

Tracker: THNK13 - Thinkify T2000

Maximum Permissible Exposure

Calculations for Maximum Permissible Exposure Levels

$$\text{Power Density} = P_d \text{ (mW/cm}^2\text{)} = \text{EIRP}/(4\pi d^2)$$

$$\text{EIRP} = P * G$$

P = Peak output power (mW)

G = Antenna numeric gain (numeric)

d = Separation distance (cm)

$$\text{Numeric Gain} = 10^{(G \text{ (dBi)}/10)}$$

The Thinkify T2000 has dual identical transmitters. The peak power in the table below is calculated by assuming a worst case scenario for the maximum gain antenna and output power. The calculated separation distance is for worst case highest power level. In order to take into account the dual transmitter situation the output power was doubled i.e. +3dB

Because the EUT belongs to the General Population/Uncontrolled Exposure the limit of power density is 2.74 W/m²

Antenna Model	Type	Ant Gain (dBi)	Numeric Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (W)	Calculated Safe Distance @ 2.74 W/m ² Limit (m)	Power Density @ 20cm (mW/cm ²)
Thinkify	Dipole	12	15.85	34.78	3.006	1.17	9.48

Minimum safe distance = 1.17 m

Specification Maximum Permissible Exposure Limits

§90.1217 Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency levels in excess of the Commission's guidelines. See §1.1307 (b)(1) of this chapter.

Limit = 2.74 W / m² from 1.310 Table 1

Note: for mobile or fixed location transmitters the minimum separation distance is 20cm, even if calculations indicate the MPE distance to be less.

Laboratory Measurement Uncertainty for Power Measurements

Measurement uncertainty	±1.33dB
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