PCTEST ENGINEERING LABORATORY, INC.
6660-B Dobbin Road, Columbia, MD 21045 USA
Tel. 410.290.6652 / Fax 410.290.6554
http://www.pctestlab.com

CERTIFICATE OF COMPLIANCE
FCC Part 24 & 22 Certification

Applicant Name:
Sanyo Electric Co Ltd
c/o Sanyo Fisher Company
21605 Plummer Street
Chatsworth, CA 91311
USA

Date of Testing:
August 21 - 22, 2006
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Test Report Serial No.:
0608150675

FCC ID: **AEZSCP-M1**

APPLICANT: **SANYO ELECTRIC CO LTD**

Application Type:	Certification
FCC Classification:	PCS Licensed Portable Tx Held to Ear (PCE)
FCC Rule Part(s):	§24(E), §22(H); §2
EUT Type:	Dual-Band CDMA Phone with Bluetooth and EVDO
Model(s):	SCP-M1
Tx Frequency Range:	824.70 - 848.31 MHz (Cellular CDMA)1851.25 - 1908.75 MHz (PCS CDMA)
Rx Frequency Range:	869.70 - 893.31 MHz (Cellular CDMA) / 1931.25 – 1988.75 MHz (PCS CDMA)
Max. RF Output Power:	0.289 W ERP Cellular CDMA (24.613 dBm) / 0.447 W EIRP PCS xCDMA (26.501 dBm)
Max. SAR Measurement:	1.22 W/kg PCS Head SAR; 0.583 W/kg PCS Body SAR 0.711 W/kg CDMA Head SAR; 0.472 W/kg CDMA Body SAR
Emission Designator(s):	1M25F9W (CDMA) / 1M25F9W (PCS)
Test Device Serial No.:	*identical prototype* [S/N: FCC No. 1]

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 1.9cm 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

2041.01

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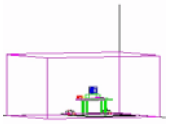
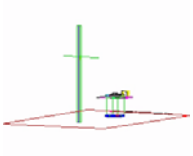
1.0 SCOPE



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



§2.1033 General Information

Applicant Name:	Sanyo Electric Co Ltd
Address:	c/o Sanyo Fisher Company 21605 Plummer Street Chatsworth, CA 91311 USA

- FCC ID: AEZSCP-M1
- Quantity: Quantity production is planned
- Emission Designators: 1M25F9W
- Tx Freq. Range: 824.70 - 848.31 MHz (Cellular CDMA)
  1851.25 - 1908.75 MHz (PCS CDMA)
- Rx Freq. Range: 869.70 - 893.31 MHz (Cellular CDMA)
  1931.25 – 1988.75 MHz (PCS CDMA)
- Max. Power Rating: 0.289 W ERP Cellular CDMA (24.613 dBm) / 0.447 W EIRP PCS xCDMA (26.501 dBm)
- FCC Classification(s): PCS Licensed Portable Tx Held to Ear (PCE)
- Equipment (EUT) Type: Dual-Band CDMA Phone with Bluetooth and EVDO
- Modulation(s): CDMA
- Frequency Tolerance: ±0.00025 % (2.5 ppm)
- FCC Rule Part(s): § 24(E), §22(H)
- Dates of Tests: August 21 - 22, 2006
- Place of Tests: PCTEST Lab, Columbia, MD U.S.A.
- Test Report S/N: 0608150675

Note: Deviation from measurement procedure - None

2.0 INTRODUCTION

2.1 Testing Facility

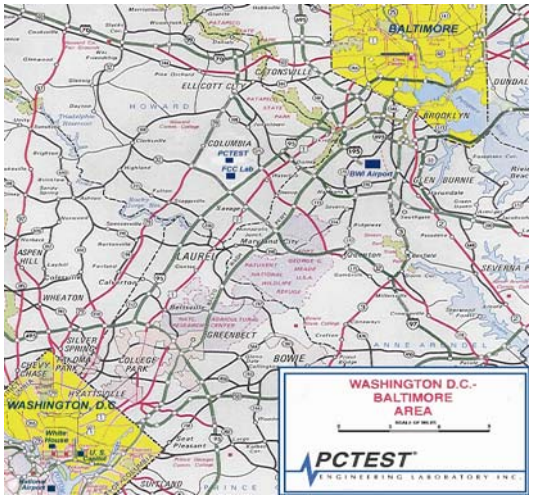


Figure 1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area.

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.

2.2 Measurement Procedure

The radiated spurious measurements were made outdoors at a 3-meter test range (see Figure2). 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.

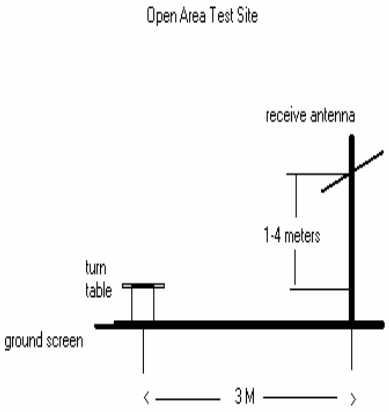


Figure 2. Diagram of 3-meter outdoor test range

3.0 INSERTS

Function of Active Devices (Confidential)

Block & Schematic Diagrams (Confidential)

Operating Instructions

Parts List & Tune-Up Procedure (Confidential)

Description of Freq. Stabilization Circuit (Confidential)

Description for Suppression of Spurious Radiation, for Limiting Modulation, and Harmonic Suppression Circuits (Confidential)

Note: These exhibits are not included within this report.

4.0 DESCRIPTION OF TESTS

4.1 Occupied Bandwidth Emission Limits

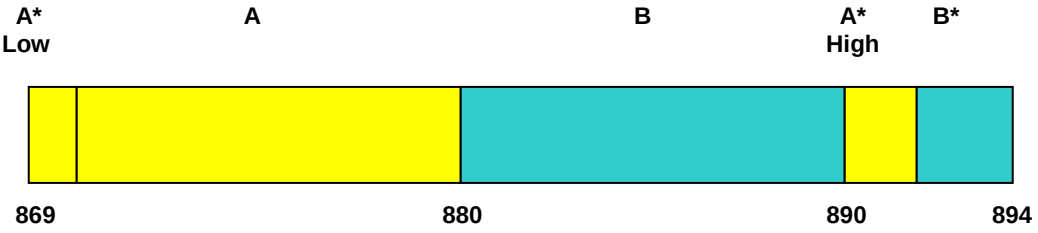
a. On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log(P) dB.

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.

4.2 Cellular - Base Frequency Blocks



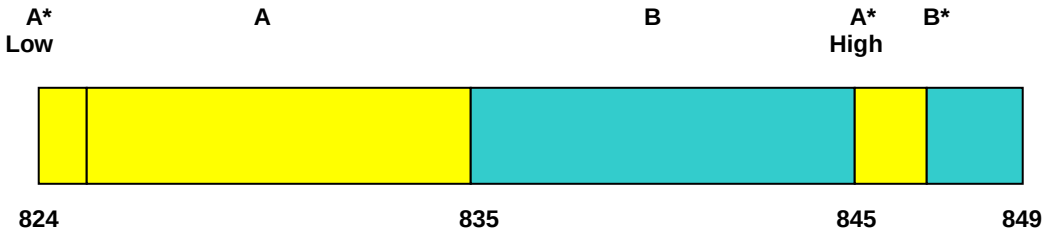
BLOCK 1: 869 – 880 MHz (A* Low + A)

BLOCK 3: 890 – 891.5 MHz (A* High)

BLOCK 2: 880 – 890 MHz (B)

BLOCK 4: 891.5 – 894 MHz (B*)

4.3 Cellular - Mobile Frequency Blocks



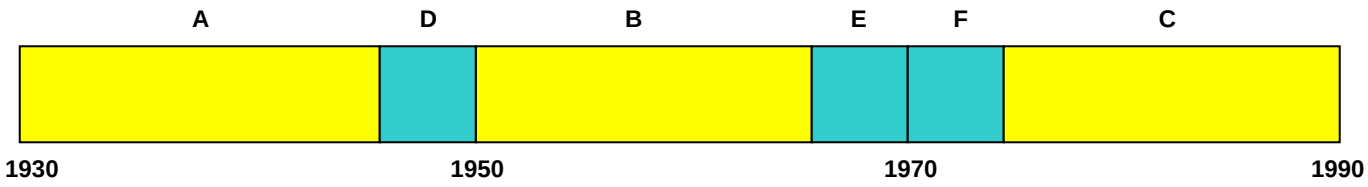
BLOCK 1: 824 – 835 MHz (A* Low + A)

BLOCK 3: 845 – 846.5 MHz (A* High)

BLOCK 2: 835 – 845 MHz (B)

BLOCK 4: 846.5 – 849 MHz (B*)

4.4 PCS - Base Frequency Blocks



BLOCK 1: 1930 – 1945 MHz (A)

BLOCK 2: 1945 – 1950 MHz (D)

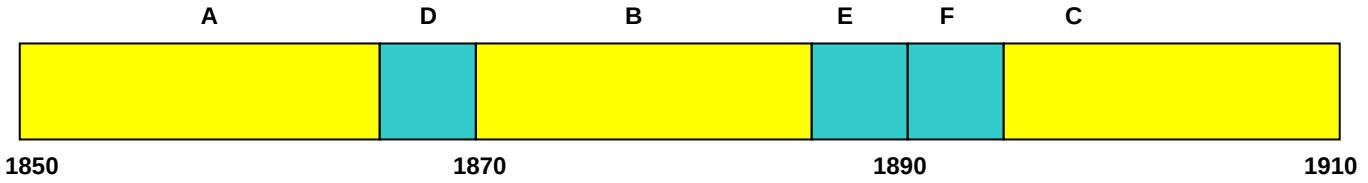
BLOCK 3: 1950 – 1965 MHz (B)

BLOCK 4: 1965 – 1970 MHz (E)

BLOCK 5: 1970 – 1975 MHz (F)

BLOCK 6: 1975 – 1990 MHz (C)

4.5 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)

4.6 Frequencies

At the input terminals of the spectrum analyzer, an isolator (RF pad) and a high-pass filter are connected between the test transceiver (for conducted tests) or the receive antenna (for radiated tests) and the analyzer. The high-pass filter (signals below 1.6 GHz) is to limit the fundamental frequency from interfering with the measurement of low-level spurious and harmonic emissions and to ensure that the preamplifier is not saturated.

4.7 Radiated Spurious and Harmonic Emissions

Radiation and harmonic 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 EvDO FTAP with "All Up" power control bits.

4.8 Frequency Stability / Temperature Variation

The frequency stability of the transmitter is measured by:

a.) **Temperature:** The temperature is varied from -30°C to +60°C using an environmental chamber.

b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the voltage normally at the input to the device or at the power supply terminals if cables are not normally supplied.

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 (22°C to 25°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 a three minute interval after applying power to the transmitter.

4. Frequency measurements are made at 10°C interval up to room temperature. At least a period of one and one half-hour is provided to allow stabilization of the equipment at each temperature level.

4.8 Frequency Stability / Temperature Variation (Cont'd)

5. Again the transmitter carrier frequency and the individual oscillators is measured at room temperature to begin measurement of the upper temperature levels.

6. Frequency measurements are at 10 intervals starting at -30°C up to +50°C allowing at least two hours at each temperature for stabilization. In all measurements the frequency is measured within three minutes after re-applying power to the transmitter.

7. The artificial load is mounted external to the temperature chamber.

NOTE: The EUT is tested down to the battery endpoint.

5.0 CONDUCTED OUTPUT POWER

This device was tested under all R.C.s and S.O.s and the worst case is reported with EvDO FTAP with "All Up" power control bits.

5.1 SAR Measurement Conditions for CDMA2000

The following procedures were followed according to FCC "SAR Measurement Procedures for 3G Devices", June 2006.

5.2 Output Power Verification

See 3GPP2 C.S0011/TIA-98-E as recommended by "SAR Measurement Procedures for 3G Devices", June 2006.

1. If the mobile station (MS) supports Reverse TCH RC 1 and Forward TCH RC 1, set up a call using Fundamental Channel Test Mode 1 (RC=1/1) with 9600 bps data rate only.
2. Under RC1, C.S0011 Table 4.4.5.2-1, Table 5-1 parameters were applied.
3. If the MS supports the RC 3 Reverse FCH, RC3 Reverse SCH0 and demodulation of RC 3,4, or 5, set up a call using Supplemental Channel Test Mode 3 (RC 3/3) with 9600 bps Fundamental Channel and 9600 bps SCH0 data rate.
4. Under RC3, C.S0011 Table 4.4.5.2-2, Table 5-2 was applied.
5. FCHs were configured at full rate for maximum SAR with "All Up" power control bits.

Parameter	Units	Value
$\hat{I}_{or}$	dBm/1.23 MHz	-104
$\frac{\text{Pilot } E_c}{I_{or}}$	dB	-7
$\frac{\text{Traffic } E_c}{I_{or}}$	dB	-7.4

Table 5-1
Parameters for Max. Power for RC1

Parameter	Units	Value
$\hat{I}_{or}$	dBm/1.23 MHz	-86
$\frac{\text{Pilot } E_c}{I_{or}}$	dB	-7
$\frac{\text{Traffic } E_c}{I_{or}}$	dB	-7.4

Table 5-2
Parameters for Max. Power for RC3

Table 5-3
Maximum Power Output Table for SCP-M1

Band	Channel	SO2	SO2	SO55	SO55	TDSO SO32	1x EvDO Rev. 0	1x EvDO Rev. 0
		RC1/1	RC3/3	RC1/1	RC3/3	RC3/3	(FTAP)	(RTAP)
Cellular	1013	23.38	23.38	23.41	23.40	23.36	22.72	23.18
	384	23.41	23.40	23.44	23.53	23.48	22.85	23.39
	777	23.52	23.51	23.54	23.50	23.46	22.90	23.40
PCS	25	23.59	23.43	23.53	23.44	23.49	23.15	23.54
	600	23.54	23.52	23.57	23.58	23.55	23.12	23.51
	1175	23.56	23.46	23.54	23.47	23.46	23.28	23.52

6.0 EFFECTIVE RADIATED POWER

6.1 Effective Radiated Power Output Data

POWER: High (CDMA Mode)

Freq. Tuned (MHz)	REF. LEVEL (dBm)	POL (H/V)	ERP (W)	ERP (dBm)	BATTERY
824.70	-16.660	H	0.289	24.613	Standard
836.52	-17.000	H	0.278	24.433	Standard
848.31	-17.400	H	0.262	24.183	Standard
836.52	-17.100	H	0.271	24.333	Extended

Note: Standard and extended batteries are options for this phone.

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 EvDO FTAP with "All Up" power control bits.

7.0 EQUIVALENT ISOTROPIC RADIATED POWER

7.1 Equivalent Isotropic Radiated Power Output Data

Radiated measurements at 3 meters

Supply Voltage: 3.7 VDC

Modulation: PCS CDMA

FREQ. (MHz)	REF. LEVEL (dBm)	POL (H/V)	Azimuth (o angle)	EIRP (dBm)	EIRP (W)	Battery
1851.25	-16.580	H	90	26.501	0.447	Standard
1880.00	-17.100	H	90	26.151	0.412	Standard
1908.75	-17.500	H	90	25.921	0.391	Standard
1880.00	-17.200	H	90	26.051	0.403	Extended

Note: Standard and extended batteries are options for this phone

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 EvDO FTAP with "All Up" power control bits.

8.0 RADIATED MEASUREMENTS

8.1 Cellular CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	824.70	MHz	
CHANNEL:	1013 (Low)		
MEASURED OUTPUT POWER:	24.613 dBm	=	0.289 W
MODULATION SIGNAL:	CDMA (Internal)		
DISTANCE:	3 meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	37.61	dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1649.40	-38.88	6.10	-32.78	H	57.4
2474.10	-40.28	6.70	-33.58	H	58.2
3298.80	-44.28	6.80	-37.48	H	62.1
4123.50	-85.68	6.50	-79.18	H	103.8
4948.20	-84.38	7.00	-77.38	H	102.0

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 EvDO FTAP with "All Up" power control bits.

8.1 Cellular CDMA Radiated Measurements (Cont'd)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 836.52 MHz
CHANNEL: 0384 (Mid)
MEASURED OUTPUT POWER: 24.613 dBm = 0.289 W
MODULATION SIGNAL: CDMA (Internal)
DISTANCE: 3 meters
LIMIT: $43 + 10 \log_{10} (W) =$ 37.61 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1673.04	-38.08	6.10	-31.98	H	56.6
2509.56	-43.38	6.70	-36.68	H	61.3
3346.08	-44.48	6.80	-37.68	H	62.3
4182.60	-85.78	6.50	-79.28	H	103.9
5019.12	-83.78	7.00	-76.78	H	101.4

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 EvDO FTAP with "All Up" power control bits.

8.1 Cellular CDMA Radiated Measurements (Cont'd)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 848.31 MHz
CHANNEL: 0777 (High)
MEASURED OUTPUT POWER: 24.613 dBm = 0.289 W
MODULATION SIGNAL: CDMA (Internal)
DISTANCE: 3 meters
LIMIT: $43 + 10 \log_{10}$ (W) = 37.61 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1696.62	-40.08	6.10	-33.98	H	58.6
2544.93	-43.58	6.70	-36.88	H	61.5
3393.24	-45.08	6.80	-38.28	H	62.9
4241.55	-85.68	6.50	-79.18	H	103.8
5089.86	-83.98	7.00	-76.98	H	101.6

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 EvDO FTAP with "All Up" power control bits.

8.2 PCS CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

CHANNEL: 0025 (Low)

MEASURED OUTPUT POWER: 26.501 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	-36.03	8.70	-27.33	H	53.8
5553.75	-41.23	9.70	-31.53	H	58.0
7405.00	-55.73	9.90	-45.83	H	72.3
9256.25	-77.43	11.40	-66.03	H	92.5
11107.50	-77.33	12.10	-65.23	H	91.7

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 EvDO FTAP with "All Up" power control bits.

8.2 PCS CDMA Radiated Measurements (Cont'd)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1880.00 MHz
CHANNEL: 0600 (Mid)
MEASURED OUTPUT POWER: 26.501 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	-35.33	8.70	-26.63	H	53.1
5640.00	-58.13	9.70	-48.43	H	74.9
7520.00	-45.03	9.90	-35.13	H	61.6
9400.00	-77.23	11.40	-65.83	H	92.3

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 EvDO FTAP with "All Up" power control bits.

8.2 PCS CDMA Radiated Measurements (Cont'd)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1908.75	MHz		
CHANNEL:	1175 (High)			
MEASURED OUTPUT POWER:	26.501	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	-38.03	8.70	-29.33	H	55.8
5726.25	-43.03	9.70	-33.33	H	59.8
7635.00	-55.13	9.90	-45.23	H	71.7
9543.75	-76.93	11.40	-65.53	H	92.0
11452.50	-76.93	12.10	-64.83	H	91.3

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 EvDO FTAP with "All Up" power control bits.

9.0 FREQUENCY STABILITY

9.1 Frequency Stability (Cellular CDMA)

8.4 FREQUENCY STABILITY (CDMA)

OPERATING FREQUENCY: 836,520,005 Hz

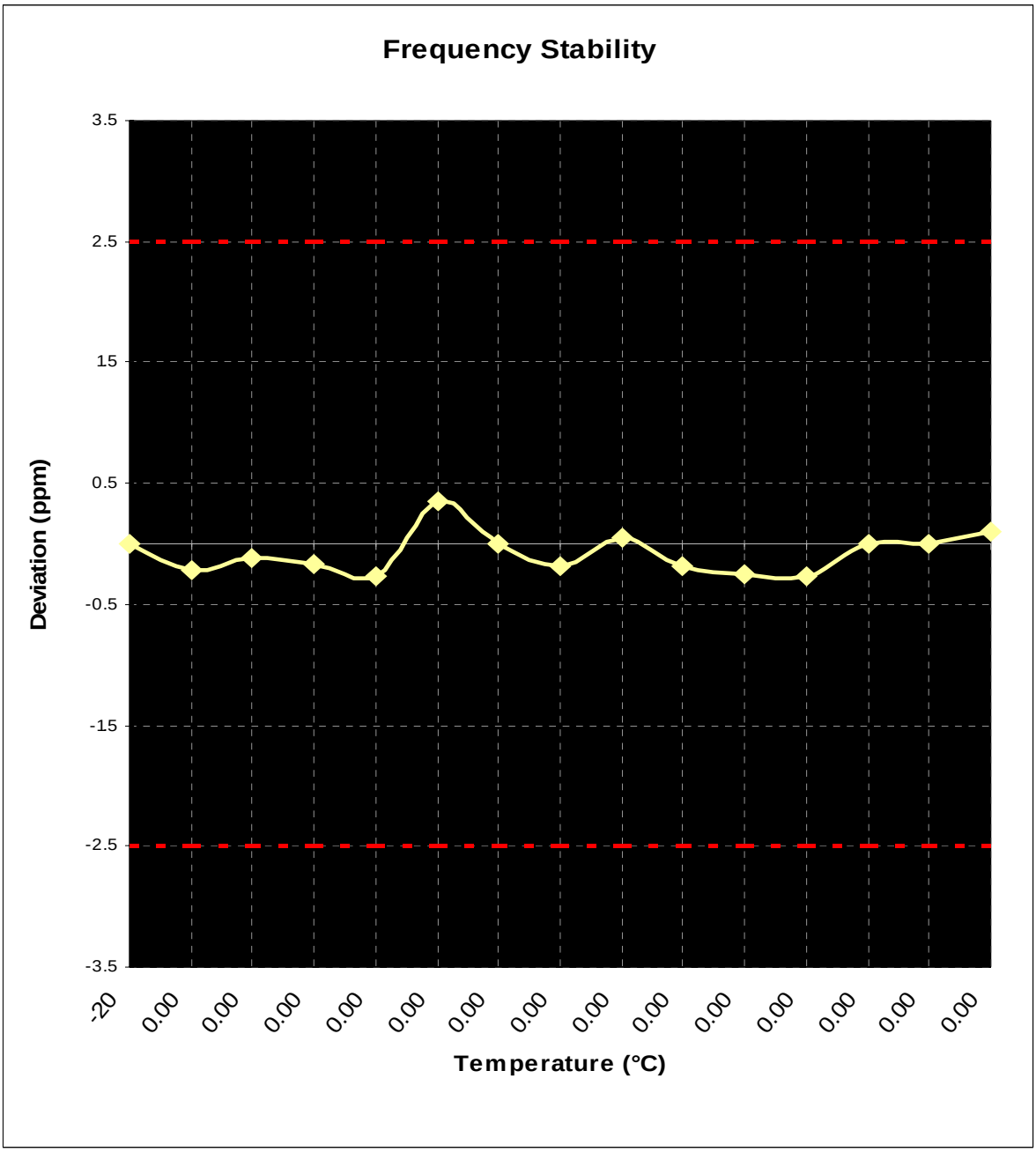
CHANNEL: 384

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)	836,520,005	0.00	0.000000
100 %		- 30	836,520,189	-184.03	-0.000022
100 %		-20	836,520,097	-92.02	-0.000011
100 %		-10	836,520,147	-142.21	-0.000017
100 %		0	836,520,222	-217.50	-0.000026
100 %		10	836,519,712	292.78	0.000035
100 %		20	836,520,005	0.00	0.000000
100 %		25	836,520,164	-158.94	-0.000019
100 %		30	836,519,963	41.83	0.000005
100 %		40	836,520,156	-150.57	-0.000018
100 %		50	836,520,214	-209.13	-0.000025
100 %		60	836,520,231	-225.86	-0.000027
85 %	3.15	20	836,520,005	0.00	0.000000
115 %	4.26	20	836,520,005	0.00	0.000000
BATT. ENDPOINT	2.9	20	836,519,921	83.65	0.000010

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



9.2 Frequency Stability (PCS CDMA)

8.6 FREQUENCY STABILITY (PCS CDMA)

OPERATING FREQUENCY: 1,880,000,011 Hz

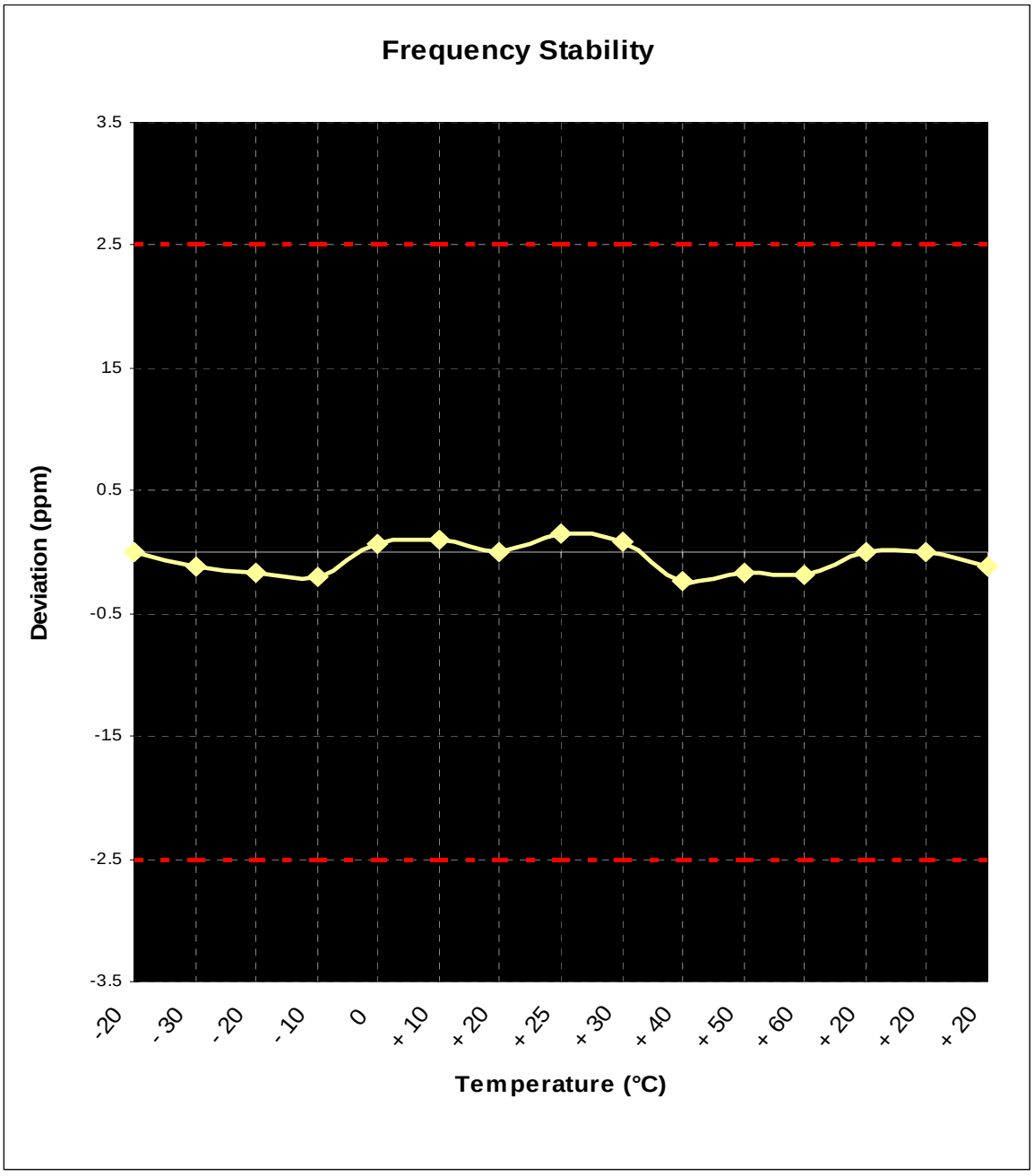
CHANNEL: 600

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)	1,880,000,011	0.00	0.000000
100 %		- 30	1,880,000,237	-225.60	-0.000012
100 %		- 20	1,880,000,312	-300.80	-0.000016
100 %		- 10	1,880,000,406	-394.80	-0.000021
100 %		0	1,879,999,898	112.80	0.000006
100 %		+ 10	1,879,999,823	188.00	0.000010
100 %		+ 20	1,880,000,011	0.00	0.000000
100 %		+ 25	1,879,999,729	282.00	0.000015
100 %		+ 30	1,879,999,861	150.40	0.000008
100 %		+ 40	1,880,000,462	-451.20	-0.000024
100 %		+ 50	1,880,000,312	-300.80	-0.000016
100 %		+ 60	1,880,000,349	-338.40	-0.000018
85 %	3.15	+ 20	1,880,000,011	0.00	0.000000
115 %	4.26	+ 20	1,880,000,011	0.00	0.000000
BATT. ENDPOINT	3.00	+ 20	1,880,000,218	-206.80	-0.000011

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



10.0 PLOT(S) OF EMISSIONS

(SEE ATTACHMENT A)

11.0 TEST EQUIPMENT

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

TYPE	MODEL	CAL. DUE DATE	CAL. INTERVAL	SERIAL No.
Microwave Spectrum Analyzer	Agilent E4448A (3Hz-50GHz)	09/19/06	Annual	US42510244
Spectrum Analyzer/Tracking Generator	HP 8591A (9kHz-1.8GHz)	09/12/06	Annual	3144A02458
Spectrum Analyzer	HP 8566B (100Hz-2.5GHz/2-22GHz)	12/22/06	Annual	3638A08713
Signal Generator	HP E8640D (500Hz-1GHz)	02/11/07	Annual	3613A00315
PSG Analog Signal Generator	Agilent E8257D (250kHz-20GHz)	03/08/07	Annual	MY45470194
5 Watt Amplifier	5S1G4 (800MHz-4.2GHz)	N/A	N/A	22332
Universal Radio Communication Tester	CMU200	04/20/07	Annual	836370/079
Universal Power Meter	Gigatronics 8651A (50MHz-18GHz)	07/28/07	Annual	1834052
Power Sensor	Gigatronics 80701A	04/11/07	Annual	1833460
Quasi-Peak Adapter	HP 85650A	08/09/07	Annual	2043A00301
Preamplifier	HP 8449B (1-26.5GHz)	12/22/06	Annual	3008A00985
Attenutation/Switch Driver	HP 11713A	12/22/06	Annual	N/A
Preselector	HP 85685A (20Hz-2GHz)	12/22/06	Annual	N/A
6dB Res BW Spec. Analyzer Display	OPT 462	12/22/06	Annual	3701A22204
Ailtech/Eaton Adapter	CCA-7 CISPR/ANSI QP Adapter	12/19/06	Annual	0194-04082
Ailtech/Eaton Receiver	NM 37/57A (30MHz – 1GHz)	06/07/07	Annual	0805-03334
Broadband Amplifier (2)	HP 8447D (0.1 – 1300MHz)	N/A	N/A	2443A01900, 1937A03348
Horn Antenna	EMCO Model 3115 (1-18GHz)	08/25/07	Bi-Annual	9704-5182
Horn Antenna	EMCO Model 3116 (18-40GHz)	08/25/07	Bi-Annual	9203-2178
Roberts Dipoles	Compliance Design (1 set) A100	08/31/06	Annual	5118
EMCO Dipoles (2)	N/A	05/08/07	Annual	00023951
EMCO LISN (3)	3816/2, 3816/2, 3725/2	10/26/06	Annual	1077, 1079, 2099
10dB Attenuator	HP 8493B	N/A	N/A	N/A
Microwave Cables	MicroCoax (1.0-26.5GHz)	02/26/07	Annual	N/A
Shielded Screen Room	RF Lindgren Model 26-2/2-0	N/A	N/A	6710 (PCT270)
Shielded Semi-Anechoic Chamber	Ray Proof Model S81	N/A	N/A	R2437 (PCT278)
Environmental Chamber	Associated Systems 1025	08/08/07	Annual	PCT285
OATS	N/A	01/27/2009	Tri-annual	N/A

Table 11-1. Test Equipment

12.0 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.

13.0 CONCLUSION

The data collected shows that the Sanyo Dual-Band CDMA Phone with Bluetooth and EVDO FCC ID: AEZSCP-M1 complies with all the requirements of Parts 2, 22, and 24 of the FCC rules.