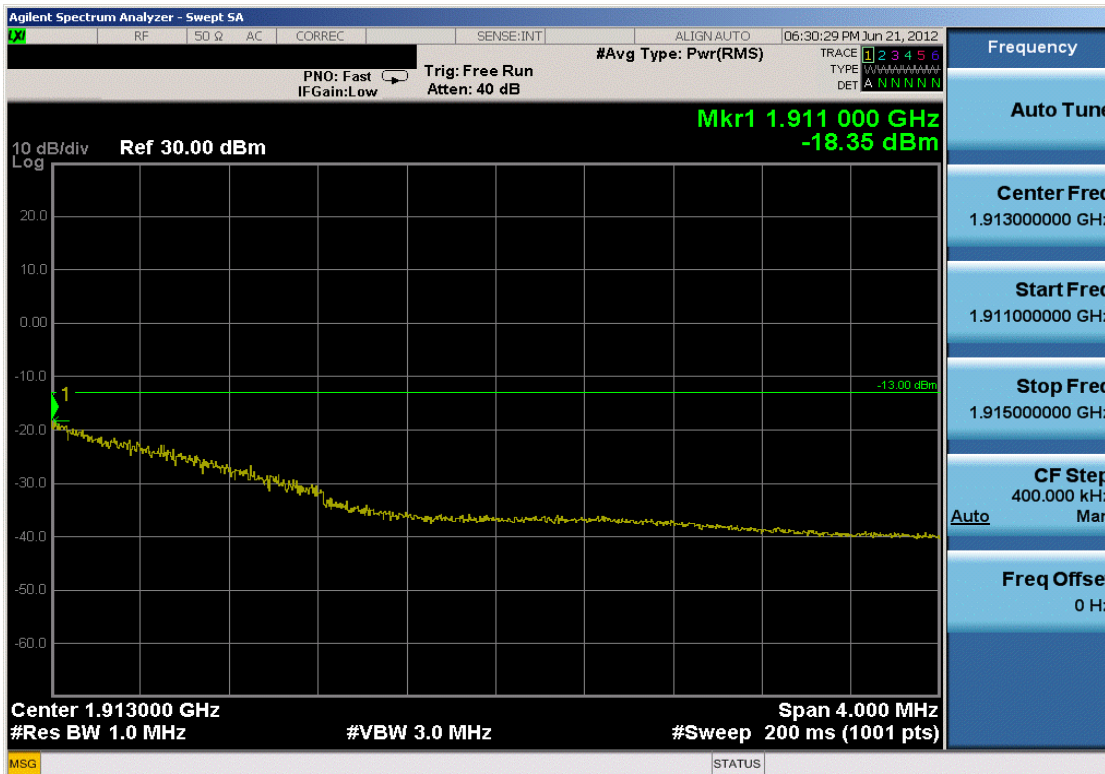


### Plot 7-21. Conducted Spurious Plot (PCS CDMA Mode – Ch. 1175)



### Plot 7-22. Band Edge Plot (PCS CDMA Mode – Ch. 1175)

|                                             |                                                                                                                                                                                                                                            |                                      |                                        |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|----------------------------------------|
| FCC ID:<br>A3LSPHM400                       |  <b>FCC Pt. 22/24 CDMA MEASUREMENT REPORT<br/>(CERTIFICATION)</b>  |                                      | <b>Reviewed by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>0Y1206140815.A3L | <b>Test Dates:</b><br>June 21 - 27, 2012                                                                                                                                                                                                   | <b>EUT Type:</b><br>Portable Handset | Page 34 of 36                          |



### Plot 7-23. 4MHz Span Plot (PCS CDMA Mode – Ch. 1175)

## 8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSPHM400** complies with all the requirements of Parts 2, 22, and 24 of the FCC rules and RSS-129 and RSS-133 of the Industry Canada rules.

|                                             |                                                                                     |                                                                  |                                                                                       |                                        |
|---------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------|
| <b>FCC ID:</b><br>A3LSPHM400                |  | <b>FCC Pt. 22/24 CDMA MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |  | <b>Reviewed by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>0Y1206140815.A3L | <b>Test Dates:</b><br>June 21 - 27, 2012                                            | <b>EUT Type:</b><br>Portable Handset                             |                                                                                       | Page 36 of 36                          |