

## Calculating Power Budget for Fiber-Optic Cable for M Series, MX Series, and T Series Routers

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To ensure that fiber-optic connections have sufficient power for correct operation, you need to calculate the link's power budget, which is the maximum amount of power it can transmit. When you calculate the power budget, you use a worst-case analysis to provide a margin of error, even though all the parts of an actual system do not operate at the worst-case levels. To calculate the worst-case estimate of power budget ( $P_B$ ), you assume minimum transmitter power ( $P_T$ ) and minimum receiver sensitivity ( $P_R$ ):

$$P_B = P_T - P_R$$

The following hypothetical power budget equation uses values measured in decibels (dB) and decibels referred to one milliwatt (dBm):

$$P_B = P_T - P_R$$

$$P_B = -15 \text{ dBm} - (-28 \text{ dBm})$$

$$P_B = 13 \text{ dB}$$

- Related Topics**
- Attenuation and Dispersion in Fiber-Optic Cable on M Series, MX Series, and T Series Routers
  - Calculating Power Margin for Fiber-Optic Cable for M Series, MX Series, and T Series Routers
  - Routing Engine Interface Cable and Wire Specifications for MX Series Routers

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