

**6. Measurement Data (continued)**

**6.7. Public Exposure to Radio Frequency Energy Levels 1.1307 (b)(1)**

Center Frequency (MHz)	MPE Distance (cm)	DUT Output Power (dBm)	DUT Antenna Gain (dBi)	Power Density		Limit (mW/cm <sup>2</sup> )	Result
				(mW/cm <sup>2</sup> )	(W/m <sup>2</sup> )		
	(1)	(2)	(3)	(4)		(5)	
1715	20.0	32.00	-2.00	0.1989437	1.9894368	1	Compliant
1745	20.0	31.77	-2.00	0.1886819	1.8868186	1	Compliant
1775	20.0	31.76	-2.00	0.1882479	1.8824790	1	Compliant
2115	20.0	27.77	3.00	0.2375364	2.3753639	1	Compliant
2145	20.0	27.68	3.00	0.2326645	2.3266451	1	Compliant
2175	20.0	27.34	3.00	0.2151444	2.1514445	1	Compliant
1715	20.0	31.98	-2.00	0.1980296	1.9802962	1	Compliant
1745	20.0	31.77	-2.00	0.1886819	1.8868186	1	Compliant
1775	20.0	31.83	-2.00	0.1913067	1.9130668	1	Compliant
2115	20.0	27.73	3.00	0.2353586	2.3535864	1	Compliant
2145	20.0	27.98	3.00	0.2493045	2.4930452	1	Compliant
2175	20.0	27.89	3.00	0.2441913	2.4419128	1	Compliant

$$PD = \frac{OP + AG}{(4 \times \pi \times d^2)}$$

1. Reference CFR 2.1093(b): For purposes of this section, a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user. Actual separation distance was calculated for outdoor applications.
2. Section 6.1.2 of this test report. Note that the value has been adjusted to include the cable insertion loss.
3. Data supplied by the client for combination of cable loss and antenna gain.
4. Power density is calculated from field strength measurement and antenna gain.
5. Reference CFR 1.1310, Table 1: Limits for Maximum Permissible Exposure (MPE), Section (B): Limits for General Population/Uncontrolled Exposure.

**Evaluation of the CSI Model  
CSI-DRACELA-PR-AW Repeater  
For  
Compliance with FCC Guidelines  
For Human Exposure to Radio Frequency  
Electromagnetic Fields**

25 April 2013

### **General**

The CSI Model CSI-DRACELA-PR-AW Repeater is considered to be a “mobile” device operating in the Cellular Service authorized under part 27. As such, the equipment is required to be evaluated for RF exposure if operated below 1.5 GHz with an effective radiated power (ERP) of 1.5 watts or more or if operated above 1.5 GHz with an effective radiated power (ERP) of 3.0 watts or more, as defined in 2.1091 of FCC rules.

### **Downlink**

For the downlink portion of the Model CSI-DRACELA-PR-AW, the maximum rated output power is +30.26dBm (1062 mW) in the 2100 MHz band (>1.5 GHz). As stated in the Model CSI-DRACELA-PR-AW Manual, the maximum authorized indoor antenna gain is 3 dBi, corresponding to a typical Multi-Band Omni-Directional antenna. The Table below shows the results of the calculated ERP, neglecting cable losses.

Frequency	Power Out	Ant Gain	EIRP	ERP	Limit
2110-2180 MHz	30.26dBm	3dBi	33.26dBm	1292mW	3.0 W

As shown in the above table, the level is below the allowable limit excluding the downlink from routine evaluation.

### **Uplink**

For the uplink portion of the Model CSI-DRACELA-PR-AW, the maximum rated output power as limited by AGC is +32dBm (1585mW) in the 1700 MHz Band (>1.5 GHz). As stated in the Model CSI-DRACELA-PR-AW Manual, the maximum authorized outdoor antenna gain including cable losses is -2 dBi, corresponding to a typical Omni-Directional antenna. The Table below shows the results of the calculated ERP for this case.

Frequency	Power Out	Ant Gain	EIRP	ERP	Limit
1710-1780 MHz	32dBm	-2 dBi	30dBm	610mW	3.0 W

As shown in the above table, the level is below the allowable limit excluding the uplink from routine evaluation.