

# **FCC Part 22 Transmitter Certification**

## **Test Report**

**FCC ID: DNY020MCELL0800**

**FCC Rule Part: CFR 47 Part 22 Subpart H**

**ACS Report Number: 07-0137-22H**

Manufacturer: EMS Wireless  
Equipment Type: Cellular Bi-Directional Repeater  
Tradename: MirrorCell<sup>®</sup> II  
Model: CDM812-743

## **RF Exposure**

**General Information:**

Applicant: EMS Technologies, Inc.  
 ACS Project: 07-0137  
 FCC ID: DNY020MCELL0800  
 Device Category: Fixed  
 Exposure Conditions: Uncontrolled/General Population

**Technical Information:****UPLINK:**

Antenna Type: Yagi  
 Antenna Gain Maximum: 13.15dBi  
 Max Transmitter Output Power: 23.37dBm  
 Max System EIRP: 36.52dBm / 4.48W  
 Operating Configuration: Fixed

**DOWNLINK:**

Antenna Type: Panel  
 Antenna Gain Maximum: 8dBi  
 Max Transmitter Output Power: 44.79dBm  
 Max System EIRP: 52.79dBm / 190W  
 Operating Configuration: Fixed

**NOTE:** Multiple antennas are available for both the uplink and downlink applications. Listed above are antennas with the highest gain.

**MPE Calculation**

The Power Density ( $\text{mW}/\text{cm}^2$ ) is calculated as follows:

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = power density (in appropriate units, e.g.  $\text{mW}/\text{cm}^2$ )

P = power input to the antenna (in appropriate units, e.g., mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

Calculations were performed at the frequencies with the highest output power as determined during testing.

Maximum Permissible Exposure (MPE) General Population/Uncontrolled Exposure								
Transmit Frequency (MHz)	Radio Power (dBm)	Power Density Limit ( $\text{mW}/\text{cm}^2$ )	Radio Power (mW)	Antenna Gain (dBi)	Antenna Gain ( $\text{mW eq.}$ )	Distance (cm)	Power Density ( $\text{mW}/\text{cm}^2$ )	Configuration
824	23.37	0.55	217.27	13.15	20.654	26	0.528	Uplink
894	44.79	0.60	30130.06	8	6.310	159	0.598	Downlink

**Installation Guidelines**

End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.