

**MPE Estimation****On****Dual-Band CDMA 1xRTT/1xEVDO ExpressCard**

<b>FCC Part 22 &amp; 24 Certification</b>	
FCC ID:	<b>OVFKWC-KPC680</b>
Model:	<b>KPC680</b>
Original Grant Date:	--

**STATEMENT OF COMPLIANCE**

Kyocera Wireless Corp declares under its sole responsibility that the product KPC680 (FCC ID: OVFKWC-KPC680) to which this declaration relates, is in conformity with the appropriate General Population/Uncontrolled RF exposure standards, recommendations and guidelines. It also declares that the product was tested in accordance with the appropriate measurement standards, guidelines and recommended practices.

Any deviations from these standards, guidelines and recommended practices are noted:  
NONE.

Test performed by:	Jeff F. Test Technician	Date of Test:	02/12/07
Report Prepared by:	Jeff F. Test Technician	Date of Report:	02/12/07
Report Reviewed by:	C. K. Li Engineer, Principle	Date of Review:	02/14/07

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## 1 INTRODUCTION

This test report describes Maximum Permissible Exposure (MPE) generated from a wireless portable device manufactured by Kyocera Wireless Corp. (KWC). These measurements were performed for compliance with the rules and regulations of the U.S. Federal Communications Commission (FCC). The limit is specified in FCC 1.1210.

## 2 EQUIPMENT UNDER TEST (EUT)

The wireless device is described as follows:

<b>FCC ID:</b>	OVFKWC-KPC680	
<b>Product:</b>	Dual-Band CDMA 1XRTT/EVDO PC Card	
<b>Trade Name:</b>	Kyocera Wireless Corp.	
<b>Model Number:</b>	KPC680	
<b>EUT S/N:</b>	1901581238	
<b>Type:</b>	[X] Identical Prototype, [ ] Pre-production	
<b>Device Category:</b>	Portable (w/built-in antenna), Mobile (w/ external antenna)	
<b>RF Exposure Environment:</b>	General Population / Uncontrolled	
<b>External Input/Output:</b>	External antenna ports	
<b>Quantity:</b>	Quantity production is planned	
<b>Antenna Type:</b>	Built-in Internal Monopole, 0 to 90° flip-up	
<b>FCC Rule Parts:</b>	§22H	§24H
<b>Modes:</b>	1xRTT, 1xEVDO (Rel 0, Rev A)	1xRTT, 1xEVDO (Rel 0, Rev A)
<b>Multiple Access Scheme:</b>	CDMA	CDMA
<b>TX Frequency (MHz):</b>	824 – 849	1850 - 1910
<b>Emission Designators:</b>	1M25F9W	1M25F9W
<b>Rated Conducted Output Power (dBm):</b>	24	24
<b>Max Built-in Antenna Gain (dBi):</b>	2.5	2.0

### 3 MPE LIMITS

Limits for General Population/Uncontrolled Exposure:

Frequency Range (MHz)	Electric Field Strength, E (V/m)	Magnetic Field Strength, H (A/m)	Power Density, S (mW/cm <sup>2</sup> )	Averaging Time  E  <sub>2</sub> ,  H  <sub>2</sub> or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f <sup>2</sup> )*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

*f* = frequency in MHz, \*Plane-wave equivalent power density

### 4 MPE ESTIMATION FORMULA

MPE power density level can be calculated by the following equation (1):

$$S = \frac{P_t G_t}{4\pi R^2} \dots\dots\dots (1)$$

- Where S = Power Density in mW/cm<sup>2</sup>
- P<sub>t</sub> = Power in mW
- G<sub>t</sub> = Numeric Antenna Gain
- R = distance from antenna to body in cm (= 20 for mobile application)

### 5 MPE CALCULATIONS

Based on the FCC OET Bulletin 65 Supplement C and 47 CFR §2.1091, it has been calculated that the device will comply with the FCC rules on RF exposure for mobile devices when used with an external antenna system with total gain (antenna gain + connecting cable loss) not to exceed 6.0 dBi in both the cellular and PCS bands.

Band	Freq (MHz)	P <sub>t</sub> * (dBm)	G <sub>t</sub> (dBi)	R (cm)	S (mW/cm <sup>2</sup> )	MPE Limit (mW/cm <sup>2</sup> )	Result
CELL	824.70	24.27	6	20	<b>0.212</b>	0.550	<b>Passes</b>
	836.52	24.29	6	20	<b>0.213</b>	0.558	<b>Passes</b>
	848.31	24.28	6	20	<b>0.212</b>	0.566	<b>Passes</b>
PCS	1851.25	23.75	6	20	<b>0.188</b>	1.000	<b>Passes</b>
	1880.00	24.04	6	20	<b>0.201</b>	1.000	<b>Passes</b>
	1908.75	24.26	6	20	<b>0.211</b>	1.000	<b>Passes</b>

Note: \* Data obtained from worst case configuration at each channel in FCC SAR report