

**SAR Test Report on**  
**Dual-Band CDMA Cellular Phone with Bluetooth and EVDO**

**FCC Part 22 & 24 Certification**

FCC ID: **OVFK60-E2-5G5**

MODEL: **E2000**

DATE: **June 25, 2007**

**STATEMENT OF COMPLIANCE**

Kyocera Wireless Corp declares under its sole responsibility that the product, FCC ID: OVFK60-E2-5G5 to which this declaration relates, is in conformity with the appropriate General Population/Uncontrolled RF exposure standards, recommendations and guidelines. It also declares that the product was tested in accordance with the appropriate measurement standards, guidelines and recommended practices.

Any deviations from these standards, guidelines and recommended practices are noted: NONE.

<b>Date of Test:</b>	June 12 – June 22, 2007
<b>Test performed by:</b>	Kyocera Wireless Corp. 10300 Campus Point Drive San Diego, CA 92121
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## 1 INTRODUCTION

This test report describes an environmental evaluation measurement of specific absorption rate (SAR) distribution in simulated human head tissues exposed to radio frequency (RF) radiation from a wireless portable device manufactured by Kyocera Wireless Corp. (KWC). These measurements were performed for compliance with the rules and regulations of the U.S. Federal Communications Commission (FCC). The testing was performed in accordance with FCC OET Bulletin 65 Supplement C (01/01) and IEEE P1528/D1.2 issued on April 21, 2003.

## 2 EQUIPMENT UNDER TEST (EUT)

The wireless device is described as follows:

<b>FCC ID:</b>	OVFK60-E2-5G5		
<b>Product:</b>	Dual-Band CDMA Phone with Bluetooth and EVDO		
<b>Trade Name:</b>	Kyocera Wireless Corp.		
<b>Model Number:</b>	E2000		
<b>EUT S/N:</b>	FFE20000000953		
<b>Type:</b>	<input checked="" type="checkbox"/> Identical Prototype, <input type="checkbox"/> Pre-production		
<b>Device Category:</b>	Portable		
<b>RF Exposure Environment:</b>	General Population / Uncontrolled		
<b>Antenna Type:</b>	Internal	<b>Antenna Location:</b>	Bottom of Lower Flip
<b>Detachable Antenna:</b>	No	<b>Antenna Dimensions (mm):</b>	37.3(L), 7.28(W), 0.15(H)
<b>External Input:</b>	Audio/Digital Data		
<b>Quantity:</b>	Quantity production is planned		
<b>FCC Rule Parts:</b>	§22H	§24H	
<b>Modes:</b>	800 CDMA	1900 CDMA	
<b>Multiple Access Scheme:</b>	CDMA	CDMA	
<b>Duty Cycle:</b>	1:1	1:1	
<b>TX Frequency (MHz):</b>	824 – 849	1850 - 1910	
<b>Emission Designators:</b>	1M25F9W	1M25F9W	
<b>Max. Output Power (W):</b>	0.617 ERP	1.072 EIRP	

**3 PRODUCT DESCRIPTION**

The phones OVFK60-E2-5G5 are Dual-Band CDMA with Bluetooth and EVDO products.

The phones have assisted GPS software feature enabled to meet the emergency location requirements of the FCC's E911 Phase II mandate. The Dual-mode architecture is defined as 1900MHz (PCS CDMA) and 800MHz (cellular 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

The phone will support certain CDMA2000 radio-configurations (RC) as describes in Exhibit 1 (operation description).

4 ACCESSORIES:

**KWC Battery Model: 1. Standard – CV90-R1447 (3.7V, 900mAh)**



**Leather Case: CV90-R2013-01 (Standard Leather), CV90-R2014-01 (Premium Leather)\***



**Holster CV90-R2091-01:**



**\*Note: Both leather cases are the same except the leather material, only CV90-R2013-1 was tested.**

## 5 SAR TEST RESULT SUMMARY

This device has been tested for localised specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in ANSI/IEEE Std. C95.1 ~ 1992 and has been tested in accordance with the measurement procedures specified in IEEE P1528\_D1.2. Normal antenna operating positions were incorporated, with the device transmitting at frequencies consistent with normal usage of the device. The device has been shown capable of compliance for localised specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in ANSI/IEEE std. C95.1-1992

### 5.1 Maximum Results Found during SAR Evaluation

The equipment is deemed to fulfil the requirements if the measured values are less than or equal to the limit.

### 5.2 Head Configuration

Mode	Ch/f(MHz)	Conducted Power (dBm)	Device Position	Measured (mW/g)	Result
CDMA-800	1013 (824.70)	25.72	Right Cheek	0.982	PASSED
CDMA-1900	600 (1880)	22.89	Left Cheek	1.13	PASSED

### 5.3 Body Worn Configuration

Mode	Ch/f(MHz)	Conducted Power (dBm)	Device Position	Measured (mW/g)	Result
CDMA-800	1013 (824.70)	25.90	Waist Level	1.37	PASSED
CDMA-1900	600 (1880.0)	22.85	Waist Level	0.627	PASSED

### 5.4 Measurement Uncertainty

Combined Uncertainty (Assessment & Source)	± 10.46
Extended Uncertainty (k=2)	± 21.22

## 6 TEST CONDITIONS

### 6.1 Ambient Conditions

All tests were performed under the following environmental conditions:

<b>Ambient Temperature:</b>	22 ± 1 Degrees C
<b>Tissue simulating liquid temperature:</b>	22 ± 1 Degrees C
<b>Humidity:</b>	38 %
<b>Pressure:</b>	1015 mB

### 6.2 RF characteristics of the test site

All SAR measurements were performed inside a shielded room that provide isolation from external EM fields.

The E-field probes of the DASY 4 system are capable of detecting signals as low as 5µW/g in the liquid dielectric. External fields are minimising by the shielded room, leaving the phone as the dominant radiation source. Two 2-foot square ferrite panels are placed on the floor of the room beneath the phantom area of the DASY system to minimise reflected energy that would otherwise re-enter the phantom and combine constructively or destructively with the desired fields. These ferrite panels provide roughly 12 to 13 dB of attenuation in the frequency range of 900 MHz, and 7 to 8 dB of attenuation in the frequency range of 1.9 GHz.

### 6.3 Test Signal, Frequencies and Output Power

In all operating bands, the measurements were performed on low, mid and high channels. The phone was set to nominal maximum power level during all tests and at the beginning of each test.

DASY4 system measures power drift during SAR testing by comparing E-field in the same location at the beginning and at the end of measurement. These records were used to monitor stability of power output.

#### 6.3.1 CDMA2000 Test conditions

The device supports CDMA2000 in 1X (Phase I, Protocol revision 6) mode only. CDMA2000 1X includes TIA/EIA-95B as a subset and was approved for publishing in July 1999. It provides voice and data capabilities within a standard 1.25 MHz CDMA channel. This RF bandwidth is identical to the legacy IS-95 B system standard.

##### 6.3.1.1 Head SAR Measurements

SAR for head exposure configurations was measured in RC3 with the EUT configured to transmit at full rate using Loopback Service Option SO55. SAR for RC1 was not required when the maximum average output of each channel was less than ¼ dB higher than that measured in RC3. Otherwise, SAR was measured on the maximum output channel in RC1 using the exposure configuration that results in the highest SAR for that channel in RC3.

### 6.3.1.2 Body SAR Measurements

SAR for body exposure configurations was measured in RC3 and 1xEVDO with the DUT configured to transmit at full rate on FCH with all other code channels disabled using TDSO / SO32. SAR for multiple code channels (FCH + SCH<sub>n</sub>) was not required when the maximum average output of each RF channel was less than ¼ dB higher than that measured with FCH only. Otherwise, SAR was measured on the maximum output channel (FCH + SCH<sub>n</sub>) with FCH at full rate and SCH<sub>0</sub> enabled at 9600 bps using the exposure configuration that results in the highest SAR for that channel with FCH only. When multiple code channels were enabled, the DUT output may shift by more than 0.5 dB and lead to higher SAR drifts and SCH dropouts.

Body SAR in RC1 was not required when the maximum average output of each channel was less than ¼ dB higher than that measured in RC3 and 1xEVDO. Otherwise, SAR was measured on the maximum output channel in RC1; with Loopback Service Option SO55, at full rate, using the body exposure configuration that resulted in the highest SAR for that channel in RC3 and 1xEVDO.

Table 6.3 below shows the maximum power level vs RCs

CONFIGURATION	CONDUCTED POWER (dBm) (AVG)					
	CDMA 800			CDMA 1900		
	Ch 1013	Ch 383	Ch 777	Ch 25	Ch 600	Ch 1175
SO2, RC1 Full Rate	25.56	25.18	25.30	22.87	22.81	22.61
SO2, RC3 Full Rate	25.50	25.12	25.24	22.76	22.76	22.58
SO55, RC1 Full Rate	25.69	25.31	25.39	22.85	22.83	22.66
<b>SO55, RC3 Full Rate</b>	<b>25.72</b>	<b>25.35</b>	<b>25.41</b>	<b>22.88</b>	<b>22.89</b>	<b>22.74</b>
TDSO SO32, RC3 (F+SCH)	25.17	24.91	24.46	22.34	22.33	21.89
TDSO SO32, RC3 (SCH)	25.36	25.03	25.24	22.77	22.76	22.52
<b>1xEVDO Rev.0, FTAP</b>	<b>26.01</b>	<b>25.72</b>	<b>25.79</b>	<b>23.51</b>	<b>23.43</b>	<b>23.18</b>
1xEvDo Rev.0, RTAP	25.9	25.39	25.36	23.06	22.96	22.81

Table 6.3 RC Configuration tested at “all up” power control bit.

### 6.4 Device Test Conditions

The EUT was tested with a fully charged battery as supplied with the handset. Conducted RF power measurements were performed before and after each SAR measurements to confirm the output power.



## 7 DESCRIPTION OF THE TEST EQUIPMENT

### 7.1 Dosimetric System

The measurements were performed with an automated near-field scanning system (as shown in Figure 7.1), DASY4, manufactured by Schmid & Partner Engineering AG (SPEAG) of Zurich, Switzerland. The system is comprised of high precision robot, robot controller, computer, near-field probe, probe alignment sensor and the SAM phantom containing brain or muscle equivalent material. The overall RSS uncertainty of the measurement system is  $\pm 10.46\%$  with an expanded uncertainty of  $\pm 21.22\%$  ( $K=2$ ). The measurement uncertainty budget is given in section 10. Below is a list of the calibrated equipment used for the measurements:

Test Equipment	Serial Number	Cal. Due Date
DASY4 DAE4	493	11-07-07
E-field Probe ET3DV6	1714	08-30-07
Dipole Validation kit, D835V2	454	03-15-08
Dipole Validation kit, D1900V2	5d003	03-21-08

*The calibration records of E-field probe and dipoles are attached in Appendix C and Appendix D respectively.*

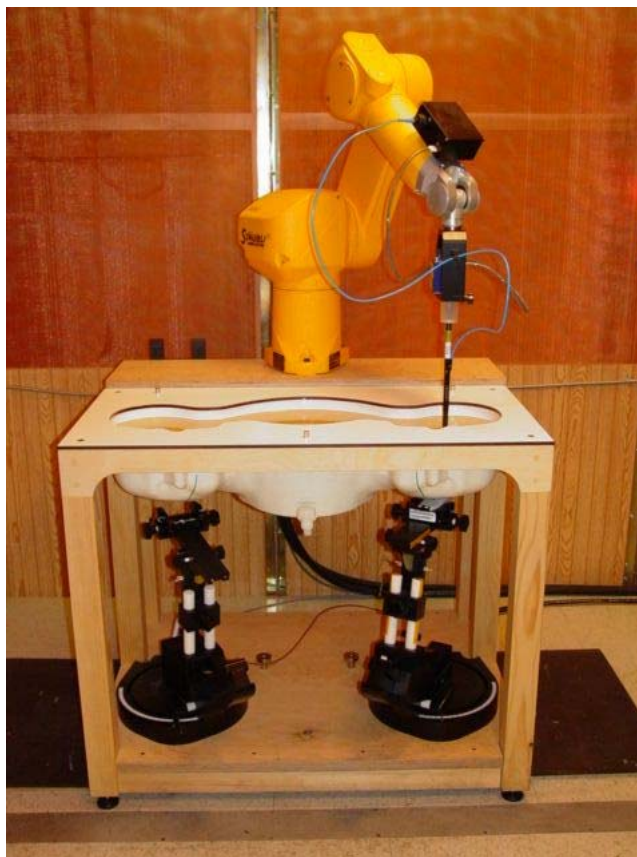


Figure 7.1 DASY 4 System

## 7.2 Additional equipment needed in validation

Test Equipment	Serial Number	Cal. Due Date
Communication Test Set Agilent 8960	GB44052736	08-16-08
Signal Generator, Agilent E4438C	MY44270167	09-27-08
Power meter, Giga-tronics 8541C	1832552	01-31-08
Power Sensor, Giga-tronics 80601A	1831066	07-20-07
Serial Network Analyzer, Agilent E5062A	MY44100250	02-22-08
Electronic Calibration Module, Agilent	1763	01-25-08
Thermometer	186700	04-24-08
Dielectric Probe, HP 85070E	--	No cal required

## 7.3 Tissue Stimulants

All dielectric parameters of tissue stimulants were measured within 24 hours of SAR measurements. The depth of the tissue stimulant in the ear reference point and flat reference point of the phantom were at least 15 cm. during all the tests. The depth of the liquid is measured by running a program that brings the probe to the bottom surface of the phantom then raise it up 15 centimeters. The operator at this point performs a visual inspection and makes sure that the liquid level is at or above the probe tip.

The list of ingredients and the percent composition used for the Head and Muscle tissue simulants are listed in the table below:

Ingredient	835 MHz		1900 MHz	
	HEAD	MUSCLE	HEAD	MUSCLE
Water	51.07%	65.45%	54%	69.91%
Cellulose	0.23%	--	--	--
Glycol monobutyl	--	--	44.91%	29.96%
Sugar	47.31%	34.31%	--	--
Preventol	0.24%	0.1%	--	--
Salt	1.15%	0.62%	0.21%	0.13%

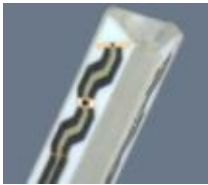
*The ingredients above are adopted from Application Note: Recipes for Head/Muscle Tissue Simulating Liquid by SPEAG.*

## 7.4 Phantoms Description

SAM v4.0 phantom, manufactured by SPEAG, was used during the measurement. It has fiberglass shell integrated in a wooden table. The shape of the shell corresponds to the phantom defined in IEEE 1528/D1.2. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. Reference markings on the phantom allow the complete set-up of all predefined phantom positions and measurement grids by manually teaching three points in the robot.

The thickness of phantom shell is 2mm except for the ear, where an integrated ear spacer provides 6mm spacing from the tissue boundary. Manufacturer reports tolerance in shell thickness to be  $\pm 0.1$ mm.

## 7.5 Isotropic E-Field Probe

<b>Model:</b>	<ul style="list-style-type: none"> <li>ET3DV6</li> </ul> 
<b>Construction:</b>	<ul style="list-style-type: none"> <li>Symmetrical design with triangular core</li> <li>Built-in optical fiber for surface detection system</li> <li>Built-in shielding against static charges</li> <li>PEEK enclosure material (resistant to organic solvents, e.g., glycol)</li> </ul>
<b>Calibration:</b>	<ul style="list-style-type: none"> <li>Calibration certificate in Appendix C</li> </ul>
<b>Frequency:</b>	<ul style="list-style-type: none"> <li>10MHz to 3GHz (dosimetry); Linearity: <math>\pm 0.2\text{dB}</math> (30MHz to 3GHz)</li> </ul>
<b>Optical Surface:</b>	<ul style="list-style-type: none"> <li><math>\pm 0.2\text{mm}</math> repeatability in air and clear liquid over diffuse reflecting</li> </ul>
<b>Detection:</b>	<ul style="list-style-type: none"> <li>Surface</li> </ul>
<b>Directivity:</b>	<ul style="list-style-type: none"> <li><math>\pm 0.2\text{dB}</math> in HSL (rotation around probe axis)</li> <li><math>\pm 0.4\text{dB}</math> in HSL (rotation normal to probe axis)</li> </ul>
<b>Dynamic Range:</b>	<ul style="list-style-type: none"> <li>5 uW/g to &gt; 100 mW/g; Linearity: <math>\pm 0.2\text{dB}</math></li> </ul>
<b>Dimensions:</b>	<ul style="list-style-type: none"> <li>Overall length: 330mm</li> <li>Tip length: 16mm</li> <li>Body diameter: 12mm</li> <li>Tip diameter: 6.8mm</li> <li>Distance from probe tip to dipole centers: 2.7mm</li> </ul>
<b>Application:</b>	<ul style="list-style-type: none"> <li>General dosimetry up to 3GHz</li> <li>Compliance tests of mobile phones</li> <li>Fast automatic scanning in arbitrary phantoms.</li> </ul>

## 8 SYSTEM VALIDATION

The probes are calibrated annually by the manufacturer. Dielectric parameters of the stimulating liquids are measured with an automated Hewlett Packard 85070E dielectric probe in conjunction with an Agilent E5062A ENA serial network analyser.

The SAR measurements of the device were done within 24 hours of system accuracy verification, which was done using the dipole validation kit. Power level of 20dBm was supplied to a dipole antenna placed under the flat section of SAM phantom. The validation results are in the table below and printouts of the validation test are attached in Appendix A. All the measured parameters are within the specification.

The system validation with head tissues was used for the device testing in muscle. Based on OET 65 Supplement C EAB Part 22/24 SAR review Reminder Sheet 01/2002, this is a valid test.

Tissue	Freq. (MHz)	Description	Validation SAR (mW/g), 1g	Dielectric Parameters		Temp. (°C)	Test date	Comments Validation testing -
				$\epsilon_r$	$\sigma$ (S/m)			
Head	835	Measured	0.987	43.4	0.86	22±1	06-12-07	For device testing in Head.
		SPEAG Reference	0.944	42.10	0.942	22.0	03-15-06	From Speag Certificate
		FCC Reference*	--	41.5	0.90	20-26	--	
	1900	Measured	4.06	39.0	1.43	22±1	06-12-07	For device testing in Head.
		SPEAG Reference	3.89	39.40	1.42	22.0	03-21-06	From Speag Certificate
		FCC Reference*	--	40.0	1.40	20-26	--	
Muscle	835	Measured	0.976	54.8	0.933	22±1	06-13-07	For device testing in Muscle
		Measured	0.937	53.7	0.979	22±1	06-14-07	For device testing in Muscle
		Measured	0.956	55.79	0.974	22±1	06-16-07	For device testing in Muscle
		SPEAG Reference	0.976	55.20	0.970	22.0	03-15-06	From Speag Certificate
		FCC Reference*	--	55.2	0.97	--	--	
	1900	Measured	3.93	53.0	1.47	22±1	06-15-07	For device testing in Muscle
		Measured	4.12	53.6	1.55	22±1	06-16-07	For device testing in Muscle
		Measured	4.02	53.4	1.48	22±1	06-21-07	For device testing in Muscle
		Measured	3.77	53.1	1.47	22±1	06-22-07	For device testing in Muscle
		SPEA Reference	4.04	53.30	1.52	22.0	03-21-06	From Speag Certificate
		FCC Reference*	--	53.3	1.52	20-26	--	

FCC reference values are adopted from OET Bulletin 65 (97-01) Supplement C (01-01).



### 9.1.2 Cheek Position

“Initial ear position” alignments are maintained and the device is brought toward the mouth of the head phantom by pivoting along the “Neck-Front” line until any point on the display, keypad or mouthpiece portions of the handset is in contact with the phantom or when any portion of a foldout, sliding or similar keypad cover opened to its intended self-adjusting normal use position is in contact with the cheek or mouth of the phantom.

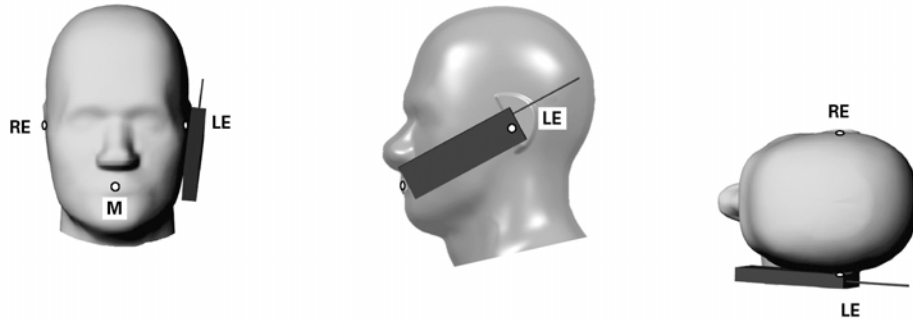


Figure 7.3 - Phone position 1, “cheek” or “touch” position.

### 9.1.3 Tilt Position

In the “cheek position”, if the earpiece of the device is not in full contact with the phantom’s ear spacer and the peak SAR location for the “cheek position” is located at the ear spacer region or corresponds to the earpiece region of the handset, the device is returned to the “initial ear position” by rotating it away from the mouth until the earpiece is in full contact with the ear spacer. Otherwise, the device is moved away from the cheek perpendicular to the line passes through both “ear reference points” for approximate 2-3cm. While it is in this position, the device is tilted away from the mouth with respect to the “test device reference point” by 15°. After the tilt, it is then moved back toward the head perpendicular to the line passes through both “ear reference point” until the device touches the phantom or the ear spacer. If the antenna touches the head first, the positioning process is repeated with a tilt angle less than 15° so that the device and its antenna would touch the phantom simultaneously.

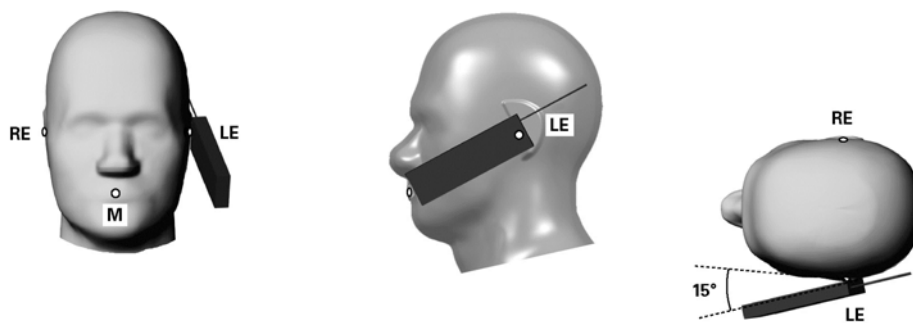


Figure 7.3 - Phone position 2, “tilted” position.

#### **9.1.4 Body Worn Configuration**

KWC body worn accessories were tested for the FCC RF exposure compliance. The device was positioned into the carrying case and placed below the flat phantom. Hands-free headset was connected during measurements.

The SAR levels were also measured with 22.5mm air space for the hands-free application, which allow user to use other body-worn accessories that contains no metal and provides at least 22.5mm separation from the closest point of the handset to the body.

#### **9.2 Scan Procedures**

First, coarse scans are used for a quick determination of the field distribution. Then an area scan measures all reachable points, it computes all of the field maxima found in the scanned area, within a range of 2dB as specified in IEEE P1528, (see the configuration below). For cases where multiple maxima were detected, the number of zoom scans could be increased accordingly.

Next a cube scan, 7x7x7 points (spacing between each point is 5x5x5mm), is performed around the highest E-field value to determine the averaged SAR-distribution over 1g. If two peaks are within 2dB of the highest one, two zoom scans are performed to provide the evaluations. A fine resolution volume scan determines the one-gram average SAR for both peaks.

#### **9.3 SAR Averaging Methods**

The maximum SAR value is average over its volume using interpolation and extrapolation.

The interpolation of the points is done with a 3d-Spline. The 3d-Spline is composed of three one-dimensional splines with the “Not a knot” –condition [W. Gander, Computermathematik, p. 141-150] (x, y and z – directions) [numerical Recipes in C, Second Edition, p 123].

The extrapolation is based on least square algorithm [W. Gander, Computermathematik, p. 168-180]. Through the points in the first 30mm in all z-axis, polynomials of order four are calculated. This polynomial is then used to evaluate the points between the surface and the probe tip. The points, calculated from the surface, have a distance of 1mm from one another.

## 10 MEASUREMENT UNCERTAINTY

Description of individual measurement uncertainty

Uncertainty Description	Uncert. Value ( $\pm$ %)	Prob. Dist.	Div	$C_i^1$ 1g	Stand. Uncert (1g) ( $\pm$ %)	$V_i^2$ or $V_{eff}$
<b>Measurement system</b>						
Probe calibration	4.8	N	1	1	4.8	$\infty$
Axial isotropy	4.7	R	$\sqrt{3}$	0.7	1.9	$\infty$
Hemispherical Isotropy	9.6	R	$\sqrt{3}$	0.7	3.9	$\infty$
Boundary effects	1.0	R	$\sqrt{3}$	1	0.6	$\infty$
Linearity	4.7	R	$\sqrt{3}$	1	1.0	$\infty$
System Detection limit	1.0	R	$\sqrt{3}$	1	0.5	$\infty$
Readout Electronics	1.0	N	1	1	1.0	$\infty$
Response Time	0.8	R	$\sqrt{3}$	1	0.5	$\infty$
Integration Time	2.6	R	$\sqrt{3}$	1	1.5	$\infty$
RF ambient conditions	3.0	R	$\sqrt{3}$	1	1.7	$\infty$
Mech. Constrains of robot	0.4	R	$\sqrt{3}$	1	0.2	$\infty$
Probe positioning	2.9	R	$\sqrt{3}$	1	1.7	$\infty$
Extrapolation, integration and Integration Algorithms for Max. SAR Evaluation	1.0	R	$\sqrt{3}$	1	0.6	$\infty$
<b>Test Sample Related</b>						
Device positioning	3.0	N	1	1	3.0	$\infty$
Device Holder	3.0	N	1	1	3.0	$\infty$
Power drift	7.0	N	$\sqrt{3}$	1	4.0	$\infty$
<b>Phantom and setup</b>						
Phantom uncertainty	4.0	R	$\sqrt{3}$	1	2.3	$\infty$
Liquid conductivity (target)	5.0	R	$\sqrt{3}$	0.6	1.7	$\infty$
Liquid conductivity (meas.)	5.0	N	1	0.6	3.0	$\infty$
Liquid permittivity (target)	5.0	R	$\sqrt{3}$	0.6	1.7	$\infty$
Liquid permittivity (meas.)	5.0	N	1	0.6	1.5	$\infty$
<b>Combined Standard Uncertainty:</b>					<b>10.46</b>	
<b>Extended Standard Uncertainty (k=2):</b>					<b>21.22</b>	

N: Normal

R: Rectangular



## 11 TEST DATA

### 11.1 Head SAR Test Results

The following tables list the SAR results in each configuration and operating mode. The channels tested for each configuration have similar SAR distributions. Highest SAR (bold blue color) plots for each configuration is provided in Appendix B.

<b>E2000 CDMA 800 HEAD</b>		<b>Channel:</b>		1013	383	777
		<b>Frequency (MHz):</b>		824.70	836.49	848.31
<b>Configuration</b>	<b>Test Position</b>	<b>Battery</b>	<b>Antenna Position</b>	<b>SAR, 1g (W/kg)</b>		
<b>RC3-S055</b>	<b>Left Cheek/Touch</b>	Standard	Fixed		<b>0.706</b>	
	<b>Left Ear/Tilt</b>	Standard	Fixed		<b>0.339</b>	
	<b>Right Cheek/Touch</b>	Standard	Fixed	0.926/* <b>0.982</b>	0.35	0.853
	<b>Right Ear/Tilt</b>	Standard	Fixed		<b>0.417</b>	

<b>E2000 CDMA 1900 HEAD</b>		<b>Channel:</b>		25	600	1175
		<b>Frequency (MHz):</b>		1851.25	1880	1908.75
<b>Configuration</b>	<b>Test Position</b>	<b>Battery</b>	<b>Antenna Position</b>	<b>SAR, 1g (W/kg)</b>		
<b>RC3-S055</b>	<b>Left Cheek/Touch</b>	Standard	Fixed	1.1	<b>1.13/*1.13</b>	0.851
	<b>Left Ear/Tilt</b>	Standard	Fixed		<b>0.167</b>	
	<b>Right Cheek/Touch</b>	Standard	Fixed	0.900	<b>1.01</b>	0.773
	<b>Right Ear/Tilt</b>	Standard	Fixed		<b>0.149</b>	

Note: If the SAR measured at the mid-channel is at least 3dB lower than the SAR limit, testing at the low and high channels were no longer performed.

Note 2: 1xEVDO is not supported at ear use position.

\* Means the phone was tested with Bluetooth on.

## 11.2 Body Worn SAR Test Result

For each mode, corresponding SAR distribution printouts of maximum results per set-up (in **blue** below), i.e., the device was tested with a 22.5mm air gap or with KWC universal pouch are shown in Appendix B. The rest of SAR distributions is substantially similar or equivalent to the plots submitted regardless of used channel. Only the worst-case result was reported.

### Waist Level SAR with KWC Body Worn Accessories

CDMA 800 BODY		Channel:			1013	383	777
		Frequency (MHz):			824.70	836.49	848.31
Accessory	Configuration	Test Position	Flip Position	Phone Position	SAR, 1g (W/kg)		
Air Gap – 22.5mm	RC1 S055	Flat	Open	Face Down	0.442		
	RC3 – SO32 (FCH)	Flat	Open	Face Down		0.406	
	RC3 – SO32 (FCH+SCH)	Flat	Open	Face Down	<b>0.482</b>		
	EvDo Rev.0 RTAP	Flat	Open	Face Down		0.464	

CDMA 800 BODY		Channel:			1013	383	777
		Frequency (MHz):			824.70	836.49	848.31
Accessory	Configuration	Test Position	Flip Position	Phone Position	SAR, 1g (W/kg)		
Air Gap – 22.5mm	RC1 S055	Flat	Closed	Face Down	0.744		
	RC3 – SO32 (FCH)	Flat	Closed	Face Down		0.716	
	RC3 – SO32 (FCH+SCH)	Flat	Closed	Face Down	0.751		
	EvDo Rev.0 RTAP	Flat	Closed	Face Down	0.826	<b>0.851</b>	0.604

*Note: If the SAR measured at the mid-channel is at least 3dB lower than the SAR limit, testing at the low and high channels were no longer performed.*

\* Means the phone was tested with Bluetooth on.

CDMA 800 BODY		Channel:			1013	383	777
		Frequency (MHz):			824.70	836.49	848.31
Accessory	Configuration	Test Position	Flip Position	Phone Position	SAR, 1g (W/kg)		
Leather Case (CV90-R2013-01)	RC1 S055	Flat	Open	Face Down	0.337		
	RC3 – SO32 (FCH)	Flat	Open	Face Down		0.331	
	RC3 – SO32 (FCH+SCH)	Flat	Open	Face Down	0.419		
	EvDo Rev.0 RTAP	Flat	Open	Face Down		0.353	

CDMA 800 BODY		Channel:			1013	383	777
		Frequency (MHz):			824.70	836.49	848.31
Accessory	Configuration	Test Position	Flip Position	Phone Position	SAR, 1g (W/kg)		
Leather Case (CV90-R2013-01)	RC1 S055	Flat	Closed	Face Down	0.625		
	RC3 – SO32 (FCH)	Flat	Closed	Face Down		0.572	
	RC3 – SO32 (FCH+SCH)	Flat	Closed	Face Down	0.614		
	EvDo Rev.0 RTAP	Flat	Closed	Face Down		0.678	

Note: If the SAR measured at the mid-channel is at least 3dB lower than the SAR limit, testing at the low and high channels were no longer performed.

\* Means the phone was tested with Bluetooth on.

CDMA 800 BODY		Channel:			1013	383	777
		Frequency (MHz):			824.70	836.49	848.31
Accessory	Configuration	Test Position	Flip Position	Phone Position	SAR, 1g (W/kg)		
Holster (CV90-R2091-01)	RC1 S055	Flat	Open	Face Down	0.119		
	RC3 – SO32 (FCH)	Flat	Open	Face Down		0.702	
	RC3 – SO32 (FCH+SCH)	Flat	Open	Face Down	0.622		
	EvDo Rev.0 RTAP	Flat	Open	Face Down		0.767	

CDMA 800 BODY		Channel:			1013	383	777
		Frequency (MHz):			824.70	836.49	848.31
Accessory	Configuration	Test Position	Flip Position	Phone Position	SAR, 1g (W/kg)		
Holster (CV90-R2091-01)	RC1 S055	Flat	Closed	Face Down	0.709		
	RC3 – SO32 (FCH)	Flat	Closed	Face Down	0.911	1.17/*1.16	0.596
	RC3 – SO32 (FCH+SCH)	Flat	Closed	Face Down	1.17	1.22	0.733
	EvDo Rev.0 RTAP	Flat	Closed	Face Down	1.37	1.26	0.968

Note: If the SAR measured at the mid-channel is at least 3dB lower than the SAR limit, testing at the low and high channels were no longer performed.

\* Means the phone was tested with Bluetooth on.

CDMA 1900 BODY		Channel:			25	600	1175
		Frequency (MHz):			1851.25	1880	1908.75
Accessory	Configuration	Test Position	Flip Position	Phone Position	SAR, 1g (W/kg)		
Air Gap – 22.5mm	RC1 SO55	Flat	Open	Face Down	0.384		
	RC3 – SO32 (FCH)	Flat	Open	Face Down		0.347	
	RC3 – SO32 (FCH+SCH)	Flat	Open	Face Down	0.333		
	EvDo Rev.0 RTAP	Flat	Open	Face Down		0.363	

CDMA 1900 BODY		Channel:			25	600	1175
		Frequency (MHz):			1851.25	1880	1908.75
Accessory	Configuration	Test Position	Flip Position	Phone Position	SAR, 1g (W/kg)		
Air Gap – 22.5mm	RC1 S055	Flat	Closed	Face Down	0.200		
	RC3 – SO32 (FCH)	Flat	Closed	Face Down		0.166	
	RC3 – SO32 (FCH+SCH)	Flat	Closed	Face Down	0.211		
	EvDo Rev.0 RTAP	Flat	Closed	Face Down		0.177	

Note: If the SAR measured at the mid-channel is at least 3dB lower than the SAR limit, testing at the low and high channels were no longer performed.

\* Means the phone was tested with Bluetooth on.

CDMA 1900 BODY		Channel:			25	600	1175
		Frequency (MHz):			1851.25	1880	1908.75
Accessory	Configuration	Test Position	Flip Position	Phone Position	SAR, 1g (W/kg)		
Leather Case (CV90-R2013-01)	RC1 SO55	Flat	Open	Face Down	0.273		
	RC3 – SO32 (FCH)	Flat	Open	Face Down		0.282	
	RC3 – SO32 (FCH+SCH)	Flat	Open	Face Down	0.329		
	EvDo Rev.0 RTAP	Flat	Open	Face Down		0.328	

CDMA 1900 BODY		Channel:			25	600	1175
		Frequency (MHz):			1851.25	1880	1908.75
Accessory	Configuration	Test Position	Flip Position	Phone Position	SAR, 1g (W/kg)		
Leather Case (CV90-R2013-01)	RC1 SO55	Flat	Closed	Face Down	0.174		
	RC3 – SO32 (FCH)	Flat	Closed	Face Down		0.172	
	RC3 – SO32 (FCH+SCH)	Flat	Closed	Face Down	0.182		
	EvDo Rev.0 RTAP	Flat	Closed	Face Down		0.207	

Note: If the SAR measured at the mid-channel is at least 3dB lower than the SAR limit, testing at the low and high channels were no longer performed.

\* Means the phone was tested with Bluetooth on.

CDMA 1900 BODY		Channel:			25	600	1175
		Frequency (MHz):			1851.25	1880	1908.75
Accessory	Configuration	Test Position	Flip Position	Phone Position	SAR, 1g (W/kg)		
Holster (CV90-R2091-01)	RC1 SO55	Flat	Open	Face Down	0.627/*0.626		
	RC3 – SO32 (FCH)	Flat	Open	Face Down		0.589	
	RC3 – SO32 (FCH+SCH)	Flat	Open	Face Down	0.626		
	EvDo Rev.0 RTAP	Flat	Open	Face Down		0.560	

CDMA 1900 BODY		Channel:			25	600	1175
		Frequency (MHz):			1851.25	1880	1908.75
Accessory	Configuration	Test Position	Flip Position	Phone Position	SAR, 1g (W/kg)		
Holster (CV90-R2091-01)	RC1 S055	Flat	Closed	Face Down	0.372		
	RC3 – SO32 (FCH)	Flat	Closed	Face Down		0.304	
	RC3 – SO32 (FCH+SCH)	Flat	Closed	Face Down	0.445		
	EvDo Rev.0 RTAP	Flat	Closed	Face Down		0.243	

Note: If the SAR measured at the mid-channel is at least 3dB lower than the SAR limit, testing at the low and high channels were no longer performed.

\* Means the phone was tested with Bluetooth on.

## 12 LIST OF APPENDIX

Appendix	Description	Note
A	Validation Test Plots	<i>Please see separate attachment</i>
B	SAR Distribution Plots	<i>Please see separate attachment</i>
C	Probe Calibration Parameters	<i>Please see separate attachment</i>
D	Dipole Calibration Parameters	<i>Please see separate attachment</i>
E	EUT Setup Photos	<i>Please see separate attachment</i>