

**POWER DENSITY ESTIMATIONS BASED ON POWER OUTPUT, ANTENNA GAIN, AND  
DISTANCE FROM ANTENNA**

$$(P G) / (4 R^2 \pi) = S$$

|               |            |                                                             |                                         |                                           |
|---------------|------------|-------------------------------------------------------------|-----------------------------------------|-------------------------------------------|
| <b>where:</b> | <b>S =</b> | maximum power density (mW/cm <sup>2</sup> )                 | <b>transmitter operating variables:</b> | must be blank if dB values<br>are entered |
|               | <b>P =</b> | power input to the antenna ----->>                          | =                                       | <b>10.34</b> (dBm) - or - (mW)            |
|               | <b>G =</b> | gain of the antenna - worst case ----->>                    | =                                       | <b>1.8</b> (dBi) - or - (numeric gain)    |
|               | <b>R =</b> | distance to the center of the radiation of the antenna -->> | =                                       | <b>20</b> (cm)                            |

|                             |   |   |                       |
|-----------------------------|---|---|-----------------------|
| $(P \ G) / (4 * R^2 * \pi)$ | = | S | (mW/cm <sup>2</sup> ) |
|-----------------------------|---|---|-----------------------|

|                                                                                 |   |   |                       |
|---------------------------------------------------------------------------------|---|---|-----------------------|
| $(10.81433951 \ 1.51356) / (4 * 20^2 * \pi)$<br><small>(mw) (gain) (cm)</small> | = | S | (mW/cm <sup>2</sup> ) |
|---------------------------------------------------------------------------------|---|---|-----------------------|

|                                                       |   |   |                       |
|-------------------------------------------------------|---|---|-----------------------|
| $(16.36816521) / (4 * 400 * \pi)$<br><small>3</small> | = | S | (mW/cm <sup>2</sup> ) |
|-------------------------------------------------------|---|---|-----------------------|

|                                 |   |          |                       |
|---------------------------------|---|----------|-----------------------|
| $(16.36816521) / (5026.548246)$ | = | 0.003256 | (mW/cm <sup>2</sup> ) |
|---------------------------------|---|----------|-----------------------|