

**Test Report On**  
**Single Band Single mode CDMA Cellular Phone**

<b>FCC Part 24 Certification</b>	
FCC ID:	<b>OVFKWC-KX9D</b>
Models:	<b>KX9D</b>
Date:	<b>April 3, 2006</b>

<b>STATEMENT OF CERTIFICATION</b>	
<i>The data, data evaluation and equipment configuration represented herein are a true and accurate representation of the measurements of the sample's radio frequency interference emissions characteristics as of the dates and at the times of the test under the conditions herein specified.</i>	
<b>STATEMENT OF COMPLIANCE</b>	
<i>This product 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>	
<b>Date of Test:</b>	March 29, 2006 – April 3, 2006
<b>Test performed by:</b>	Kyocera Wireless Corp. 10300 Campus Point Drive San Diego, CA 92121
<b>Report Prepared by:</b>	Thuy To, Regulatory Engineer
<b>Report Reviewed by:</b>	C.K. Li, Hardware Engineering Senior Staff Manager
Nemko USA, Inc. performed the tests that required an OATS site.	

## Table of Contents

<b>1</b>	<b>GENERAL INFORMATION .....</b>	<b>3</b>
<b>2</b>	<b>PRODUCT DESCRIPTION .....</b>	<b>4</b>
<b>3</b>	<b>ELECTRONIC SERIAL NUMBERS (ESN) PROTECTION.....</b>	<b>5</b>
<b>4</b>	<b>FCC COMPLIANCE EMERGENCY 911 .....</b>	<b>5</b>
<b>5</b>	<b>TTY COMPLIANCE.....</b>	<b>5</b>
<b>6</b>	<b>TRANSMITTER RF POWER OUTPUT .....</b>	<b>6</b>
6.1	CONDUCTED POWER .....	6
6.2	RADIATED POWER.....	7
<b>7</b>	<b>OCCUPIED BANDWIDTH.....</b>	<b>8</b>
<b>8</b>	<b>SPURIOUS EMISSIONS AT ANTENNA TERMINALS .....</b>	<b>12</b>
<b>9</b>	<b>TRANSMITTER RADIATED SPURIOUS EMISSIONS MEASURED DATA .....</b>	<b>15</b>
<b>10</b>	<b>RECEIVER SPURIOUS EMISSIONS .....</b>	<b>15</b>
<b>11</b>	<b>TRANSMITTER RF CARRIER FREQUENCY STABILITY .....</b>	<b>15</b>
11.1	CDMA 1900 MODE.....	16
<b>12</b>	<b>EXPOSURE OF HUMANS TO RF FIELDS (SAR).....</b>	<b>17</b>
<b>13</b>	<b>TEST EQUIPMENT .....</b>	<b>17</b>

**1 General Information**

<b>Applicant:</b>	Kyocera Wireless Corp. 10300 Campus Point Drive San Diego CA 92121
<b>FCC ID:</b>	OVFKWC-KX9D
<b>Product:</b>	Single-Band Single-Mode Digital Phone
<b>Model Numbers:</b>	KX9D
<b>EUT Serial Number:</b>	F0000005671159, F0000005671116
<b>Type:</b>	<input type="checkbox"/> Prototype, <input checked="" type="checkbox"/> Pre-Production, <input type="checkbox"/> Production
<b>Device Category:</b>	Portable
<b>RF Exposure Environment:</b>	General Population / Uncontrolled
<b>Antenna:</b>	Stubby
<b>Detachable Antenna:</b>	No
<b>External Input:</b>	Audio/Digital Data
<b>Quantity:</b>	Quantity production is planned
<b>FCC Rule Parts:</b>	§24E
<b>Modes:</b>	1900 CDMA
<b>Multiple Access Scheme:</b>	CDMA
<b>TX Frequency (MHz):</b>	1850 - 1910
<b>Emission Designators:</b>	1M25F9W
<b>Max. Output Power (W):</b>	0.286 EIRP

## 2 Product Description

The OVFKWC-KX9D phones are Single Band Single mode products. The phones have assisted GPS software feature enabled to meet the emergency location requirements of the FCC's E911 Phase II mandate. The Single mode architecture is defined as 1900MHz (PCS CDMA).

The phone is designed in compliance with the technical specifications for compatibility of mobile and base stations in the Cellular Radio telephone service contained in "Cellular System Mobile Station -Land Station Compatibility Specification" as specified in OET Bulletin 53 and TIA Standards

As described in Exhibit 1 (operation description), OVFKWC-KX9D can operate in the CDMA mode specified in IS-2000.2 standard, release 0. It can only invoke a Spreading Rate 1 (SR1) operational mode. SR1 is defined as a 1.2288 Mcps chip rate-based system using a direct-spread single carrier, which limits the bandwidth to the same 1.25MHz bandwidth occupied by the legacy IS-95/8-A/B system. Thus, for SR1 in IS-2000, the frequency response is identical to the legacy IS-95 B system standard.

For Part 24, all of CDMA measurements were conducted with Agilent 8960 as a base station simulator. The base station simulator establishes a CDMA link with the test device. The CDMA link was configured via 8960 for all of measurements as follows:

Radio Configuration: RC1  
Service Options: SO2  
Code domain channels: R-FCH + R-PICH  
Cell Power: -100 dBm/1.23MHz to -103 dBm/1.23MHz  
Data Rate: full rate

### 3 Electronic Serial Numbers (ESN) Protection

The Single mode Phone, FCC ID: OVFKWC-KX9D uses ESN. The ESN is a unique identification number to each phone, which is contained in the Numeric Assignment Module and is automatically transmitted to the base station whenever a call is placed. The ESN is stored in an EPROM and is isolated from fraudulent contact and tampering. Any attempt to change the ESN will render the portable phone inoperative.

The phone complies with all requirements for ESN under Part 22.919.

### 4 FCC Compliance Emergency 911

<b>FCC § 22.921</b>
When an emergency 911 call is originated by the user, the mobile will attempt to acquire any available system and originate the emergency call on that system, disregarding restrictions set by the roaming list. The FCC NPRM WT99-13, CC94-102 automatic analog A/B roaming option has been implemented for 911 emergency calls.

### 5 TTY compliance

<b>FCC § 255 of the Telecom Act</b>
The OVFKWC-KX9D phone models have been designed for TTY Compliance with Cellular Compatibility Standard.

## 6 Transmitter RF Power Output

### 6.1 Conducted Power

<b>FCC: § 2.1046</b>
<p><b>Measurement Procedures:</b></p> <p>The RF output power was measured using a Giga-tronics 8541C Universal Power Meter. Terminated to a resistive coaxial load of 50 ohms.</p>

Mode	Frequency (MHz)	Channel	Power (dBm)
CDMA 1900	1851.25	25	23.09
	1880.00	600	23.02
	1908.75	1175	23.03

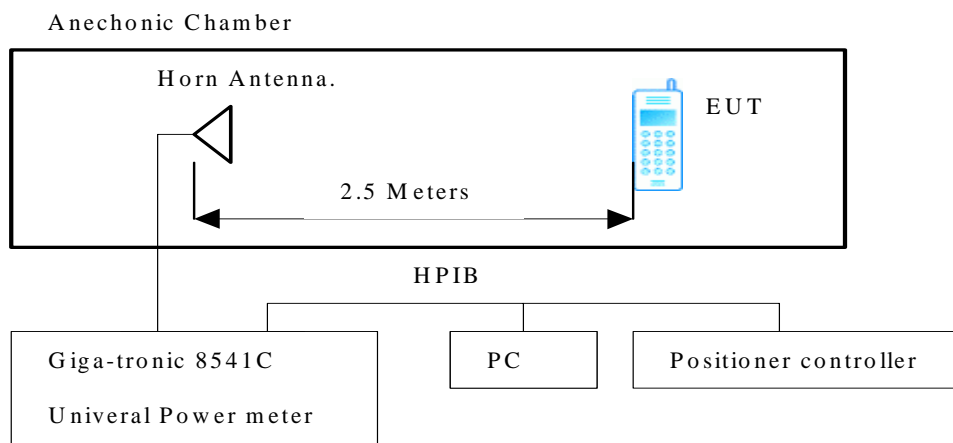
## 6.2 Radiated Power

FCC: § 24.232

### Measurement Procedures:

The EUT was positioned on a 2-axis non-conductive positioner inside an anechoic chamber.

The phone control software set the EUT conducted power. During tests, the phone was rotated 360 degree in azimuth and elevation by an automated antenna measurement workstation. Maximum radiated power was recorded using a Giga-tronics 8541C Universal Power Meter. All measurement results are EIRP in dBm. For ERP, subtract 2.1 dB from the EIRP data.



Mode	Frequency (MHz)	Channel	Max. Power (dBm)	Ref.
CDMA 1900	1851.25	25	24.28	EIRP
	1880.00	600	24.58	
	1908.75	1175	24.56	

## 7 Occupied Bandwidth

<b>FCC:</b> § 2.1049, § 24.238
<p><b>Measurement Procedures:</b>          The RF output of the EUT was connected to the input of the spectrum analyzer with sufficient attenuation. The spectrum with no modulation was recorded.</p> <p><u>For Digital:</u> Modulate with full rate.</p> <p><b>Pass/Fail Criteria:</b></p> <ul style="list-style-type: none"> <li>In-Band: See Figures below.</li> <li>Block-edge compliance: &lt;-13dBm</li> </ul>

**Equipment Setting:**

	Span	RBW	VBW
PCS Block-Edge Compliance	5 MHz	30kHz	30kHz

List of Figures

Figure	Mode	Description
7-1	CDMA 1900	CDMA @ CH600
7-2		ACPR Lower Band Edge @ CH 25
7-3		ACPR Upper Band Edge @ CH 1175
7-4		Lower Edge @ CH 25
7-5		Upper Edge @ CH 1175



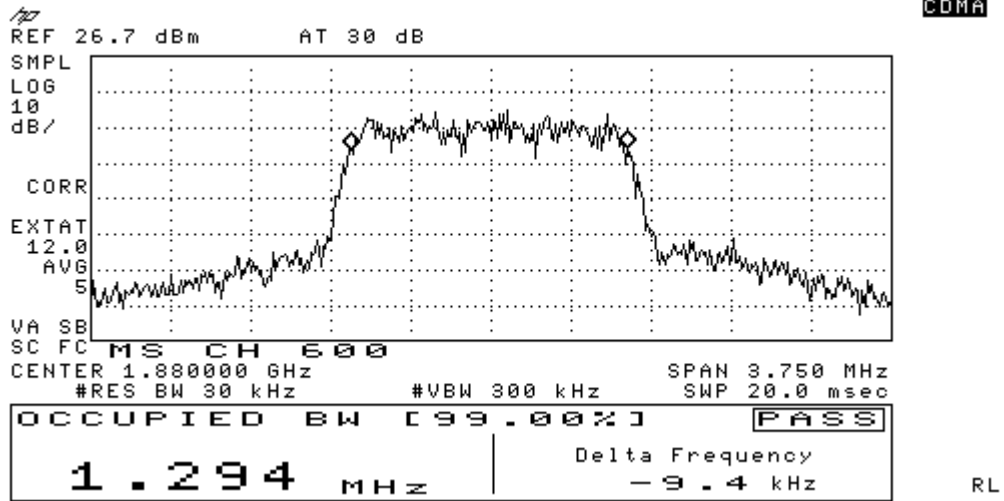


Figure 7-1 CDMA 1900 @ CH 600

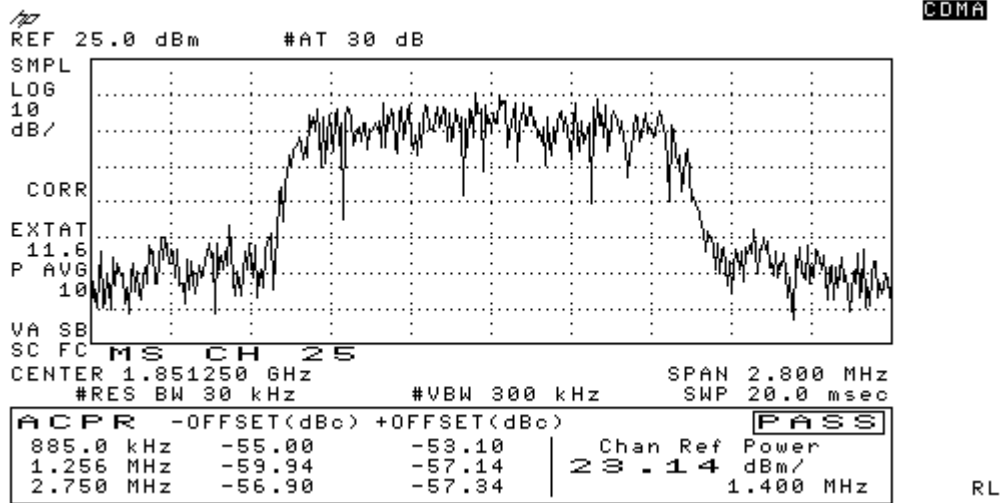


Figure 7-2 CDMA 1900 Lower Band Edge

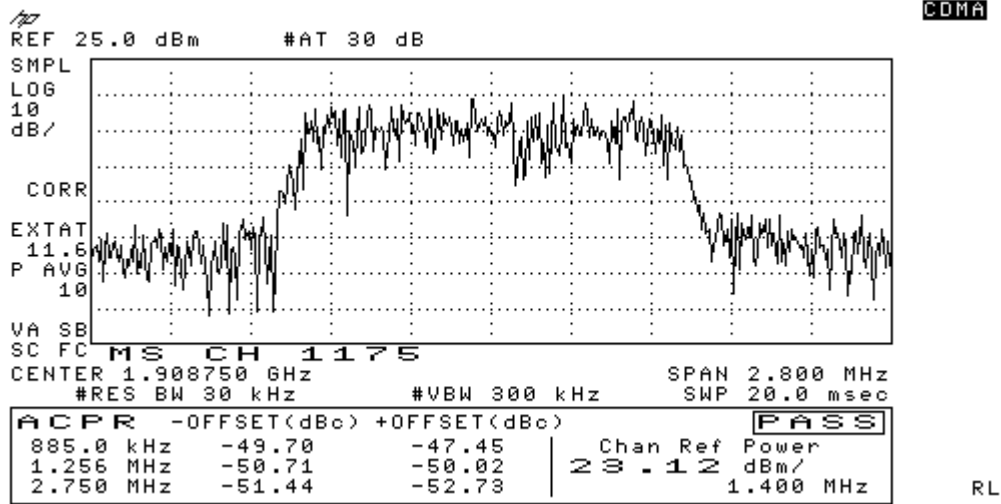


Figure 7-3 CDMA 1900 Upper Band Edge

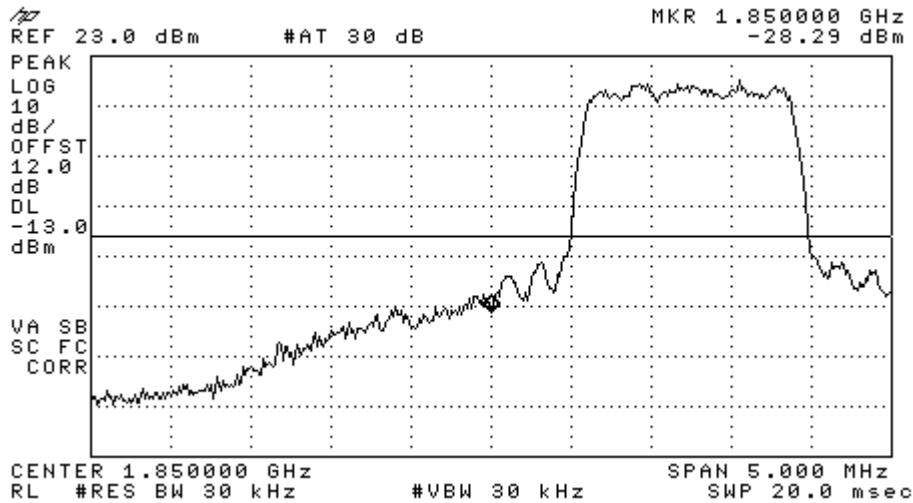
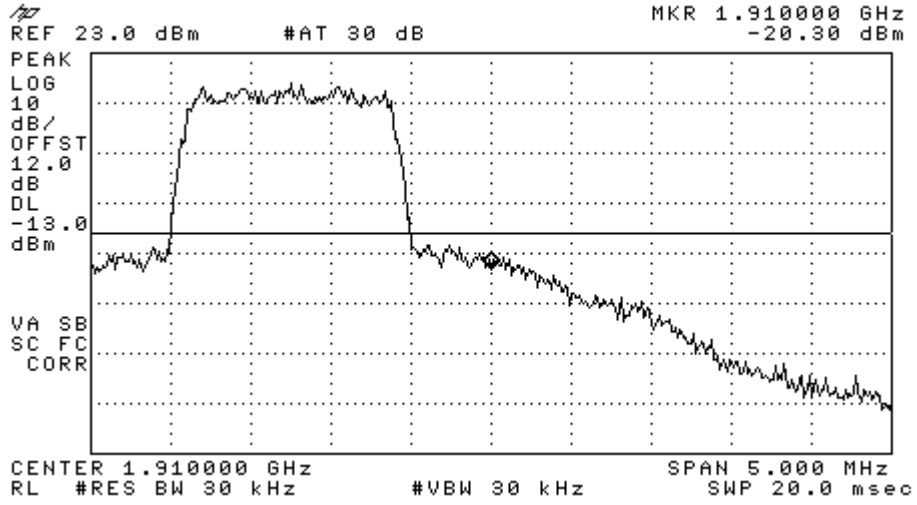


Figure 7-4 Lower edge, Channel 25



**Figure 7-5 Upper edge, Channel 1175**

## 8 Spurious Emissions At Antenna Terminals

<b>FCC:</b>	<b>§ 2.1051, § 24.238</b>
<b>Measurement Procedures:</b>	
<p><u>Out of Band:</u> The RF output of the EUT was connected to the input of the spectrum analyzer with sufficient attenuation. The modulating signal was applied accordingly. The frequency spectrum was investigated from the lowest frequency signal generated up to at least the tenth harmonic of the fundamental.</p>	
<p><u>Base Band:</u> Spectrum was investigated from 1851-1908 MHz for PCS.</p>	

***List of Figures:***

Figure	Mode	Channel	Plot Description
8-1	CDMA 1900	25	Conducted spurious emissions, 9kHz to 20GHz
8-2		600	Conducted spurious emissions, 9kHz to 20GHz
8-3		1175	Conducted spurious emissions, 9kHz to 20GHz

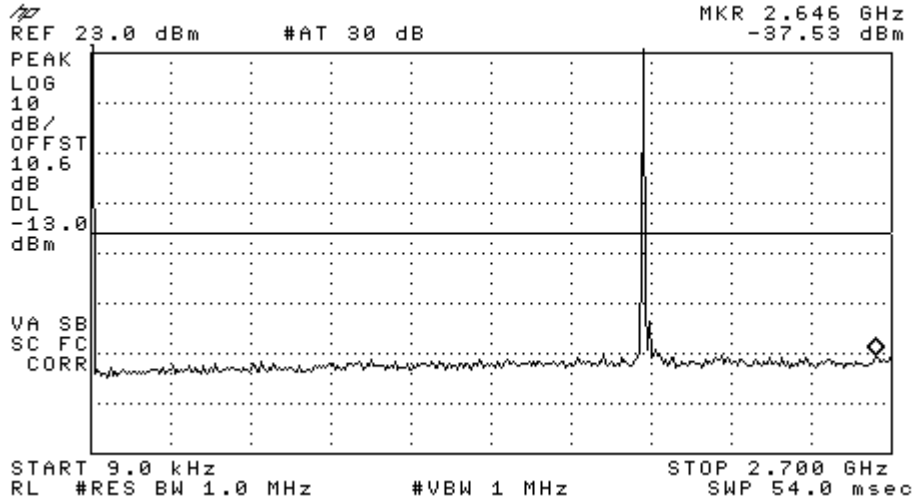


Figure 8-1a CDMA 1900 - Conducted Spurious Emission (CH 25)

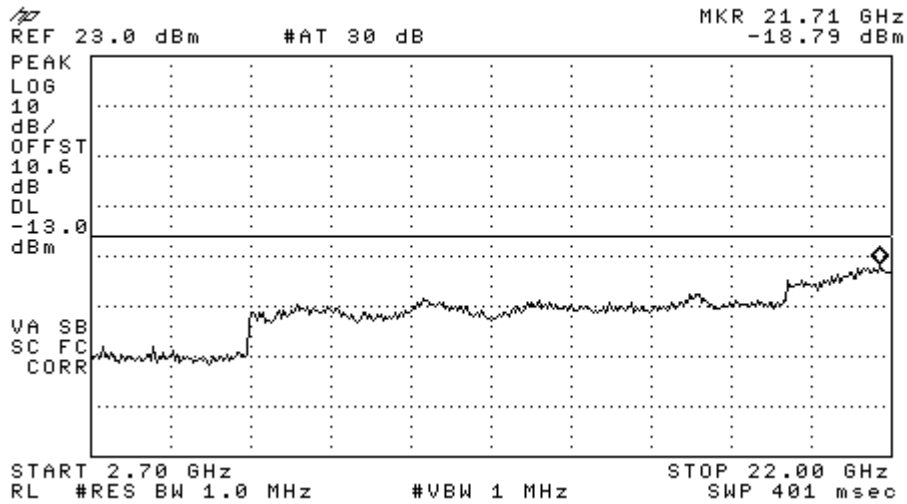


Figure 8-1b CDMA 1900 - Conducted Spurious Emission (CH 25)

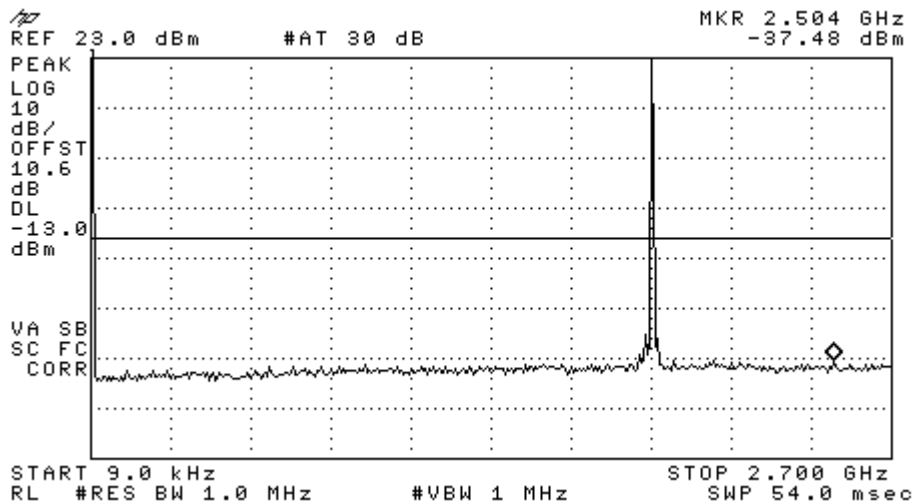


Figure 8-2a CDMA 1900 - Conducted Spurious Emission (CH 600)

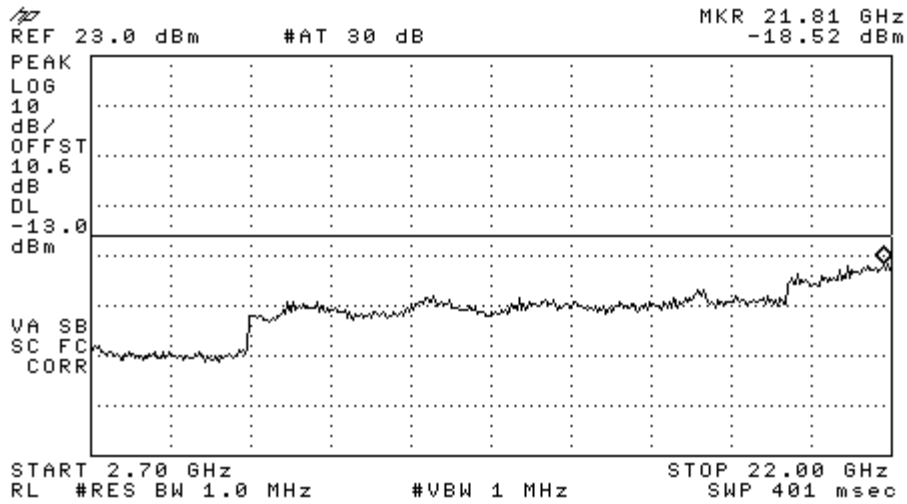


Figure 8-2b CDMA 1900 - Conducted Spurious Emission (CH 600)

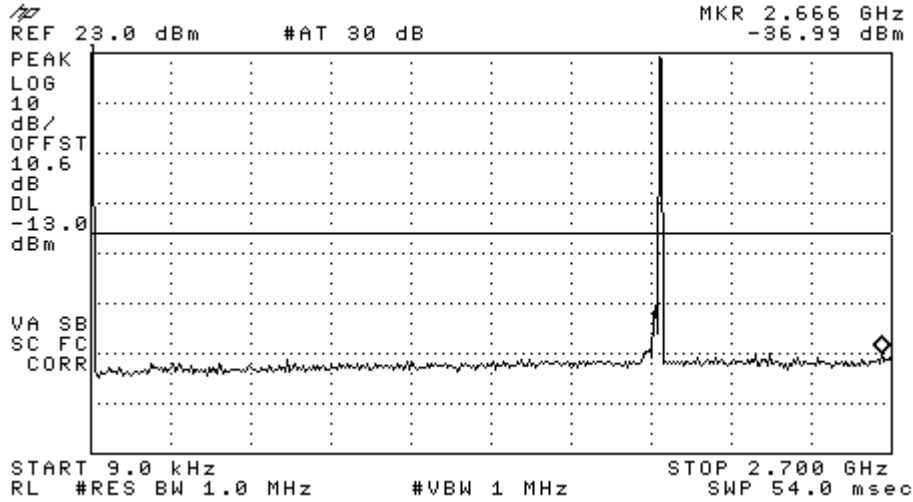


Figure 8-3a CDMA 1900 - Conducted Spurious Emission (CH 1175)

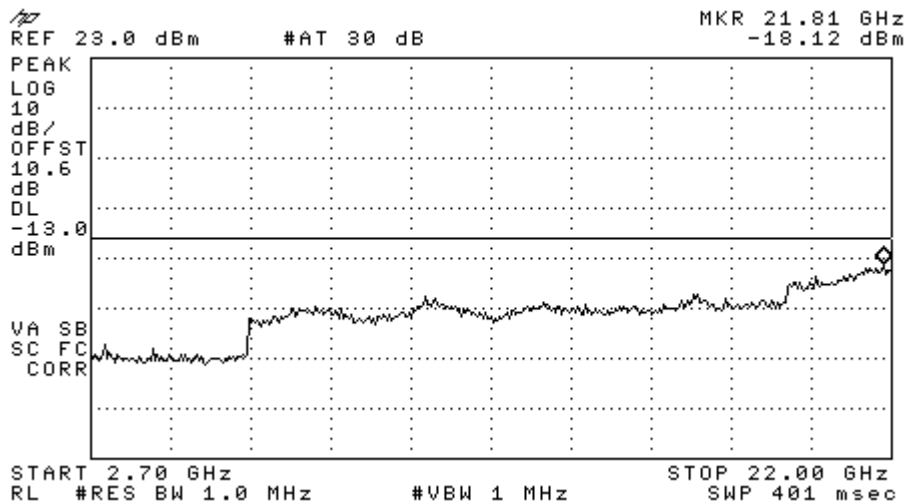


Figure 8-3b CDMA 1900 - Conducted Spurious Emission (CH 1175)

## 9 Transmitter Radiated Spurious Emissions Measured Data

**FCC:** § 2.1053, § 24.238

**Measurement Procedures:**

The radiated spurious emission test was performed at Nemko in San Diego, California. The test report is attached in a separate attachment.

## 10 Receiver Spurious Emissions

**FCC:** § 15.109

**Measurement Procedures:**

The receiver radiated spurious emission test was performed at Nemko in San Diego, California. The test report is attached in a separate attachment.

## 11 Transmitter RF Carrier Frequency Stability

**FCC:** § 2.1055, § 24.235

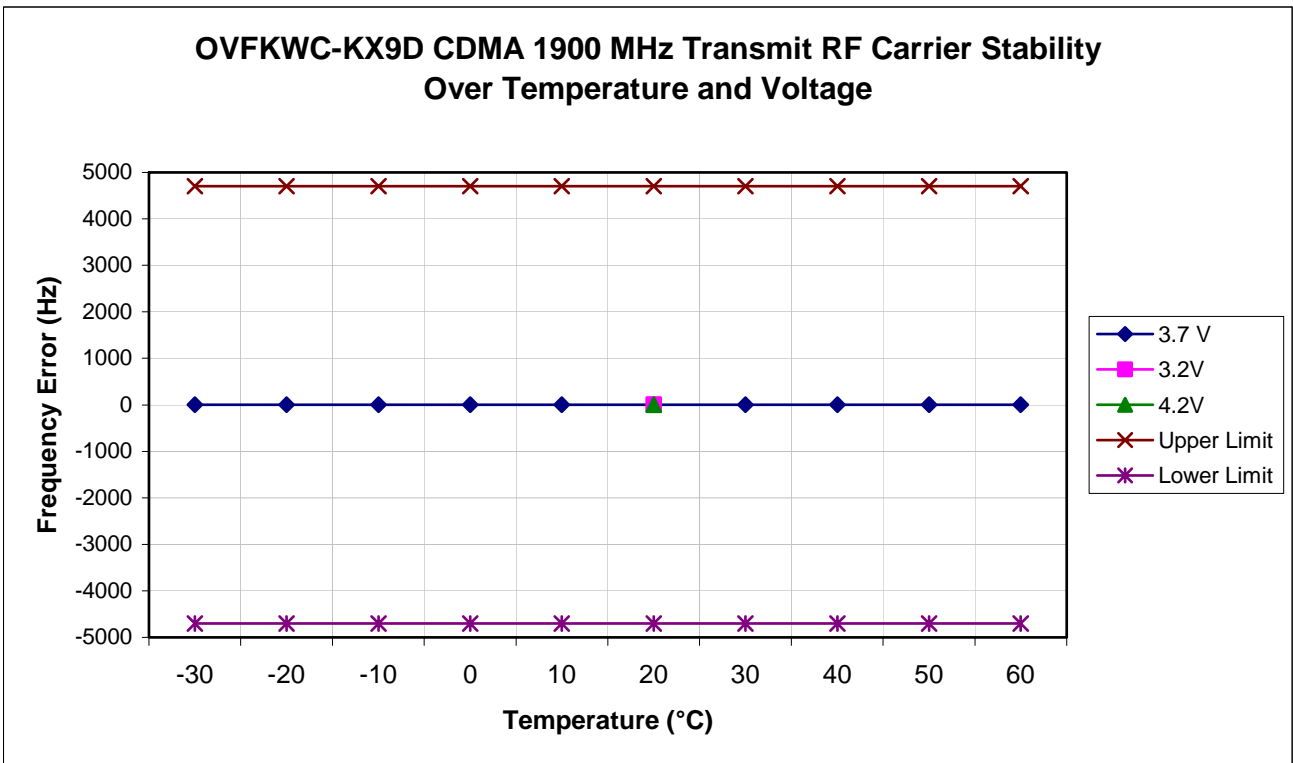
**Measurement Procedures:**

The EUT was placed in an environmental chamber. The RF output of the EUT was connected to Agilent 8960 Series 10 E5515C. A power supplier was connected as primary voltage supply.

## 11.1 CDMA 1900 Mode

<b>Tx Frequency:</b>	1880.00 MHz	<b>Voltage :</b>	3.7V
<b>Tolerance:</b>	+/- 2.5 Ppm (+/-4700 Hz)	<b>Ch:</b>	600

Temperature (°C)	Deviation of Carrier (Hz)			Specification (Hz)	
	3.2V (Battery endpoint)	3.7V	4.26V (115%)	Lower limit	Upper limit
-30		2.74		-4700	4700
-20		2.69		-4700	4700
-10		2.93		-4700	4700
0		1.14		-4700	4700
10		2.56		-4700	4700
20	<b>0.57</b>	<b>0.94</b>	<b>1.85</b>	-4700	4700
30		-2.88		-4700	4700
40		2.16		-4700	4700
50		-2.02		-4700	4700
60		-2.20		-4700	4700





## 12 Exposure of Humans to RF Fields (SAR)

The SAR Test Report is shown in Exhibit 9 on a separate attachment.

## 13 Test Equipment

Description	Manufacturer	Model Number	Serial Number	Cal Due Date
Power Meter	Giga-tronics	8541C	1834884	03/03/07
Power Meter Sensor	Giga-tronics	80601A	1831770	04/28/06
Spectrum Analyzer	Hewlett Packard	8593EM	3710A00203	03/23/07
Spectrum Analyzer	Hewlett Packard	8594E	3810A04238	04/16/06
Spectrum Analyzer	Rohde & Schwarz	FSEA	DE13693	03/19/07
Wireless Communications Test Set	Agilent	8960	US41140252	09/16/06
CDMA Mobile Station Test Set	Hewlett Packard	8924C	US37482647	09/16/06
Temperature Chamber	Test Equity	105	0500507	09/02/06