



**RADIATED SPURIOUS EMISSIONS PORTIONS OF  
FCC CFR47 PART 24 SUBPART E  
CERTIFICATION TEST REPORT  
FOR  
SINGLE BAND 1xRTT CDMA PHONE WITH BLUETOOTH  
MODEL NUMBER: K55-01  
FCC ID: OVF- K5501  
REPORT NUMBER: 10U13454-1  
ISSUE DATE: OCTOBER 08, 2010**

*Prepared for*  
**KYOCERA COMMUNICATIONS, INC.  
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>
--	10/08/10	Initial Issue	T. Chan



# 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** KYOCERA COMMUNICATIONS, INC.  
10300 CAMPUS POINT DRIVE  
SAN DIEGO, CA 92121, USA

**EUT DESCRIPTION:** SINGLE-BAND 1XR TT CDMA PHONE WITH BLUETOOTH

**MODEL:** OVF-K5501

**SERIAL NUMBER:** IVQ80910M00125

**DATE TESTED:** OCTOBER 7 - 8, 2010

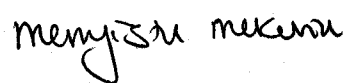
APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 24E	PASS (Radiated Portion)

Compliance Certification Services, Inc. (UL CCS) tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL CCS based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. 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 UL CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL CCS 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 UL CCS By:

Tested By:



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THU CHAN  
ENGINEERING MANAGER  
UL CCS

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MENGISTU MEKURIA  
EMC ENGINEER  
UL CCS

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-C, FCC CFR 47 Part 2, and FCC CFR Part 24.

## 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

UL 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. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

$$\text{Field Strength (dBuV/m)} = \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} - \text{Preamp Gain (dB)}$$

$$36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$$

### 4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 1000 MHz	4.94 dB

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

## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

The EUT is a Bluetooth featured Single-band CDMA Phone that is manufactured by Kyocera Communications, Inc.

### 5.2. MAXIMUM RADIATED OUTPUT POWER

The transmitter has an average maximum EIRP output powers as follows:

1850 to 1910 MHz Authorized Band

Frequency Range (MHz)	Modulation	EIRP Output Power (dBm)	EIRP Output Power (mW)
Low CH - 1851.25	CDMA2000	28.3	676.1
Mid CH - 1880.00		29.9	977.2
High CH - 1908.75		27.7	588.8

### 5.3. SOFTWARE AND FIRMWARE

The EUT is linked with Agilent Communication Test Set.

## 5.4. WORST-CASE CONFIGURATION AND MODE

The worst-position was the EUT with highest emissions. To determine the worst-case, the EUT was investigated for X, Y, and Z-Positions, and the worst position among X, Y, and Z with flap open, headset, and AC/DC adapter, after the investigations, the worst-position was turned out to be a X-position flapped open with headset only.

### PROCEDURE USED TO ESTABLISH TEST SIGNAL

#### **3G-CDMA2000 1xRTT**

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

<u>Application</u>	<u>Rev, License</u>
CDMA2000 Mobil Test	B.10.11, L

#### 1xRTT

- Call Setup > Shift & Preset
- Protocol Rev > 6 (IS-2000-0)
- Radio Config (RC) > RC3 (Fwd3, Rvs3)
- FCH Service Option (SO) Setup > 55
- Traffic Data Rate > Full
- TDSO SCH Info > F-SCH Parameters > F-SCH Data Rate > 153.6 kbps  
> R-SCH Parameters > R-SCH Data Rate > 153.6 kbps
- Cell Info > Cell Parameters > System ID (SID) > 4145  
> Network ID (NID) > 0

Once "Active Cell" show "Connected" then change "Rvs Power Ctrl" from "Active bits" to "**All Up bits**" to get the maximum power.

Worst-case Measurement Result @ Low, Middle and High Channel

Worst-case Measurement Result for Low, Middle and High Channel under Radio Configuration RC3 and Service Option 55.

## 5.5. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
AC/DC Adapter	Kyocera	TXTVL10148	2143	DoC
Headset	Kyocera	N/A	2106	N/A

### I/O CABLES

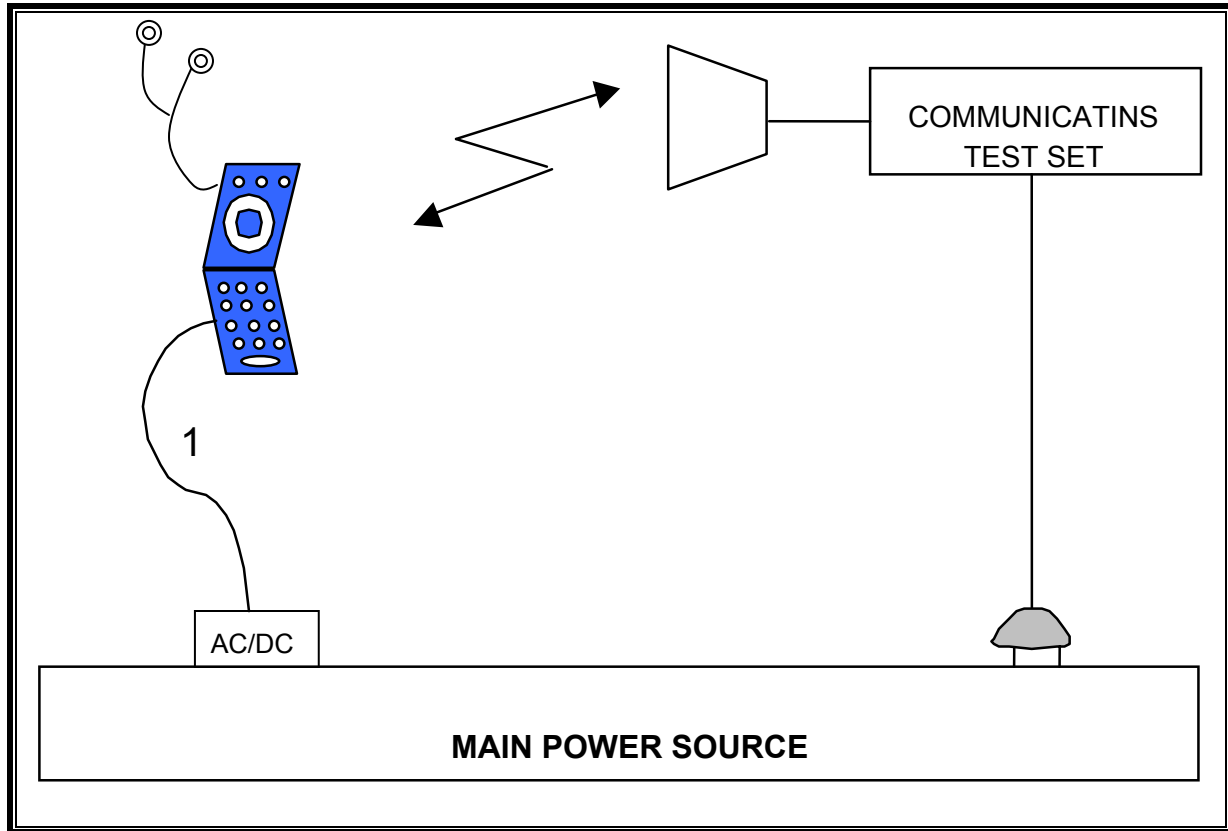
I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	DC Input	1	Mini-USB	Un-Shielded	2.0 m	N/A
2	Audio	1	Mini-Jack	Un-Shielded	1.3m	Mic on the wire

### TEST SETUP

The EUT is a CDMA phone and-is tested as a standalone configuration. Communications Test Set is used to link the device under test.



**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	Asset	Cal Due
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	07/14/11
Antenna, Horn, 18 GHz	EMCO	3115	C00783	06/29/11
Antenna, Horn, 18 GHz	EMCO	3115	C00943	CNR
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR
Signal Generator	R & S	SMP04	C00953	02/16/11
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01179	08/18/11
Communications Test Set	Agilent / HP	E5515C	C01086	06/17/11

## **7. LIMITS AND RESULTS**

### **7.1. RADIATED OUTPUT POWER**

#### **LIMITS**

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 603 Clause 2.2.17.

#### **RESULTS**

**PCS OUTPUT POWER (EIRP)**

High Frequency Fundamental Measurement Compliance Certification Services Chamber A							
<b>Company:</b>		KYOCERA					
<b>Project #:</b>		10U13454					
<b>Date:</b>		10/7/2010					
<b>Test Engineer:</b>		MENGISTU MEKURIA					
<b>Configuration:</b>		EUT ALONE					
<b>Mode:</b>		TX, CDMA 1XR TT PCS BAND					
<b>Test Equipment:</b>							
Receiving: Horn T73, and Camber B SMA Cables							
Substitution: Horn T72 Substitution, 6ft SMA Cable (208947003) Warehouse							
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.850	-20.7	V	40.4	19.8	33.0	-13.2	
1.850	-11.4	H	39.7	28.3	33.0	-4.7	
1.880	-19.7	V	39.9	20.3	33.0	-12.7	
1.880	-10.3	H	40.1	29.9	33.0	-3.2	
1.910	-22.6	V	39.8	17.2	33.0	-15.8	
1.910	-12.5	H	40.2	27.7	33.0	-5.3	
Rev. 1.24.7							

## 7.2. FIELD STRENGTH OF SPURIOUS RADIATION

### LIMIT

§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 603 Clause 3.2.12 & FCC 24.238 (b).

### RESULTS

**PCS Spurious & Harmonic (EIRP)**

Compliance Certification Services										
Above 1GHz High Frequency Substitution Measurement										
Company:		KYOCERA								
Project #:		10U13454								
Date:		10/7/2010								
Test Engineer:		MENGISTU MEKURIA								
Configuration:		EUT ALONE								
Mode:		TX, CDMA 1xRTT PCS BAND								
Chamber		Pre-amplifier			Filter		Limit			
5m Chamber A		T144 8449B			Filter 1		FCC PART 24			
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch. (1851.25 MHz)</b>										
3.703	-50.8	H	3.0	45.0	36.8	1.0	-41.6	-13.0	-28.6	
5.554	-60.6	H	3.0	49.9	36.3	1.0	-46.0	-13.0	-33.0	
7.405	-66.4	H	3.0	52.9	36.6	1.0	-49.1	-13.0	-36.1	
9.256	-53.3	H	3.0	55.3	37.0	1.0	-34.1	-13.0	-21.1	
14.810	-63.3	H	3.0	60.4	34.8	1.0	-36.7	-13.0	-23.7	
3.703	-51.1	V	3.0	44.9	36.8	1.0	-41.9	-13.0	-28.9	
5.554	-54.0	V	3.0	49.3	36.3	1.0	-40.0	-13.0	-27.0	
7.405	-64.7	V	3.0	51.8	36.6	1.0	-48.5	-13.0	-35.5	
9.256	-49.4	V	3.0	54.2	37.0	1.0	-31.1	-13.0	-18.1	
14.810	-61.9	V	3.0	60.1	34.8	1.0	-35.7	-13.0	-22.7	
<b>Mid Ch. (1890.00 MHz)</b>										
3.760	-54.5	H	3.0	45.2	36.8	1.0	-45.1	-13.0	-32.1	
5.640	-57.1	H	3.0	50.1	36.3	1.0	-42.3	-13.0	-29.3	
7.520	-66.2	H	3.0	53.1	36.6	1.0	-48.7	-13.0	-35.7	
9.400	-52.7	H	3.0	55.4	37.0	1.0	-33.3	-13.0	-20.3	
15.040	-64.2	H	3.0	60.7	34.7	1.0	-37.3	-13.0	-24.3	
3.760	-50.1	V	3.0	45.1	36.8	1.0	-40.8	-13.0	-27.8	
5.640	-55.2	V	3.0	49.4	36.3	1.0	-41.1	-13.0	-28.1	
7.520	-66.0	V	3.0	52.0	36.6	1.0	-49.7	-13.0	-36.7	
9.400	-47.0	V	3.0	54.4	37.0	1.0	-28.7	-13.0	-15.7	
15.040	-63.9	V	3.0	60.1	34.7	1.0	-37.5	-13.0	-24.5	
<b>Hi Ch. (1908.75 MHz)</b>										
3.818	-48.3	H	3.0	45.3	36.7	1.0	-38.6	-13.0	-25.6	
5.726	-60.1	V	3.0	49.5	36.3	1.0	-45.9	-13.0	-32.9	
7.635	-66.7	H	3.0	53.2	36.6	1.0	-49.1	-13.0	-36.1	
9.544	-53.8	H	3.0	55.6	37.1	1.0	-34.2	-13.0	-21.2	
11.453	-65.1	H	3.0	55.7	36.8	1.0	-45.2	-13.0	-32.2	
3.818	-46.5	V	3.0	45.2	36.7	1.0	-37.0	-13.0	-24.0	
5.726	-52.3	V	3.0	49.5	36.3	1.0	-38.0	-13.0	-25.0	
7.635	-66.5	V	3.0	52.1	36.6	1.0	-50.0	-13.0	-37.0	
9.544	-49.1	V	3.0	54.6	37.1	1.0	-30.6	-13.0	-17.6	
15.270	-63.8	V	3.0	59.5	34.8	1.0	-38.0	-13.0	-25.0	

Note: No other emissions were detected within -40 dB margin to the limits.  
 Rev. 03.03.09