RADIATED SPURIOUS EMISSIONS PORTIONS OF FCC CFR47 PART 24 SUBPART E CERTIFICATION TEST REPORT

FOR

SINGLE BAND CDMA PHONE WITH BLUETOOTH

MODEL NUMBER: K53-01

FCC ID: OVF-K5301

REPORT NUMBER: 11U13967-1, REVISION B

ISSUE DATE: OCTOBER 10, 2011

Prepared for

KYOCERA COMMUNICATIONS, INC.
9520 TOWNE CENTER DRIVE
SAN DIEGO, CA 92121, USA

Prepared by

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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
---	08/07/11	Initial Issue	T. Chan
---	10/10/11	Re-measured With Average Readings	T. Chan

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: KYOCERA COMMUNICATIONS, INC.
9520 TOWNE CENTER DRIVE
SAN DIEGO, CA 92121, USA

EUT DESCRIPTION: SINGLE BAND CDMA PHONE WITH BLUETOOTH

MODEL: K53-01

SERIAL NUMBER: 268435459900294371

DATE TESTED: OCTOBER 07, 2011

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:

THU CHAN
ENGINEERING MANAGER
UL CCS

Tested By:

MENGISTU MEKURIA
EMC ENGINEER
UL CCS

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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 47 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:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 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%.

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a single band CDMA phone with Bluetooth feature that is manufactured by Kyocera Communications, Inc.

5.2. MAXIMUM OUTPUT POWER

The transmitter maximum average EIRP output powers are 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	22.89	194.5
Mid CH – 1880.00		23.05	201.8
High CH – 1908.75		22.48	177.0

5.3. SOFTWARE AND FIRMWARE

The EUT is linked with Agilent Communication Test Set.

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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 on X, Y, and Z Positions, and the worst position among X, Y, and Z with an AC Adapter and headset. After the investigations the worst-cases were turned out to be X position with headset only.

PROCEDURE USED TO ESTABLISH TEST SIGNAL

3G-CDMA2000 1xRTT

This procedure assumes the Agilent E5515C Test Set has the following applications installed and with valid license.

Application	Rev, License
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) > 4395
  > 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.

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5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
AC/DC Adapter	Kyocera	TXTVL10148	CE90-R431C-03	N/A
Headset	TICS	Istation	N/A	N/A

I/O CABLES

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	DC	1	Mini-USB	Un-shielded	1.9m	N/A
2	Mic	1	Mini-Banana	Un-shielded	1.5m	Volume Control on Cable

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.

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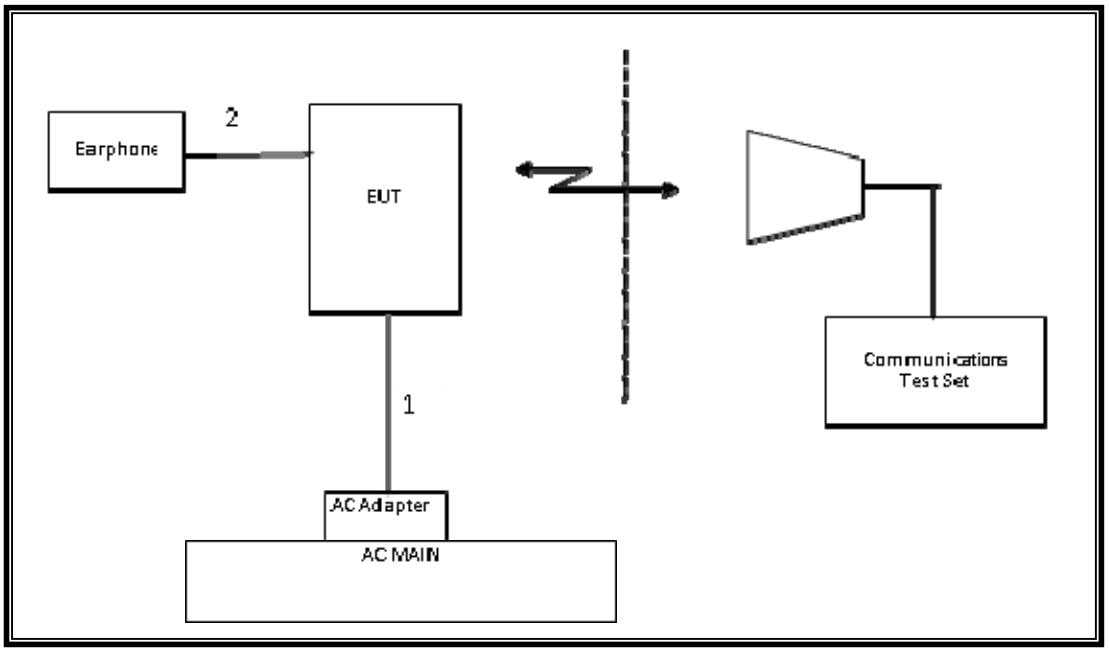
SETUP DIAGRAM FOR TESTS



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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**
Communications Test Set	Agilent / HP	E5515C	1000732	09/27/12
Antenna, Horn, 18 GHz	EMCO	3115	C00783	06/29/12
Antenna, Horn, 18 GHz	EMCO	3115	C00872	06/29/12
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	07/14/12
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01161	6/7/2012
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR
Signal Generator, 20 GHz	Agilent / HP	83732B	C00774	07/14/12
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01016	07/16/12
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00885	01/27/12
Dipole	Speag	D900V2	N/A	11/16/11

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7. LIMITS AND RESULTS

7.1. RADIATED OUTPUT POWER

LIMITS

24.232(b) & RSS133 § 6.4 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 B

Company: KYOCERA
Project #: 11U13967
Date: 10/07/11
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH HEADSET
Mode: TX, PCS BAND CDMA MODE

Test Equipment:
Receiving: Horn T59, and Camber B SMA Cables
Substitution: Horn T60 Substitution, 6ft SMA Cable (208947003) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.851	7.1	V	0.85	8.01	14.25	33.0	-18.8	
1.851	15.7	H	0.85	8.01	22.89	33.0	-10.1	
1.880	8.2	V	0.85	8.13	15.50	33.0	-17.5	
1.880	15.8	H	0.85	8.13	23.05	33.0	-10.0	
1.909	7.1	V	0.85	8.13	14.37	33.0	-18.6	
1.909	15.2	H	0.85	8.13	22.48	33.0	-10.5	

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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)(g)(1)(2)

RESULTS

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PCS SPURIOUS & HARMONIC (EIRP)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: KYOCERA
Project #: 11U13967
Date: 07/10/11
Test Engineer: MENGISTU MEKURIA
Configuration: EUT w/ EARPHONE
Mode: TX, PCS BAND CDMA MODE

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T144 8449B	Filter 1	Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.25MHz									
3.702	-17.3	V	3.0	36.8	1.0	-53.1	-13.0	-40.1	
5.554	-16.5	V	3.0	36.3	1.0	-51.8	-13.0	-38.8	
3.702	-13.4	H	3.0	36.8	1.0	-49.2	-13.0	-36.2	
5.554	-15.2	H	3.0	36.3	1.0	-50.5	-13.0	-37.5	
Mid Ch, 1880MHz									
3.760	-13.3	V	3.0	36.8	1.0	-49.1	-13.0	-36.1	
5.640	-16.0	V	3.0	36.3	1.0	-51.3	-13.0	-38.3	
3.760	-14.1	H	3.0	36.8	1.0	-49.9	-13.0	-36.9	
5.640	-16.0	H	3.0	36.3	1.0	-51.3	-13.0	-38.3	
High Ch, 1908.75MHz									
3.818	-13.8	V	3.0	36.7	1.0	-49.5	-13.0	-36.5	
5.726	-15.2	V	3.0	36.3	1.0	-50.6	-13.0	-37.6	
3.818	-11.0	H	3.0	36.7	1.0	-46.7	-13.0	-33.7	
5.726	-15.9	H	3.0	36.3	1.0	-51.2	-13.0	-38.2	

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Note: No other emissions were detected above the system noise floor.

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