



# PCTEST ENGINEERING LABORATORY, INC.

6660-B Dobbin Road, Columbia, MD 21045 USA

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<http://www.pctestlab.com>



## CERTIFICATE OF COMPLIANCE FCC Part 22 & 24 Certification

**Applicant Name:**

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

**Date of Testing:**

December 7 - 11, 2006

**Test Site/Location:**

PCTEST Lab., Columbia, MD, USA

**Test Report Serial No.:**

0611241036

**FCC ID:**

**A3LSPHA303**

**APPLICANT:**

**SAMSUNG ELECTRONICS, CO. LTD.**

**Application Type:**

Certification

**FCC Classification:**

PCS Licensed Transmitter Held to Ear (PCE)

**FCC Rule Part(s):**

§2; §22(H), §24(E)

**EUT Type:**

Dual-Band CDMA Phone with Bluetooth

**Model(s):**

SPH-A303

**Tx Frequency Range:**

824.70 - 848.31MHz (Cell. CDMA) / 1851.25 - 1908.75MHz (PCS CDMA)

**Rx Frequency Range:**

869.70 - 893.31MHz (Cell. CDMA) / 1931.25 - 1988.75MHz (PCS CDMA)

**Max. RF Output Power:**

0.206 W ERP Cell. CDMA (23.141 dBm) /

0.316 W EIRP PCS CDMA (24.991 dBm)

**Max. SAR Measurement:**

0.845 W/kg Cell. CDMA Head SAR, 0.76 W/kg Cell. CDMA Body SAR;

1.46 W/kg PCS CDMA Head SAR, 1.21 W/kg PCS CDMA Body SAR

**Emission Designator(s):**

1M25F9W (CDMA) / 1M25F9W (PCS)

**Test Device Serial No.:**

*identical prototype* [S/N: FD-232-B]

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

**Grant Conditions:** Power output listed is ERP for Part 22 and EIRP for Part 24. SAR compliance for body-worn operating configuration is based on a separation distance of 1.5cm between the back of the unit and the body of the user. End-users must be informed of the body-worn operating requirements for satisfying RF exposure compliance. Belt clips or holsters may not contain metallic components.

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

Randy Ortanez  
President



|                                |                                      |                                                                 |  |                                 |
|--------------------------------|--------------------------------------|-----------------------------------------------------------------|--|---------------------------------|
| FCC ID: A3LSPHA303             |                                      | FCC Pt. 22/24 CDMA / EvDO MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006 | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth                |  | Page 1 of 38                    |

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## MEASUREMENT REPORT



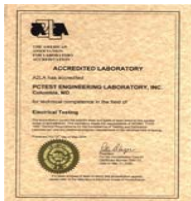
### FCC Part 22 & 24

#### A. §2.1033 General Information

**APPLICANT:** Samsung Electronics, Co. Ltd.  
**APPLICANT ADDRESS:** 18600 Broadwick St.  
 Rancho Dominguez, CA 90220 USA  
**TEST SITE:** PCTEST ENGINEERING LABORATORY, INC.  
**TEST SITE ADDRESS:** 6660-B Dobbin Road, Columbia, MD 21045 USA  
**FCC RULE PART(S):** §2; §22(H), §24(E)  
**MODEL NAME:** SPH-A303  
**FCC ID:** A3LSPHA303  
**FCC CLASSIFICATION:** PCS Licensed Transmitter Held to Ear (PCE)  
**EMISSION DESIGNATOR(S):** 1M25F9W (CDMA) / 1M25F9W (PCS)  
**MODE:** CDMA / EvDO  
**FREQUENCY TOLERANCE:**  $\pm 0.00025\%$  (2.5 ppm)  
**Test Device Serial No.:** FD-232-B ☐ Production ☒ Pre-Production ☐ Engineering  
**DATE(S) OF TEST:** December 7 - 11, 2006  
**TEST REPORT S/N:** 0611241036

### A.1 Test Facility / Accreditations

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



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

|                                |                                      |                                                                 |  |                                 |
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## 1.0 INTRODUCTION

### 1.1 Measurement Procedure

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

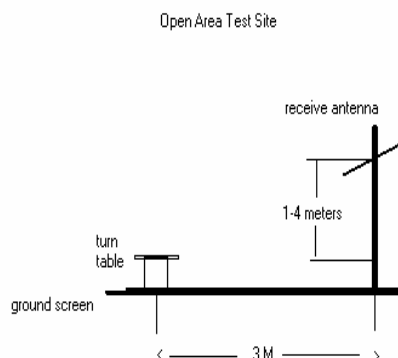


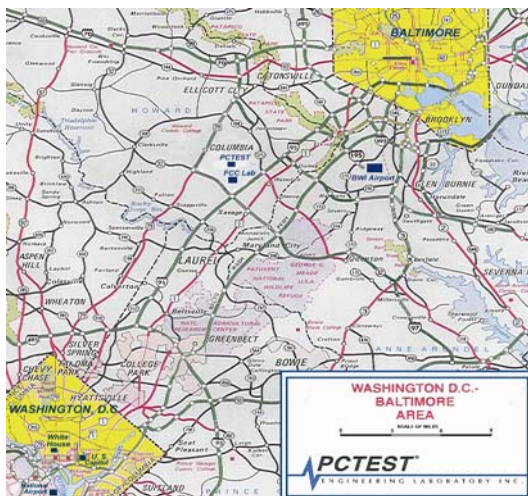
Figure 1-1. Diagram of 3-meter outdoor test range

Deviation from Measurement Procedure.....None

### 1.2 Scope

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

### 1.3 Testing Facility



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

Figure 1-3. 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 Dual-Band CDMA Phone with Bluetooth FCC ID: A3LSPHA303**. The EUT consisted of the following component(s):

| Manufacturer / Description                  | FCC ID     | Serial Number |
|---------------------------------------------|------------|---------------|
| Samsung Dual-Band CDMA Phone with Bluetooth | A3LSPHA303 | FD-232-B      |

Table 2.1. EUT Equipment Description

### 2.2 EMI Suppression Device(s)/Modifications

EMI suppression device(s) added and/or modifications made during testing.

- None

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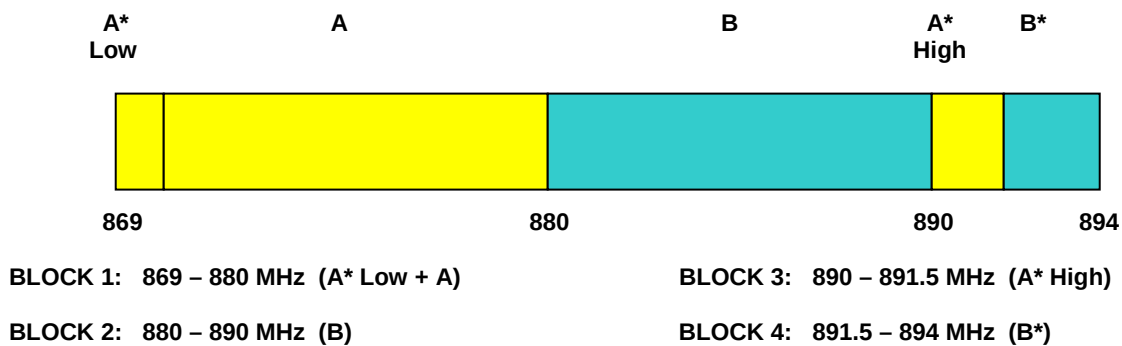
## 3.0 DESCRIPTION OF TESTS

### 3.1 Occupied Bandwidth Emission Limits

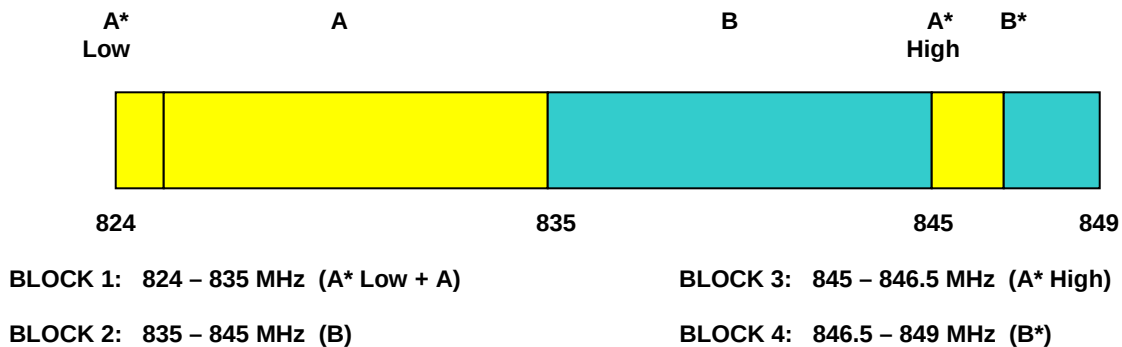
§2.1049, 22.917(a), 24.238(a)

- 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.
- When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the licensee's frequency block edges, both upper and lower, as the design permits.
- The measurement of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power.

### 3.2 Cellular - Base Frequency Blocks

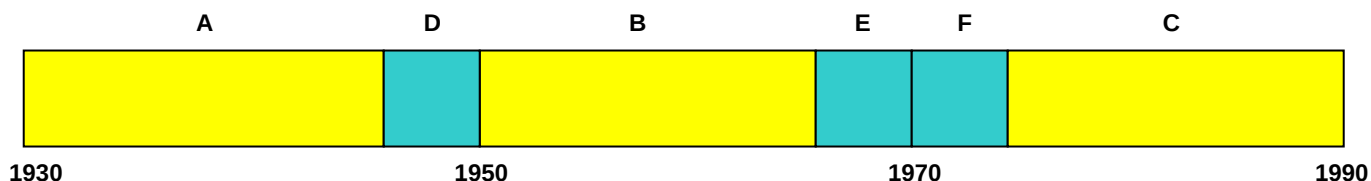


### 3.3 Cellular - Mobile Frequency Blocks



|                                |                                                                                     |                                                                 |                                                                                       |                                 |
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### 3.4 PCS - Base Frequency Blocks



BLOCK 1: 1930 – 1945 MHz (A)

BLOCK 4: 1965 – 1970 MHz (E)

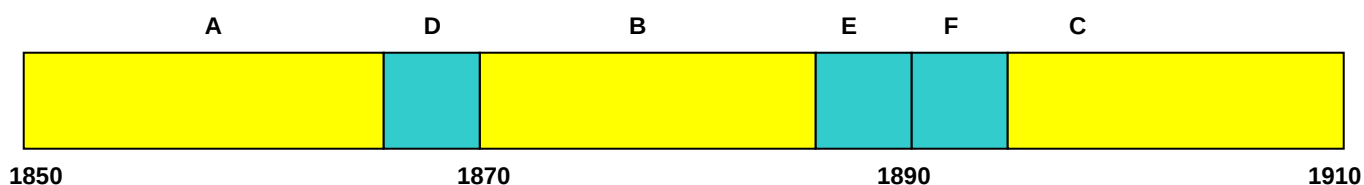
BLOCK 2: 1945 – 1950 MHz (D)

BLOCK 5: 1970 – 1975 MHz (F)

BLOCK 3: 1950 – 1965 MHz (B)

BLOCK 6: 1975 – 1990 MHz (C)

### 3.5 PCS - Mobile Frequency Blocks



BLOCK 1: 1850 – 1865 MHz (A)

BLOCK 4: 1885 – 1890 MHz (E)

BLOCK 2: 1865 – 1870 MHz (D)

BLOCK 5: 1890 – 1895 MHz (F)

BLOCK 3: 1870 – 1885 MHz (B)

BLOCK 6: 1895 – 1910 MHz (C)

### 3.6 Spurious and Harmonic Emissions at Antenna Terminal

§2.1051, 22.917(a), 24.238(a); RSS-129 (8.1.1), 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.

### 3.7 Radiated Spurious and Harmonic Emissions

§2.1053, 22.917(a), 24.238(a); RSS-129 (8.1.1), RSS-133 (6.5.1(i))

Spurious and harmonic radiated emissions are measured outdoors at our 3-meter test range. The equipment under test is placed on a wooden turntable 3-meters from the receive antenna. The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive spectrum analyzer reading. This level is recorded. For readings above 1 GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration. This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55, with "All Up" power control bits.

|                                |                                                                                     |                                                                 |                                                                                       |                                 |
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### **3.8 Frequency Stability / Temperature Variation**

**§2.1055, 22.355, 24.235; RSS-129 (9.2.1), RSS-133 (6.7(a,b))**

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 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 – The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within  $\pm 0.00025\%$  ( $\pm 2.5$  ppm) of the center frequency.*

#### **Time Period and Procedure:**

1. The carrier frequency of the transmitter and the individual oscillators is measured at room temperature (20°C to provide a reference).
2. The equipment is subjected to an overnight “soak” at -30°C without any power applied.
3. After the overnight “soak” at -30°C (usually 14-16 hours) the equipment is turned on in a “standby” condition for one minute before applying power to the transmitter. Measurement of the carrier frequency of the transmitter and the individual oscillators is made within one minute after applying power to the transmitter.
4. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. At least a period of 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 / Equipment                         | Calibration Date | Cal Interval | Calibration Due | Serial No.       |
|-------------------|-------------------------------------------|------------------|--------------|-----------------|------------------|
| Agilent           | E4404B/E4407B ESA Spectrum Analyzer       | 04/20/06         | Annual       | 04/20/07        | US39210313       |
| Agilent           | E5515C Wireless Communications Test Set   | 07/27/06         | Annual       | 07/27/07        | GB41450275       |
| Agilent           | E5515C Wireless Communications Test Set   | 10/06/06         | Annual       | 10/06/07        | GB43193972       |
| Agilent           | E4432B ESG-D Series Signal Generator      | 08/08/06         | Annual       | 08/08/07        | US40053896       |
| Agilent           | 8648D (9kHz-4GHz) Signal Generator        | 10/01/06         | Annual       | 10/01/07        | 3613A00315       |
| EMCO              | Model 3115 (1-18GHz) Horn Antenna         | 08/24/06         | Biennial     | 08/23/08        | 9203-2178        |
| EMCO              | Model 3115 (1-18GHz) Horn Antenna         | 08/25/06         | Biennial     | 08/24/08        | 9704-5182        |
| Gigatronics       | 8657A Universal Power Meter               | 04/07/06         | Annual       | 04/07/07        | 8650319          |
| Gigatronics       | 80701A (0.05-18GHz) Power Sensor          | 04/11/06         | Annual       | 04/11/07        | 1833460          |
| Rohde & Schwarz   | NRVS Power Meter                          | 06/01/05         | Biennial     | 06/01/07        | 835360/079       |
| Rohde & Schwarz   | NRV-Z53 Power Sensor                      | 06/01/05         | Biennial     | 06/01/07        | 846076/007       |
| Rohde & Schwarz   | CMU200 Base Station Simulator             | 11/08/06         | Annual       | 11/08/07        | 107826           |
| Rohde & Schwarz   | CMU200 Base Station Simulator             | 07/26/06         | Annual       | 07/26/07        | 833855/010       |
| Rohde & Schwarz   | CMU200 Base Station Simulator             | 04/20/06         | Annual       | 04/20/07        | 836371/079       |
| Agilent           | HP 8566B (100Hz-22GHz)                    | 12/22/05         | Annual       | 12/22/06        | 3638A08713       |
| Agilent           | E4448A (3Hz-50GHz)                        | 09/22/06         | Annual       | 09/22/07        | US42510244       |
| Agilent           | E8257D (250kHz-20GHz) Signal Generator    | 02/11/06         | Annual       | 02/11/07        | MY45470194       |
| Agilent           | E8257D (250kHz-20GHz) Signal Generator    | 03/30/06         | Annual       | 03/30/07        | MY44320964       |
| Gigatronics       | 8651A (50MHz-18GHz)                       | 07/28/06         | Annual       | 07/28/07        | 1834052          |
| Gigatronics       | 80701A (0.05-18GHz) Power Sensor          | 08/04/06         | Annual       | 08/04/07        | 1835299          |
| Agilent           | HP 85650A Quasi-Peak Adapter              | 12/22/05         | Annual       | 12/22/06        | 2043A00301       |
| Agilent           | HP 8449B (1-26.5GHz) Pre-Amplifier        | 12/22/05         | Annual       | 12/22/06        | 3008A00985       |
| Agilent           | HP 11713A Attenuation/Switch Driver       | 12/22/05         | Annual       | 12/22/06        | N/A              |
| Agilent           | HP 85685A (20Hz-2GHz) Preselector         | 12/22/05         | Annual       | 12/22/06        | N/A              |
| Agilent           | HP 8586 Opt. 462 Impulse Bandwidth        | 12/22/05         | Annual       | 12/22/06        | 3701A22204       |
| EMCO              | 3115 (1-18GHz) Horn Antenna               | 04/04/05         | Biennial     | 04/04/07        | 9205-3874        |
| Compliance Design | A100 Roberts Dipoles                      | 08/31/05         | Biennial     | 08/31/07        | 5118             |
| EMCO              | Dipole Pair                               | 09/21/06         | Biennial     | 09/20/08        | 23951            |
| SOLAR             | 8012-50 LISN (2)                          | 11/18/05         | Biennial     | 11/18/07        | 0313233, 0310234 |
| Agilent           | HP 8901A Modulation Analyzer              | 06/05/06         | Annual       | 06/05/07        | 2432A03467       |
| Agilent           | HP 8903 B Audio Analyzer                  | 06/01/06         | Annual       | 06/01/07        | 3011A09025       |
| K & L             | 11SH10 Band Pass Filter                   | N/A              | Annual       | N/A             | 1300/4000        |
| K & L             | 11SH10 Band Pass Filter                   | N/A              | Annual       | N/A             | 4000/12000       |
| Agilent           | HP 8495A (0-70dB) DC-4GHz Attenuator      | N/A              | Annual       | N/A             | N/A              |
| -                 | 263-10dB (DC-18GHz) 10 dB Attenuator      | N/A              | Annual       | N/A             | N/A              |
| Pasternack        | PE2208-6 Bidirectional Coupler            | N/A              | Annual       | N/A             | N/A              |
| -                 | No.165 (30MHz - 1000MHz) RG58 Coax Cable  | N/A              | Annual       | N/A             | N/A              |
| -                 | No.166 (1000-26500MHz) Microwave RF Cable | N/A              | Annual       | N/A             | N/A              |
| -                 | No.167 (100kHz - 100MHz) RG58 Coax Cable  | N/A              | Annual       | N/A             | N/A              |

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

|                                |                                                                                     |                                                                 |                                                                                       |                                 |
|--------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSPHA303             |  | FCC Pt. 22/24 CDMA / EvDO MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006                                                | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth                |                                                                                       | Page 10 of 38                   |

## 6.0 TEST RESULTS

### Summary

The intentional radiator has been tested in a simulated typical installation to demonstrate compliance with the relevant FCC performance and procedural standards. The radio was transmitting at full power on the specified channels. The channels tested are high, middle and low of the allocated bands. Final system data was gathered in a mode that tended to maximize emissions by varying the orientation of the EUT, orientation of power and I/O cabling, antenna search height, and antenna polarization. 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.

Method/System: PCS Licensed Transmitter Held to Ear (PCE)

Mode(s): CDMA / EvDO

| FCC Part Section(s)          | RSS Section                                                | Test Description                                                               | Test Limit                                                                           | Test Condition                      | Test Result |
|------------------------------|------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------|-------------|
| <b>TRANSMITTER MODE (TX)</b> |                                                            |                                                                                |                                                                                      |                                     |             |
| 2.1049, 22.917(a), 24.238(a) | N/A                                                        | Occupied Bandwidth                                                             | N/A                                                                                  | CONDUCTED                           | PASS        |
| 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        |
| 2.1046                       | N/A                                                        | Transmitter Conducted Output Power                                             | N/A                                                                                  |                                     | PASS        |
| 22.913(a)(2)                 | RSS-129 (9.1)                                              | Effective Radiated Power                                                       | < 7 Watts max. ERP                                                                   | RADIATED                            | PASS        |
| 24.232(c)                    | RSS-133 (6.4)<br>[SRSP-510 (5.1.2)]                        | Equivalent Isotropic Radiated Power                                            | < 2 Watts max. EIRP                                                                  |                                     | PASS        |
| 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        |
| 2.1055, 22.355, 24.235       | RSS-129 (9.2.1)<br>RSS-133 (6.3)                           | Frequency Stability                                                            | < 2.5 ppm                                                                            |                                     | PASS        |
| <b>RECEIVER MODE (RX)</b>    |                                                            |                                                                                |                                                                                      |                                     |             |
| 15.107                       | RSS-Gen [7.2.2]                                            | AC Conducted Emissions 150kHz – 30MHz                                          | < FCC 15.207 limits or<br>< RSS-Gen table 2 limits                                   | Line Conducted                      | PASS        |
| 15.109                       | RSS-129 (10(a,d)),<br>RSS-133 (6.7(a,b)),<br>RSS-210 (7.3) | General Field Strength Limits (Restricted Bands and Radiated Emissions Limits) | < FCC 15.209 limits or<br>< RSS-Gen limits [Section 6; Table 1]                      | RADIATED (30MHz-1GHz)<br>(1-25 GHz) | PASS        |
| <b>RF EXPOSURE (SAR)</b>     |                                                            |                                                                                |                                                                                      |                                     |             |
| 2.1093                       | RSS-102                                                    | SAR Test or MPE                                                                | 1.6 W/kg (SAR Limit)                                                                 | 3 Channels                          | PASS        |

**Table 6-1. Summary of Test Results**

|                                |                                                                                     |                                                                 |                                                                                       |                                 |
|--------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSPHA303             |  | FCC Pt. 22/24 CDMA / EvDO MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
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## 6.1 Effective Radiated Power Output Data

§22.913(a)(2); RSS-129 (9.1)

POWER: High (CDMA Mode)

| Freq.<br>Tuned<br>(MHz) | REF.<br>LEVEL<br>(dBm) | POL<br>(H/V) | ERP<br>(W) | ERP<br>(dBm) | BATTERY  |
|-------------------------|------------------------|--------------|------------|--------------|----------|
| 824.70                  | -18.510                | H            | 0.189      | 22.763       | Standard |
| 836.52                  | -18.292                | H            | 0.206      | 23.141       | Standard |
| 848.31                  | -18.498                | H            | 0.203      | 23.085       | Standard |

Table 6-2. Effective Radiated Power Output Data

### NOTES:

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

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

This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55, with "All Up" power control bits. This unit was tested with its standard battery.

|                                |                                                                                     |                                                                 |                                                                                       |                                 |
|--------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
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| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006                                                | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth                |                                                                                       | Page 12 of 38                   |

## 6.2 Equivalent Isotropic Radiated Power Output Data

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

### Radiated measurements at 3 meters

Supply Voltage: 3.7 VDC

Modulation: PCS CDMA

| FREQ.<br>(MHz) | REF.<br>LEVEL<br>(dBm) | POL<br>(H/V) | Azimuth<br>(o angle) | EIRP<br>(dBm) | EIRP<br>(W) | Battery  |
|----------------|------------------------|--------------|----------------------|---------------|-------------|----------|
| 1851.25        | -18.392                | H            | 95                   | 24.689        | 0.294       | Standard |
| 1880.00        | -18.260                | H            | 95                   | 24.991        | 0.316       | Standard |
| 1908.75        | -18.744                | H            | 95                   | 24.677        | 0.294       | Standard |

Table 6-3. Equivalent Isotropic Radiated Power Output Data

### NOTES:

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

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

This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55, with "All Up" power control bits. This unit was tested with its standard battery.

|                                |                                                                                     |                                                                 |                                                                                       |                                 |
|--------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSPHA303             |  | FCC Pt. 22/24 CDMA / EvDO MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006                                                | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth                |                                                                                       | Page 13 of 38                   |

### 6.3 Cellular CDMA Radiated Measurements

S2.1053, 22.917(a): RSS-129 (8.1.1)

#### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 824.70 MHz  
 CHANNEL: 1013 (Low)  
 MEASURED OUTPUT POWER: 23.141 dBm = 0.206 W  
 MODULATION SIGNAL: CDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  36.14 dBc

| FREQ.<br>(MHz) | LEVEL @<br>ANTENNA<br>TERMINALS<br>(dBm) | SUBSTITUTE<br>ANTENNA<br>GAIN<br>(dBd) | CORRECT<br>GENERATOR<br>LEVEL<br>(dBm) | POL<br>(H/V) | (dBc) |
|----------------|------------------------------------------|----------------------------------------|----------------------------------------|--------------|-------|
| 1649.40        | -46.23                                   | 6.10                                   | -40.13                                 | H            | 63.3  |
| 2474.10        | -52.45                                   | 6.70                                   | -45.75                                 | H            | 68.9  |
| 3298.80        | -50.99                                   | 6.80                                   | -44.19                                 | H            | 67.3  |
| 4123.50        | -52.28                                   | 6.50                                   | -45.78                                 | H            | 68.9  |
| 4948.20        | -59.28                                   | 7.00                                   | -52.28                                 | H            | 75.4  |

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

#### NOTES:

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

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

This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55, with "All Up" power control bits. This unit was tested with its standard battery.

|                                |                                                                                     |                                                                 |                                                                                       |                                 |
|--------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
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## 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: 0384 (Mid)  
 MEASURED OUTPUT POWER: 23.141 dBm = 0.206 W  
 MODULATION SIGNAL: CDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  36.14 dBc

| FREQ.<br>(MHz) | LEVEL @<br>ANTENNA<br>TERMINALS<br>(dBm) | SUBSTITUTE<br>ANTENNA<br>GAIN<br>(dBd) | CORRECT<br>GENERATOR<br>LEVEL<br>(dBm) | POL<br>(H/V) | (dBc) |
|----------------|------------------------------------------|----------------------------------------|----------------------------------------|--------------|-------|
| 1673.04        | -42.73                                   | 6.10                                   | -36.63                                 | H            | 59.8  |
| 2509.56        | -49.16                                   | 6.70                                   | -42.46                                 | H            | 65.6  |
| 3346.08        | -51.10                                   | 6.80                                   | -44.30                                 | H            | 67.4  |
| 4182.60        | -50.11                                   | 6.50                                   | -43.61                                 | H            | 66.7  |
| 5019.12        | -58.70                                   | 7.00                                   | -51.70                                 | H            | 74.8  |

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

#### NOTES:

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

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

This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55, with "All Up" power control bits. This unit was tested with its standard battery.

|                                |                                                                                     |                                                                 |                                                                                       |                                 |
|--------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSPHA303             |  | FCC Pt. 22/24 CDMA / EvDO MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006                                                | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth                |                                                                                       | Page 15 of 38                   |



## 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: 0777 (High)  
MEASURED OUTPUT POWER: 23.141 dBm = 0.206 W  
MODULATION SIGNAL: CDMA (Internal)  
DISTANCE: 3 meters  
LIMIT:  $43 + 10 \log_{10} (W) =$  36.14 dBc

| FREQ.<br>(MHz) | LEVEL @<br>ANTENNA<br>TERMINALS<br>(dBm) | SUBSTITUTE<br>ANTENNA<br>GAIN<br>(dBd) | CORRECT<br>GENERATOR<br>LEVEL<br>(dBm) | POL<br>(H/V) | (dBc) |
|----------------|------------------------------------------|----------------------------------------|----------------------------------------|--------------|-------|
| 1696.62        | -42.14                                   | 6.10                                   | -36.04                                 | H            | 59.2  |
| 2544.93        | -51.76                                   | 6.70                                   | -45.06                                 | H            | 68.2  |
| 3393.24        | -46.01                                   | 6.80                                   | -39.21                                 | H            | 62.3  |
| 4241.55        | -48.65                                   | 6.50                                   | -42.15                                 | H            | 65.3  |
| 5089.86        | -58.34                                   | 7.00                                   | -51.34                                 | H            | 74.5  |

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

#### NOTES:

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

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

This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55, with "All Up" power control bits. This unit was tested with its standard battery.

|                                |                                      |                                                                 |  |                                 |
|--------------------------------|--------------------------------------|-----------------------------------------------------------------|--|---------------------------------|
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## 6.4 PCS CDMA Radiated Measurements

S2.1053, 24.238(a); RSS-133 (6.5.1)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1851.25 MHz  
 CHANNEL: 0025 (Low)  
 MEASURED OUTPUT POWER: 24.991 dBm = 0.316 W  
 MODULATION SIGNAL: CDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  37.99 dBc

| FREQ.<br>(MHz) | LEVEL @<br>ANTENNA<br>TERMINALS<br>(dBm) | SUBSTITUTE<br>ANTENNA<br>GAIN<br>(dBi) | CORRECT<br>GENERATOR<br>LEVEL<br>(dBm) | POL<br>(H/V) | (dBc) |
|----------------|------------------------------------------|----------------------------------------|----------------------------------------|--------------|-------|
| 3702.50        | -22.95                                   | 8.70                                   | -14.25                                 | H            | 39.2  |
| 5553.75        | -46.30                                   | 9.70                                   | -36.60                                 | H            | 61.6  |
| 7405.00        | -43.02                                   | 9.90                                   | -33.12                                 | H            | 58.1  |
| 9256.25        | -77.43                                   | 11.40                                  | -66.03                                 | H            | 91.0  |
| 11107.50       | -77.33                                   | 12.10                                  | -65.23                                 | H            | 90.2  |

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

#### NOTES:

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

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

This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55, with "All Up" power control bits. This unit was tested with its standard battery.

|                                |                                                                                     |                                                                 |                                                                                       |                                 |
|--------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSPHA303             |  | FCC Pt. 22/24 CDMA / EvDO MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006                                                | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth                |                                                                                       | Page 17 of 38                   |

## 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: 0600 (Mid)  
 MEASURED OUTPUT POWER: 24.991 dBm = 0.316 W  
 MODULATION SIGNAL: CDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  37.99 dBc

| FREQ.<br>(MHz) | LEVEL @<br>ANTENNA<br>TERMINALS<br>(dBm) | SUBSTITUTE<br>ANTENNA<br>GAIN<br>(dBi) | CORRECT<br>GENERATOR<br>LEVEL<br>(dBm) | POL<br>(H/V) | (dBc) |
|----------------|------------------------------------------|----------------------------------------|----------------------------------------|--------------|-------|
| 3760.00        | -22.60                                   | 8.70                                   | -13.90                                 | H            | 38.9  |
| 5640.00        | -43.03                                   | 9.70                                   | -33.33                                 | H            | 58.3  |
| 7520.00        | -45.03                                   | 9.90                                   | -35.13                                 | H            | 60.1  |
| 9400.00        | -77.23                                   | 11.40                                  | -65.83                                 | H            | 90.8  |
| 11280.00       | -77.13                                   | 12.10                                  | -65.03                                 | H            | 90.0  |

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

#### NOTES:

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

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

This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55, with "All Up" power control bits. This unit was tested with its standard battery.

|                                |                                                                                     |                                                                 |                                                                                       |                                 |
|--------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
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| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006                                                | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth                |                                                                                       | Page 18 of 38                   |



## 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 (High)  
MEASURED OUTPUT POWER: 24.991 dBm = 0.316 W  
MODULATION SIGNAL: CDMA (Internal)  
DISTANCE: 3 meters  
LIMIT:  $43 + 10 \log_{10} (W) =$  37.99 dBc

| FREQ.<br>(MHz) | LEVEL @<br>ANTENNA<br>TERMINALS<br>(dBm) | SUBSTITUTE<br>ANTENNA<br>GAIN<br>(dBi) | CORRECT<br>GENERATOR<br>LEVEL<br>(dBm) | POL<br>(H/V) | (dBc) |
|----------------|------------------------------------------|----------------------------------------|----------------------------------------|--------------|-------|
| 3817.50        | -22.14                                   | 8.70                                   | -13.44                                 | H            | 38.4  |
| 5726.25        | -33.12                                   | 9.70                                   | -23.42                                 | H            | 48.4  |
| 7635.00        | -47.00                                   | 9.90                                   | -37.10                                 | H            | 62.1  |
| 9543.75        | -76.93                                   | 11.40                                  | -65.53                                 | H            | 90.5  |
| 11452.50       | -76.93                                   | 12.10                                  | -64.83                                 | H            | 89.8  |

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

#### **NOTES:**

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

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

This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55, with "All Up" power control bits. This unit was tested with its standard battery.

|                                |                                      |                                                                 |  |                                 |
|--------------------------------|--------------------------------------|-----------------------------------------------------------------|--|---------------------------------|
| FCC ID: A3LSPHA303             |                                      | FCC Pt. 22/24 CDMA / EvDO MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006 | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth                |  | Page 19 of 38                   |



## 6.5 Frequency Stability (Cellular CDMA)

S2.1055, 22.355; RSS-129 (9.2.1)

OPERATING FREQUENCY: 836,520,006 Hz

CHANNEL: 384

REFERENCE VOLTAGE: 3.7 VDC

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

| VOLTAGE<br>(%) | POWER<br>(VDC) | TEMP<br>(°C) | FREQ.<br>(Hz) | Freq. Dev.<br>(Hz) | Deviation<br>(%) |
|----------------|----------------|--------------|---------------|--------------------|------------------|
| 100 %          | 3.70           | + 20 (Ref)   | 836,520,006   | 0.00               | 0.000000         |
| 100 %          |                | -30          | 836,520,081   | -75.29             | -0.000009        |
| 100 %          |                | -20          | 836,520,115   | -108.75            | -0.000013        |
| 100 %          |                | -10          | 836,520,123   | -117.11            | -0.000014        |
| 100 %          |                | 0            | 836,520,148   | -142.21            | -0.000017        |
| 100 %          |                | 10           | 836,520,073   | -66.92             | -0.000008        |
| 100 %          |                | 20           | 836,520,065   | -58.56             | -0.000007        |
| 100 %          |                | 30           | 836,520,098   | -92.02             | -0.000011        |
| 100 %          |                | 40           | 836,520,048   | -41.83             | -0.000005        |
| 100 %          |                | 50           | 836,520,031   | -25.10             | -0.000003        |
| 115 %          |                | 20           | 836,520,073   | -66.92             | -0.000008        |
| BATT. ENDPOINT | 3.25           | 20           | 836,520,081   | -75.29             | -0.000009        |

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

### Note:

Standard batteries were used to perform this test.

|                                |                                      |                                                                 |  |                                 |
|--------------------------------|--------------------------------------|-----------------------------------------------------------------|--|---------------------------------|
| FCC ID: A3LSPHA303             |                                      | FCC Pt. 22/24 CDMA / EVDO MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006 | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth                |  | Page 20 of 38                   |

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

§2.1055, 22.355; RSS-129 (9.2.1)

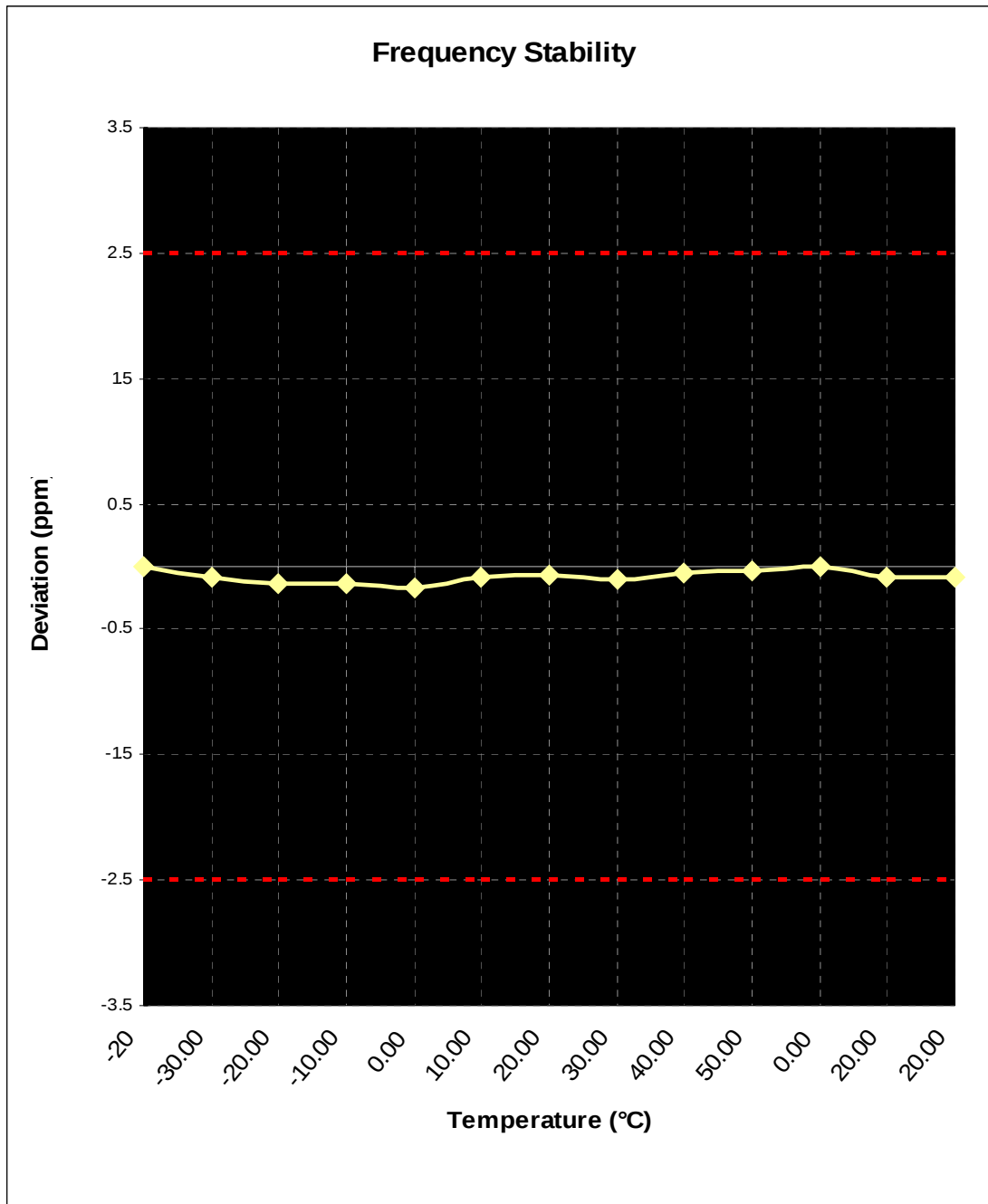


Figure 6-1. Frequency Stability Graph (Cellular CDMA Mode – Ch. 384)

### Note:

Standard batteries were used to perform this test.

|                                |                                                                                     |                                                                 |                                                                                       |                                 |
|--------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSPA303              |  | FCC Pt. 22/24 CDMA / EVDO MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006                                                | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth                | Page 21 of 38                                                                         |                                 |

## 6.6 Frequency Stability (PCS CDMA)

S2.1055, 24.235; RSS-133 (6.3)

OPERATING FREQUENCY: 1,880,000,003 Hz

CHANNEL: 600

REFERENCE VOLTAGE: 3.7 VDC

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

| VOLTAGE<br>(%) | POWER<br>(VDC) | TEMP<br>(°C) | FREQ.<br>(Hz) | Freq. Dev.<br>(Hz) | Deviation<br>(%) |
|----------------|----------------|--------------|---------------|--------------------|------------------|
| 100 %          | 3.70           | + 20 (Ref)   | 1,880,000,003 | 0.00               | 0.000000         |
| 100 %          |                | -30          | 1,880,000,153 | -150.40            | -0.000008        |
| 100 %          |                | -20          | 1,880,000,116 | -112.80            | -0.000006        |
| 100 %          |                | -10          | 1,880,000,041 | -37.60             | -0.000002        |
| 100 %          |                | 0            | 1,879,999,928 | 75.20              | 0.000004         |
| 100 %          |                | 10           | 1,879,999,871 | 131.60             | 0.000007         |
| 100 %          |                | 20           | 1,879,999,815 | 188.00             | 0.000010         |
| 100 %          |                | 30           | 1,880,000,153 | -150.40            | -0.000008        |
| 100 %          |                | 40           | 1,880,000,097 | -94.00             | -0.000005        |
| 100 %          |                | 50           | 1,879,999,947 | 56.40              | 0.000003         |
| 115 %          |                | 20           | 1,879,999,984 | 18.80              | 0.000001         |
| BATT. ENDPOINT | 3.25           | 20           | 1,880,000,041 | -37.60             | -0.000002        |

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

### Note:

Standard batteries were used to perform this test.

|                                |                                                                                     |                                                                 |                                                                                       |                                 |
|--------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSPA303              |  | FCC Pt. 22/24 CDMA / EvDO MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006                                                | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth                | Page 22 of 38                                                                         |                                 |

## Frequency Stability (PCS CDMA) (Cont'd)

S2.1055, 24.235; RSS-133 (6.3)

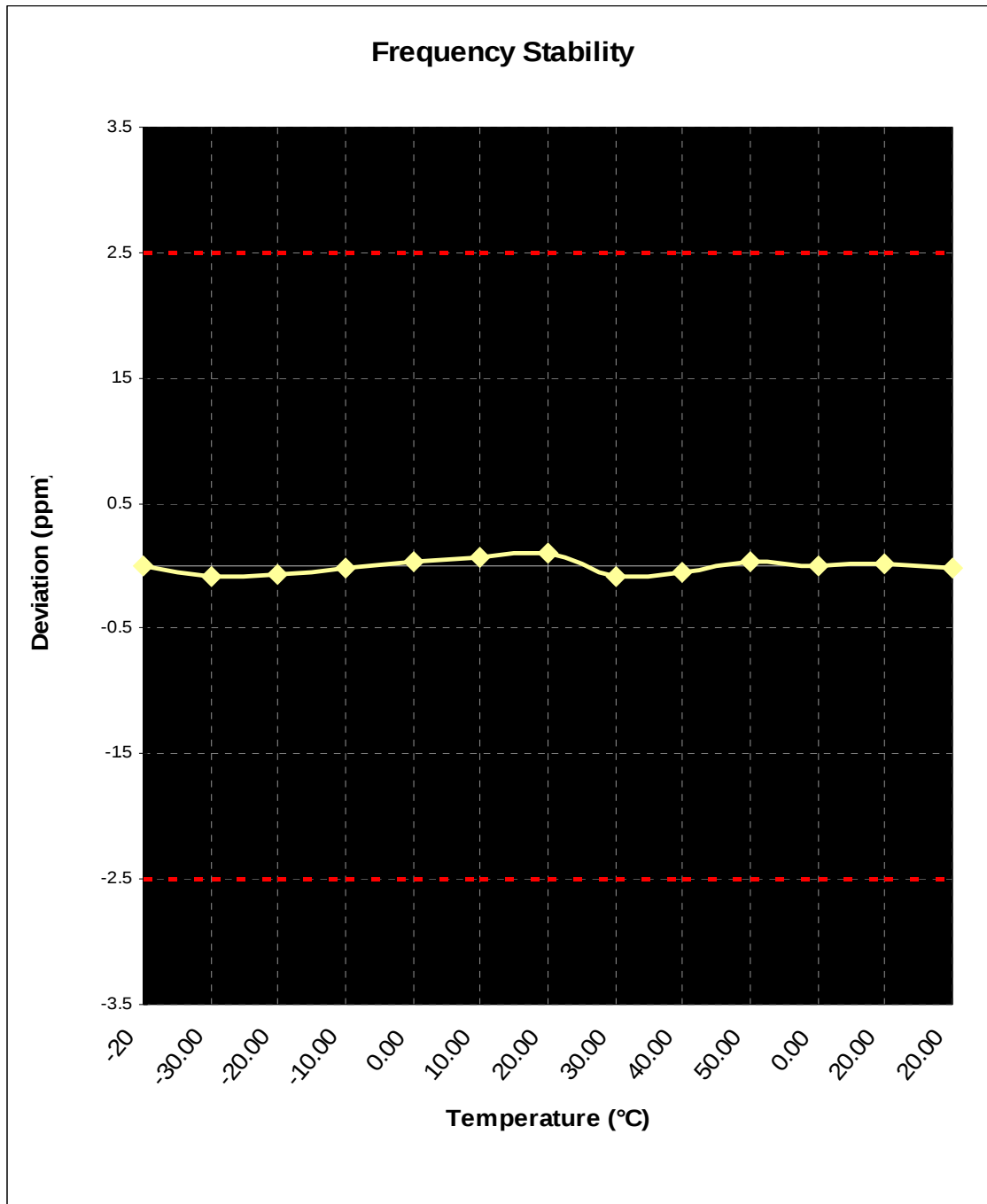


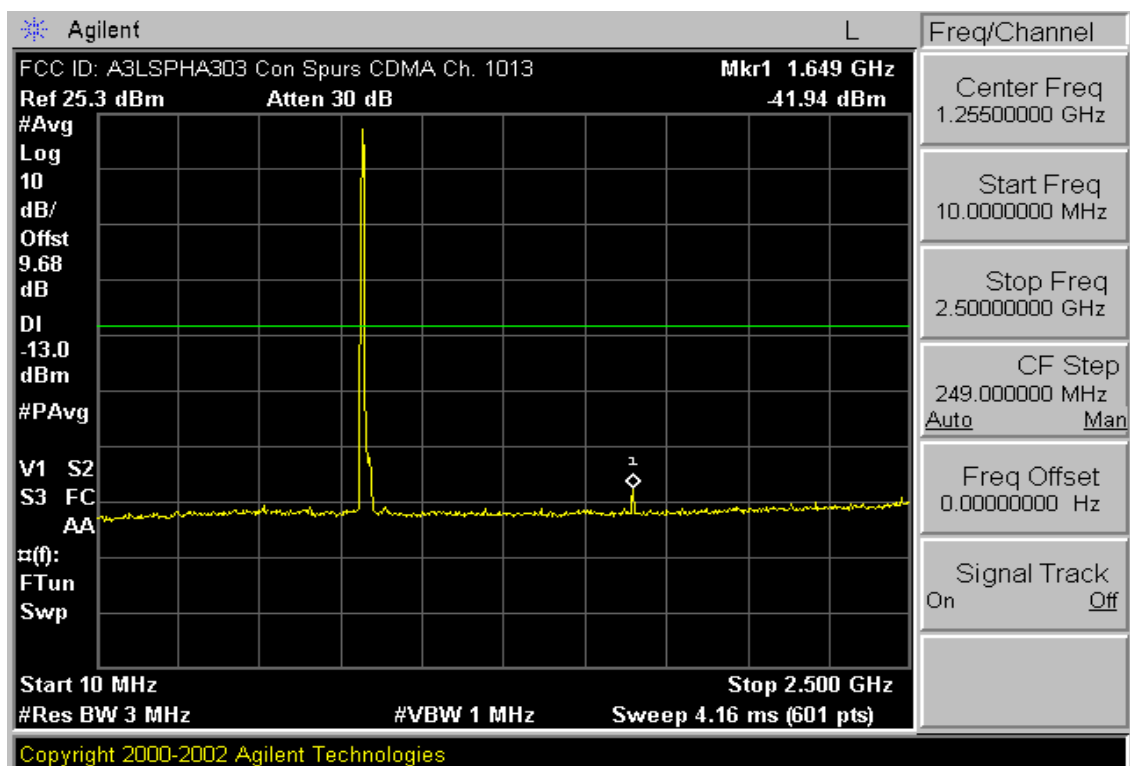
Figure 6-2. Frequency Stability Graph (PCS CDMA Mode – Ch. 600)

### Note:

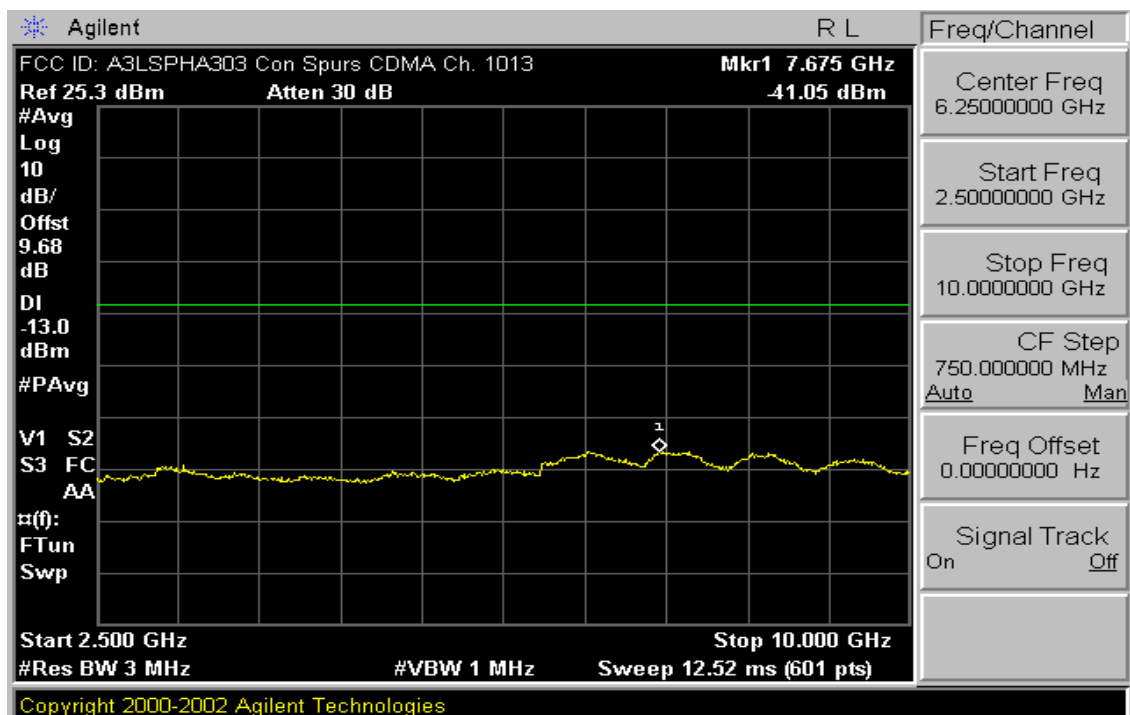
Standard batteries were used to perform this test.

|                                |                                                                                     |                                                                 |                                                                                       |                                 |
|--------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSPA303              |  | FCC Pt. 22/24 CDMA / EVDO MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006                                                | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth                |                                                                                       | Page 23 of 38                   |

## 7.0 PLOT(S) OF EMISSIONS

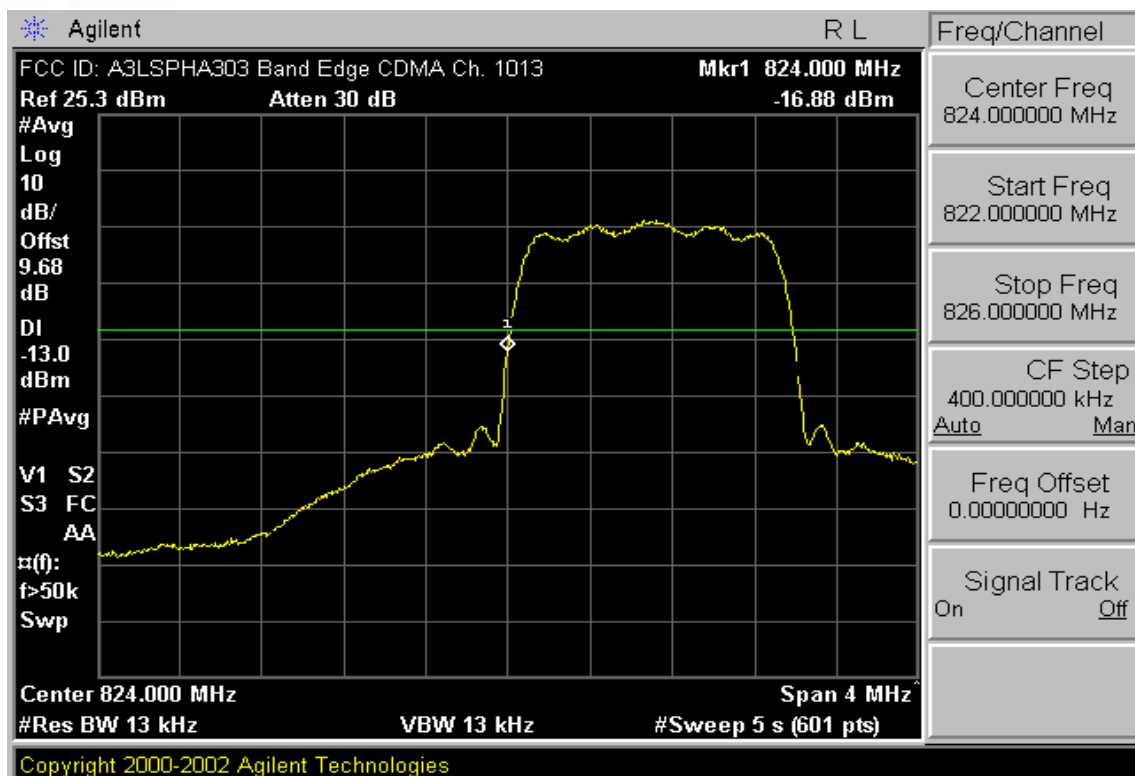


Plot 7-1. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 1013)

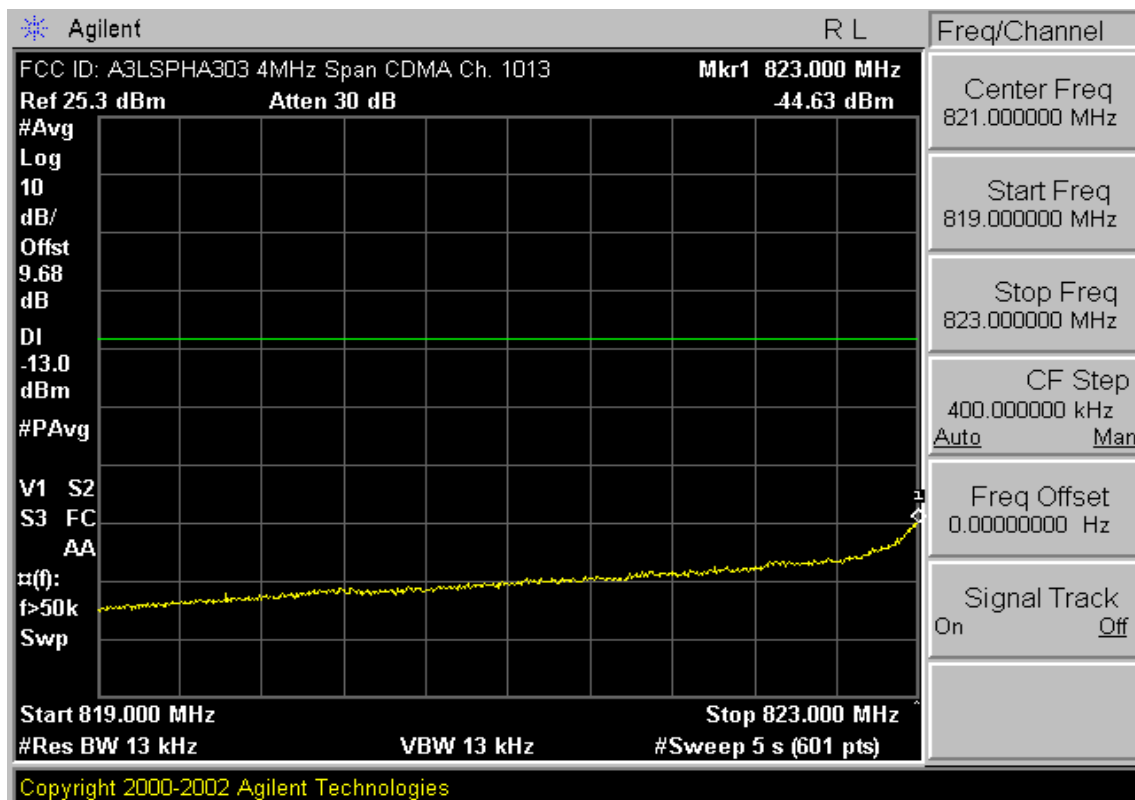


Plot 7-2. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 1013)

|                                |                                                                                     |                                                              |                                                                                       |                                 |
|--------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSPHA303             |  | FCC Pt. 22/24 CDMA / EVDO MEASUREMENT REPORT (CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006                                                | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth             |                                                                                       | Page 24 of 38                   |

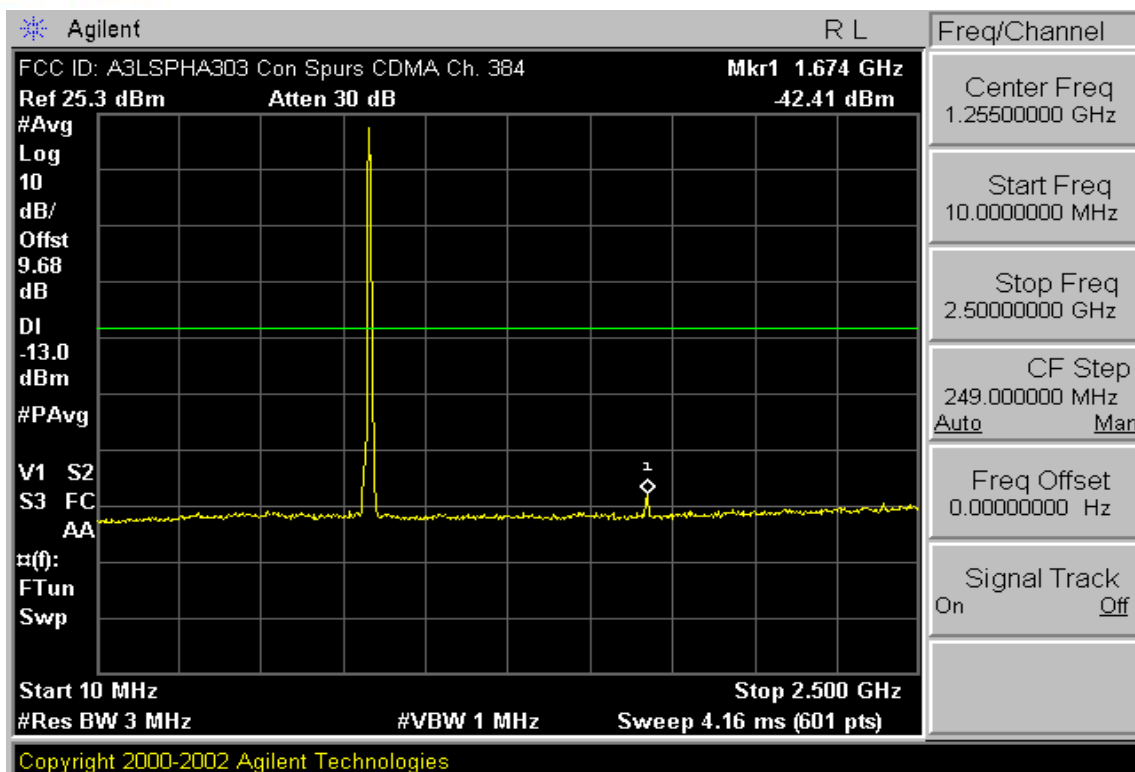


Plot 7-3. Band Edge Plot (Cellular CDMA Mode – Ch. 1013)

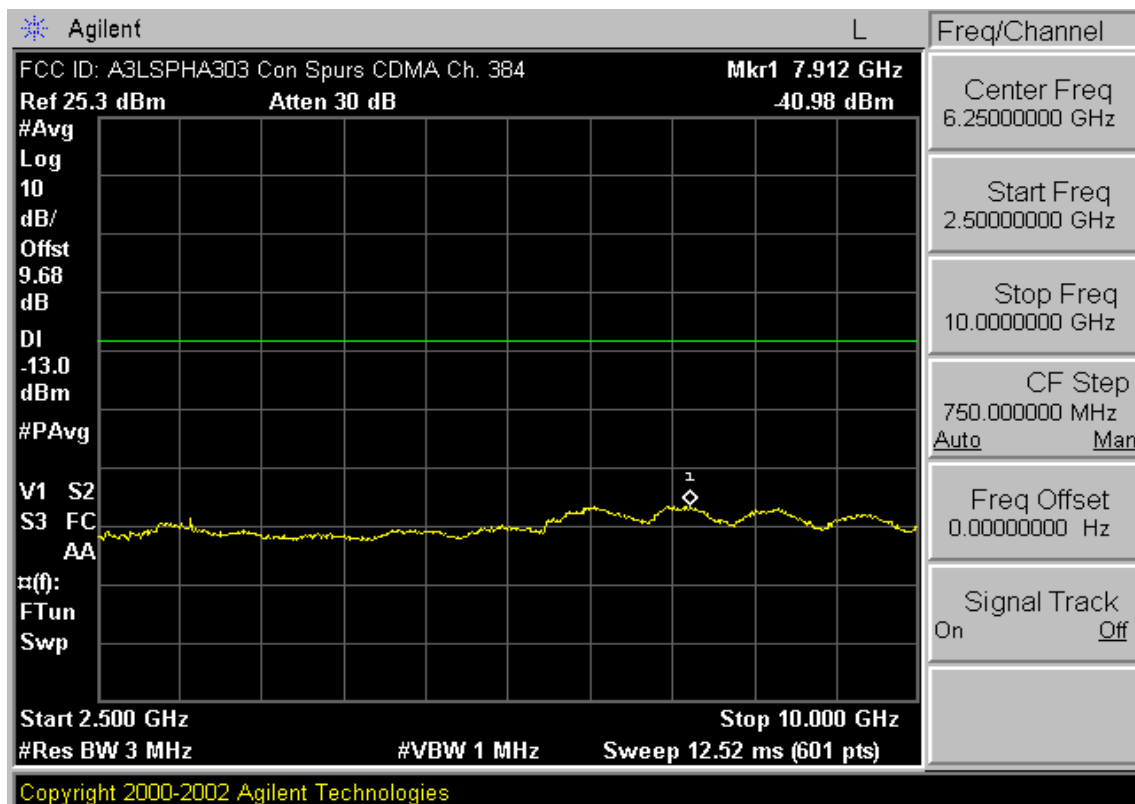


Plot 7-4. 4MHz Span Plot (Cellular CDMA Mode – Ch. 1013)

|                                |                                      |                                                                 |                |                                 |
|--------------------------------|--------------------------------------|-----------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSPHA303             | <b>PCTEST</b><br>wireless            | FCC Pt. 22/24 CDMA / EvDO MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006 | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth                |                | Page 25 of 38                   |

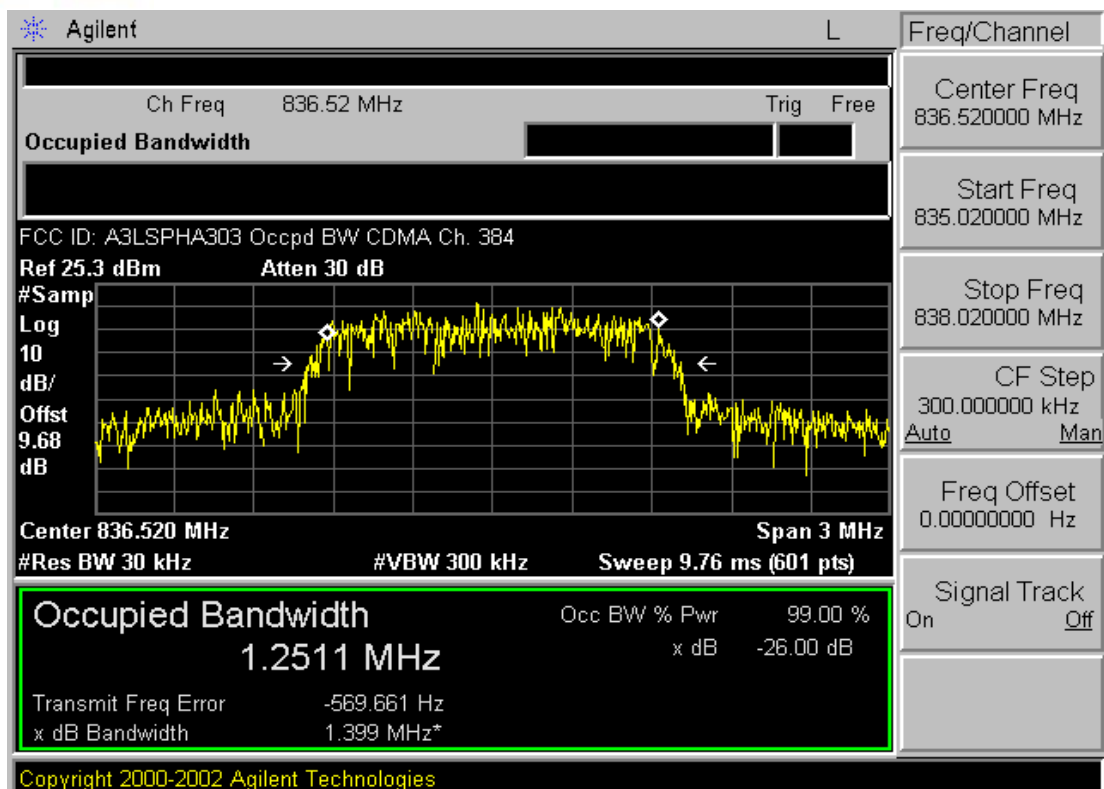


Plot 7-5. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 384)

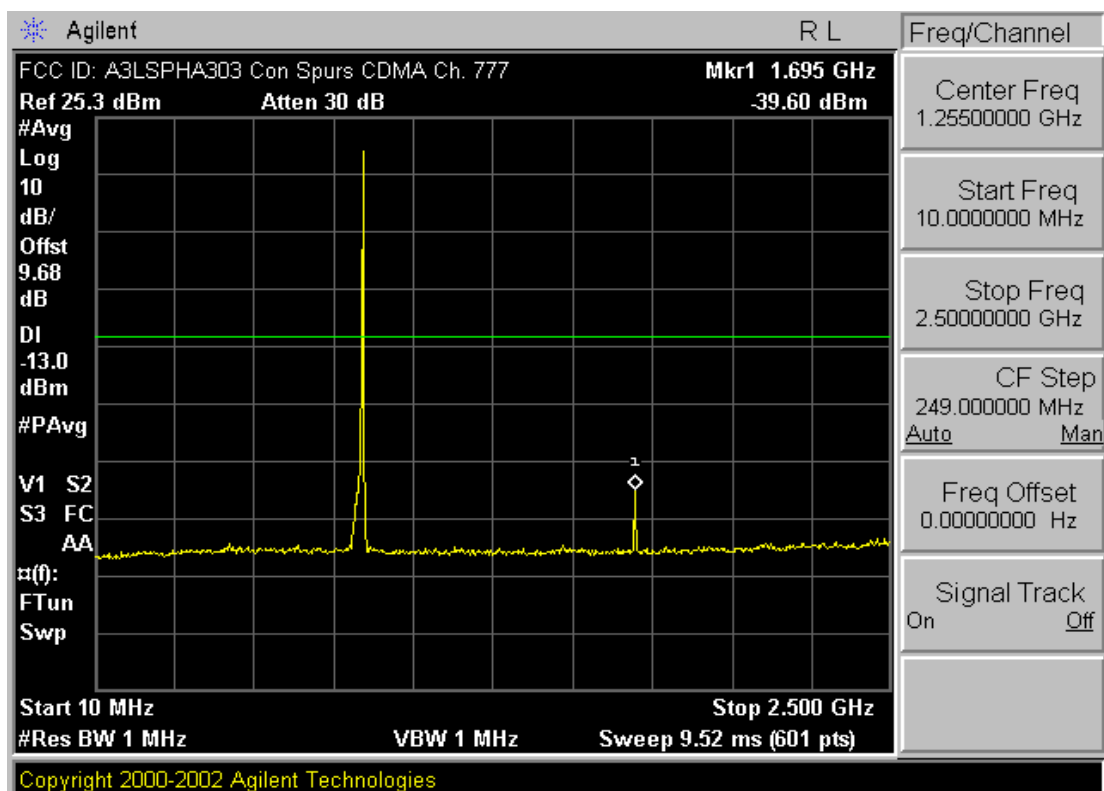


Plot 7-6. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 384)

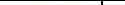
|                                |                                                                                     |                                                              |                                                                                       |                                 |
|--------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSPHA303             |  | FCC Pt. 22/24 CDMA / EvDO MEASUREMENT REPORT (CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006                                                | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth             |                                                                                       | Page 26 of 38                   |

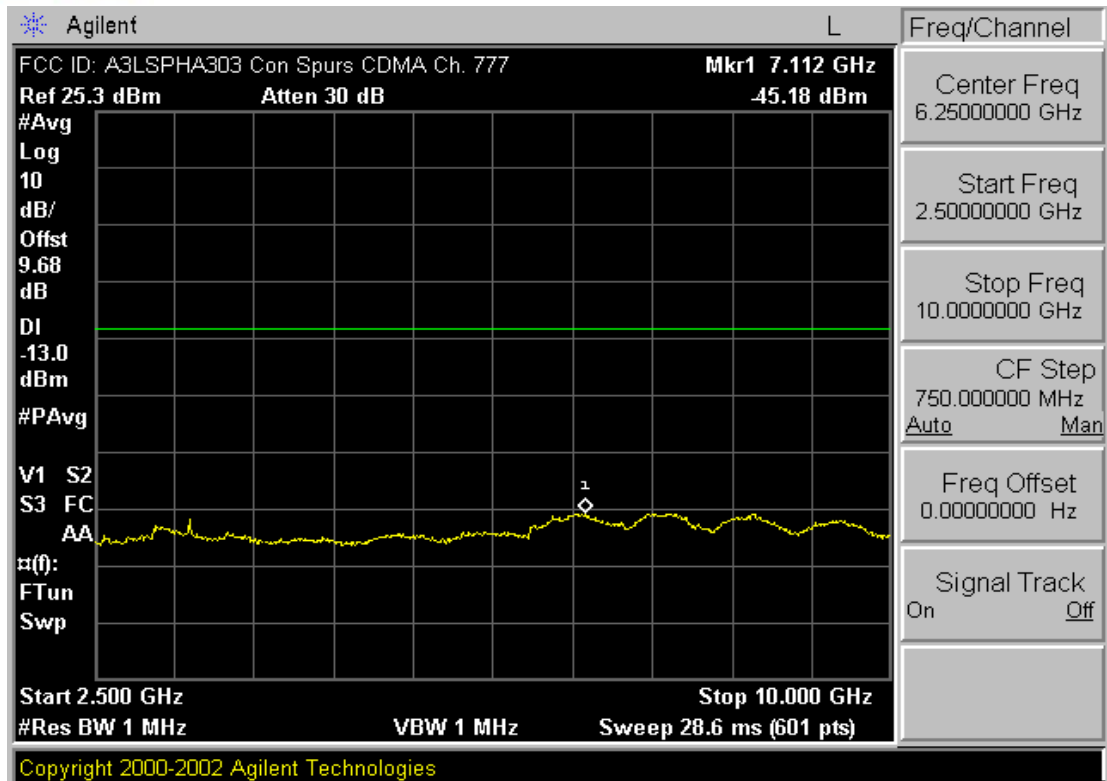


### Plot 7-7. Occupied Bandwidth Plot (Cellular CDMA Mode – Ch. 384)

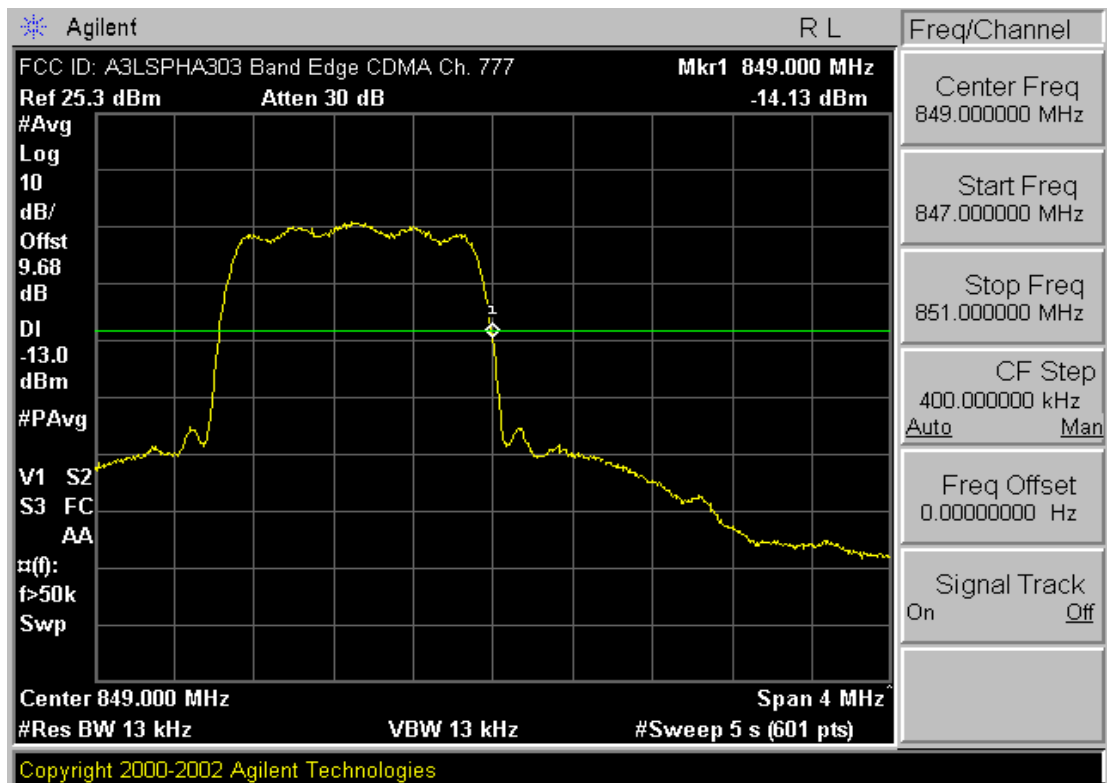


### Plot 7-8. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 777)

|                                |                                                                                                                                                                                                                                                   |                                                  |                                 |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|---------------------------------|
| FCC ID: A3LSPHA303             |  <b>FCC Pt. 22/24 CDMA / EvDO MEASUREMENT REPORT<br/>(CERTIFICATION)</b>  |                                                  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006                                                                                                                                                                                                              | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth | Page 27 of 38                   |

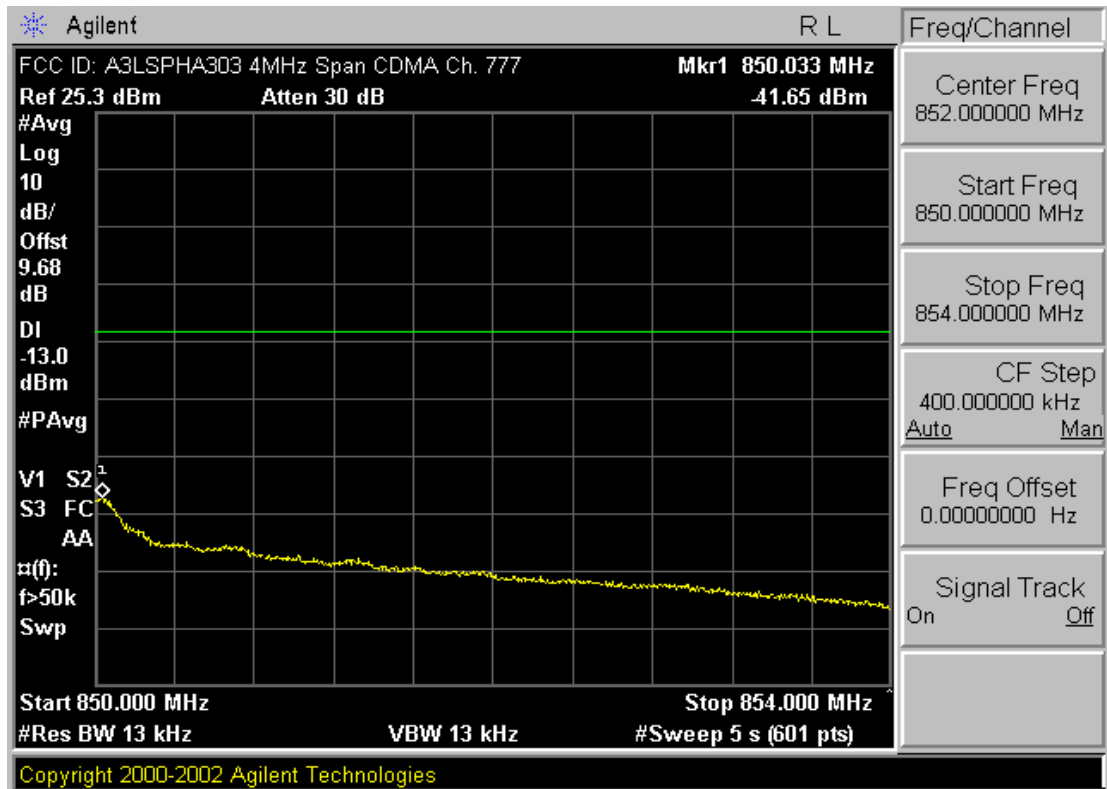


Plot 7-9. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 777)

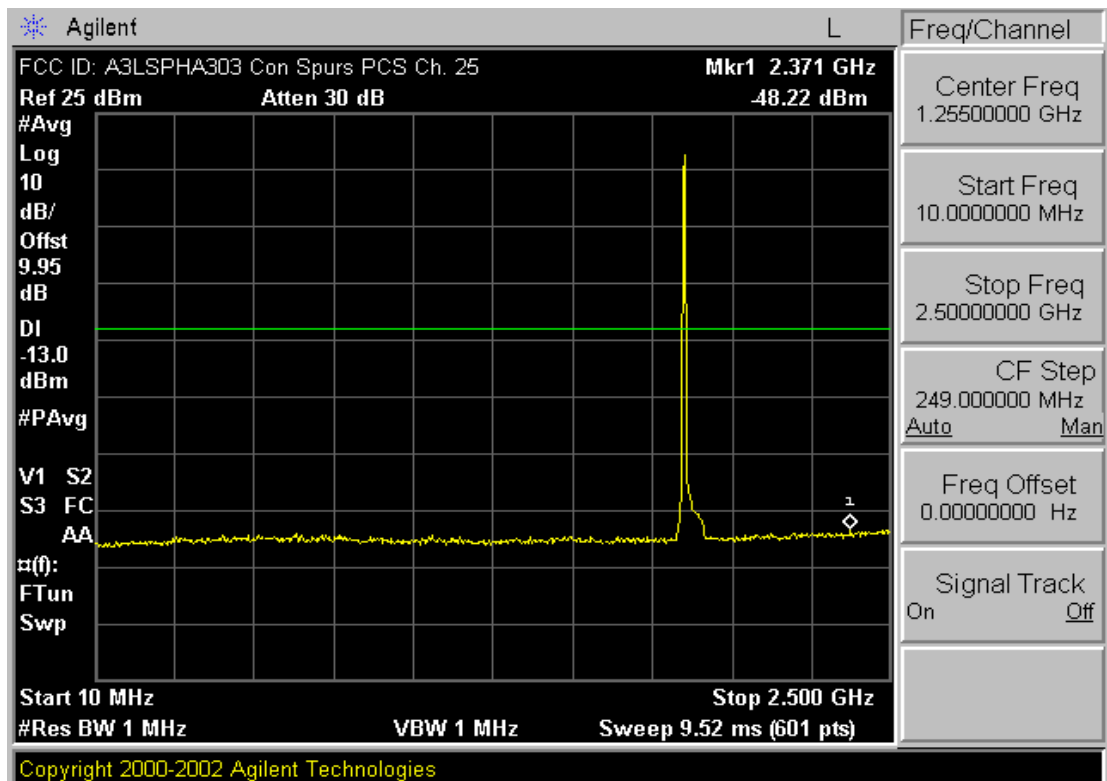


Plot 7-10. Band Edge Plot (Cellular CDMA Mode – Ch. 777)

|                                |                                      |                                                                 |                |                                 |
|--------------------------------|--------------------------------------|-----------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSPHA303             | <b>PCTEST</b><br>wireless            | FCC Pt. 22/24 CDMA / EVDO MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006 | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth                |                | Page 28 of 38                   |

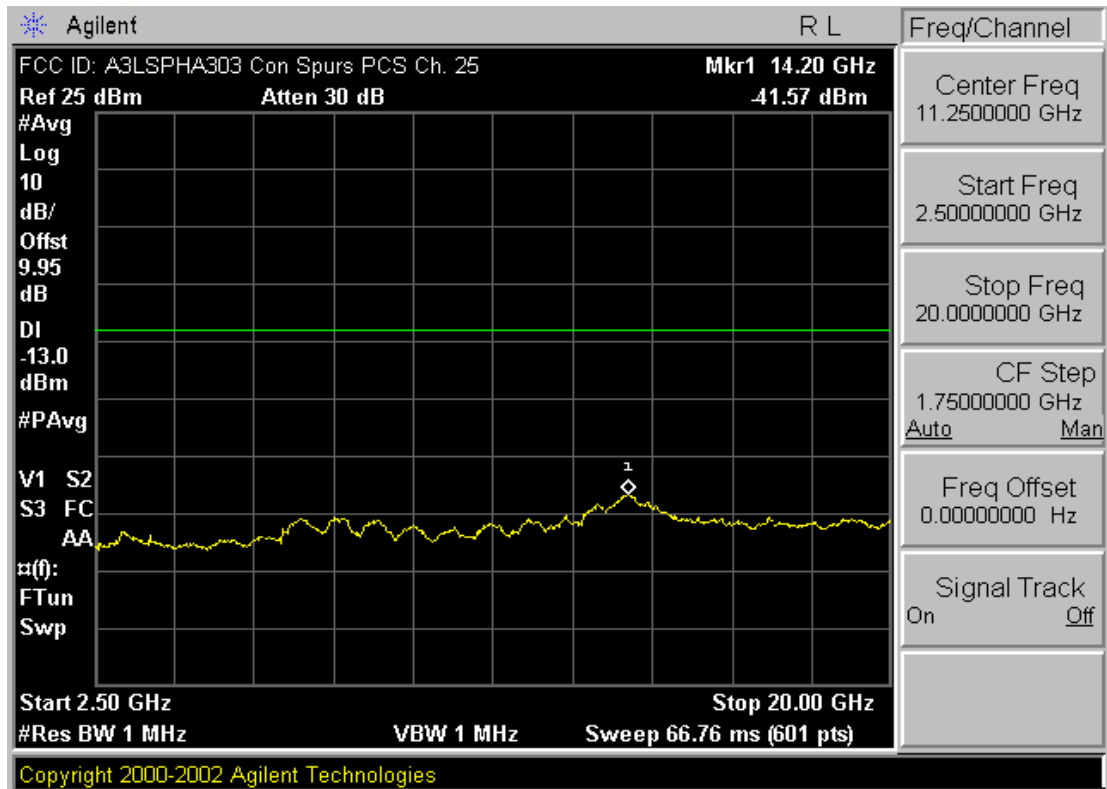


Plot 7-11. 4MHz Span Plot (Cellular CDMA Mode – Ch. 777)

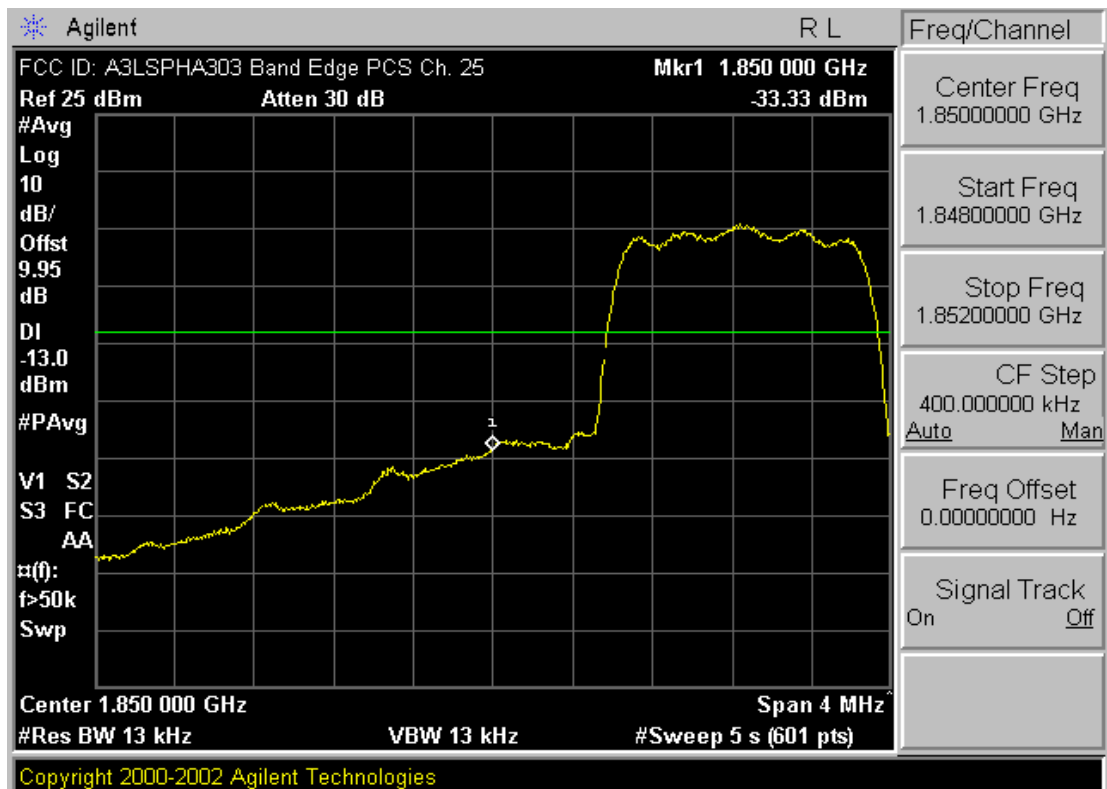


Plot 7-12. Conducted Spurious Plot (PCS CDMA Mode – Ch. 25)

|                                |                                      |                                                                 |                |                                 |
|--------------------------------|--------------------------------------|-----------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSPHA303             | <b>PCTEST</b><br>wireless            | FCC Pt. 22/24 CDMA / EVDO MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006 | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth                |                | Page 29 of 38                   |

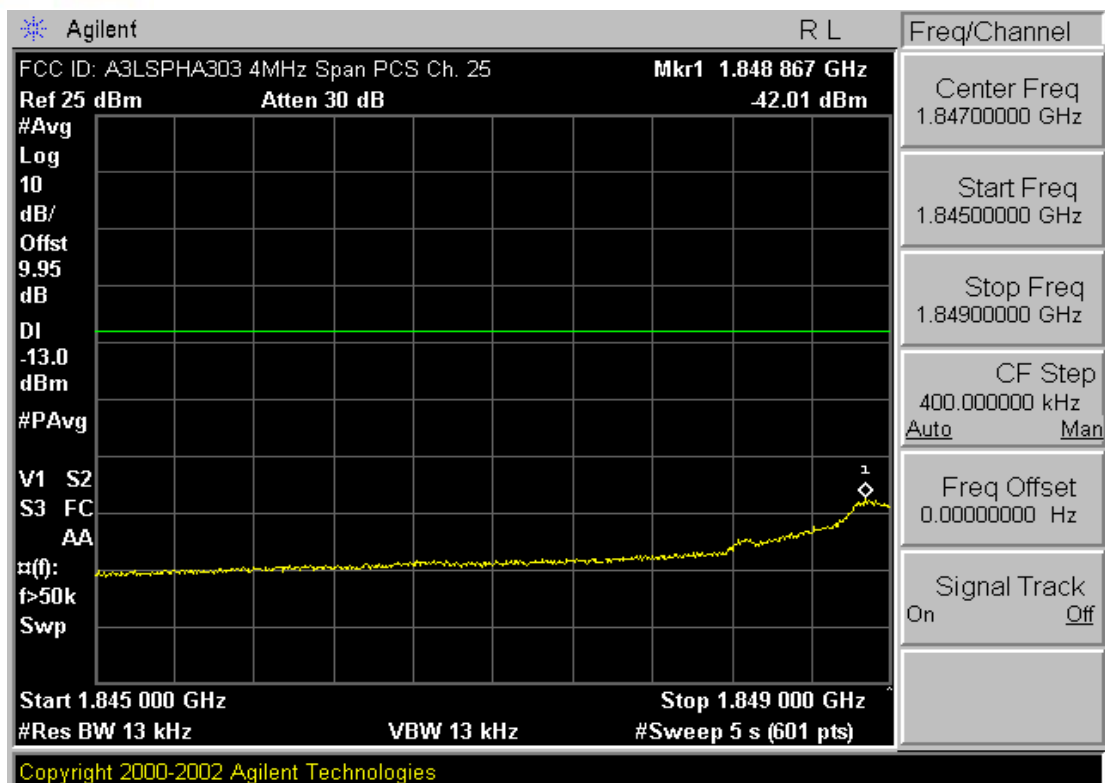


Plot 7-13. Conducted Spurious Plot (PCS CDMA Mode – Ch. 25)

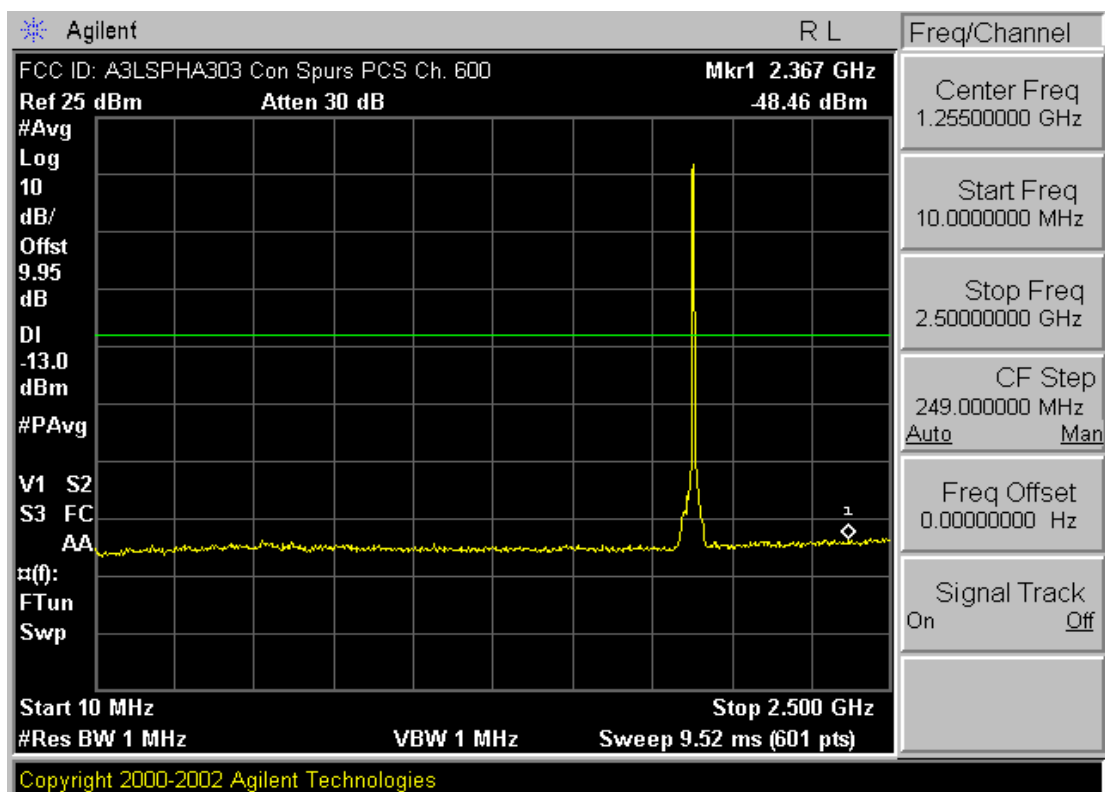


Plot 7-14. Band Edge Plot (PCS CDMA Mode – Ch. 25)

|                                |                                      |                                                                 |                |                                 |
|--------------------------------|--------------------------------------|-----------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSPHA303             | <b>PCTEST</b><br>wireless            | FCC Pt. 22/24 CDMA / EVDO MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006 | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth                |                | Page 30 of 38                   |

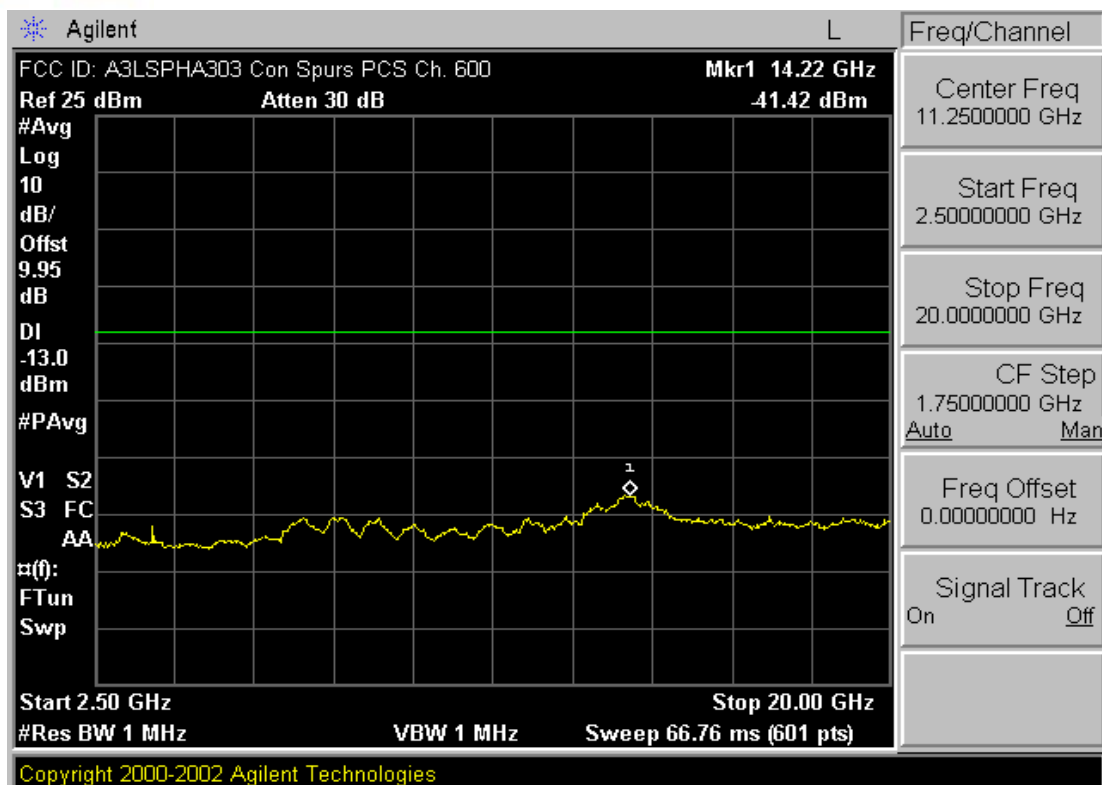


Plot 7-15. 4MHz Span Plot (PCS CDMA Mode – Ch. 25)

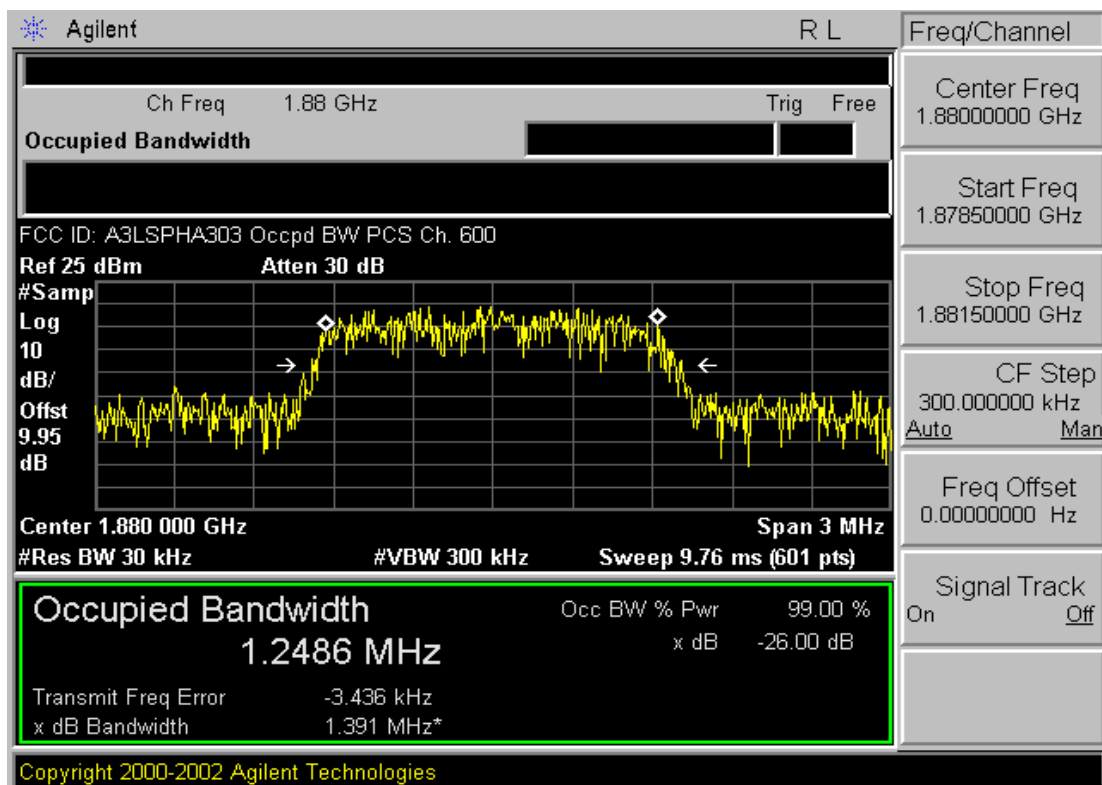


Plot 7-16. Conducted Spurious Plot (PCS CDMA Mode – Ch. 600)

|                                |                                      |                                                                 |                |                                 |
|--------------------------------|--------------------------------------|-----------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSPHA303             | <b>PCTEST</b><br>wireless            | FCC Pt. 22/24 CDMA / EvDO MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006 | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth                |                | Page 31 of 38                   |

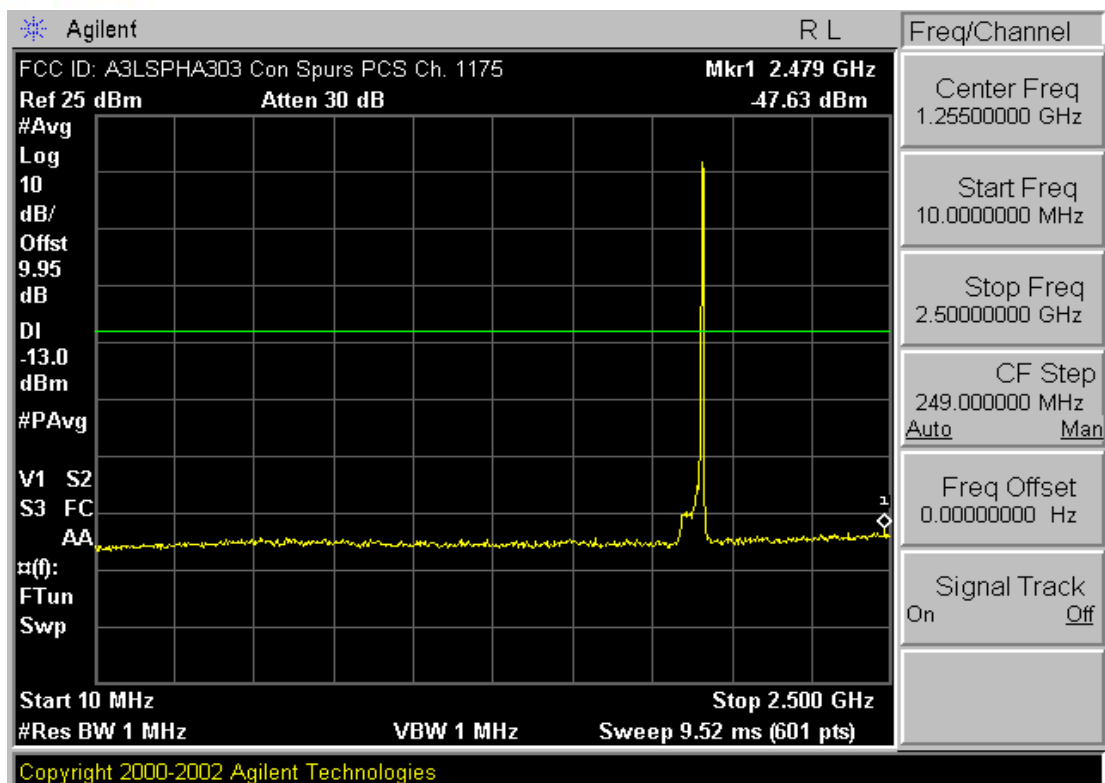


Plot 7-17. Conducted Spurious Plot (PCS CDMA Mode – Ch. 600)

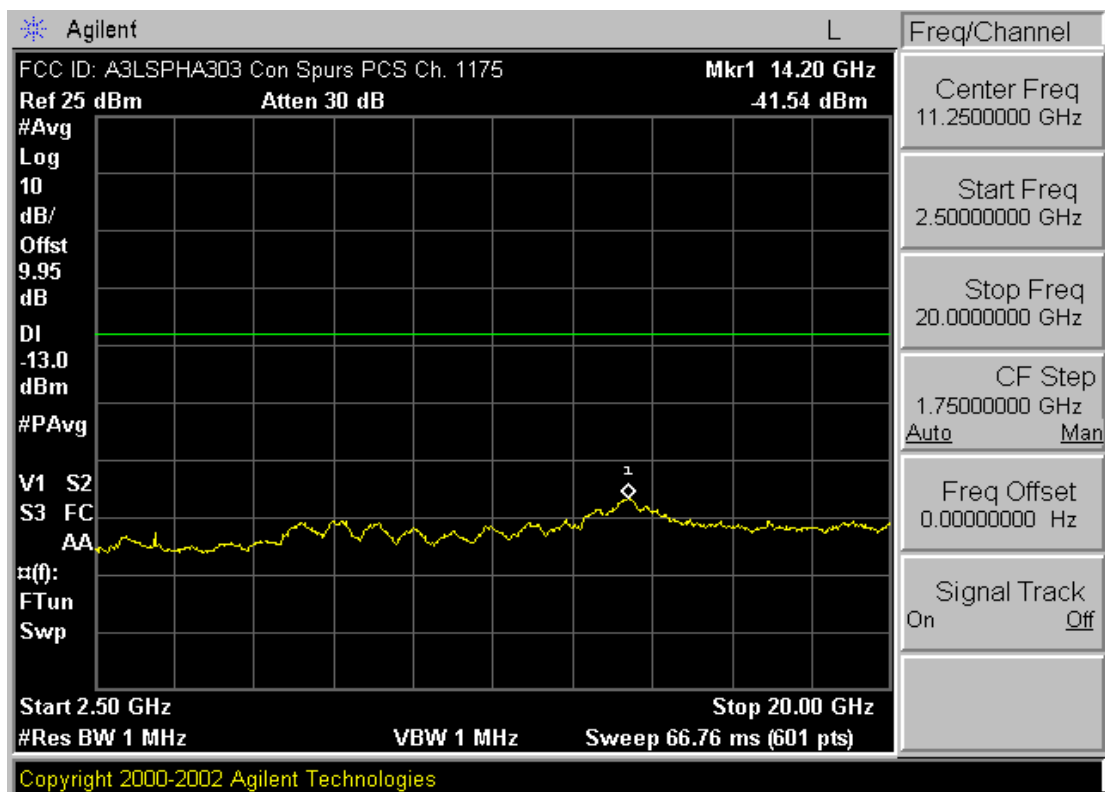


Plot 7-18. Occupied Bandwidth Plot (PCS CDMA Mode – Ch. 600)

|                                |                                      |                                                                 |                |                                 |
|--------------------------------|--------------------------------------|-----------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSPHA303             | <b>PCTEST</b><br>wireless            | FCC Pt. 22/24 CDMA / EvDO MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006 | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth                |                | Page 32 of 38                   |

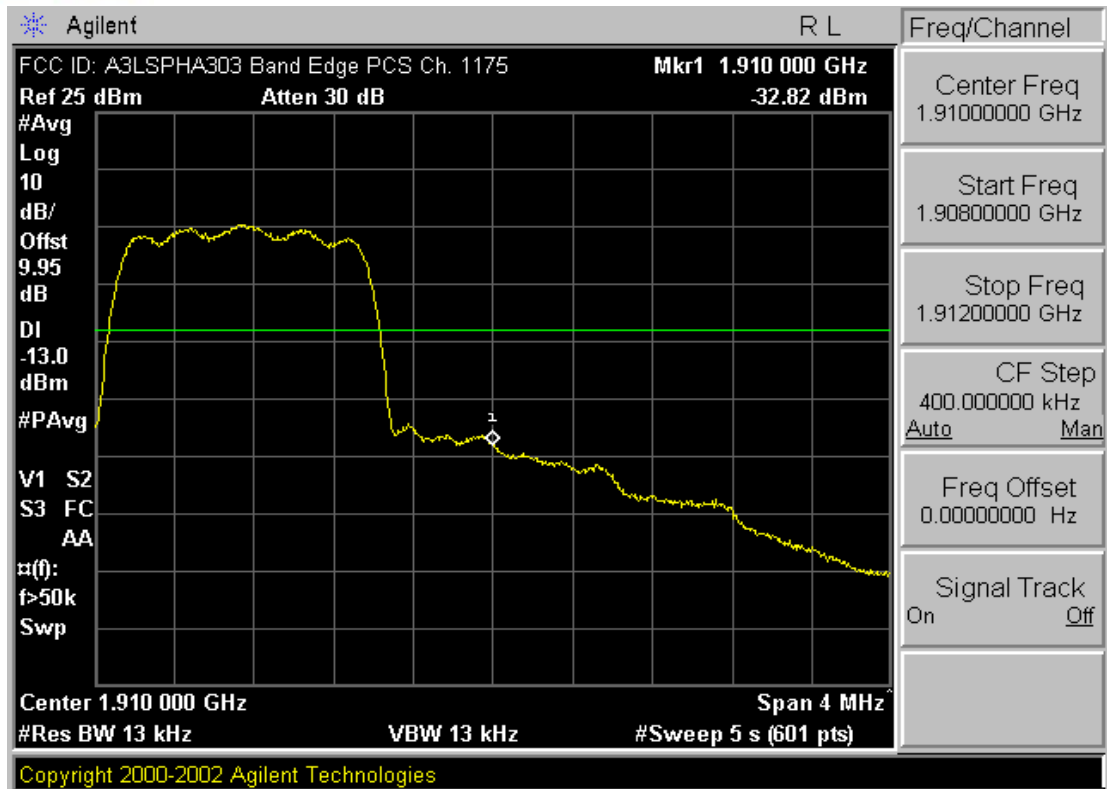


Plot 7-19. Conducted Spurious Plot (PCS CDMA Mode – Ch. 1175)

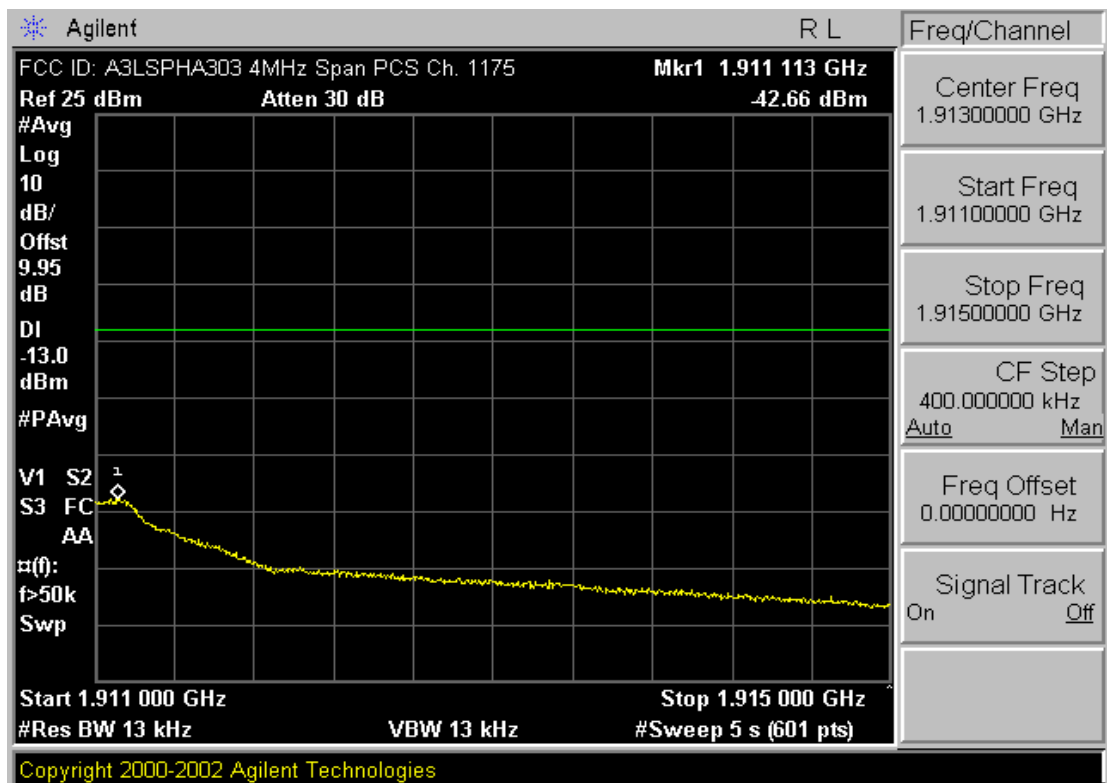


Plot 7-20. Conducted Spurious Plot (PCS CDMA Mode – Ch. 1175)

|                                |                                      |                                                                 |                |                                 |
|--------------------------------|--------------------------------------|-----------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSPHA303             | <b>PCTEST</b><br>wireless            | FCC Pt. 22/24 CDMA / EvDO MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006 | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth                |                | Page 33 of 38                   |



Plot 7-21. Band Edge Plot (PCS CDMA Mode – Ch. 1175)



Plot 7-22. 4MHz Span Plot (PCS CDMA Mode – Ch. 1175)

|                                |                                      |                                                                 |                |                                 |
|--------------------------------|--------------------------------------|-----------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSPHA303             | <b>PCTEST</b><br>wireless            | FCC Pt. 22/24 CDMA / EvDO MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006 | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth                |                | Page 34 of 38                   |

## 8.0 CONCLUSION

The data collected shows that the **Samsung Dual-Band CDMA Phone with Bluetooth** **FCC ID: A3LSPHA303** complies with all the requirements of Parts 2, 22, and 24 of the FCC rules.

|                                |                                                                                     |                                                                 |                                                                                       |                                 |
|--------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSPHA303             |  | FCC Pt. 22/24 CDMA / EVDO MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006                                                | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth                |                                                                                       | Page 35 of 38                   |

## EXHIBIT A – TEST SETUP PHOTOGRAPHS

|                                |                                                                                     |                                                                 |                                                                                       |                                 |
|--------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSPA303              |  | FCC Pt. 22/24 CDMA / EVDO MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006                                                | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth                |                                                                                       | Page 36 of 38                   |

## EXHIBIT B – INTERNAL PHOTOGRAPHS

|                                |                                                                                     |                                                                 |                                                                                       |                                 |
|--------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSPA303              |  | FCC Pt. 22/24 CDMA / EVDO MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006                                                | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth                |                                                                                       | Page 37 of 38                   |

## EXHIBIT C – EXTERNAL PHOTOGRAPHS

|                                |                                                                                     |                                                                 |                                                                                       |                                 |
|--------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSPA303              |  | FCC Pt. 22/24 CDMA / EVDO MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0611241036 | Test Dates:<br>December 7 - 11, 2006                                                | EUT Type:<br>Dual-Band CDMA Phone with Bluetooth                |                                                                                       | Page 38 of 38                   |