

Dm
11/10/00

MDS 4710, Lowest operating frequency is 310.000 MHz

$$4710 \quad P = 5000 \text{ mW} = (5 \text{ WATTS})$$

$$S = 310 \text{ MHz} / 1500 = .20 \text{ mW/cm}^2$$

$$G = 14.5 \text{ dbd} = 16.65 \text{ dBi} = 46.8 \text{ numeric}$$

$$r = \sqrt{PG/4\pi S} = \sqrt{5000 \times 46.8 / 4\pi (.20)} = 305.1 \text{ cm} = 3.05 \text{ m}$$

$$R = 305 \text{ METERS}$$

MDS 9710, Lowest operating frequency is 800 MHz

$$9710 \quad P = 6000 \text{ mW} (6 \text{ WATTS})$$

$$S = 800 \text{ MHz} / 1500 = .53 \text{ mW/cm}^2$$

$$G = 16.5 \text{ dbd} = 18.65 \text{ dBi} = 74.1 \text{ numeric}$$

$$r = \sqrt{PG/4\pi S} = \sqrt{6000 \times 74.1 / 4\pi (.53)} = 258 \text{ cm} = 2.58 \text{ m}$$

$$R = 2.58 \text{ m}$$

Antenna Gain	* Factor
5 dBi =	3.16
10 dBi =	10
16.65 dBi =	46.8
18.65 dBi =	74.1

* numeric value