

Intermec Technologies Corporation

EMC Test Lab

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RIM R802D-2-O Radio, 6100, 6600, SAR Portable, Appendix G, ERP and MPE Data

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MEASUREMENT/TECHNICAL REPORT



Technologies Corporation

EMC Test Laboratory

Cedar Rapids, IA

Intermec Technologies Corporation

Cellular Radio Module

OEM From RIM 802

REPORT NO: 20010120-1

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APPENDIX G

EFFECTIVE RADIATE POWER AND MAXIMUM PERMISSIBLE EXPOSURE DATA

**RIM R802D-2-O, Centurion CAF28764 Antenna
Effective Radiated Power and Maximum Permissible Exposure**

The long antenna is 7-inch (17.8-cm) long ½ wave end-fed whip dipole from Centurion part number CAF28764, Intermec part number 805-490-002. Gain -2.5 dBd, VSWR 1.5:1, 50 Ohms.

ERP Calculator

dBd + 2.17 = dBi

TX Frequency (MHz)	806	Watts	2	Antenna Gain dBi	-0.33
				Antenna Gain dBd	-2.50
Cable Losses dB	0.2	dBm	33.010300	radiated dBm	30.310300
<u>Calculated ERP (mW)</u>			<u>1074.064</u>		

MPE Calculator

**General Public Limit
0.5373 mW/cm²**

$$\frac{\text{ERP}}{4 \pi d^2} = \text{mW/cm}^2$$

d = cm ERP=mW

Freq. MHz	public limit
300-1,500	f/300
1,500-10,000	1

Maximum Permissible Exposure

Distance	mW/cm ²
20-cm	0.21368

ERP (milliwatts)	Distance (Meters)	Distance (cm)	Distance (inches)	mW/cm ²
1074.064	1.00	100.0	39.37	0.00855
1074.064	0.50	50.0	19.69	0.03419
1074.064	0.475	47.5	18.70	0.03788
1074.064	0.450	45.0	17.72	0.04221
1074.064	0.425	42.5	16.73	0.04732
1074.064	0.400	40.0	15.75	0.05342
1074.064	0.375	37.5	14.76	0.06078
1074.064	0.350	35.0	13.78	0.06977
1074.064	0.325	32.5	12.80	0.08092
1074.064	0.300	30.0	11.81	0.09497
1074.064	0.275	27.5	10.83	0.11302
1074.064	0.250	25.0	9.84	0.13675
1074.064	0.225	22.5	8.86	0.16883
1074.064	0.200	20.0	7.87	0.21368

**RIM R802D-2-O, Mobile Mark PSTN2-815CI Antenna
Effective Radiated Power and Maximum Permissible Exposure**

The short antenna is 3.5-inch (9-cm) long ½ wave end fed dipole from Mobile Mark model number PSTN2-815CI, Intermec part number 805-572-003. Gain -1.2 dBd, VSWR 2-2.5:1, 50 Ohms.

ERP Calculator

dBd + 2.17 = dBi

TX Frequency (MHz)	806	Watts	2	Antenna Gain dBi	0.92
				Antenna Gain dBd	-1.25
Cable Losses dB	0.2	dBm	33.010300	radiated dBm	31.560300
<u>Calculated ERP (mW)</u>			<u>1432.287</u>		

MPE Calculator

**General Public Limit
0.5373 mW/cm²**

$$\frac{\text{ERP}}{4 \pi d^2} = \text{mW/cm}^2$$

d = cm ERP=mW

Freq. MHz	public limit
300-1,500	f/300
1,500-10,000	1

Maximum Permissible Exposure

Distance	mW/cm ²
20-cm	0.28494

ERP (milliwatts)	Distance (Meters)	Distance (cm)	Distance (inches)	mW/cm ²
1432.287	1.00	100.0	39.37	0.01140
1432.287	0.50	50.0	19.69	0.04559
1432.287	0.475	47.5	18.70	0.05052
1432.287	0.450	45.0	17.72	0.05629
1432.287	0.425	42.5	16.73	0.06310
1432.287	0.400	40.0	15.75	0.07124
1432.287	0.375	37.5	14.76	0.08105
1432.287	0.350	35.0	13.78	0.09304
1432.287	0.325	32.5	12.80	0.10791
1432.287	0.300	30.0	11.81	0.12664
1432.287	0.275	27.5	10.83	0.15071
1432.287	0.250	25.0	9.84	0.18236
1432.287	0.225	22.5	8.86	0.22514
1432.287	0.200	20.0	7.87	0.28494