PCTEST ENGINEERING LABORATORY, INC.
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CERTIFICATE OF COMPLIANCE
FCC Part 22 & 24 Certification

Applicant Name:
LG Electronics USA
1000 Sylvan Avenue
Englewood Cliffs, NJ 07632
United States

Date of Testing:
May 04, 2007
Test Site/Location:
PCTEST Lab., Columbia, MD, USA
Test Report Serial No.:
0704190331.BEJ

FCC ID:	**BEJVX8550**
APPLICANT:	**LG ELECTRONICS USA**

Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§2; §22(H), §24(E)
EUT Type:	Cellular/PCS CDMA Phone with Bluetooth and EVDO
Model(s):	VX8550, AX8550, UX8550, CX8550, MT8350, BP8350, LG8550, MX8550
Tx Frequency Range:	824.70 - 848.31MHz (Cell. CDMA) / 1851.25 - 1908.75MHz (PCS CDMA)
Max. RF Output Power:	0.473 W ERP Cell. CDMA (26.75 dBm) / 0.447 W EIRP PCS CDMA (26.50 dBm)
Emission Designator(s):	1M27F9W (CDMA) / 1M27F9W (PCS)
Test Device Serial No.:	*identical prototype* [S/N: A000000377C1FD]

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

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

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

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

Randy Ortanez
President

ACCREDITED
TESTING LABORATORY
CERTIFICATE #2041.01

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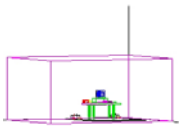
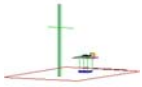


MEASUREMENT REPORT
FCC Part 22 & 24



§2.1033 General Information

APPLICANT:	LG Electronics USA
APPLICANT ADDRESS:	1000 Sylvan Avenue Englewood Cliffs, NJ 07632
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:	VX8550, AX8550, UX8550, CX8550, MT8350, BP8350, LG8550, MX8550
FCC ID:	BEJVX8550
FCC CLASSIFICATION:	PCS Licensed Transmitter Held to Ear (PCE)
EMISSION DESIGNATOR(S):	1M27F9W (CDMA) / 1M27F9W (PCS)
MODE:	CDMA / EvDO
FREQUENCY TOLERANCE:	±0.00025 % (2.5 ppm)
Test Device Serial No.:	A000000377C1FD ☐ Production ☒ Pre-Production ☐ Engineering
DATE(S) OF TEST:	May 04, 2007
TEST REPORT S/N:	0704190331.BEJ

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.

Deviation from Measurement Procedure…….None

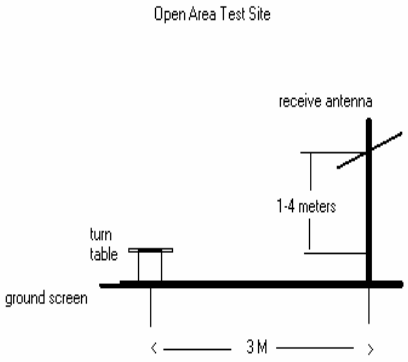

Figure 1-1. Diagram of 3-meter outdoor test range

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

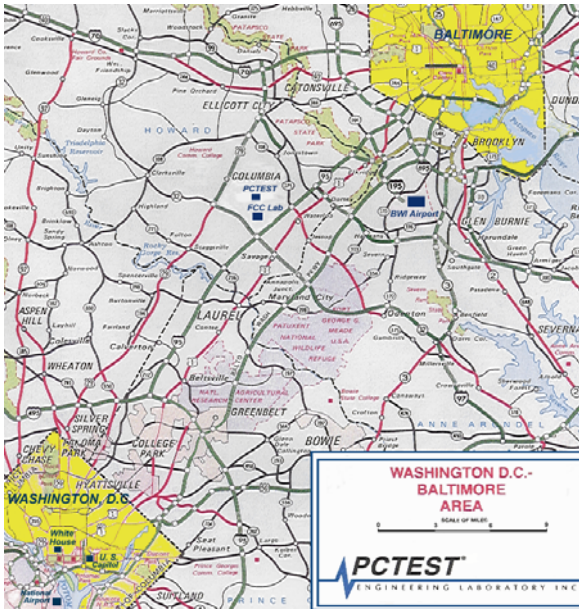

Figure 1-2. Map of the Greater Baltimore and Metropolitan Washington, D.C. area.

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **LG Cellular/PCS CDMA Phone with Bluetooth and EVDO FCC ID: BEJVX8550**. The EUT consisted of the following component(s):

Trade Name / Model	FCC ID	Description
LG / Model: VX8550, AX8550, UX8550, CX8550, MT8350, BP8350, LG8550, MX8550	BEJVX8550	Cellular/PCS CDMA Phone with Bluetooth and EVDO

Table 2-1. EUT Equipment Description

2.2 EMI Suppression Device(s)/Modifications

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

2.3 Labeling Requirements

Per 15.19; Docket 95-19

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 Occupied Bandwidth Emission Limits

§2.1049, 22.917(a), 24.238(a)

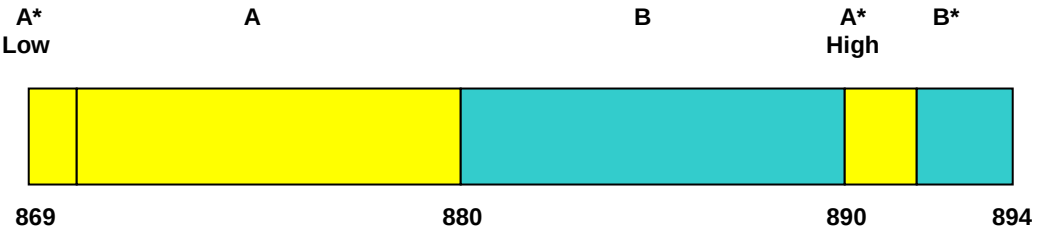
a. On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log(P) dB.

b. 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.

c. 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.

d. 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



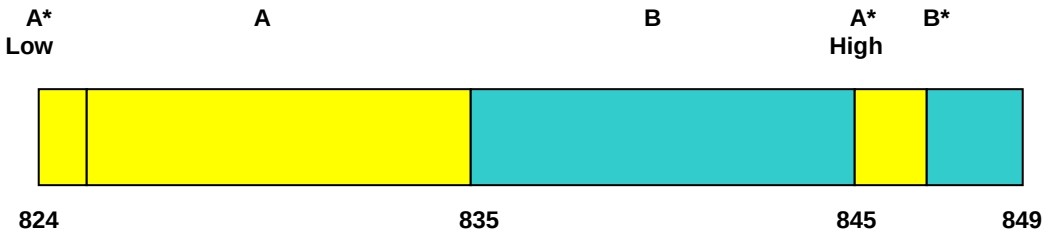
BLOCK 1: 869 – 880 MHz (A* Low + A)

BLOCK 2: 880 – 890 MHz (B)

BLOCK 3: 890 – 891.5 MHz (A* High)

BLOCK 4: 891.5 – 894 MHz (B*)

3.3 Cellular - Mobile Frequency Blocks



BLOCK 1: 824 – 835 MHz (A* Low + A)

BLOCK 2: 835 – 845 MHz (B)

BLOCK 3: 845 – 846.5 MHz (A* High)

BLOCK 4: 846.5 – 849 MHz (B*)

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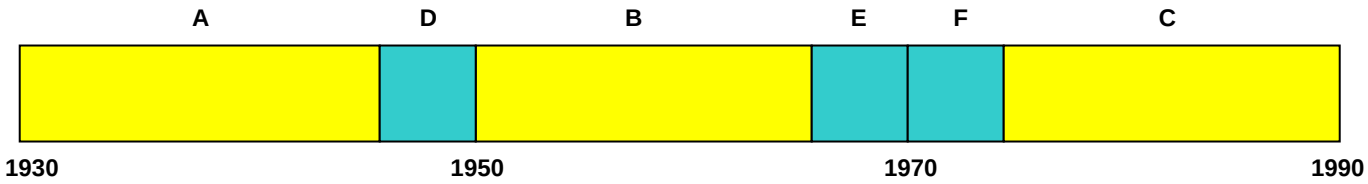
3.4 PCS - Base Frequency Blocks



BLOCK 1: 1930 – 1945 MHz (A)

BLOCK 2: 1945 – 1950 MHz (D)

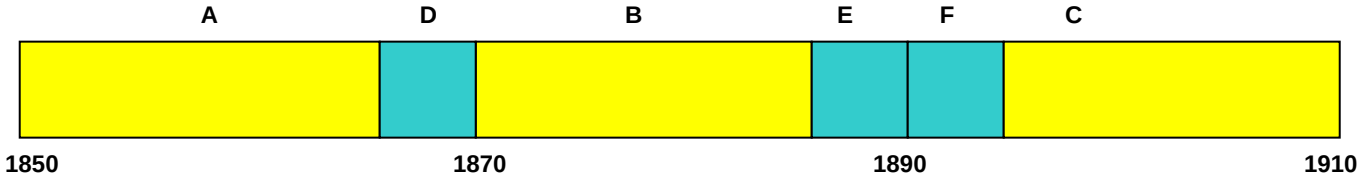
BLOCK 3: 1950 – 1965 MHz (B)

BLOCK 4: 1965 – 1970 MHz (E)

BLOCK 5: 1970 – 1975 MHz (F)

BLOCK 6: 1975 – 1990 MHz (C)

3.5 PCS - Mobile Frequency Blocks



BLOCK 1: 1850 – 1865 MHz (A)

BLOCK 2: 1865 – 1870 MHz (D)

BLOCK 3: 1870 – 1885 MHz (B)

BLOCK 4: 1885 – 1890 MHz (E)

BLOCK 5: 1890 – 1895 MHz (F)

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 10th 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. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive spectrum analyzer reading. This level is recorded. For readings above 1 GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration. This device was tested under all 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 ±0.00025% (±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	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
Agilent	E5515C Wireless Communications Test Set	10/26/06	Biennial	10/25/08	GB46310798
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
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
Agilent	HP 8566B (100Hz–22GHz)	12/21/06	Annual	12/21/07	3638A08713
Agilent	E4448A (3Hz-50GHz)	09/22/06	Annual	09/22/07	US42510244
Gigatronics	80701A (0.05-18GHz) Power Sensor	08/04/06	Annual	08/04/07	1835299
Agilent	HP 85650A Quasi-Peak Adapter	12/21/06	Annual	12/21/07	2043A00301
Agilent	HP 8449B (1-26.5GHz) Pre-Amplifier	12/12/06	Annual	12/12/07	3008A00985
Agilent	HP 11713A Attenuation/Switch Driver	12/12/06	Annual	12/12/07	N/A
Agilent	HP 85685A (20Hz-2GHz) Preselector	12/12/06	Annual	12/12/07	N/A
Agilent	HP 8566B Opt. 462 Impulse Bandwidth	12/12/06	Annual	12/12/07	3701A22204
EMCO	3115 (1-18GHz) Horn Antenna	08/25/05	Biennial	08/25/07	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		N/A	N/A
-	263-10dB (DC-18GHz) 10 dB Attenuator	N/A		N/A	N/A
Pasternack	PE2208-6 Bidirectional Coupler	N/A		N/A	N/A
-	No.165 (30MHz - 1000MHz) RG58 Coax Cable	N/A		N/A	N/A
-	No.166 (1000-26500MHz) Microwave RF Cable	N/A		N/A	N/A
-	No.167 (100kHz - 100MHz) RG58 Coax Cable	N/A		N/A	N/A

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 2nd 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.

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6.0 TEST RESULTS

6.1 Summary

Company Name: LG Electronics USA

FCC ID: BEJVX8550

FCC Classification: 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	Reference
TRANSMITTER MODE (TX)						
2.1049, 22.917(a), 24.238(a)	N/A	Occupied Bandwidth	N/A	CONDUCTED	PASS	Section 7.0
2.1051, 22.917(a), 24.238(a)	RSS-129 (8.1.1) RSS-133 (6.5.1)	Band Edge / Conducted Spurious Emissions	< 43 + 10log$_{10}$ (P[Watts]) at Band Edge and for all out-of-band emissions		PASS	Section 7.0
SAR Measurement Procedures for 3G Devices, June '06	N/A	Conducted Power Measurements for 3G Devices	N/A		PASS	FCC 3G Power Table
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) [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) RSS-133 (6.5.1)	Undesirable Emissions	< 43 + 10log$_{10}$ (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) RSS-133 (6.3)	Frequency Stability	< 2.5 ppm		PASS	Sections 6.6, 6.7
RECEIVER MODE (RX) / DIGITAL EMISSIONS						
15.107	RSS-Gen [7.2.2]	AC Conducted Emissions 150kHz – 30MHz	< FCC 15.207 limits or < RSS-Gen table 2 limits	LINE CONDUCTED	PASS	Pt. 15B Test Report
15.109	RSS-129 (10(a,d)), RSS-133 (6.7(a,b)), RSS-210 (7.3)	General Field Strength Limits (Restricted Bands and Radiated Emissions Limits)	< FCC 15.209 limits or < RSS-Gen limits [Section 6; Table 1]	RADIATED (30MHz-1GHz) (1-25 GHz)	PASS	Pt. 15B Test Report
RF EXPOSURE (SAR)						
2.1091 / 2.1093	RSS-102	SAR Test	1.6 W/kg (SAR Limit)	SAR	PASS	SAR Report

Table 6-1. Summary of Test Results

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6.2 Effective Radiated Power Output Data

§22.913(a)(2); RSS-129 (9.1)

POWER: "All Up" Bits (Cellular CDMA Mode)

Frequency [MHz]	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBd]	Pol [H/V]	ERP [dBm]	ERP [Watts]
824.70	-12.900	27.80	-1.65	H	26.15	0.412
836.52	-13.200	27.50	-1.65	H	25.85	0.385
848.31	-12.300	28.40	-1.65	H	26.75	0.473

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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6.3 Equivalent Isotropic Radiated Power Output Data

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

POWER: "All Up" Bits (PCS CDMA Mode)

Frequency [MHz]	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]
1851.25	-14.900	18.30	8.00	H	26.30	0.427
1880.00	-15.100	18.10	8.00	H	26.10	0.407
1908.75	-14.700	18.50	8.00	H	26.50	0.447

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.

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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:	26.750	dBm	=	0.473 W
MODULATION SIGNAL:	CDMA (Internal)			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	39.75	dBc	

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1649.40	-68.59	6.16	-62.43	H	89.2
2474.10	-93.83	7.26	-86.58	H	113.3
3298.80	-72.79	7.40	-65.39	H	92.1
4123.50	-86.76	7.59	-79.18	H	105.9
4948.20	-85.85	8.47	-77.38	H	104.1

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:	384			
MEASURED OUTPUT POWER:	26.750	dBm	=	0.473 W
MODULATION SIGNAL:	CDMA (Internal)			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	39.75	dBc	

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1673.04	-68.61	6.18	-62.43	H	89.2
2509.56	-93.68	7.30	-86.38	H	113.1
3346.08	-75.82	7.42	-68.40	H	95.1
4182.60	-87.03	7.75	-79.28	H	106.0
5019.12	-85.24	8.46	-76.78	H	103.5

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.

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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:	848.31	MHz		
CHANNEL:	777			
MEASURED OUTPUT POWER:	26.750	dBm	=	0.473 W
MODULATION SIGNAL:	CDMA (Internal)			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	39.75	dBc	

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1696.62	-68.23	6.19	-62.04	H	88.8
2544.93	-79.05	7.30	-71.76	H	98.5
3393.24	-75.85	7.44	-68.41	H	95.2
4241.55	-87.08	7.91	-79.18	H	105.9
5089.86	-85.44	8.46	-76.98	H	103.7

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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6.5 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:	26.500	dBm	=	0.447 W
MODULATION SIGNAL:	CDMA (Internal)			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	39.50	dBc	

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3702.50	-63.38	9.54	-53.85	H	80.3
5553.75	-84.19	10.66	-73.53	H	100.0
7405.00	-80.67	11.14	-69.53	H	96.0
9256.25	-77.18	11.15	-66.03	H	92.5
11107.50	-77.98	12.75	-65.23	H	91.7

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.

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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:	26.500	dBm	=	0.447 W
MODULATION SIGNAL:	CDMA (Internal)			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	39.50	dBc	

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3760.00	-64.00	9.51	-54.50	H	81.0
5640.00	-84.09	10.76	-73.33	H	99.8
7520.00	-80.24	11.01	-69.23	H	95.7
9400.00	-77.15	11.32	-65.83	H	92.3
11280.00	-77.77	12.74	-65.03	H	91.5

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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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:	26.500	dBm	=	0.447 W
MODULATION SIGNAL:	CDMA (Internal)			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	39.50	dBc	

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3817.50	-59.12	9.48	-49.64	H	76.1
5726.25	-83.99	10.86	-73.13	H	99.6
7635.00	-80.06	11.03	-69.03	H	95.5
9543.75	-77.02	11.49	-65.53	H	92.0
11452.50	-77.55	12.72	-64.83	H	91.3

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.

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6.6 Frequency Stability (Cellular CDMA)

§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 (ºC)	FREQ. (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.70	+ 20 (Ref)	836,520,016	16	0.000002
100 %		- 30	836,520,014	14	0.000002
100 %		- 20	836,520,019	19	0.000002
100 %		- 10	836,520,021	21	0.000003
100 %		0	836,519,984	-16	-0.000002
100 %		+ 10	836,519,987	-13	-0.000002
100 %		+ 20	836,520,016	16	0.000002
100 %		+ 25	836,519,977	-23	-0.000003
100 %		+ 30	836,520,018	18	0.000002
100 %		+ 40	836,520,026	26	0.000003
100 %		+ 50	836,520,022	22	0.000003
115 %	4.26	+ 20	836,520,016	16	0.000002
BATT. ENDPOINT	3.40	+ 20	836,520,035	35	0.000004

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

Note:

Standard batteries were used to perform this test.

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Frequency Stability (Cellular CDMA) (Cont'd)
§2.1055, 22.355; RSS-129 (9.2.1)

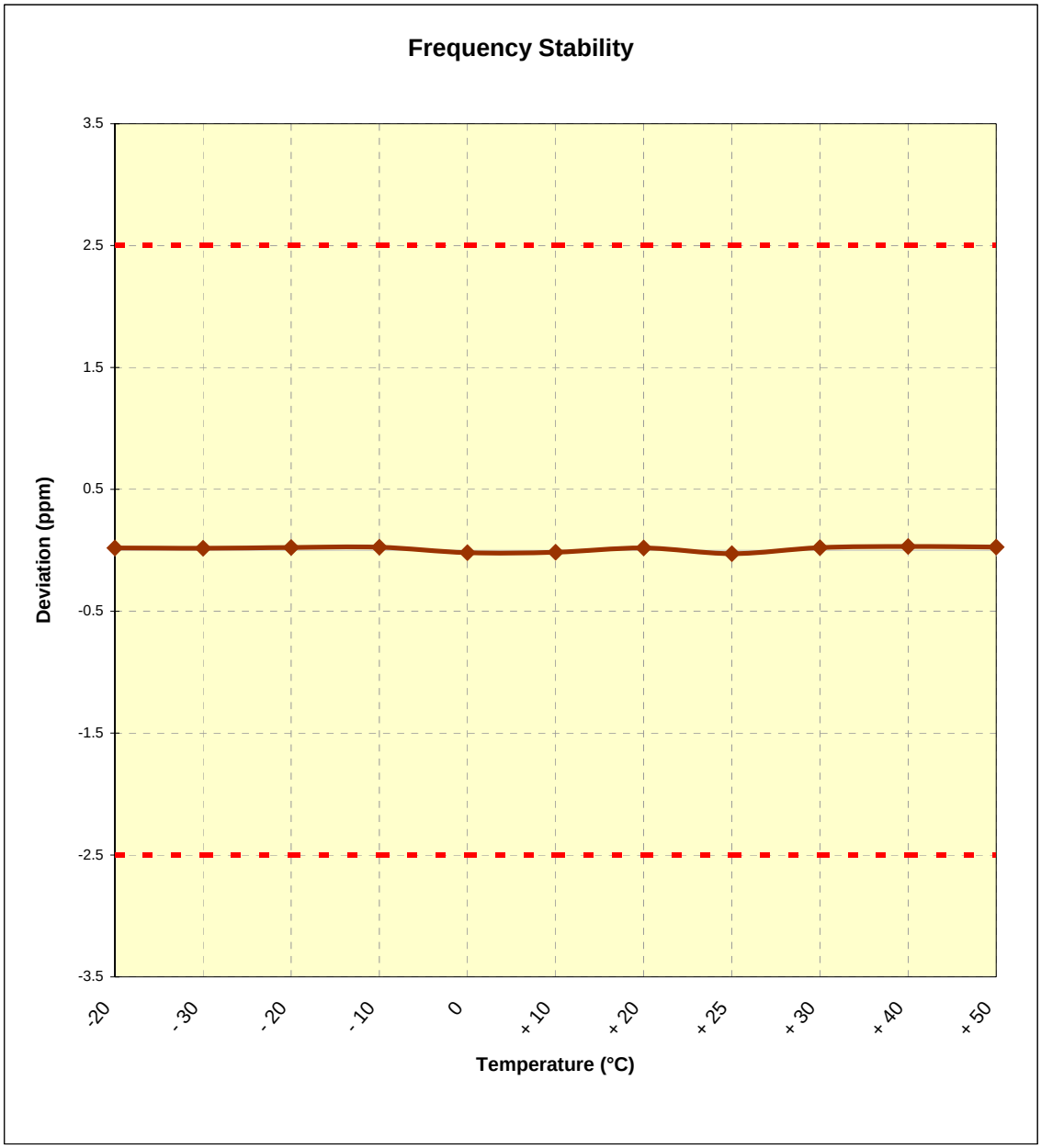

Figure 6-1. Frequency Stability Graph (Cellular CDMA Mode – Ch. 384)

Note:

Standard batteries were used to perform this test.

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6.7 Frequency Stability (PCS CDMA)

§2.1055, 24.235; RSS-133 (6.3)

OPERATING FREQUENCY: 1,880,000,000 Hz

CHANNEL: 600

REFERENCE VOLTAGE: 3.7 VDC

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (ºC)	FREQ. (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.70	+ 20 (Ref)	1,879,999,986	-14	-0.000001
100 %		- 30	1,880,000,023	23	0.000001
100 %		- 20	1,880,000,021	21	0.000001
100 %		- 10	1,880,000,018	18	0.000001
100 %		0	1,879,999,983	-17	-0.000001
100 %		+ 10	1,880,000,019	19	0.000001
100 %		+ 20	1,879,999,986	-14	-0.000001
100 %		+ 25	1,879,999,978	-22	-0.000001
100 %		+ 30	1,880,000,027	27	0.000001
100 %		+ 40	1,880,000,020	20	0.000001
100 %		+ 50	1,879,999,983	-17	-0.000001
115 %	4.26	+ 20	1,879,999,986	-14	-0.000001
BATT. ENDPOINT	3.40	+ 20	1,880,000,038	38	0.000002

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

Note:

Standard batteries were used to perform this test.

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

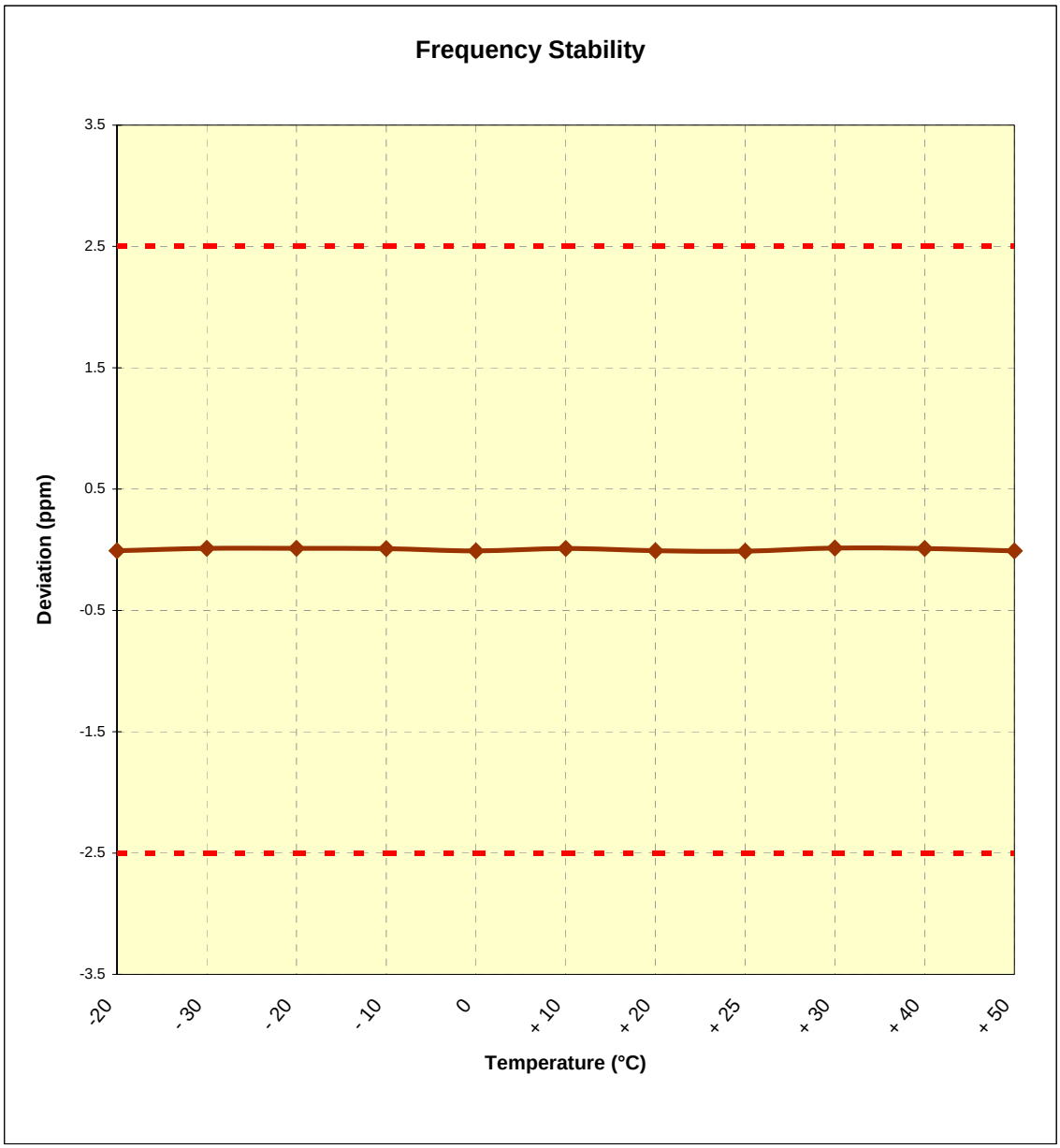

Figure 6-2. Frequency Stability Graph (PCS CDMA Mode – Ch. 600)

Note:

Standard batteries were used to perform this test.

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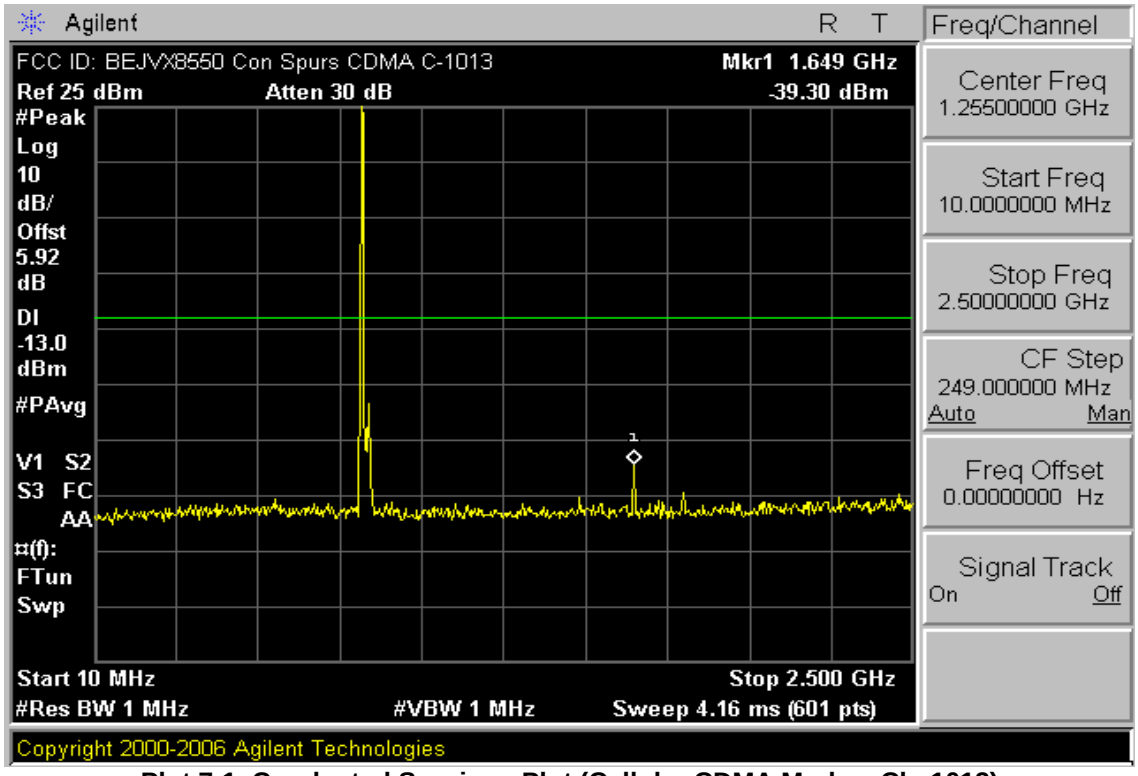
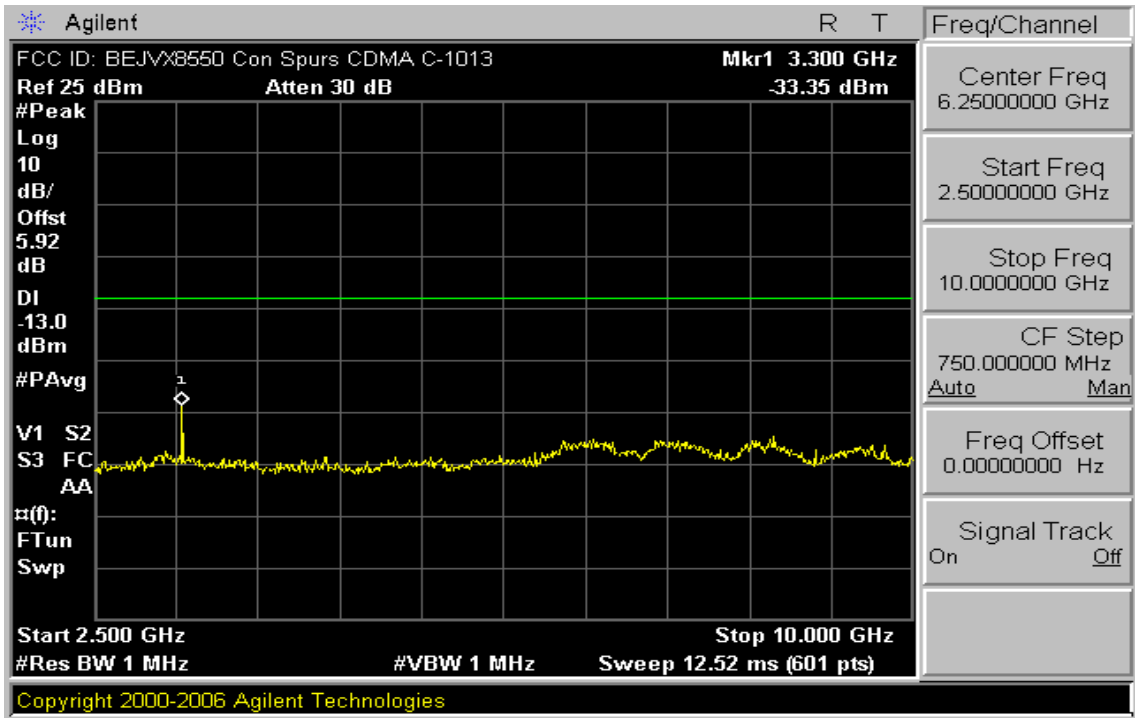
7.0 PLOT(S) OF EMISSIONS



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



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

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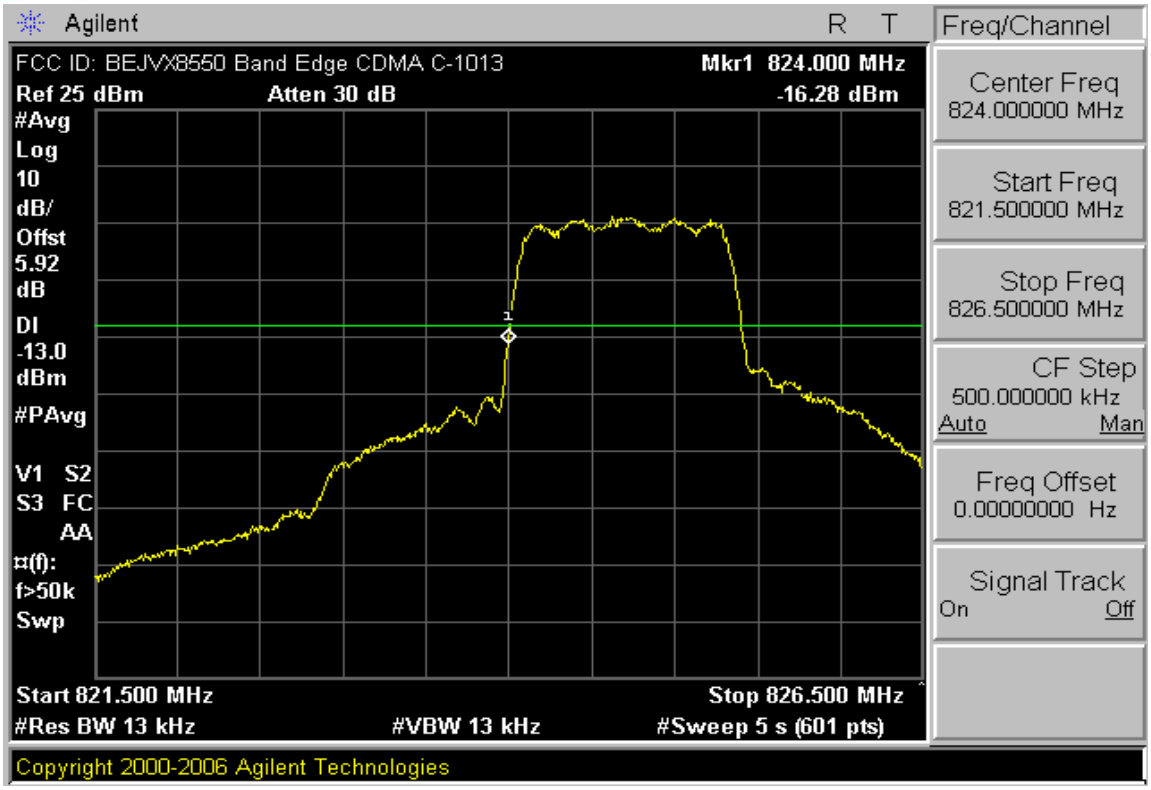
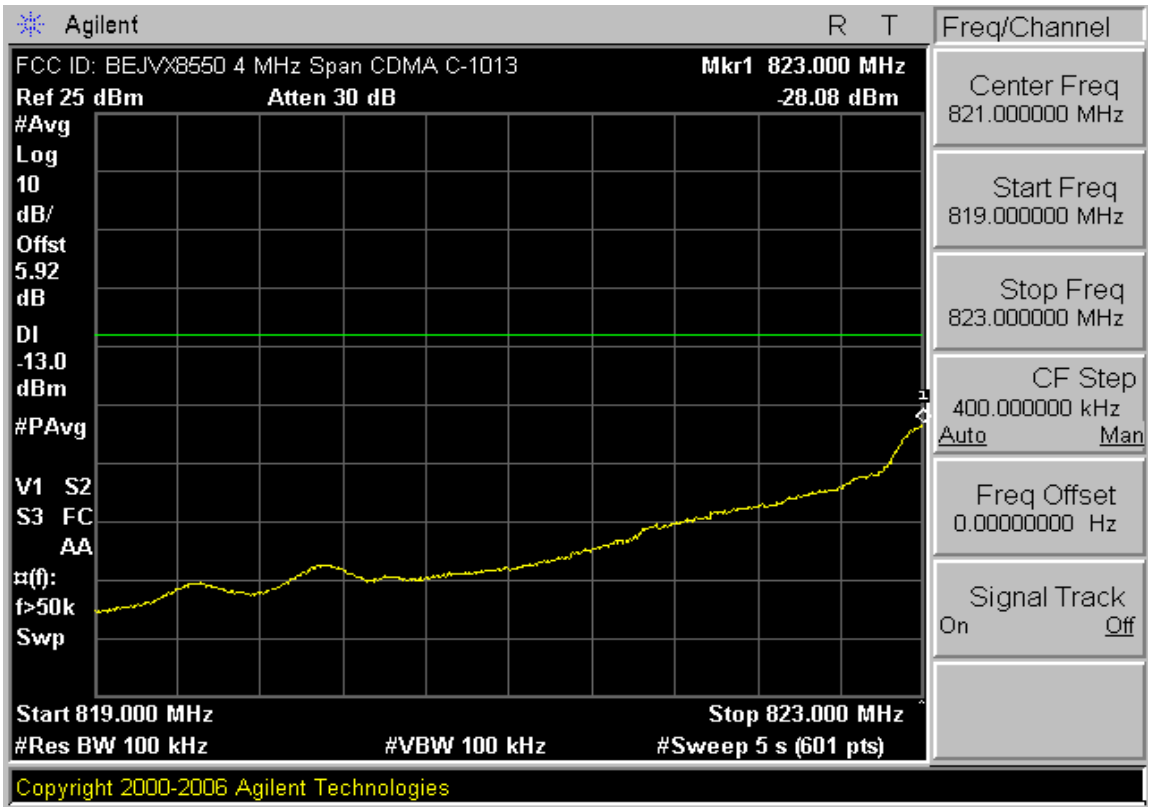


Plot 7-3. Band Edge Plot (Cellular CDMA Mode – Ch. 1013)



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

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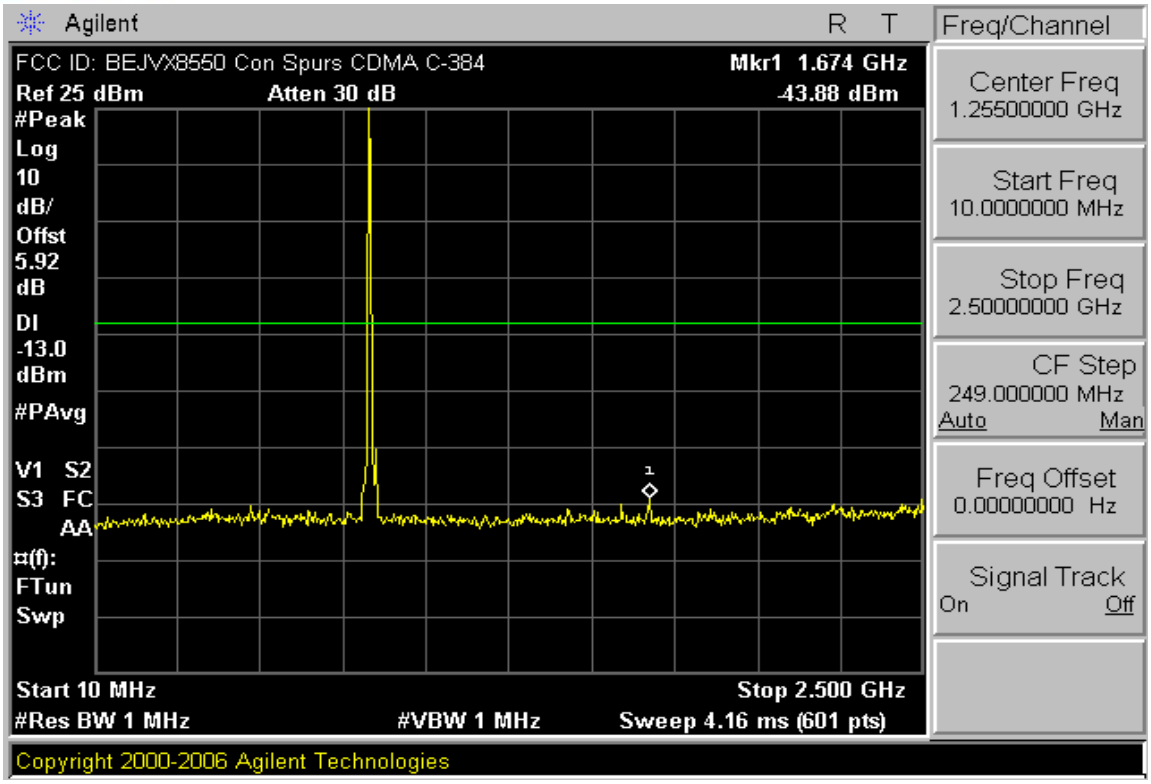
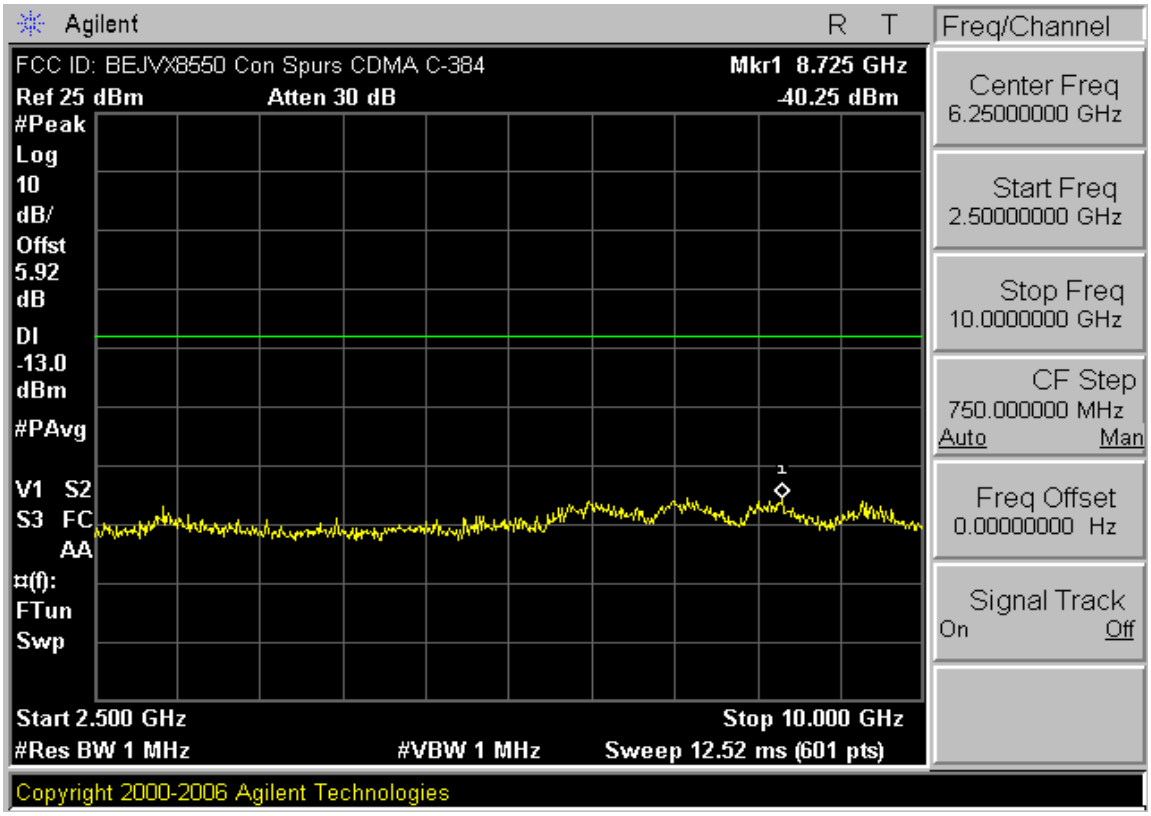


Plot 7-5. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 384)



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

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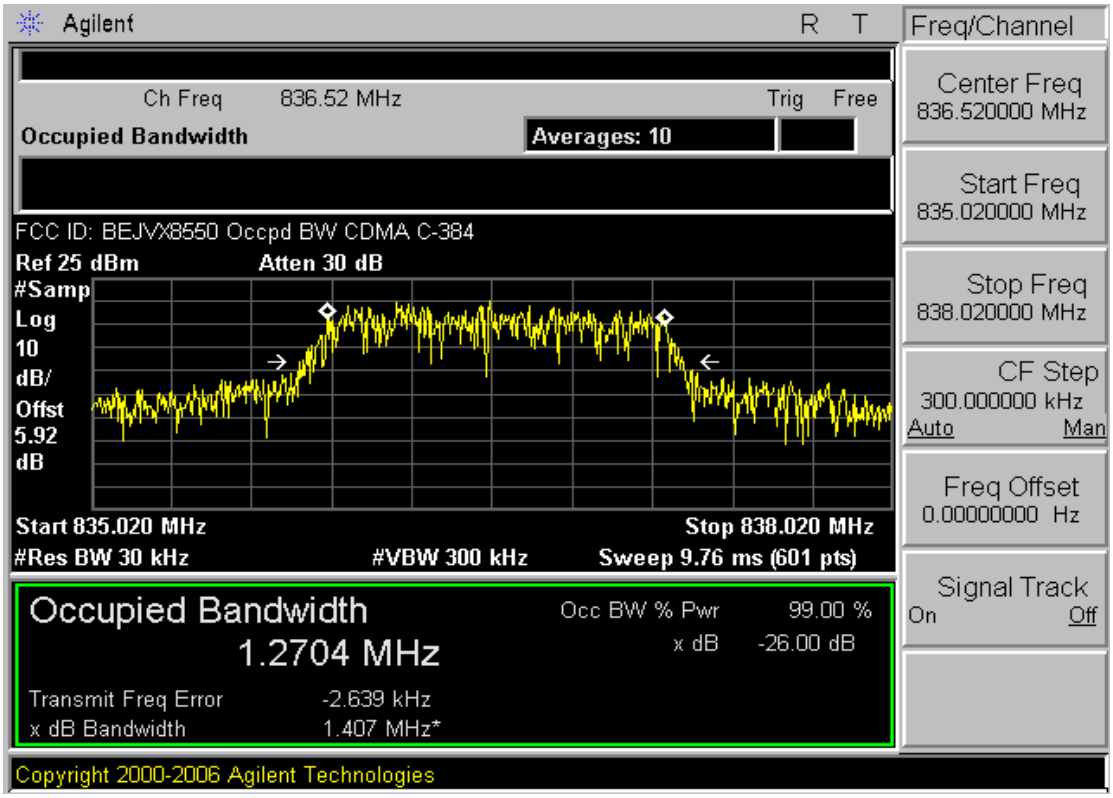
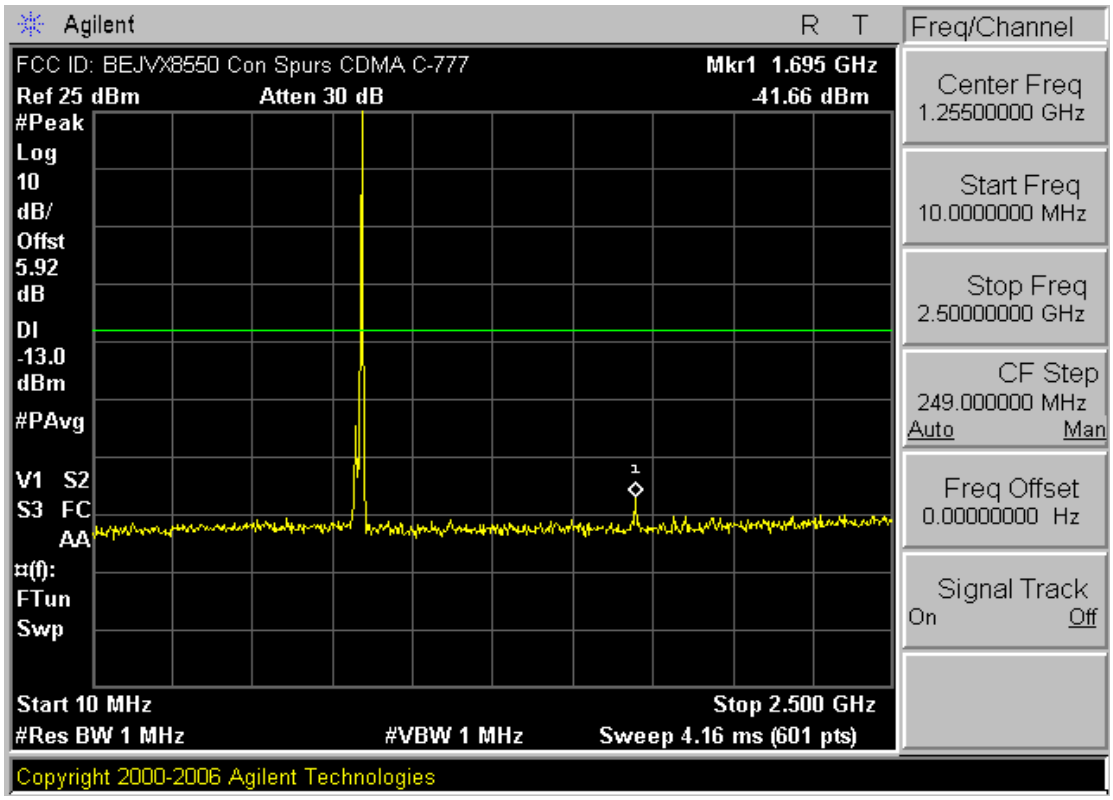


Plot 7-7. Occupied Bandwidth Plot (Cellular CDMA Mode – Ch. 384)



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

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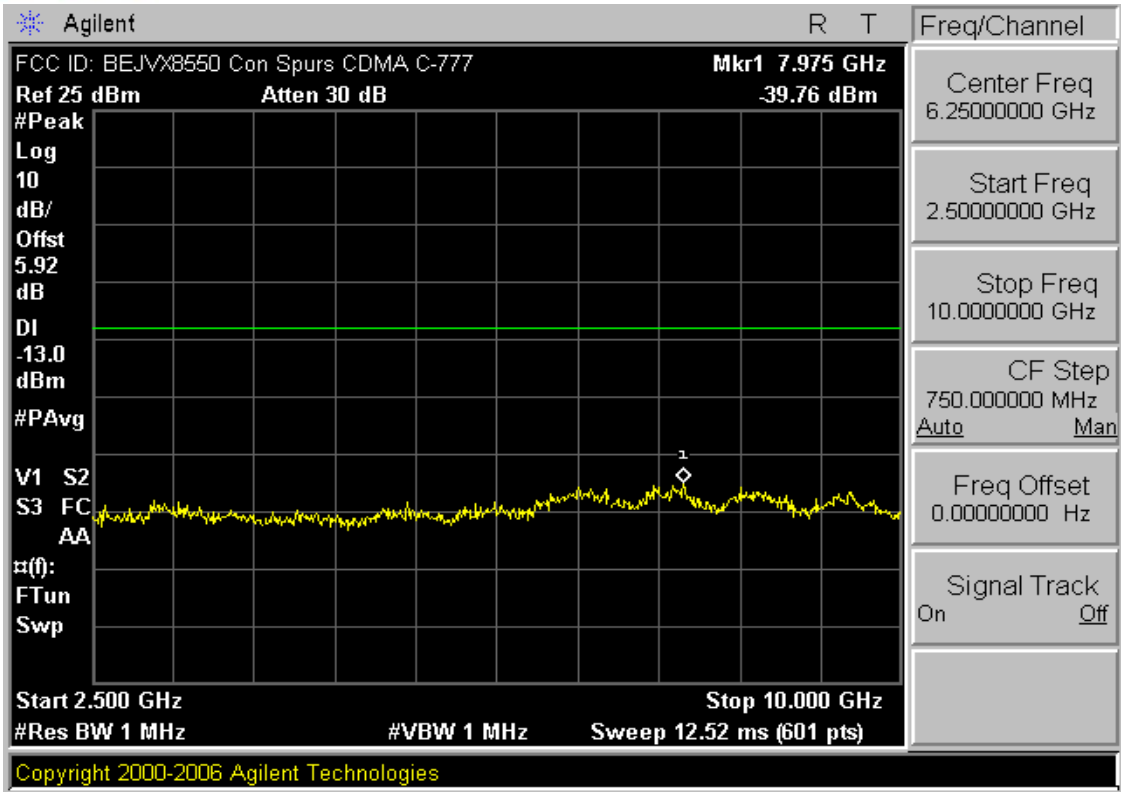
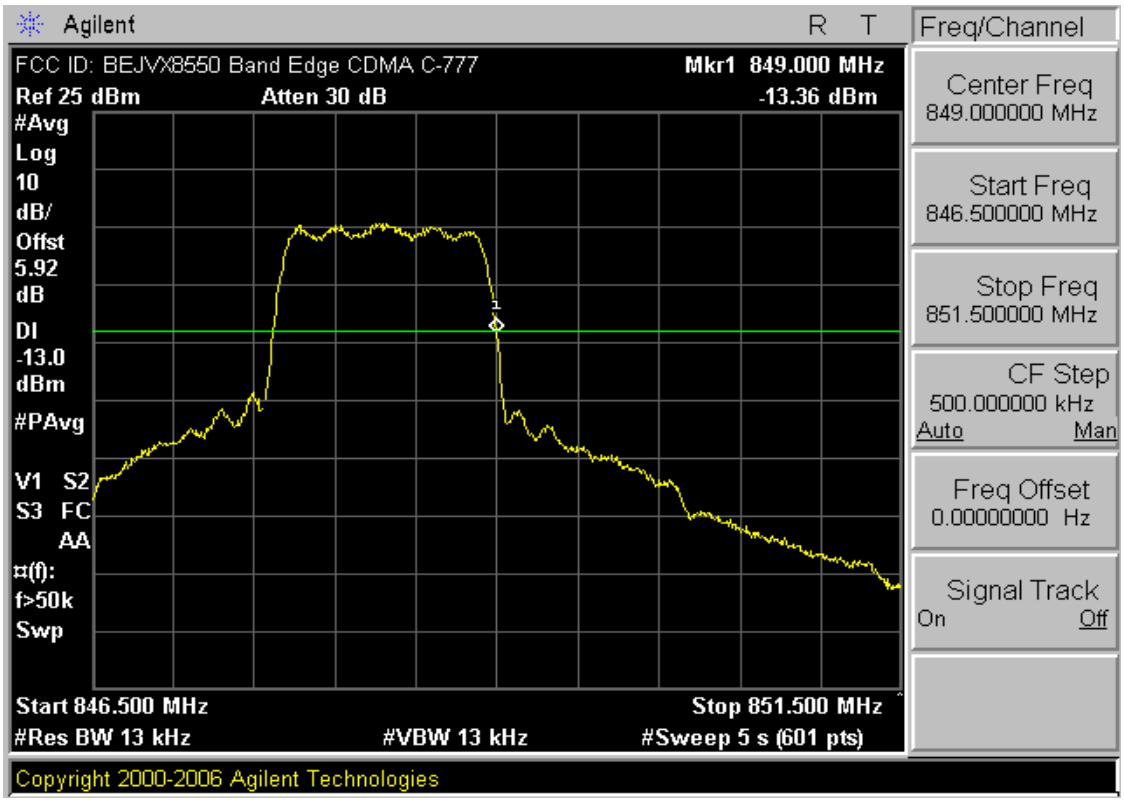


Plot 7-9. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 777)



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

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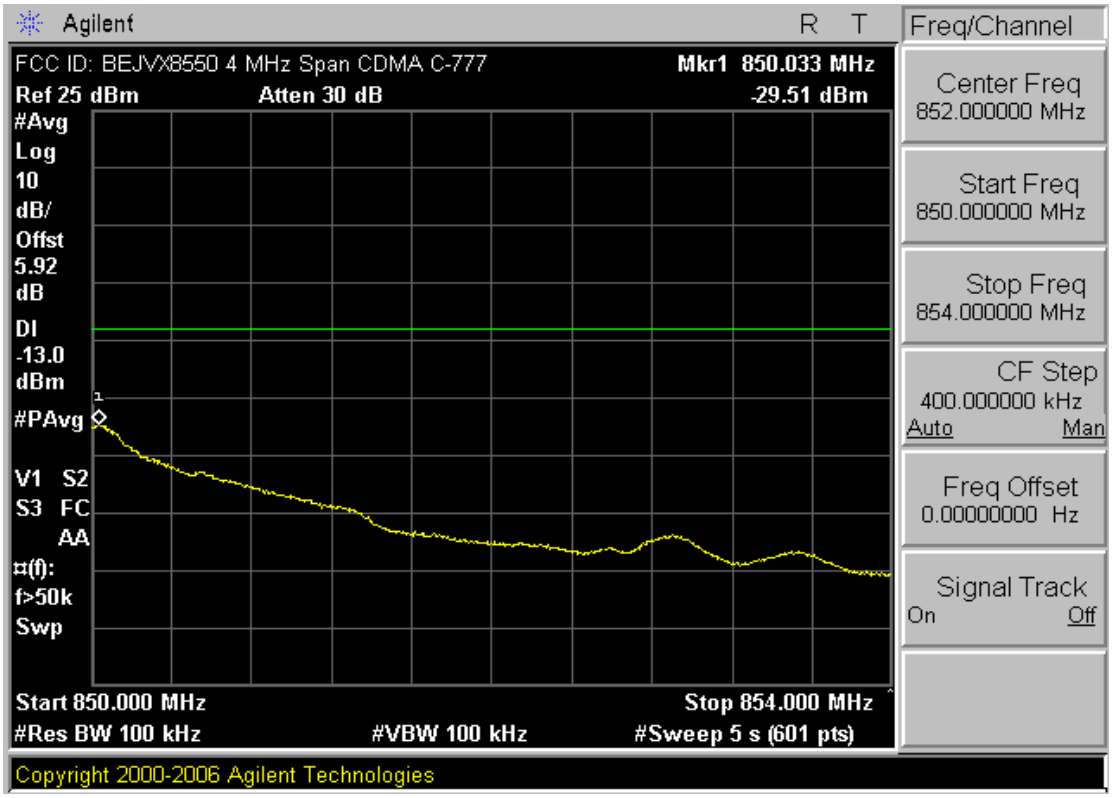
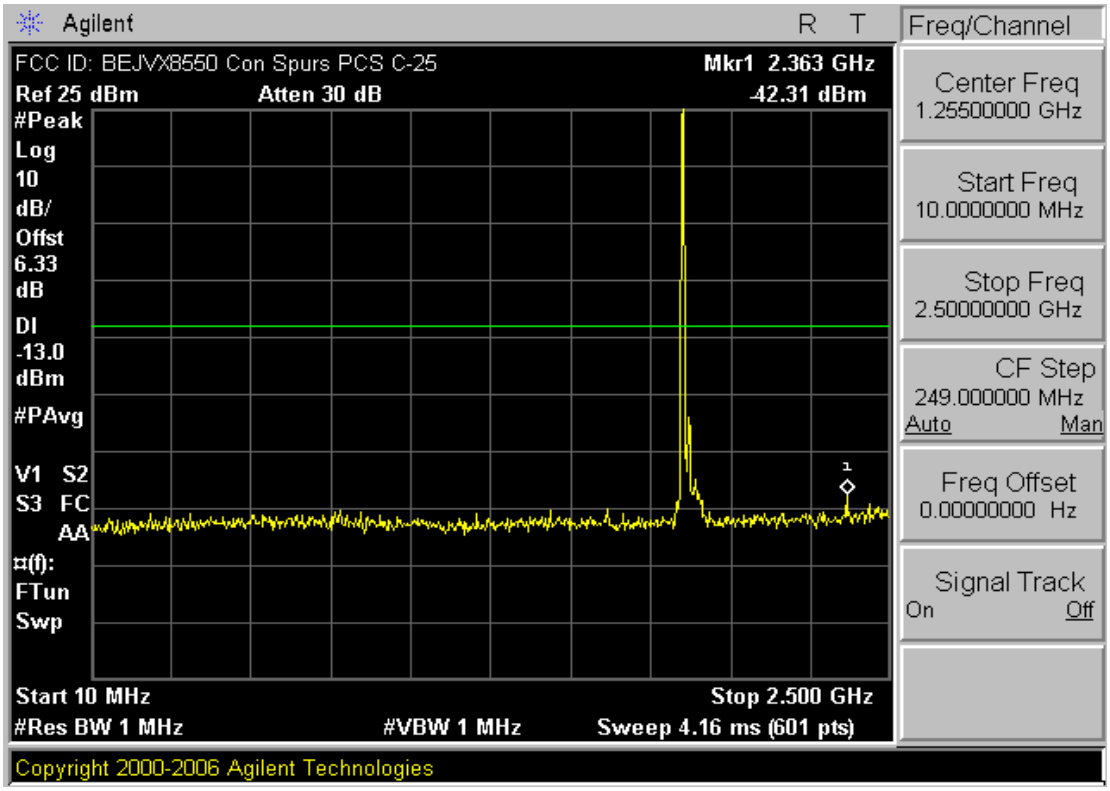


Plot 7-11. 4MHz Span Plot (Cellular CDMA Mode – Ch. 777)



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

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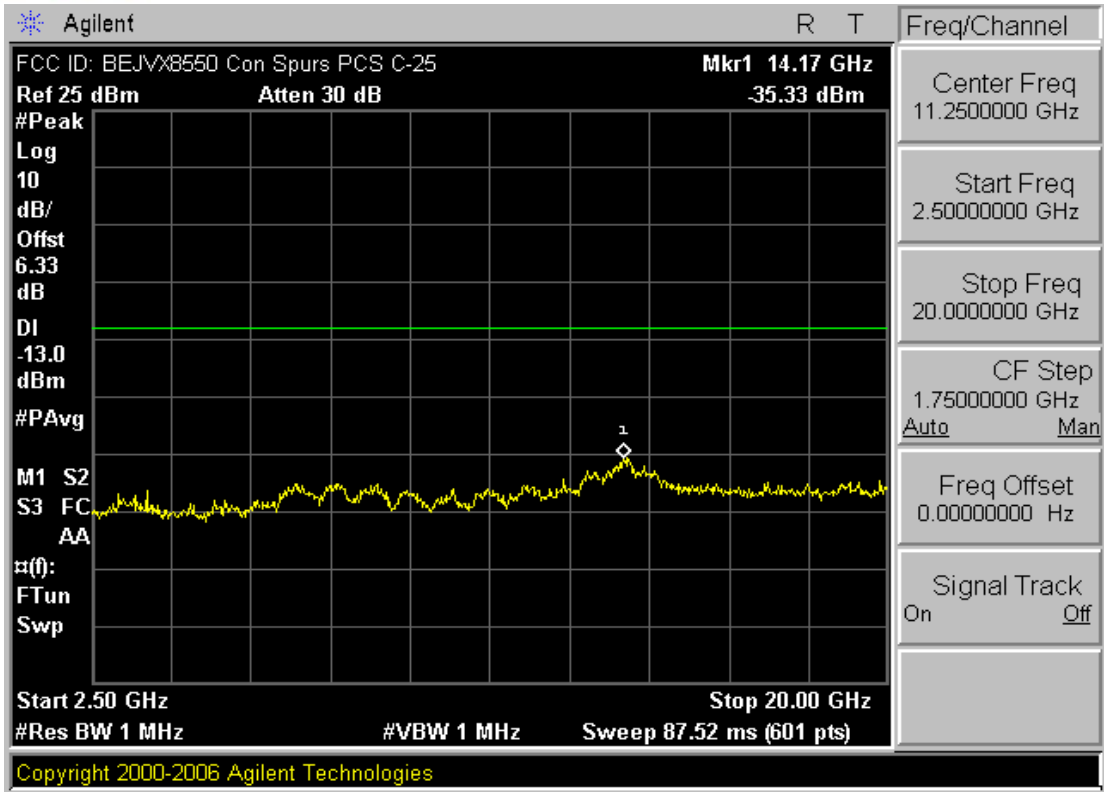
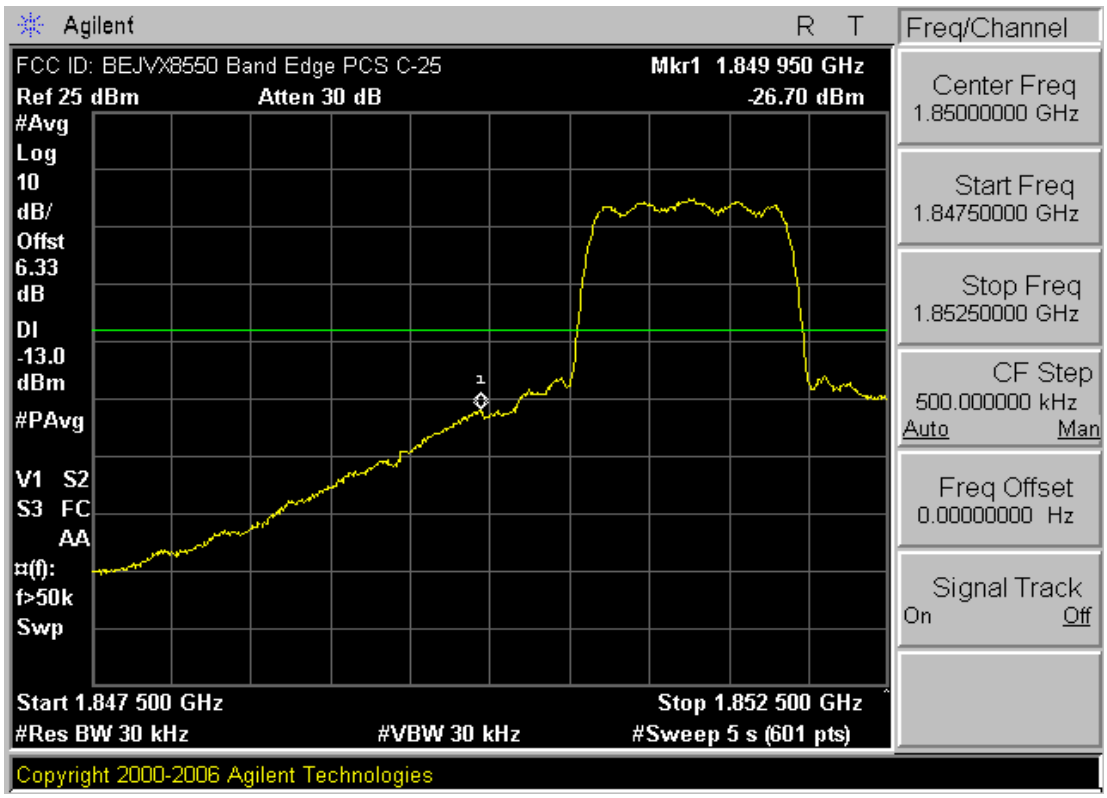


Plot 7-13. Conducted Spurious Plot (PCS CDMA Mode – Ch. 25)



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

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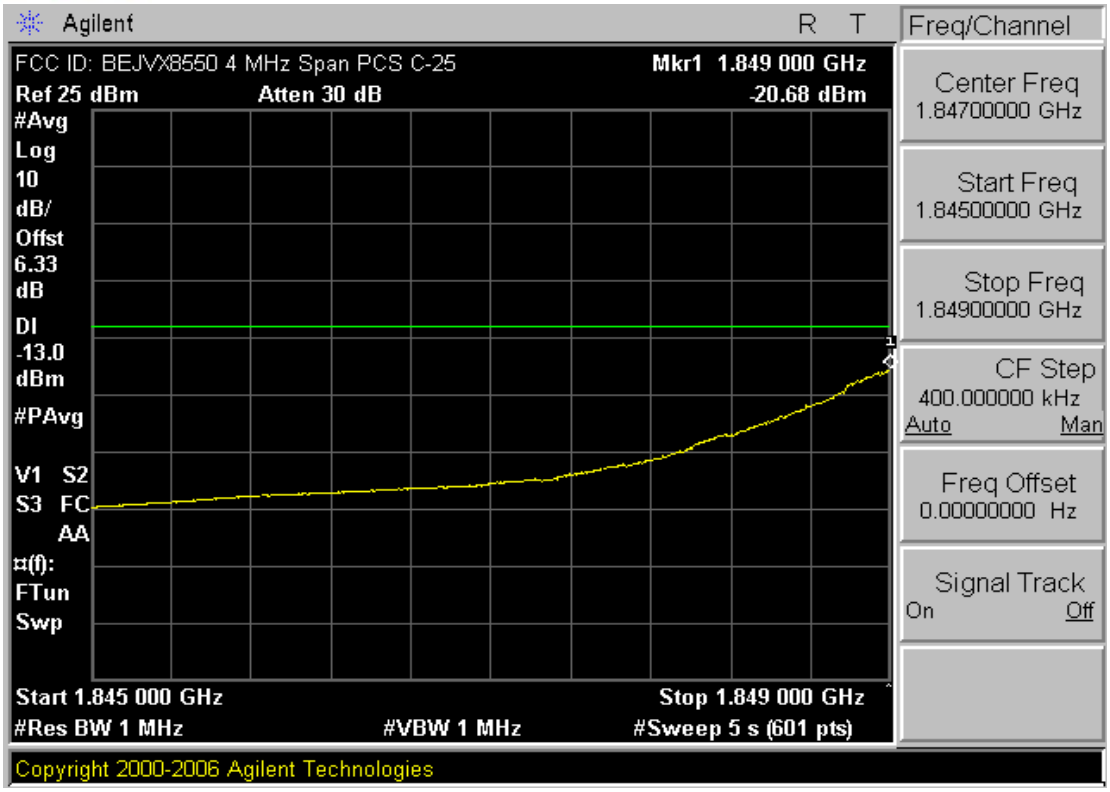
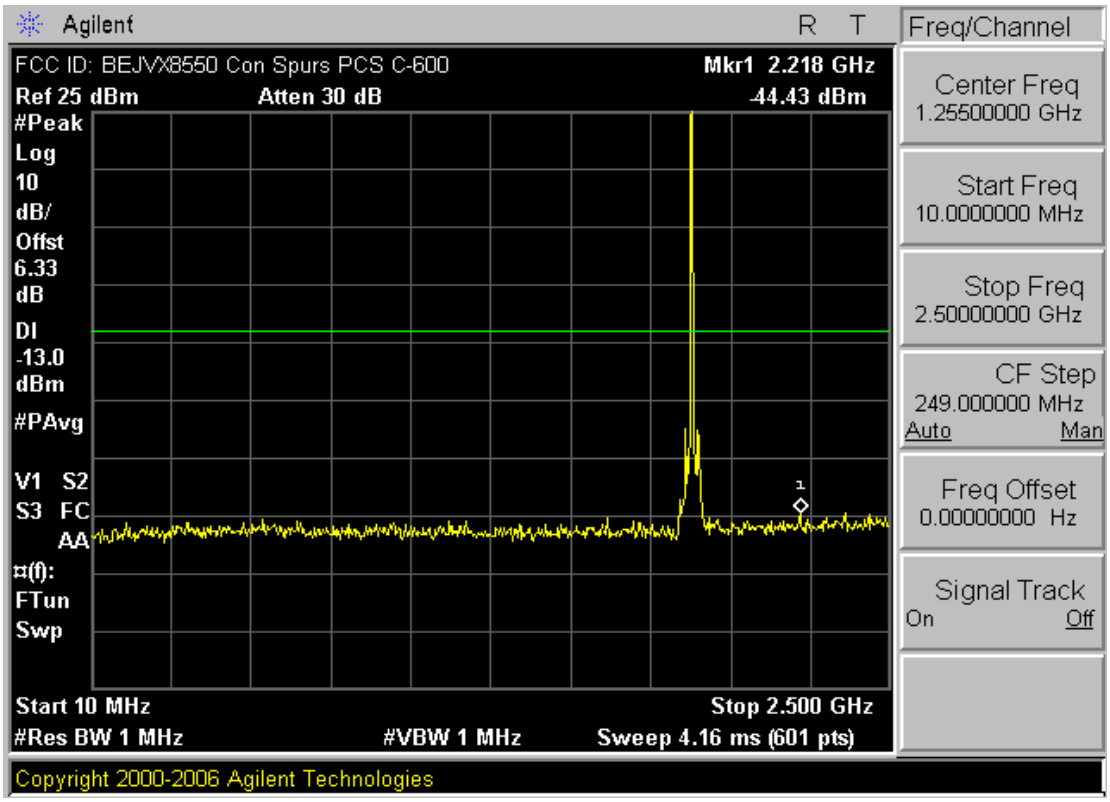


Plot 7-15. 4MHz Span Plot (PCS CDMA Mode – Ch. 25)



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

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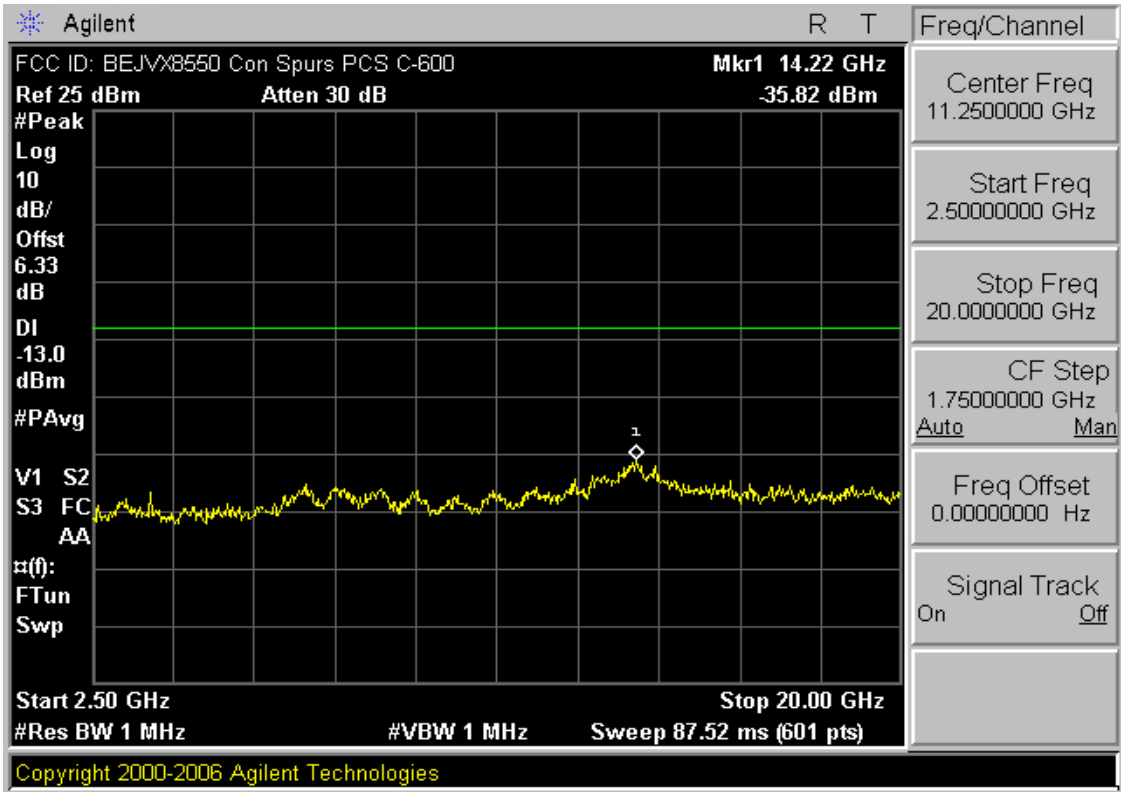
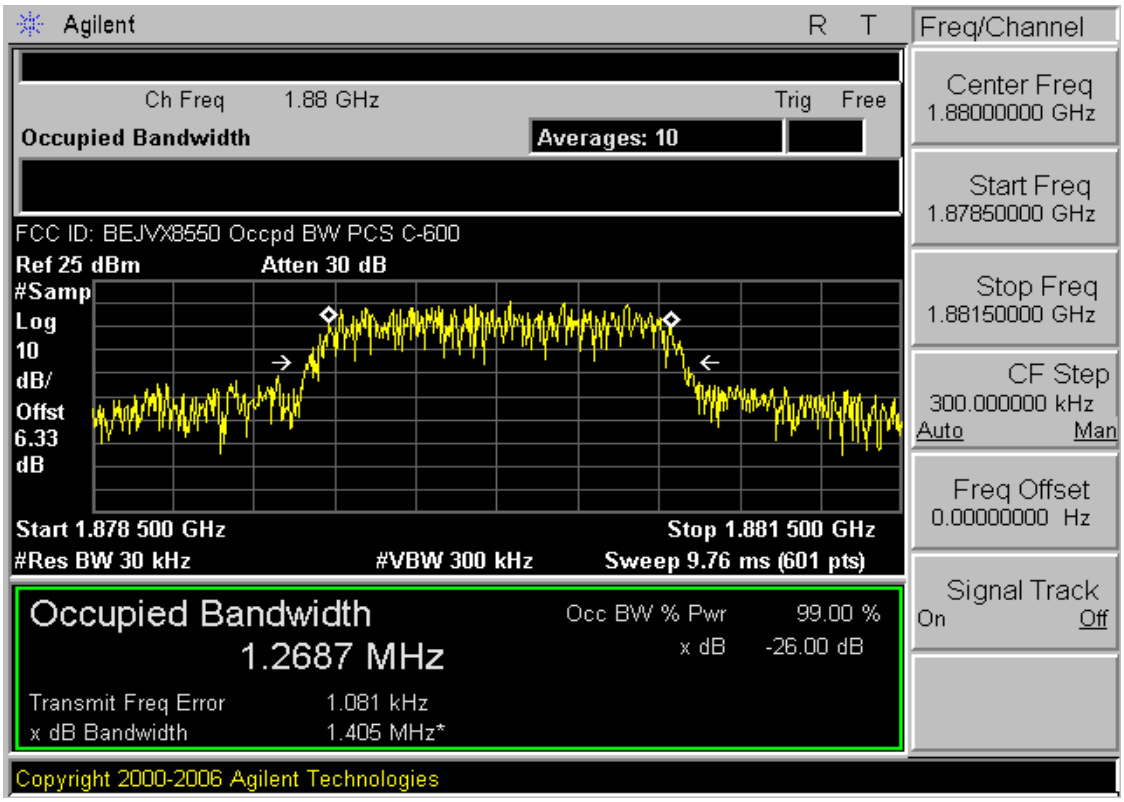


Plot 7-17. Conducted Spurious Plot (PCS CDMA Mode – Ch. 600)



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

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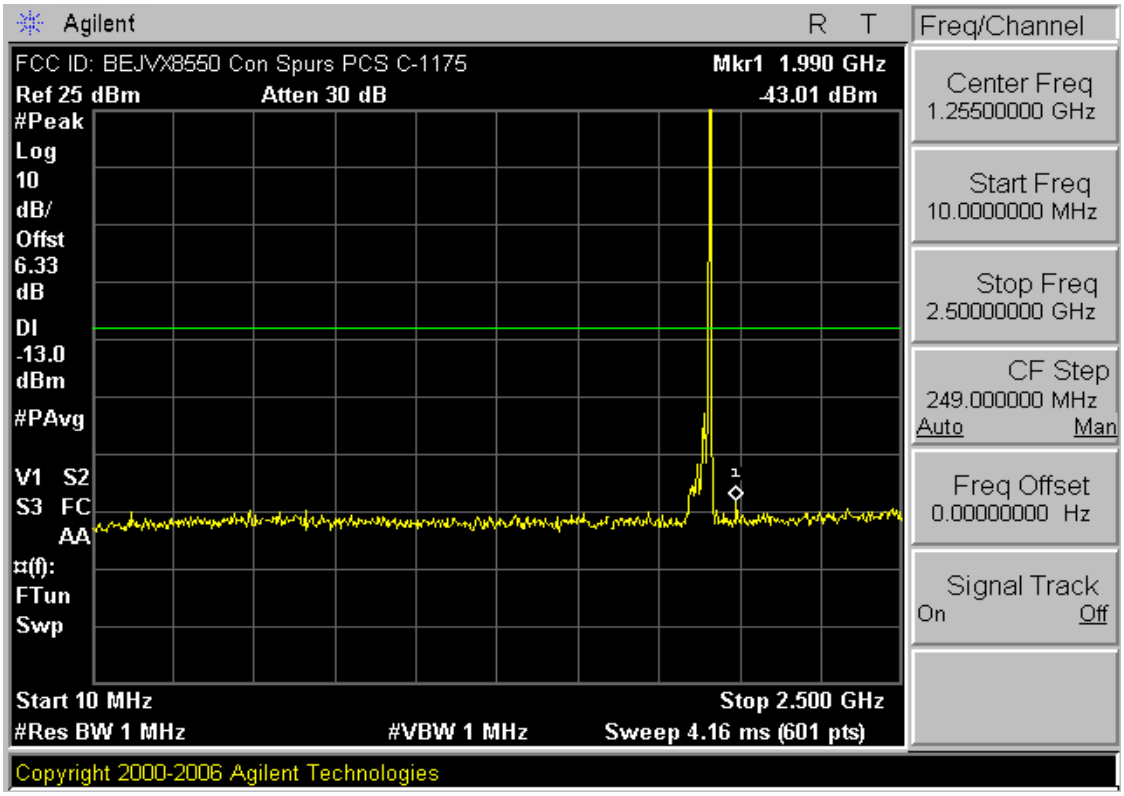
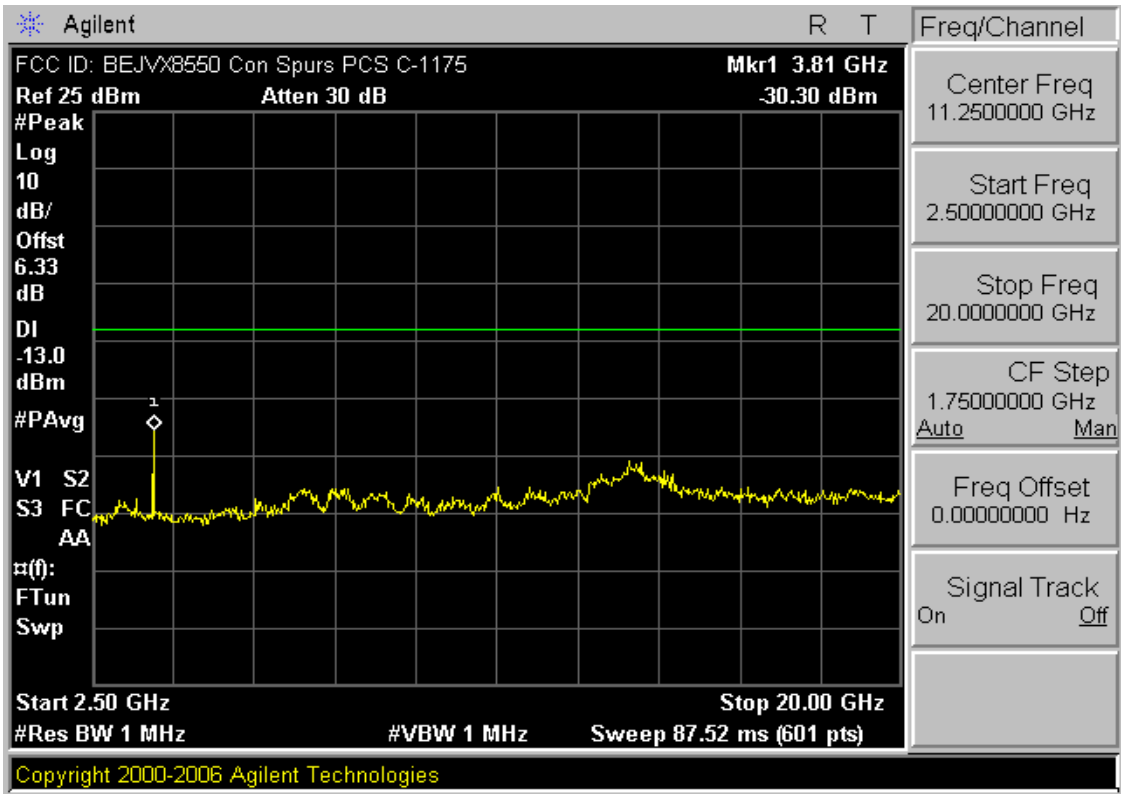


Plot 7-19. Conducted Spurious Plot (PCS CDMA Mode – Ch. 1175)



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

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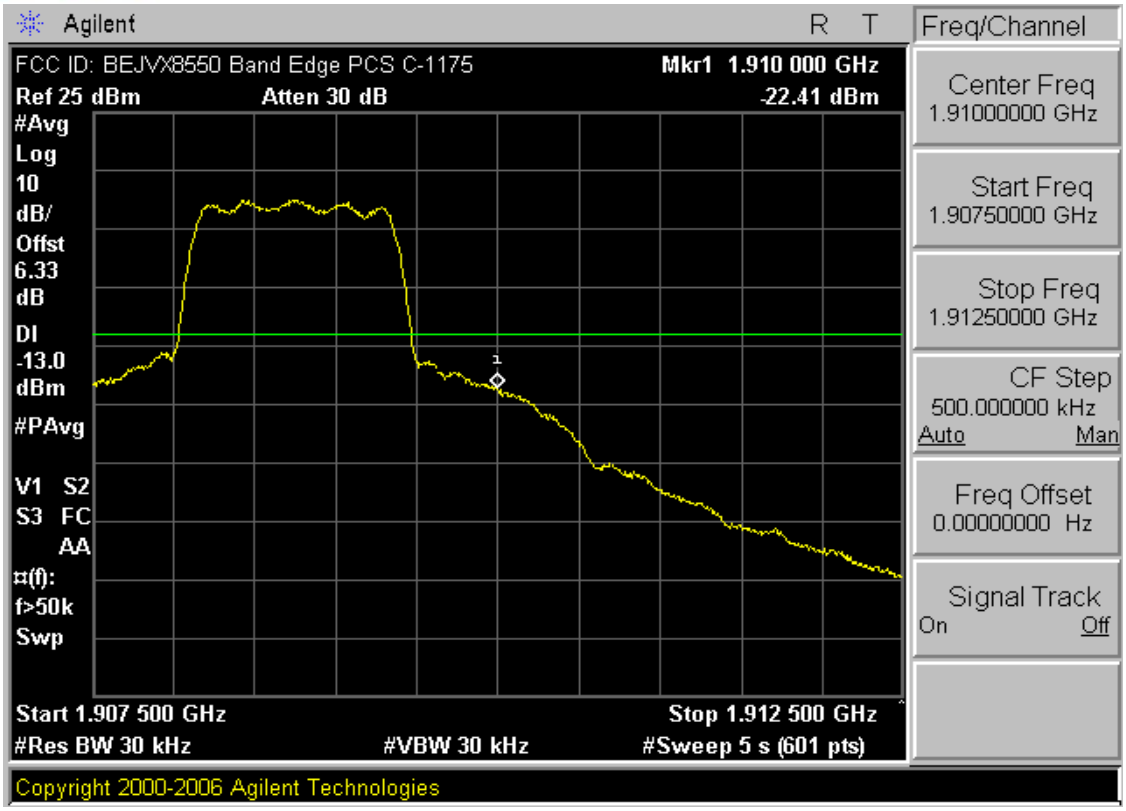
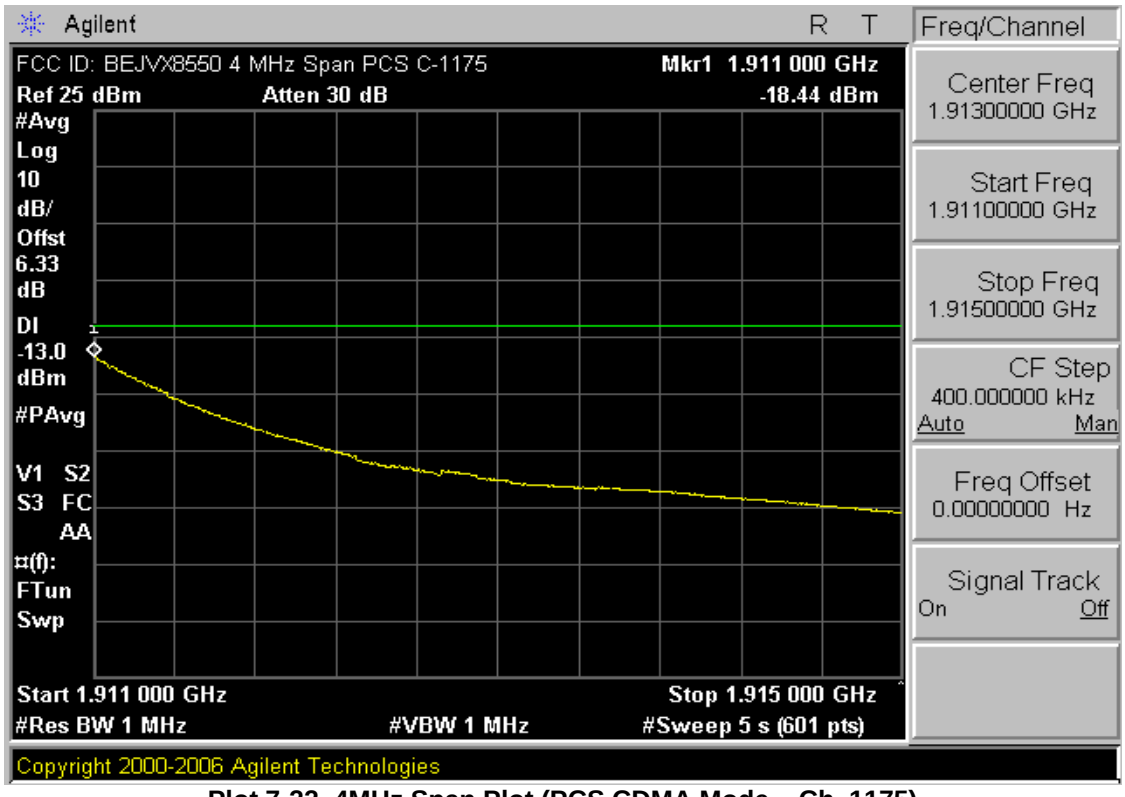


Plot 7-21. Band Edge Plot (PCS CDMA Mode – Ch. 1175)



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

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8.0 CONCLUSION

The data collected show that the **LG Cellular/PCS CDMA Phone with Bluetooth and EVDO FCC ID: BEJVX8550** complies with all the requirements of Parts 2, 22, and 24 of the FCC rules.

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