



**RADIATED SPURIOUS EMISSIONS PORTIONS OF**

**FCC CFR47 PART 22 SUBPART H  
FCC CFR47 PART 24 SUBPART E  
FCC CFR47 PART 27 SUBPART L  
INDUSTRY CANADA RSS-132 ISSUE 2  
INDUSTRY CANADA RSS-133 ISSUE 5  
INDUSTRY CANADA RSS-139 ISSUE 2**

**CERTIFICATION TEST REPORT  
FOR**

**TRI-BAND 1xRTT CDMA PHONE WITH BLUETOOTH**

**FCC MODEL NUMBER: K54-02  
IC MODEL NUMBER: E3100**

**FCC ID: OVF-K5402  
IC: 3572A- E3100**

**REPORT NUMBER: 10U13257-1**

**ISSUE DATE: JUNE 15, 2010**

*Prepared for*

**KYOCERA COMMUNICATIONS, INC  
10300 CAMPUS POINT DRIVE  
SAN DIEGO, CA 92121, U.S.A.**

*Prepared by*

**COMPLIANCE CERTIFICATION SERVICES  
47173 BENICIA STREET  
FREMONT, CA 94538, U.S.A.  
TEL: (510) 771-1000  
FAX: (510) 661-0888**



**NVLAP LAB CODE 200065-0**

Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
--	06/15/10		T. Chan

## TABLE OF CONTENTS

<b>1. ATTESTATION OF TEST RESULTS</b> .....	<b>4</b>
<b>2. TEST METHODOLOGY</b> .....	<b>5</b>
<b>3. FACILITIES AND ACCREDITATION</b> .....	<b>5</b>
<b>4. CALIBRATION AND UNCERTAINTY</b> .....	<b>5</b>
4.1. <i>MEASURING INSTRUMENT CALIBRATION</i> .....	5
4.2. <i>SAMPLE CALCULATION</i> .....	5
4.3. <i>MEASUREMENT UNCERTAINTY</i> .....	5
<b>5. EQUIPMENT UNDER TEST</b> .....	<b>6</b>
5.1. <i>DESCRIPTION OF EUT</i> .....	6
5.2. <i>MAXIMUM OUTPUT POWER</i> .....	6
5.3. <i>SOFTWARE AND FIRMWARE</i> .....	7
5.4. <i>WORST-CASE CONFIGURATION AND MODE</i> .....	7
5.5. <i>DESCRIPTION OF TEST SETUP</i> .....	8
<b>6. TEST AND MEASUREMENT EQUIPMENT</b> .....	<b>10</b>
<b>7. LIMITS AND RESULTS</b> .....	<b>11</b>
7.1. <i>RADIATED OUTPUT POWER</i> .....	11
7.2. <i>FIELD STRENGTH OF SPURIOUS RADIATION</i> .....	15
7.3. <i>RECEIVER SPURIOUS EMISSIONS</i> .....	19
7.4. <i>POWER LINE CONDUCTED EMISSION</i> .....	24
<b>8. SETUP PHOTOS</b> .....	<b>28</b>

# 1. ATTESTATION OF TEST RESULTS

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

**EUT DESCRIPTION:** TRI-BAND 1XRTT CDMA PHONE WITH BLUETOOTH

**MODEL:** K54-02 for FCC & E3100 for IC

**SERIAL NUMBER:** FFE31000002588

**DATE TESTED:** JUNE 09 - 10, 2010

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 22H, 24E, AND 27L	PASS (Radiated Portion)
IC RSS-132 ISSUE 2, RSS-133 ISSUE 5, AND RSS-139 ISSUE 2	PASS (Radiated Portion)

Compliance Certification Services, Inc. (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 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 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:



THU CHAN  
EMC MANAGER  
COMPLIANCE CERTIFICATION SERVICES

Tested By:



VIEN TRAN  
EMC ENGINEER  
COMPLIANCE CERTIFICATION SERVICES

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-C, FCC CFR 47 Part 2, FCC CFR 47 Part 22, FCC CFR Part 24, FCC Part 27, RSS-132 Issue 2, RSS-133 Issue 5 and RSS-139 Issue 2.

## 3. FACILITIES AND ACCREDITATION

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

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 Tri-band CDMA Phone that manufactured by Kyocera Communications, Inc.

### 5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak ERP & average EIRP output powers as follows:

824 to 849 MHz Authorized Band

Frequency Range (MHz)	Modulation	ERP Output Power (dBm)	ERP Output Power (mW)
Low CH - 824.70	CDMA2000	25.1	323.6
Mid CH - 836.52		26.2	416.9
High CH - 848.31		26.6	457.1

1850 to 1910 MHz Authorized Band

Frequency Range (MHz)	Modulation	EIRP Output Power (dBm)	EIRP Output Power (mW)
Low CH - 1851.25	CDMA2000	24.4	275.4
Mid CH - 1880.00		26.4	436.5
High CH - 1908.75		25.4	346.7

1710 to 1755 MHz Authorized Band

Frequency Range (MHz)	Modulation	EIRP Output Power (dBm)	EIRP Output Power (mW)
Low CH - 1711.25	AWS	25.4	346.7
MID-Ch- 1733.00		25.6	363.1
High CH - 1753.75		25.7	371.5

### 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 AC/DC adapter and headset, after the investigations, the worst-position was turned out to be a Z-position with AC/DC adapter and headset for all bands.

#### 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) > 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.

## 5.5. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
AC/DC Adapter	Kyocera	TXTVL10148	936S-001Y	DoC
Headset	N/A	N/A	N/A	N/A

### I/O CABLES

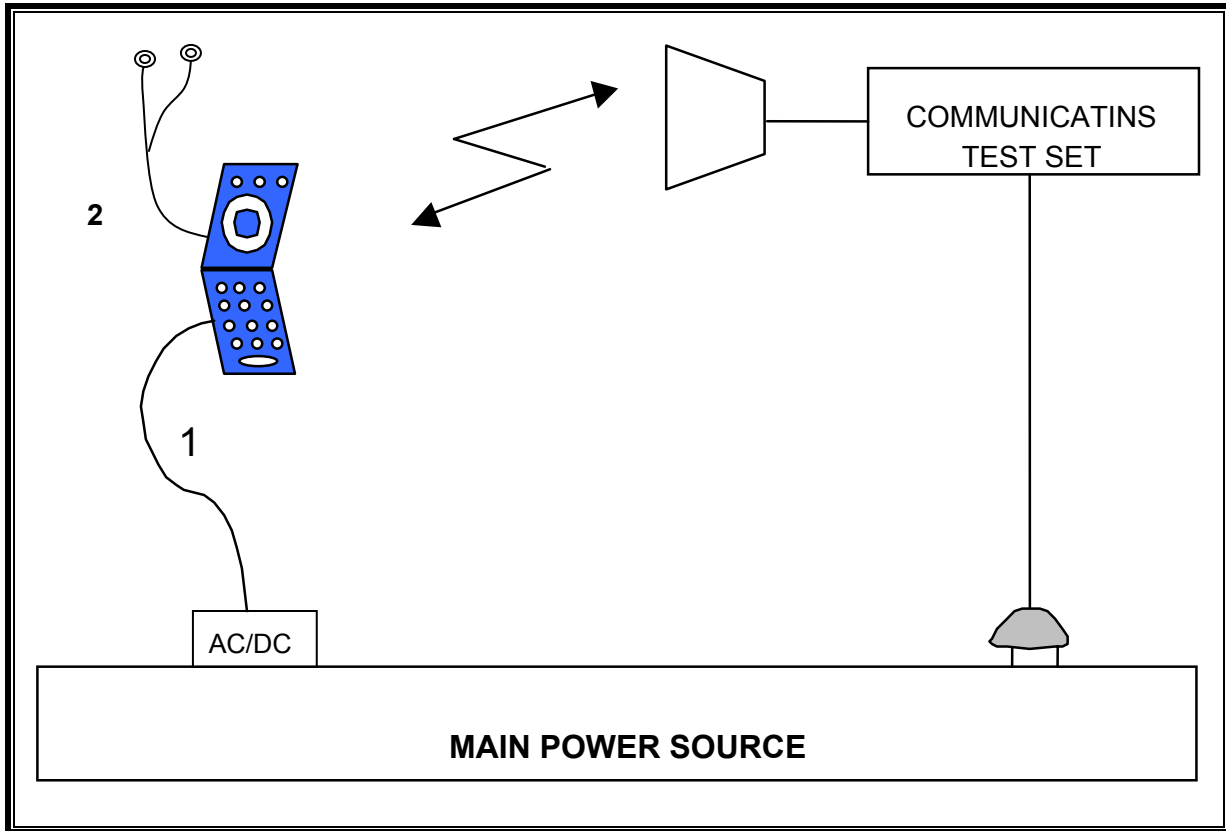
I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	DC Input	1	Mini-USB	Un-Shielded	2.0 m	N/A
2	Audio	1	Mini-Jack	Un-Shielded	1.5 m	Min on the Cable

### 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.



**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
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01176	08/24/10
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01179	08/24/10
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01178	08/31/10
Communications Test Set	Agilent / HP	E5515C	N/A	02/22/11
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	08/04/10
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C00749	08/04/10
Dipole	Speag	D900V2	N/A	11/16/11
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	N02689`	CNR
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR
Signal Generator	R & S	SMP04	C00953	02/16/11
Antenna, Horn, 18 GHz	ETS	3117	C01005	07/29/10
Antenna, Horn, 18 GHz	EMCO	3115	C00783	07/29/10
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01016	07/14/10
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01011	07/14/10
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	05/06/11
LISN, 30 MHz	FCC	LISN-50/250-25-2	N02625	11/06/10

## **7. LIMITS AND RESULTS**

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

#### **LIMITS**

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

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.

27.50 (d) (2) & RSS-139 § 6.4 Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band are limited to a peak EIRP of 1 watt.

RSS-132 § 4.4 The maximum ERP shall be 6.3 Watts for mobile stations.

#### **TEST PROCEDURE**

ANSI / TIA / EIA 603 Clause 2.2.17, RSS-132, RSS-133, & RSS-139

#### **RESULTS**

**CELL OUTPUT POWER (ERP)**

High Frequency Substitution Measurement Compliance Certification Services Chamber B							
<b>Company:</b>		Kyocera Communications, Inc.					
<b>Project #:</b>		10U13257					
<b>Date:</b>		6/9/2010					
<b>Test Engineer:</b>		Vien Tran					
<b>Configuration:</b>		EUT with Headset and AC Adapter					
<b>Mode:</b>		Tx Cell Band					
<b>Test Equipment:</b>							
Receiving: Sunol T130, and 3m Chamber N-type Cable (Setup this one for testing EUT)							
Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse.							
f MHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>LOW CHANNEL</b>							
824.70	-10.7	V	32.6	21.9	38.5	-16.6	
824.70	-5.3	H	30.4	25.1	38.5	-13.4	
<b>MID CHANNEL</b>							
836.52	-9.5	V	32.7	23.2	38.5	-15.3	
836.52	-4.6	H	30.7	26.2	38.5	-12.3	
<b>HIGH CHANNEL</b>							
848.31	-10.6	V	32.0	21.4	38.5	-17.1	
848.31	-4.1	H	30.8	26.6	38.5	-11.8	
Rev. 1.24.7							

**PCS OUTPUT POWER (EIRP)**

High Frequency Fundamental Measurement Compliance Certification Services 3m Chamber							
<b>Company:</b>		Kyocera Communications, Inc.					
<b>Project #:</b>		10U13257					
<b>Date:</b>		6/9/2010					
<b>Test Engineer:</b>		Vien Tran					
<b>Configuration:</b>		EUT with Headset and AC Adapter					
<b>Mode:</b>		Tx PCS Band					
<b>Test Equipment:</b>							
Receiving: Horn T60, and 3m Chamber SMA Cables							
Substitution: Horn T72 Substitution, 6ft SMA Cable (SN # 208947003) Warehouse							
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>LOW CHANNEL</b>							
1.851	-14.3	V	38.7	24.4	33.0	-8.6	
1.851	-19.1	H	36.8	17.7	33.0	-15.3	
<b>MID CHANNEL</b>							
1.880	-14.5	V	40.9	26.4	33.0	-6.6	
1.880	-22.3	H	40.9	18.6	33.0	-14.4	
<b>HIGH CHANNEL</b>							
1.910	-15.5	V	40.9	25.4	33.0	-7.6	
1.910	-20.6	H	37.6	17.0	33.0	-16.0	
Rev. 1.24.7							

**AWS OUTPUT POWER (EIRP)**

High Frequency Fundamental Measurement Compliance Certification Services Chamber A							
<b>Company:</b>		Kyocera Communications, Inc.					
<b>Project #:</b>		10U13257					
<b>Date:</b>		6/9/2010					
<b>Test Engineer:</b>		Mengistu Mekuria					
<b>Configuration:</b>		EUT with Headset and AC Adapter					
<b>Mode:</b>		Tx AWS Band					
<b><u>Test Equipment:</u></b>							
Receiving: Horn T59, 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
1.711	-14.5	V	39.9	25.4	30.0	4.6	
1.711	-13.8	H	38.6	24.9	30.0	5.2	
1.733	-15.7	V	40.4	24.8	30.0	5.3	
1.733	-13.6	H	39.2	25.6	30.0	4.4	
1.755	-15.3	V	40.2	24.9	30.0	5.1	
1.755	-13.9	H	39.6	25.7	30.0	4.3	
Rev. 1.24.7							

## **7.2. FIELD STRENGTH OF SPURIOUS RADIATION**

### **LIMIT**

§22.917 (e) and §24.238 (a), RSS-132 § 4.5.1, & RSS-133 § 6.5.1 (a) (i) & (b): 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.

§27.53 (g) and RSS-139 § 6.5 For operations in the 1710–1755MHz and 2110–2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log_{10} (P)$  dB.

### **TEST PROCEDURE**

ANSI / TIA / EIA 603 Clause 3.2.12 & FCC 22.917 (b), FCC 24.238 (b), & FCC 27.53 (g)(1)(2)(3), RSS-132, RSS-133, & RSS-139

### **RESULTS**

**CELL SPURIOUS & HARMONIC (ERP)**

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement											
Company:		Kyocera Communications, Inc.									
Project #:		10U13257									
Date:		6/9/2010									
Test Engineer:		Mengistu Mekuria									
Configuration:		EUT with Headset and AC Adapter									
Mode:		Tx CELL Band									
Chamber			Pre-amplifier			Filter			Limit		
5m Chamber B			T145 8449B			Filter 1			FCC PART 22		
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes	
<b>Low Channel (1851.25 MHz)</b>											
1.649	-25.3	V	3.0	36.8	35.5	1.0	-23.1	-13.0	-10.1		
2.474	-42.8	V	3.0	41.7	35.4	1.0	-35.5	-13.0	-22.5		
3.299	-45.6	V	3.0	44.1	35.5	1.0	-36.0	-13.0	-23.0		
1.649	-26.5	H	3.0	37.2	35.5	1.0	-23.8	-13.0	-10.8		
2.474	-43.7	H	3.0	39.8	35.4	1.0	-38.3	-13.0	-25.3		
3.299	-52.8	H	3.0	44.0	35.5	1.0	-43.4	-13.0	-30.4		
<b>Mid Channel (1880.00 MHz)</b>											
1.673	-28.3	V	3.0	37.1	35.5	1.0	-25.7	-13.0	-12.7		
2.510	-51.9	V	3.0	41.8	35.4	1.0	-44.5	-13.0	-31.5		
3.346	-45.0	V	3.0	44.3	35.5	1.0	-35.3	-13.0	-22.3		
1.673	-29.3	H	3.0	37.5	35.5	1.0	-26.4	-13.0	-13.4		
2.510	-51.8	H	3.0	39.9	35.4	1.0	-46.4	-13.0	-33.4		
3.346	-53.7	H	3.0	44.1	35.5	1.0	-44.1	-13.0	-31.1		
<b>Hi Channel (1908.75 MHz)</b>											
1.697	-24.6	V	3.0	37.4	35.5	1.0	-21.7	-13.0	-8.7		
2.545	-49.4	V	3.0	42.0	35.4	1.0	-41.9	-13.0	-28.9		
3.393	-45.4	V	3.0	44.4	35.5	1.0	-35.5	-13.0	-22.5		
1.697	-25.7	H	3.0	37.7	35.5	1.0	-22.6	-13.0	-9.6		
2.545	-50.9	H	3.0	40.1	35.4	1.0	-45.2	-13.0	-32.2		
3.393	-49.4	H	3.0	44.3	35.5	1.0	-39.6	-13.0	-26.6		
<p>Note: No other emissions were detected within 40 dB limit of the limit.                      Rev. 03.03.09</p>											



**PCS Spurious & Harmonic (EIRP)**

**Compliance Certification Services**  
**Above 1GHz High Frequency Substitution Measurement**

Company: Kyocera Communications, Inc.  
 Project #: 10U13257  
 Date: 6/9/2010  
 Test Engineer: Mengistu Mekuria  
 Configuration: EUT with Headset and AC Adapter  
 Mode: Tx PCS Band

Chamber

Pre-amplifier

Filter

Limit

5m Chamber B

T145 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 Channel (1851.25 MHz)</b>										
3.703	-50.9	V	3.0	45.1	35.4	1.0	-40.1	-13.0	-27.1	
3.703	-61.6	H	3.0	45.3	35.4	1.0	-50.6	-13.0	-37.6	
<b>Mid Channel (1880.00 MHz)</b>										
3.760	-48.3	V	3.0	45.3	35.3	1.0	-37.4	-13.0	-24.4	
3.760	-58.2	H	3.0	45.5	35.3	1.0	-47.0	-13.0	-34.0	
<b>Hi Channel (1908.75 MHz)</b>										
3.818	-51.6	V	3.0	45.4	35.3	1.0	-40.5	-13.0	-27.5	
3.818	-59.7	H	3.0	45.7	35.3	1.0	-48.2	-13.0	-35.2	

Note: No other emissions were detected within 40 dB limit of the limit.  
 Rev. 03.03.09

**AWS Spurious & Harmonic (EIRP)**

**Compliance Certification Services**  
 Above 1GHz High Frequency Substitution Measurement

Company: Kyocera Communications, Inc.  
 Project #: 10U13257  
 Date: 6/9/2010  
 Test Engineer: Mengistu Mekuria  
 Configuration: EUT with Headset and AC Adapter  
 Mode: Tx AWS Band

Chamber

Pre-amplifier

Filter

Limit

5m Chamber B

T145 8449B

Filter 1

FCC PART 27

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 Channel (1711.25 MHz)</b>										
3.423	-57.2	V	3.0	44.4	35.5	1.0	-47.2	-13.0	-34.2	
3.423	-62.5	H	3.0	44.4	35.5	1.0	-52.6	-13.0	-39.6	
<b>Mid Channel (1733.00 MHz)</b>										
3.466	-58.0	V	3.0	44.6	35.5	1.0	-47.9	-13.0	-34.9	
3.466	-62.2	H	3.0	44.5	35.5	1.0	-52.1	-13.0	-39.1	
<b>Hi Channel (1754.75 MHz)</b>										
3.510	-55.3	V	3.0	44.7	35.4	1.0	-45.1	-13.0	-32.1	
3.510	-62.7	H	3.0	44.7	35.4	1.0	-52.5	-13.0	-39.5	

Note: No other emissions were detected within 40 dB limit of the limit.  
 Rev. 03.03.09

### 7.3. RECEIVER SPURIOUS EMISSIONS

#### LIMIT

RSS-Gen 7.2.2

Spurious Emission Limits for Receivers:

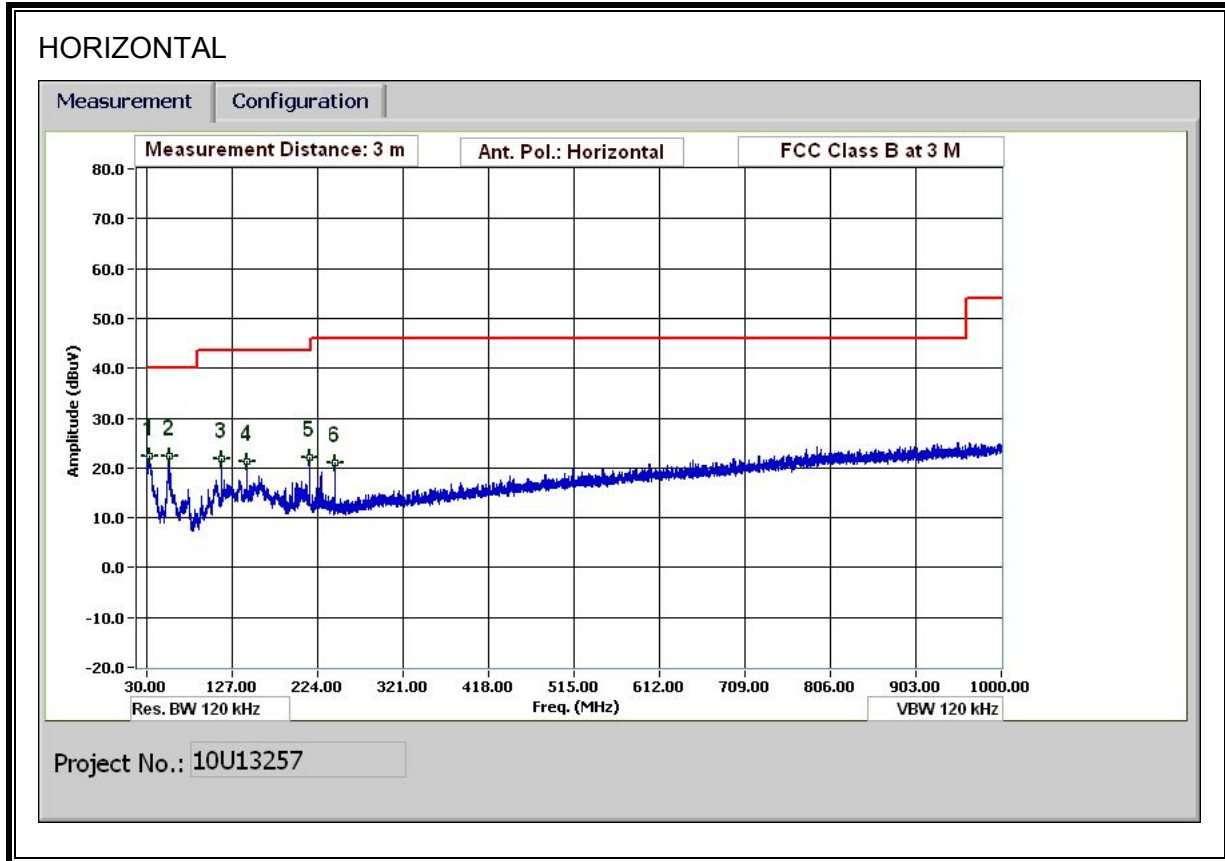
Spurious Frequency (MHz)	Field Strength (microvolts/m at 3 metres)
30-88	100
88-216	150
216-960	200
Above 960	500

#### TEST PROCEDURE

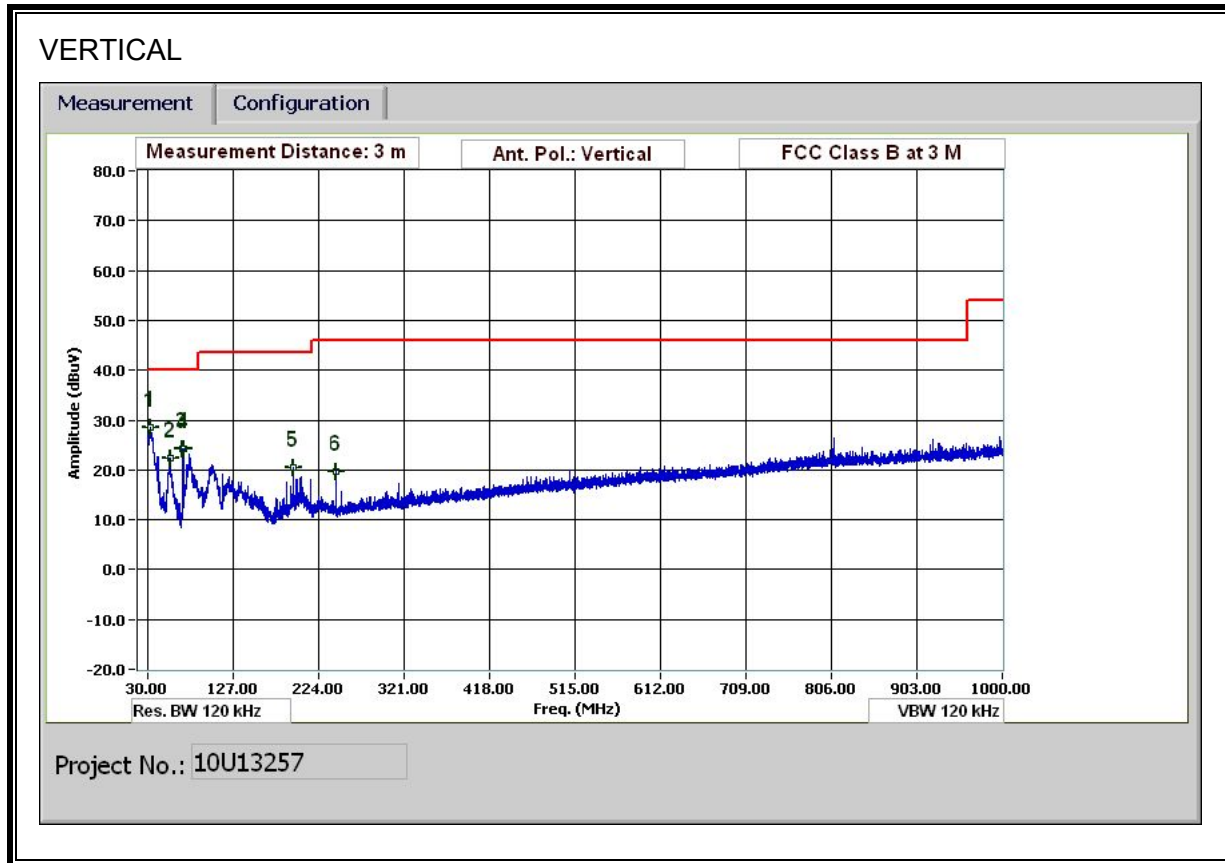
The search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (local oscillator frequency, intermediate frequency or carrier frequency), or 30 MHz, whichever is the higher, to at least 3 times the highest tunable and local oscillator frequencies.

#### RESULTS

**SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)**



**SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)**



**SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)**

30-1000MHz Frequency Measurement Compliance Certification Services, Fremont 5m Chamber													
Test Engr:		Mengistu Mekuria											
Date:		06/09/10											
Project #:		10U13257											
Company:		Kyocera Communications, Inc.											
EUT Description:		Tri Band CDMA Phone With BT Future											
EUT M/N:		K54-02											
Test Target:		FCC Class B											
Mode Oper:		TX Worst-Case											
f	Measurement Frequency			Amp	Preamp Gain			Margin	Margin vs. Limit				
Dist	Distance to Antenna			D Corr	Distance Correct to 3 meters								
Read	Analyzer Reading			Filter	Filter Insert Loss								
AF	Antenna Factor			Corr.	Calculated Field Strength								
CL	Cable Loss			Limit	Field Strength Limit								
f MHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Filter dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol V/H	Det. P/A/QP	Notes
33.240	3.0	38.8	18.9	0.5	29.7	0.0	0.0	28.5	40.0	-11.5	V	P	
55.441	3.0	43.4	7.9	0.6	29.6	0.0	0.0	22.4	40.0	-17.6	V	P	
70.082	3.0	45.0	8.3	0.7	29.6	0.0	0.0	24.4	40.0	-15.6	V	P	
70.922	3.0	44.9	8.2	0.7	29.6	0.0	0.0	24.2	40.0	-15.8	V	P	
195.367	3.0	36.5	11.6	1.3	28.9	0.0	0.0	20.4	43.5	-23.1	V	P	
243.369	3.0	35.2	11.8	1.4	28.8	0.0	0.0	19.6	46.0	-26.4	V	P	
32.640	3.0	32.5	19.1	0.5	29.7	0.0	0.0	22.5	40.0	-17.5	H	P	
55.561	3.0	43.5	7.9	0.6	29.6	0.0	0.0	22.5	40.0	-17.5	H	P	
114.483	3.0	37.7	12.7	1.0	29.5	0.0	0.0	21.8	43.5	-21.7	H	P	
143.165	3.0	36.5	13.0	1.1	29.3	0.0	0.0	21.3	43.5	-22.2	H	P	
214.808	3.0	37.8	11.9	1.3	28.9	0.0	0.0	22.2	43.5	-21.3	H	P	
243.489	3.0	36.5	11.8	1.4	28.8	0.0	0.0	20.9	46.0	-25.1	H	P	

Rev. 1.27.09  
Note: No other emissions were detected above the system noise floor.

**SPURIOUS EMISSIONS ABOVE 1000 MHz (WORST-CASE CONFIGURATION)**

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

## 7.4. POWER LINE CONDUCTED EMISSION

### LIMIT

#### RSS-Gen 7.2.2

Except when the requirements applicable to a given device state otherwise, for any licence-exempt radio communication device equipped to operate from the public utility AC power supply, either directly or indirectly, the radio frequency voltage that is conducted back onto the AC power lines in the frequency range of 0.15 MHz to 30 MHz shall not exceed the limits shown in Table 2. The tighter limit applies at the frequency range boundaries.

Table 2 – AC Power Lines Conducted Emission Limits

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

\* Decreases with the logarithm of the frequency.

### RESULTS



**6 WORST EMISSIONS**

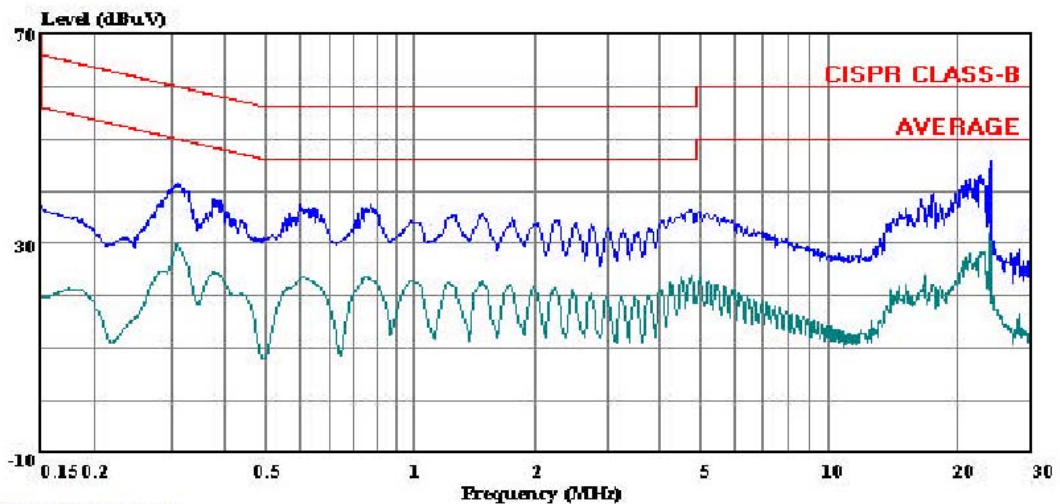
CONDUCTED EMISSIONS DATA										
Freq. (MHz)	Reading			Class (dB)	Limit QP	FCC B		Margin		Remark L1 / L2
	PK (dBuV)	QP (dBuV)	AV (dBuV)			AV	QP (dB)	AV (dB)		
0.31	41.55	--	29.78	0.00	59.89	49.89	-18.34	-20.11	L1	
22.90	42.90	--	28.35	0.00	60.00	50.00	-17.10	-21.65	L1	
24.01	45.70	--	35.32	0.00	60.00	50.00	-14.30	-14.68	L1	
0.31	40.93	--	31.90	0.00	60.02	50.02	-19.09	-18.12	L2	
22.90	42.00	--	27.42	0.00	60.00	50.00	-18.00	-22.58	L2	
24.01	45.68	--	24.01	0.00	60.00	50.00	-14.32	-25.99	L2	
6 Worst Data										

**LINE 1 RESULTS**



Compliance Certification Services  
47173 Benicia Street  
Fremont, CA 94538  
Tel: (510) 771-1000  
Fax: (510) 661-0888

Data#: 7 File#: 10U13257-LC.EMI Date: 06-08-2010 Time: 09:55:50



(Line Conduction)

Trace: 5

Ref Trace:

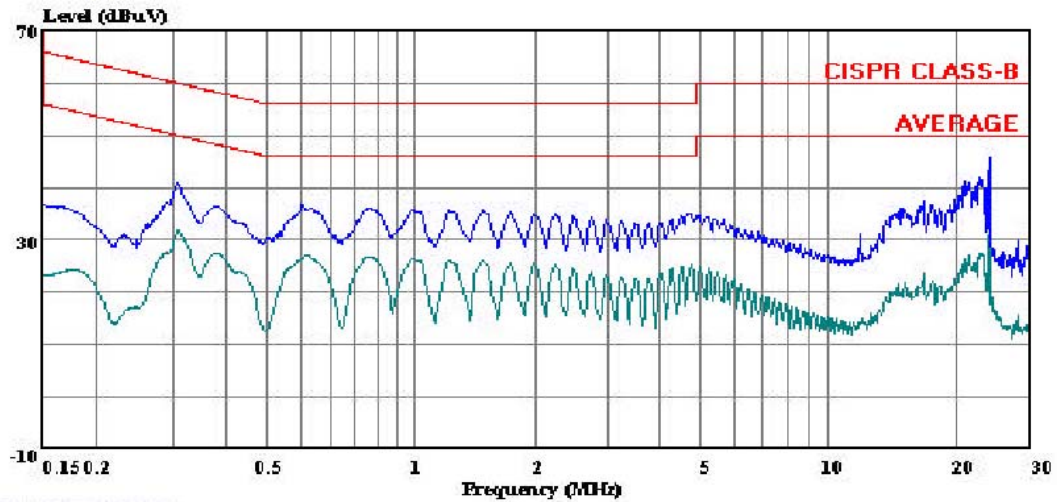
Condition: CISPR CLASS-B  
Test Operator: : William Zhuang  
Project #: : 10U13257  
Company: : Kyocera Communications, Inc.  
EUT Description: : Tri Band 1xRTT CDMA with Bluetooth  
Model: : K54-02  
Configuration: : EUT with earphone  
Mode: : Charge Mode  
Target: : FCC Class B  
Voltage: : 115V / 60HZ  
: L1: Peak (Blue) ; Average (Green)

**LINE 2 RESULTS**



Compliance Certification Services  
47173 Benicia Street  
Fremont, CA 94538  
Tel: (510) 771-1000  
Fax: (510) 661-0888

Data#: 14 File#: 10U13257-LC.EMI Date: 06-08-2010 Time: 10:07:33



(Line Conduction)

Trace: 12

Ref Trace:

Condition: CISPR CLASS-B  
Test Operator: : William Zhuang  
Project #: : 10U13257  
Company: : Kyocera Communications, Inc.  
EUT Description: : Tri Band 1xRTT CDMA with Bluetooth  
Model: : K54-02  
Configuration: : EUT with earphone  
Mode: : Charge Mode  
Target: : FCC Class B  
Voltage: : 115V / 60Hz  
: L2: Peak (Blue) ; Average (Green)