

RADIATED SPURIOUS EMISSIONS PORTIONS OF

FCC CFR47 PART 22 SUBPART H FCC CFR47 PART 24 SUBPART E FCC CFR47 PART 27 SUBPART L

CERTIFICATION TEST REPORT

FOR

TRI-BAND CDMA PHONE WITH BLUETOOTH EDR AND WIFI

FCC MODEL NUMBER: M6000

FCC ID: V65M6000

REPORT NUMBER: 09U12955-1

ISSUE DATE: DECEMBER 08, 2009

Prepared for

KYOCERA WIRELESS CORP 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

TEL: (510) 771-1000 FAX: (510) 661-0888



DATE: DECEMBER 08, 2009 FCC ID: V65M6000

Revision History

Rev.	Issue Date	Revisions	Revised By
	12/08/09	Initial Issue	T. Chan

TABLE OF CONTENTS

1.	ATT	ESTATION OF TEST RESULTS	4
2.	TES	T METHODOLOGY	5
3.	FAC	ILITIES AND ACCREDITATION	5
4.	CAL	IBRATION AND UNCERTAINTY	5
4	.1.	MEASURING INSTRUMENT CALIBRATION	5
4	.2.	SAMPLE CALCULATION	5
4	.3.	MEASUREMENT UNCERTAINTY	5
5.	EQU	IIPMENT UNDER TEST	6
5	.1.	DESCRIPTION OF EUT	6
5	.2.	MAXIMUM OUTPUT POWER	6
5	.3.	SOFTWARE AND FIRMWARE	7
5	.4.	WORST-CASE CONFIGURATION AND MODE	7
5	.5.	DESCRIPTION OF TEST SETUP	8
6.	TES	T AND MEASUREMENT EQUIPMENT	10
7.	LIMI	TS AND RESULTS	11
7	.1.	RADIATED OUTPUT POWER	11
7	.2.	FIELD STRENGTH OF SPURIOUS RADIATION	15
0	OET.	IID DHOTOS	10

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: KYOCERA WIRELESS

10300 CAMPUS POINT DRIVE SAN DIEGO, CA 92121, USA

EUT DESCRIPTION: TRI-BAND CDMA PHONE WITH BLUETOOTH, EDR, AND WIFI

MODEL: M6000

SERIAL NUMBER: 1095889600E

DATE TESTED: DECEMBER 07 AND 08, 2009

APPLICABLE STANDARDS

STANDARD TEST RESULTS

FCC PART 22H, 24E, AND 27L 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:

Tested By:

THU CHAN EMC MANAGER

COMPLIANCE CERTIFICATION SERVICES

9

MENGISTU MEKURIA EMC ENGINEER

COMPLIANCE CERTIFICATION SERVICES

Page 4 of 4

DATE: DECEMBER 08, 2009

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.

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.

SAMPLE CALCULATION 4.2.

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%.

DATE: DECEMBER 08, 2009

5. EQUIPMENT UNDER TEST

5.1. **DESCRIPTION OF EUT**

The EUT is a Bluetooth, EDR, and WiFi featured Tri-band CDMA Phone that manufactured by **Kyocera Wireless Corporations**

5.2. **MAXIMUM OUTPUT POWER**

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

824 to 849 MHz Authorized Band

Frequency Range Modulation		ERP	ERP	
		Peak Power	Peak Power	
(MHz)		(dBm)	(mW)	
Low CH - 824.70		25.2	331.1	
Mid CH - 836.52	CDMA2000	27.7	588.8	
High CH - 848.31		27.6	575.4	

1850 to 1910 MHz Authorized Band

Frequency Range	Frequency Range Modulation		EIRP	
		Peak Power	Peak Power	
(MHz)		(dBm)	(mW)	
Low CH - 1851.25		28.4	691.8	
Mid CH - 1880.00	CDMA2000	27.9	616.6	
High CH - 1908.75		27.5	562.3	

1710 to 1755 MHz Authorized Band

Frequency Range	Modulation	EIRP	EIRP	
		Peak Power	Peak Power	
(MHz)		(dBm)	(mW)	
Low CH - 1711.25		23.9	245.5	
MID-Ch- 1733.00	AWS	25.9	389.0	
High CH - 1753.75		25.0	316.2	

DATE: DECEMBER 08, 2009

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, after the investigations, the worst-position was turned out to be an Z-position without AC/DC adapter for Cell band and X-position without AC/DC for AWS, and PCS bands.

DATE: DECEMBER 08, 2009

FCC ID: V65M6000

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.

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) > 2

> 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	SCP-21ADT	4209A	DoC				
Headset N/A N/A N/A N/A								

DATE: DECEMBER 08, 2009

FCC ID: V65M6000

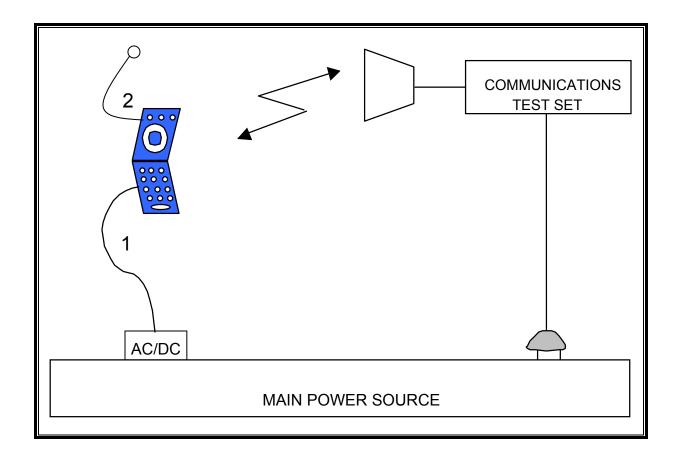
I/O CABLES

	I/O CABLE LIST									
Cable	Port	# of	Connector	Cable	Cable	Remarks				
No.		Identical	Type	Type	Length					
		Ports								
1	DC Input	1	Mini-USB	Un-Shielded	2.0 m	N/A				
2	AUDIO	1	Mini-Jack	Un-Shielded	1.0 m	Volume Control 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:

DATE: DECEMBER 08, 2009

TEST EQUIPMENT LIST								
Description	Manufacturer	Model	Asset	Cal Due				
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	02/04/10				
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01016	01/14/10				
Antenna, Horn, 18 GHz	EMCO	3115	C00783	01/29/10				
Antenna, Horn, 18 GHz	EMCO	3115	C00943	01/29/10				
Dipole	Speag	D900V2	NA	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				
Communications Test Set	Agilent / HP	E5515C	C01086	06/16/10				
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01178	08/31/10				

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) 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.

DATE: DECEMBER 08, 2009

FCC ID: V65M6000

27.50 (d) (2) 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 WIRELESS

Project #: 09U12955 Date: 12/7/2009

Test Engineer: MENGISTU MEKURIA

Configuration: EUT ALONE

Mode: TX, CELLI MODE

Test Equipment:

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	SA reading	Ant. Pol.	Path Loss	ERP	Limit	Margin	Notes
MHz	z (dBm)	(H/V)	(dBm)	(dBm)	(dBm)	(dB)	
						•	
824.7	0 -7.4	V	32.6	25.2	38.5	-13.2	
824.7	0 -13.2	Н	30.4	17.2	38.5	-21.3	
836.5	2 -5.0	V	32.7	27.7	38.5	-10.8	
836.5	2 -13.4	Н	30.7	17.4	38.5	-21.1	
848.3	1 4.4	V	32.0	27.6	38.5	-10.9	
848.3	1 -13.7	Н	30.8	17.0	38.5	-21.4	

Rev. 1.24.7

PCS OUTPUT POWER (EIRP)

High Frequency Fundamental Measurement

Compliance Certification Services Chamber B

Company: KYOCERA WIRELESS

 Project #:
 09U12955

 Date:
 12/7/2009

Test Engineer: MENGISTU MEKURIA

Configuration: EUT ALONE Mode: TX, PCS MODE

Test Equipment:

Receiving: Horn T59, and Camber B SMA Cables

Substitution: Horn T72 Substitution, 6ft SMA Cable (208947003) Warehouse

f	SA reading	Ant. Pol.	Path Loss	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(dBm)	(dBm)	(dBm)	(dB)	
1.851	-20.0	V	40.2	20.1	33.0	-12.9	
1.851	-11.1	Н	39.5	28.4	33.0	4.7	
1.880	-14.5	V	40.3	25.7	33.0	-7.3	
1.880	-12.2	Н	40.1	27.9	33.0	-5.1	
1.909	-21.5	V	40.2	18.7	33.0	-14.3	
1.909	-12.6	Н	40.1	27.5	33.0	-5.5	

Rev. 1.24.7

AWS OUTPUT POWER (EIRP)

High Frequency Fundamental Measurement Compliance Certification Services Chamber A

Company: KYOCERA WIRELESS

Project #: 09U12955 **Date:** 12/7/2009

Test Engineer: MENGISTU MEKURIA

Configuration: EUT ALONE

Mode: TX, AWS MODE

Test Equipment:

Receiving: Horn T59, and Camber B SMA Cables

Substitution: Horn T72 Substitution, 6ft SMA Cable (208947003) Warehouse

f	SA reading	Ant. Pol.	Path Loss	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(dBm)	(dBm)	(dBm)	(dB)	
1.711	-28.7	V	39.9	11.1	30.0	-18.9	
1.711	-14.7	Н	38.6	23.9	30.0	-6.1	
1.733	-26.9	V	40.4	13.5	30.0	-16.5	
1.733	-13.3	Н	39.2	25.9	30.0	4.1	
1.754	-26.2	V	40.2	14.0	30.0	-16.0	
1.754	-14.6	Н	39.6	25.0	30.0	-5.1	

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.

DATE: DECEMBER 08, 2009

FCC ID: V65M6000

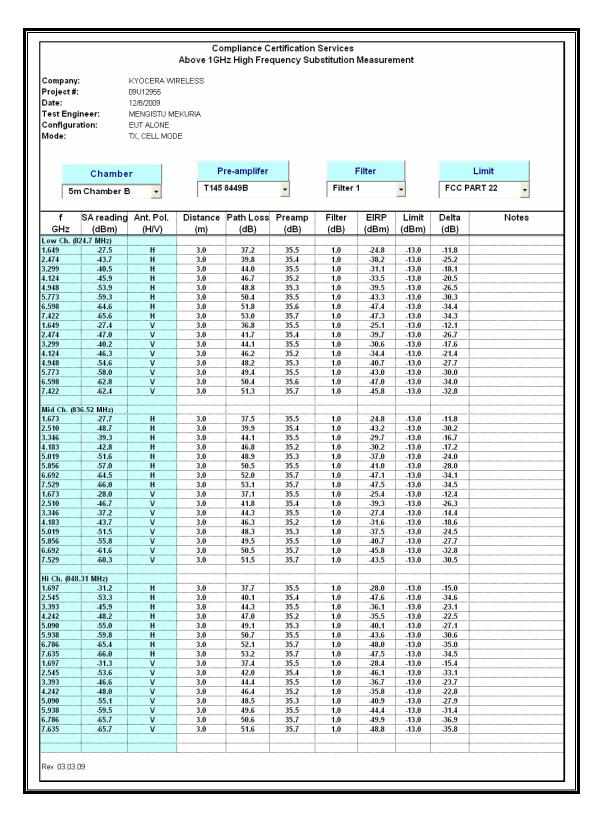
§27.53 (g) For operations in the 1710–1755MHz and 2110–2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10 (P) dB.

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),

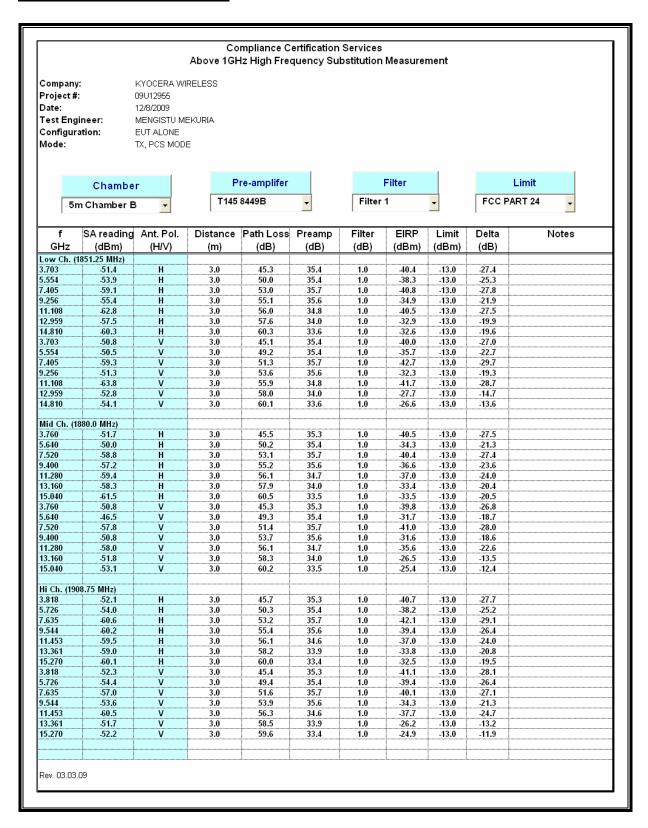
RESULTS

CELL SPURIOUS & HARMONIC (ERP)



Page 16 of 16

PCS Spurious & Harmonic (EIRP)



Page 17 of 17

AWS Spurious & Harmonic (EIRP)

