

Optical Budget

- 1) Optical Transmitter output power = +6.4 dBm
- 2) Maximum Optical input power for linear operation = -3 dBm
- 3) CWDM Mux and de-Mux loss = 3.7 dB
- 4) Connector loss + Max splice loss = 1.7 dB
- 5) Fiber Cable loss = 0.3 dB / Km x 22 Km = 6.6 dB
- 6) Total Optical Loss = 3.7 + 1.7 + 6.6 = 12 dB

$$\begin{aligned}\text{Available Optical Power at 22 Km} &= \text{OTx output} - \text{Total loss} \\ &= 6.4 - 12 = -5.6 \text{ dBm}\end{aligned}$$

$$\text{Recommended operating power level} = -8 \text{ dBm}$$

$$\text{Available optical margin} = -5.6 + 8 = 2.4 \text{ dB}$$