



**FCC CFR47 PART 22 SUBPART H  
AND PART 24 SUBPART E  
CERTIFICATION TEST REPORT**

**FOR**

**DUAL BAND 1xRTT CDMA PHONE WITH BLUETOOTH**

**MODEL NUMBER: M1000-2X0**

**FCC ID: OVFKWC-M1000-2X0**

**REPORT NUMBER: 07U11076-1**

**ISSUE DATE: JUNE 1, 2007**

*Prepared for*

**KYOCERA WIRELESS CORP.  
10300 CAMPUS POINT DRIVE  
SAN DIEGO, CA 92121, U.S.A.**

*Prepared by*

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**NVLAP LAB CODE 200065-0**

Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
<u>--</u>	<u>06/01/07</u>	<u>Initial Issue</u>	<u>T. Chan</u>

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**1. ATTESTATION OF TEST RESULTS**

**COMPANY NAME:** KYOCERA WIRELESS CORP.  
10300 CAMPUS POINT DRIVE  
SAN DIEGO, CA 92121, U.S.A.

**EUT DESCRIPTION:** DUAL BAND 1xRTT CDMA PHONE WITH BLUETOOTH

**MODEL NUMBER:** M1000-2X0

**SERIAL NUMBER:** FFMK0000001424

**DATE TESTED:** MAY 23-24, 2007

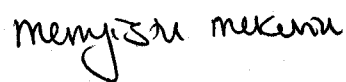
APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 22 SUBPART H	NO NON-COMPLIANCE NOTED
FCC PART 24 SUBPART E	NO NON-COMPLIANCE NOTED

Compliance Certification Services, Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

**Note:** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification Services will constitute fraud and shall nullify the document. No part of this report may be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any government agency.

Approved & Released For CCS By:

Tested By:

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EMC SUPERVISOR  
COMPLIANCE CERTIFICATION SERVICES

MEGISTU MEKURIA  
EMC ENGINEER  
COMPLIANCE CERTIFICATION SERVICES

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA/EIA 603C (2004), ANSI C63.4-2003, FCC CFR 47 Part 2, FCC CFR 47 Part 22H and 24E.

## 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA. The sites are constructed in conformance with the requirements of ANSI C63.4, ANSI C63.7 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://www.ccsemc.com>.

## 4. CALIBRATION AND UNCERTAINTY

### 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

### 4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Radiated Emission, 30 to 200 MHz	+/- 3.3 dB
Radiated Emission, 200 to 1000 MHz	+4.5 / -2.9 dB
Radiated Emission, 1000 to 2000 MHz	+4.5 / -2.9 dB
Radiated Emission, Above 2000 MHz	+/- 4.3 dB
Power Line Conducted Emission	+/- 2.9 dB

Uncertainty figures are valid to a confidence level of 95%.

## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

The EUT is a dual band 1xRTT CDMA phone with BT.

The radio module is manufactured by Kyocera Wireless.

### 5.2. SOFTWARE AND FIRMWARE

The EUT is linked with Agilent Communication Test Set.

### 5.3. WORST-CASE CONFIGURATION AND MODE

The EUT has been investigated on all possible X Y Z, open, and normal positions, and the worst position is determined at Z position for Cell band and Y position for PCS band.

## 5.4. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
Wireless Communications Test Set	Agilent	E5515C	10092	DoC
Horn	EMCO	3115	2238	NA

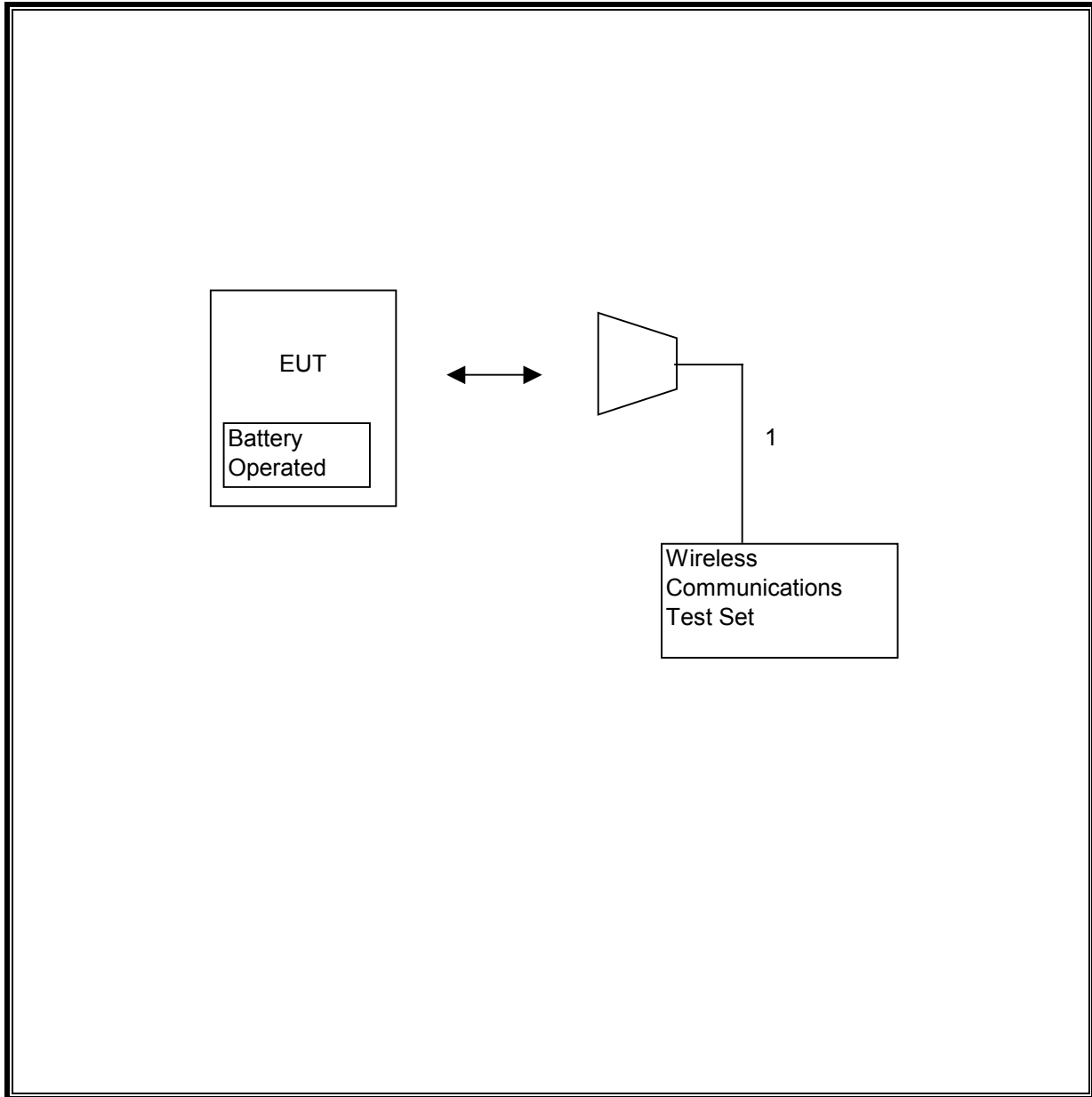
### I/O CABLES

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	RF In/out	1	N-Type	Shielded	1m	N/A

### TEST SETUP

The EUT is a standalone device. The Agilent Communication Test Set is used to link the EUT.

**SETUP DIAGRAM FOR TESTS**





## 6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	Cal Due
Antenna, Bilog 30 MHz ~ 2 Ghz	Sunol Sciences	JB1	A121003	9/3/07
Antenna, Horn 1 ~ 18 GHz	EMCO	3115	6717	4/22/08
Antenna, Horn 1 ~ 18 GHz	EMCO	3115	6717	4/22/08
Signal Generator 2 -40 GHz	R & S	SMP04	DE 34210	6/2/07
Signal Generator 1024 MHz	R & S	SMY01	DE 12311	5/11/08
Dipole	EMCO	3121C-DB2	22435	5/7/08
2.7GHz HPF	MicroTronic	HPM13194	2	CNR
1.5GHz HPF	MicroTronic	HPM13195	1	CNR
Communication Test Set	Agilent	E5515C	91936	4/8/08
Spectrum Analyzer 9KHz ~ 26.5 GHz	Agilent / HP	E4407B	MY41444592	10/6/07
Preamplifier, 1 ~ 26.5 GHz	Agilent / HP	8449B	3008A00369	8/1/07

## 7. LIMITS AND RESULTS

### 7.1. RF POWER OUTPUT

#### LIMIT

22.913(a) The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

24.232(b) Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

#### TEST PROCEDURE

ANSI / TIA / EIA 603C Clause 2.2.17

#### RESULTS

No non-compliance noted.

#### 800MHz CELL CDMA Modulation

Channel	Frequency (MHz)	ERP Peak Power (dBm)	ERP Peak Power (mW)
Low	824.7	25.90	389.05
Middle	836.5	26.10	407.38
High	848.3	25.80	380.19

#### 1900MHz PCS Modulation

Channel	Frequency (MHz)	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
Low	1851.20	26.60	457.09
Middle	1880.00	26.40	436.52
High	1908.80	27.00	501.19

**Cellular Output Power (ERP)**

High Frequency Substitution Measurement									
Compliance Certification Services, Fremont 5m Chamber A									
Company:		Kyocera							
Project #:		07U11076							
Date:		5/23/2007							
Test Engineer:		Mengistu Mekuria							
Configuration:		EUT Alone							
Mode:		TX, CDMA 2000 1xRTT							
Worst Case: Z position									
<b>Test Equipment:</b>									
Receiving: Sunol T122, and 5m Chamber N-type Cable (Setup this one for testing EUT)									
Substitution: Dipole S/N: 00022117, and 4ft SMA Cable Warehouse S/N: 177081002									
f MHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
824.70	90.4	V	16.8	0.5	0.0	16.3	38.5	-22.2	
824.70	101.7	H	26.4	0.5	0.0	25.9	38.5	-12.5	
836.50	92.1	V	19.1	0.6	0.0	18.5	38.5	-19.9	
836.50	101.8	H	26.7	0.6	0.0	26.1	38.5	-12.3	
848.30	92.2	V	19.0	0.7	0.0	18.3	38.5	-20.2	
848.30	102.0	H	26.5	0.7	0.0	25.8	38.5	-12.6	
Rev. 1.24.7									

**PCS Output Power (EIRP)**

High Frequency Fundamental Measurement									
Compliance Certification Services, Fremont 5m Chamber A									
Company:		Kyocera							
Project #:		07U11076							
Date:		5/23/2007							
Test Engineer:		Mengistu Mekuria							
Configuration:		EUT Alone							
Mode:		TX, CDMA 2000 1xRTT							
Worst Case:		Y position							
<u>Test Equipment:</u>									
Receiving: Horn T73, and 12ft S/N: 197209005 (Setup this one for testing EUT)									
Substitution: Horn T60 Substitution, 4ft SMA Cable Warehouse S/N: 177081002									
f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
1.851	92.6	V	19.2	0.9	8.3	26.6	33.0	-6.4	
1.851	85.7	H	11.8	0.9	8.3	19.2	33.0	-13.8	
1.880	93.3	V	19.0	0.9	8.3	26.4	33.0	-6.6	
1.880	86.4	H	11.6	0.9	8.3	19.1	33.0	-13.9	
1.909	92.8	V	19.5	0.9	8.4	27.0	33.0	-6.0	
1.909	87.3	H	14.5	0.9	8.4	22.0	33.0	-11.0	
Rev. 1.24.7									

## 7.2. FIELD STRENGTH OF SPURIOUS RADIATION

### LIMIT

§22.917 (e) and §24.238 (a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

### TEST PROCEDURE

ANSI / TIA / EIA 603C Clause 2.2.12, FCC 22.917 (h), & FCC 24.238 (b)

### RESULTS

No non-compliance noted.

Note: No emissions were found within 20dB of the system noise from 30-1000MHz.

800MHz Band CDMA Spurious & Harmonic (ERP)

**High Frequency Substitution Measurement**  
 Compliance Certification Services, Fremont 5m A-Chamber

Company: Kyocera  
 Project #: 07U11076  
 Date: 5/23/2007  
 Test Engineer: Mengistu Mekuria  
 Configuration: EUT Alone, Y\_Position  
 Mode: TX, CDMA 2000 1xRTT

**Test Equipment:**

EMCO Horn 1-18GHz  
 T73; S/N: 6717 @3m

Horn > 18GHz

Limit  
 FCC 22

High Pass Filter

Hi Frequency Cables  
 (2 ft)  (2~3 ft)  (4~6 ft)  (12 ft)

Pre-amplifier 1-26GHz  
 T144 Miteq 3008A01

Pre-amplifier 26-40GHz

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>Low Ch.</b>										
1.649	55.4	H	-52.8	3.8	8.0	5.8	-50.8	-13.0	-37.8	
2.474	54.6	H	-50.0	4.9	9.5	7.4	-47.5	-13.0	-34.5	
3.299	48.7	H	-52.2	5.6	9.8	7.6	-50.2	-13.0	-37.2	
1.649	60.1	V	-48.8	3.8	8.0	5.8	-46.8	-13.0	-33.8	
2.474	46.4	V	-58.4	4.9	9.5	7.4	-55.9	-13.0	-42.9	
3.299	41.9	V	-59.1	5.6	9.8	7.6	-57.1	-13.0	-44.1	
<b>Mid Ch</b>										
1.673	58.5	H	-49.6	3.9	8.0	5.9	-47.5	-13.0	-34.5	
2.510	55.0	H	-49.5	4.9	9.6	7.4	-47.0	-13.0	-34.0	
3.346	54.5	H	-46.2	5.6	9.8	7.6	-44.2	-13.0	-31.2	
1.673	64.1	V	-44.6	3.9	8.0	5.9	-42.6	-13.0	-29.6	
2.510	57.9	V	-46.7	4.9	9.6	7.4	-44.2	-13.0	-31.2	
4.183	53.2	V	-43.8	6.3	9.9	7.7	-42.5	-13.0	-29.5	
<b>Hi Ch</b>										
1.697	60.5	H	-47.4	3.9	8.1	5.9	-45.4	-13.0	-32.4	
2.545	55.7	H	-48.6	4.9	9.6	7.4	-46.1	-13.0	-33.1	
3.394	50.0	H	-50.5	5.7	9.7	7.6	-48.5	-13.0	-35.5	
1.697	63.6	V	-45.0	3.9	8.1	5.9	-43.0	-13.0	-30.0	
2.545	56.4	V	-48.1	4.9	9.6	7.4	-45.6	-13.0	-32.6	
3.394	52.6	V	-48.0	5.7	9.7	7.6	-46.0	-13.0	-33.0	

Rev. 4.12.7

PCS Spurious & Harmonic (EIRP):

**High Frequency Substitution Measurement**  
Compliance Certification Services, Fremont 5m A-Chamber

Company: Kyocera  
Project #: 07U11076  
Date: 5/23/2007  
Test Engineer: Mengistu Mekuria  
Configuration: EUT Alone, Y\_Position (Worst Case)  
Mode: TX, CDMA 2000 1xRTT

**Test Equipment:**

EMCO Horn 1-18GHz  
T73; S/N: 6717 @3m

Horn > 18GHz

Limit  
FCC 24

High Pass Filter

Hi Frequency Cables:

(2 ft)   
  (2~3 ft)   
  (4~6 ft)   
  (12 ft)

Pre-amplifier 1-26GHz  
T144 Miteq 3008A0

Pre-amplifier 26-40GHz

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>Low Ch.</b>										
3.703	60.5	H	-38.4	5.9	9.7	7.6	-34.6	-13.0	-21.6	
5.554	55.3	H	-37.6	7.4	11.3	9.1	-33.7	-13.0	-20.7	
7.405	48.6	H	-42.5	8.3	12.6	10.4	-38.2	-13.0	-25.2	
3.703	53.4	V	-45.6	5.9	9.7	7.6	-41.8	-13.0	-28.8	
5.554	50.4	V	-43.5	7.4	11.3	9.1	-39.6	-13.0	-26.6	
7.405	45.7	V	-46.2	8.3	12.6	10.4	-41.9	-13.0	-28.9	
<b>Mid Ch</b>										
3.760	62.2	H	-36.4	6.0	9.7	7.6	-32.7	-13.0	-19.7	
5.640	55.7	H	-37.4	7.4	11.5	9.3	-33.3	-13.0	-20.3	
7.520	52.0	H	-39.0	8.3	12.6	10.5	-34.6	-13.0	-21.6	
3.760	58.9	V	-39.8	6.0	9.7	7.6	-36.1	-13.0	-23.1	
5.640	53.4	V	-40.7	7.4	11.5	9.3	-36.7	-13.0	-23.7	
7.520	50.0	V	-41.8	8.3	12.6	10.5	-37.4	-13.0	-24.4	
<b>Hi Ch</b>										
3.818	64.6	H	-33.7	6.0	9.7	7.5	-30.0	-13.0	-17.0	
5.726	58.0	H	-35.3	7.5	11.6	9.5	-31.1	-13.0	-18.1	
7.635	53.6	H	-37.2	8.4	12.7	10.5	-32.9	-13.0	-19.9	
3.818	60.2	V	-38.2	6.0	9.7	7.5	-34.5	-13.0	-21.5	
5.726	56.2	V	-38.1	7.5	11.6	9.5	-33.9	-13.0	-20.9	
7.635	51.7	V	-39.9	8.4	12.7	10.5	-35.6	-13.0	-22.6	

Rev. 4.12.7

**NOTE: Setup photos are contained in a separate document.**