



**FCC CFR47 PART 22H, 24E AND 27L
CLASS II PERMISSIVE CHANGE**

**CERTIFICATION TEST REPORT
FOR
TRI BAND CDMA MOBILE PHONE WITH BLUETOOTH
FCC MODEL NUMBER: S2150**

FCC ID: V65S2150

REPORT NUMBER: 12U14698-2

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Prepared for

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Prepared by

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NVLAP LAB CODE 200065-0

Revision History

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: KYOCERA COMMUNICATIONS, INC
8611 BALBOA AVENUE
SAN DIEGO, CA 92123, U.S.A

EUT DESCRIPTION: TRI BAND CDMA MOBILE PHONE WITH BLUETOOTH

MODEL: S2150

SERIAL NUMBER: 268435457816729385

DATE TESTED: NOVEMBER 03-05, 2012

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 22H, 24E, AND 27L	PASS

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. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For UL CCS By:

Tested By:



THU CHAN
ENGINEERING MANAGER
UL CCS

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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, FCC CFR 47 Part 22, FCC CFR Part 24, and FCC Part 27.

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 Bluetooth featured Tri Band CDMA Phone that is manufactured by Kyocera Communications, Inc.

5.2. DESCRIPTION OF CLASS II PERMISSIVE CHANGE

The change filed under this application is alternate component change.

5.3. MAXIMUM OUTPUT POWER

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

RESULTS

Mode	Channel	f (MHz)	ERP (Peak)	
			dBm	mW
CDMA2000, 1xRTT	1013	824.70	26.40	436.52
	384	836.52	26.52	448.75
	777	848.31	27.70	588.84

Mode	Channel	f (MHz)	EIRP (Average)	
			dBm	mW
CDMA2000, 1xRTT	25	1851.25	25.32	340.41
	600	1880.00	25.97	395.37
	1175	1908.75	26.22	418.79

Mode	Channel	f (MHz)	EIRP (Average)	
			dBm	mW
CDMA2000, AWS	25	1711.00	26.22	418.79
	450	1732.50	27.27	533.33
	875	1753.75	26.30	426.58

5.4. SOFTWARE AND FIRMWARE

The EUT is linked with Agilent Communication Test Set.

5.5. WORST-CASE CONFIGURATION AND MODE

The worst-position is the EUT with highest emissions. To determine the worst-case, the EUT was investigated for folded and unfolded X, Y, and Z-Positions, and the worst position among X, Y, or Z with AC/DC adapter and headset, after the investigations, the worst-position was turned out to be folded at Y-Position with AC Adapter and headset for cell band and Un-folded at Z-Position with an AC Adapter only PCS and AWS bands respectively.

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.

<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) > 1234
> Network ID (NID) > 1
> Initial Registration Channel > 25 (PCS)

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.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
Travel Adapter	Kyocera	SCP-36ADT	N/A	N/A
Headphones	N/A	N/A	N/A	N/A

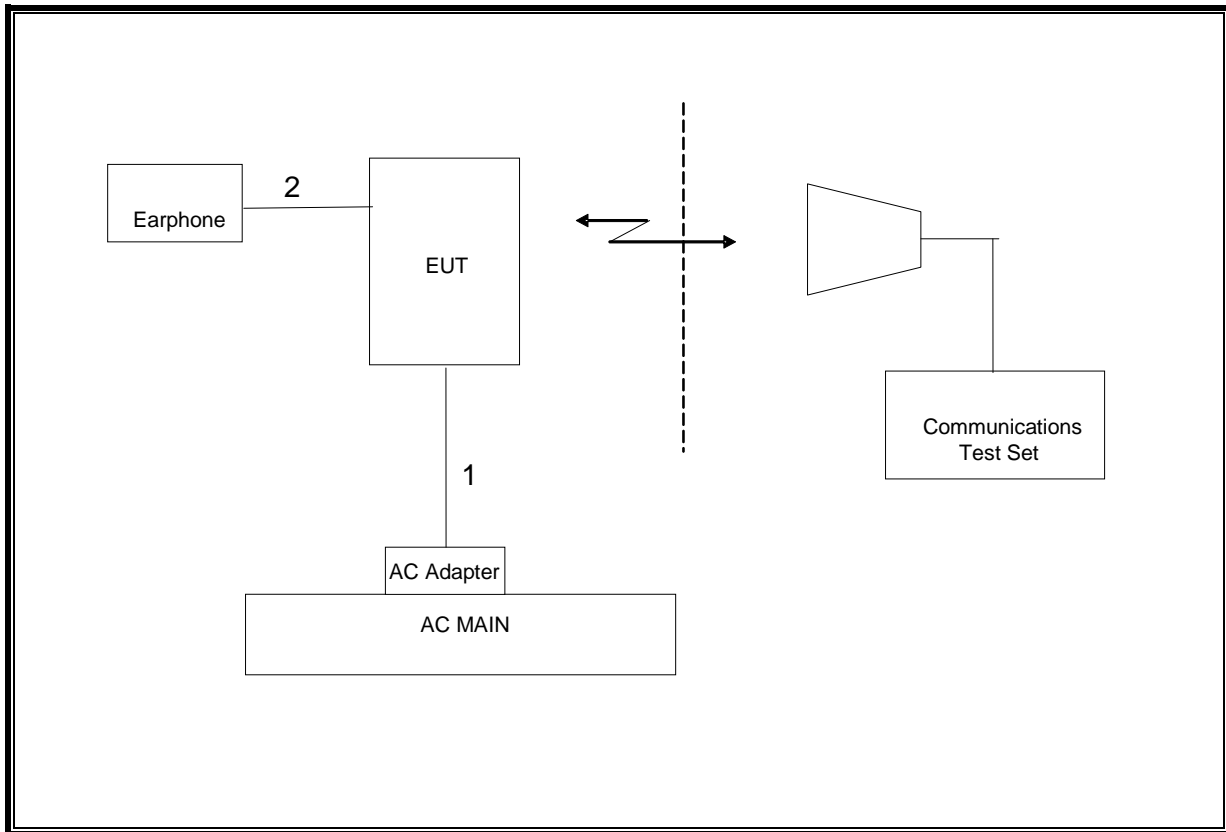
I/O CABLES

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
2	DC	1	USB	Shielded	1.5m	N/A
3	Mic	1	Earphone	Un-shielded	1.5m	N/A

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	C01161	12/16/12
Antenna, Horn, 18 GHz	EMCO	3115	C00943	CNR
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	C01016	08/14/13
Communications Test Set	Agilent / HP	E5515C	1000732	02/13/13
Vector signal generator, 20 GHz	Agilent / HP	E8267C	C01066	11/17/12
Antenna, Horn, 18 GHz	EMCO	3115	C00945	10/25/13
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	11/11/12
Tuned Dipole 400~1000 MHz	ETS	3121C DB4	C00994	09/16/13
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	N02689	CNR
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR

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) 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) 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.

TEST PROCEDURE

ANSI / TIA / EIA 603 Clause 2.2.17.

RESULTS

CELL OUTPUT POWER (ERP)

High Frequency Substitution Measurement Compliance Certification Services Chamber B								
Company:		Kyocera						
Project #:		12U14698						
Date:		11/03/12						
Test Engineer:		Chin Pang						
Configuration:		EUT WITH HEADSET AND AC ADAPTER						
Mode:		TX, 850 MHz BAND, CDMA2000 MODE						
Test Equipment:								
Receiving: Sunol T243, and Chamber B N-type Cable (Setup this one for testing EUT)								
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 208947003) Warehouse.								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.70	27.00	V	0.6	0.0	26.40	38.5	-12.0	
824.70	18.40	H	0.6	0.0	17.80	38.5	-20.6	
Mid Ch								
836.52	27.12	V	0.6	0.0	26.52	38.5	-11.9	
836.52	18.58	H	0.6	0.0	17.98	38.5	-20.5	
High Ch								
848.31	28.30	V	0.6	0.0	27.70	38.5	-10.7	
848.31	18.83	H	0.6	0.0	18.23	38.5	-20.2	
Rev. 3.17.11								

PCS OUTPUT POWER (EIRP)

High Frequency Fundamental Measurement Compliance Certification Services Chamber B								
Company:		Kyocera						
Project #:		12U14698						
Date:		11/03/12						
Test Engineer:		Chin Pang						
Configuration:		EUT WITH HEADSET AND AC ADAPTER						
Mode:		TX, 1900 MHz BAND, CDMA2000 MODE						
Test Equipment:								
Receiving: Horn T59, and Chamber B SMA Cables								
Substitution: Horn T60 Substitution, 4ft 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
Low Ch								
1.851	9.9	V	0.90	8.10	17.10	33.0	-15.9	
1.851	18.1	H	0.90	8.10	25.32	33.0	-7.7	
Mid Ch								
1.880	11.1	V	0.90	8.11	18.31	33.0	-14.7	
1.880	18.8	H	0.90	8.11	25.97	33.0	-7.0	
High Ch								
1.909	11.2	V	0.90	8.11	18.41	33.0	-14.6	
1.909	19.0	H	0.90	8.11	26.22	33.0	-6.8	
Rev. 3.17.11								

AWS OUTPUT POWER (EIRP)

High Frequency Fundamental Measurement Compliance Certification Services Chamber B								
Company:		Kyocera						
Project #:		12U14698						
Date:		11/03/12						
Test Engineer:		Chin Pang						
Configuration:		EUT and AC Adapter and Earphone						
Mode:		AWS1700						
		Average						
Test Equipment:								
Receiving: Horn T217, and Chamber B SMA Cables								
Substitution: Horn T60 Substitution, 4ft 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
Low Ch								
1.711	16.65	V	0.85	7.98	23.78	30.0	-6.2	
1.711	18.99	H	0.85	8.08	26.22	30.0	-3.8	
Mid Ch								
1.733	17.72	V	0.85	8.03	24.90	30.0	-5.1	
1.733	20.00	H	0.85	8.12	27.27	30.0	-2.7	
High Ch								
1.754	16.83	V	0.85	8.08	24.06	30.0	-5.9	
1.754	18.98	H	0.85	8.17	26.30	30.0	-3.7	
Rev. 3.17.11								

7.2. FIELD STRENGTH OF SPURIOUS RADIATION

LIMIT

§22.917 (e) and §24.238 (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) 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).

RESULTS

CELL SPURIOUS & HARMONIC (ERP)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Kyocera
Project #: 12U14698
Date: 11/03/12
Test Engineer: Chin Pang
Configuration: EUT and AC Adapter
Mode: TX, Cell BAND CDMA2000

Chamber

5m Chamber B

Pre-amplifier

T145 8449B

Filter

Filter 1

Limit

Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.7MHz									
1.649	-17.2	V	3.0	35.5	1.0	-51.7	-13.0	-38.7	
2.474	-16.3	V	3.0	35.4	1.0	-50.7	-13.0	-37.7	
1.649	-17.8	H	3.0	35.5	1.0	-52.3	-13.0	-39.3	
2.474	-14.2	H	3.0	35.4	1.0	-48.6	-13.0	-35.6	
Mid Ch, 836.52MHz									
1.673	-15.9	V	3.0	35.5	1.0	-50.4	-13.0	-37.4	
2.510	-17.2	V	3.0	35.4	1.0	-51.6	-13.0	-38.6	
1.673	-21.5	H	3.0	35.5	1.0	-56.1	-13.0	-43.1	
2.510	-15.1	H	3.0	35.4	1.0	-49.5	-13.0	-36.5	
High Ch, 848.31MHz									
1.697	-14.6	V	3.0	35.5	1.0	-49.1	-13.0	-36.1	
2.545	-18.0	V	3.0	35.4	1.0	-52.5	-13.0	-39.5	
1.697	-20.3	H	3.0	35.5	1.0	-54.8	-13.0	-41.8	
2.545	-15.2	H	3.0	35.4	1.0	-49.6	-13.0	-36.6	

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

PCS Spurious & Harmonic (EIRP)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Kyocera
Project #: 12U14698
Date: 11/03/12
Test Engineer: Chin Pang
Configuration: EUT and AC Adapter
Mode: TX, PCS CDMA2000

Chamber

5m Chamber B

Pre-amplifier

T145 8449B

Filter

Filter 1

Limit

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									
3.703	-11.9	V	3.0	35.4	1.0	-46.2	-13.0	-33.2	
5.554	-12.8	V	3.0	35.4	1.0	-47.2	-13.0	-34.2	
3.703	-9.7	H	3.0	35.4	1.0	-44.0	-13.0	-31.0	
5.554	-12.0	H	3.0	35.4	1.0	-46.4	-13.0	-33.4	
Mid Ch, 1880MHz									
3.760	-12.7	V	3.0	35.3	1.0	-47.1	-13.0	-34.1	
5.198	-13.7	V	3.0	35.3	1.0	-48.1	-13.0	-35.1	
3.760	-11.5	H	3.0	35.3	1.0	-45.8	-13.0	-32.8	
5.640	-11.8	H	3.0	35.4	1.0	-46.3	-13.0	-33.3	
High Ch, 1908.75MHz									
3.818	-14.6	V	3.0	35.3	1.0	-48.9	-13.0	-35.9	
5.726	-13.6	V	3.0	35.4	1.0	-48.1	-13.0	-35.1	
3.818	-11.3	H	3.0	35.3	1.0	-45.6	-13.0	-32.6	
5.726	-11.7	H	3.0	35.4	1.0	-46.1	-13.0	-33.1	

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

AWS Spurious & Harmonic (EIRP)

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement									
Company:		Kyocera							
Project #:		12U14698							
Date:		11/03/12							
Test Engineer:		Chin Pang							
Configuration:		EUT and AC Adapter							
Mode:		TX, AWS BAND CDMA2000							
Chamber		Pre-amplifer			Filter		Limit		
5m Chamber B		T145 8449B			Filter 1		Part 90		
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1711MHz									
3.422	-12.6	V	3.0	35.5	1.0	-47.0	-13.0	-34.0	
5.133	-12.4	V	3.0	35.3	1.0	-46.7	-13.0	-33.7	
3.422	-14.6	H	3.0	35.5	1.0	-49.1	-13.0	-36.1	
5.133	-12.8	H	3.0	35.3	1.0	-47.1	-13.0	-34.1	
Mid Ch, 1732.5MHz									
3.465	-13.4	V	3.0	35.5	1.0	-47.9	-13.0	-34.9	
5.198	-13.2	V	3.0	35.3	1.0	-47.6	-13.0	-34.6	
3.465	-13.5	H	3.0	35.5	1.0	-47.9	-13.0	-34.9	
5.198	-11.6	H	3.0	35.3	1.0	-45.9	-13.0	-32.9	
High Ch, 1753.75MHz									
3.508	-13.3	V	3.0	35.4	1.0	-47.8	-13.0	-34.8	
5.261	-12.1	V	3.0	35.3	1.0	-46.5	-13.0	-33.5	
3.508	-14.3	H	3.0	35.4	1.0	-48.8	-13.0	-35.8	
5.261	-10.5	H	3.0	35.3	1.0	-44.8	-13.0	-31.8	
Rev. 03.03.09									
Note: No other emissions were detected above the system noise floor.									