

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

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

<b>where:</b>	<b>S =</b>	maximum power density (mW/cm <sup>2</sup> )	<b>transmitter operating variables:</b>	<b>must be blank if dB values are entered</b>	
	<b>P =</b>	power input to the antenna ----->>	=	<b>25.14</b> (dBm) - or -	(mW)
	<b>G =</b>	gain of the antenna - worst case ----->>	=	<b>2.5</b> (dBi) - or -	(numeric gain)
	<b>R =</b>	distance to the center of the radiation of the antenna -->>	=	<b>20</b>	(cm)

$$( P \quad G ) / ( 4 * R ^ 2 * \pi ) = S \quad (mW/cm^2)$$

$$\left( \frac{326.5878322}{(mw)} \frac{1.77828}{(gain)} \right) / \left( 4 * \frac{20}{(cm)}^2 * \pi \right) = S \quad (mW/cm^2)$$

$$( 580.7644175 ) / ( 4 * 400 * \pi ) = S \quad (mW/cm^2)$$

$$( 580.7644175 ) / ( 5026.548246 ) = 0.115539 \quad (mW/cm^2)$$

**POWER DENSITY ESTIMATIONS BASED ON POWER OUTPUT, ANTENNA GAIN, AND DISTANCE FROM ANTENNA - 900 MHz DTS FROM THE EUT**

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

<b>where:</b>	<b>S =</b>	maximum power density (mW/cm <sup>2</sup> )	<b>transmitter operating variables:</b>	<b>must be blank if dB values are entered</b>	
	<b>P =</b>	power input to the antenna ----->>	=	<b>22.67</b> (dBm) - or -	(mW)
	<b>G =</b>	gain of the antenna - worst case ----->>	=	<b>6</b> (dBi) - or -	(numeric gain)
	<b>R =</b>	distance to the center of the radiation of the antenna -->>	=	<b>20</b>	(cm)

$$( P \quad G ) / ( 4 * R ^ 2 * \pi ) = S \quad (mW/cm^2)$$

$$\left( \frac{184.9268619 \text{ (mw)}}{3.98107 \text{ (gain)}} \right) / \left( 4 * \frac{20 \text{ (cm)}}{}^2 * \pi \right) = S \quad (mW/cm^2)$$

$$( 736.2070975 ) / ( 4 * 400 * \pi ) = S \quad (mW/cm^2)$$

$$( 736.2070975 ) / ( 5026.548246 ) = 0.146464 \quad (mW/cm^2)$$

MPE Ratio of simultaneous operation based on highest power density compared to the **FCC** limits

Device FCC ID 2AC46-LCG300  
Date 11/8/2019  
Prepared By Kyle F.

e.i.r.p			
27.54	0.21	Ratio 1	WCDMA Module
28.67	0.242	Ratio 2	900 MHz DTS

**0.452** Total      Ratio Must be <=1

0.548 Remaining

Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is  $\leq 1.0$ , according to calculated/estimated, numerically modeled, or measured field strengths or power density.

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