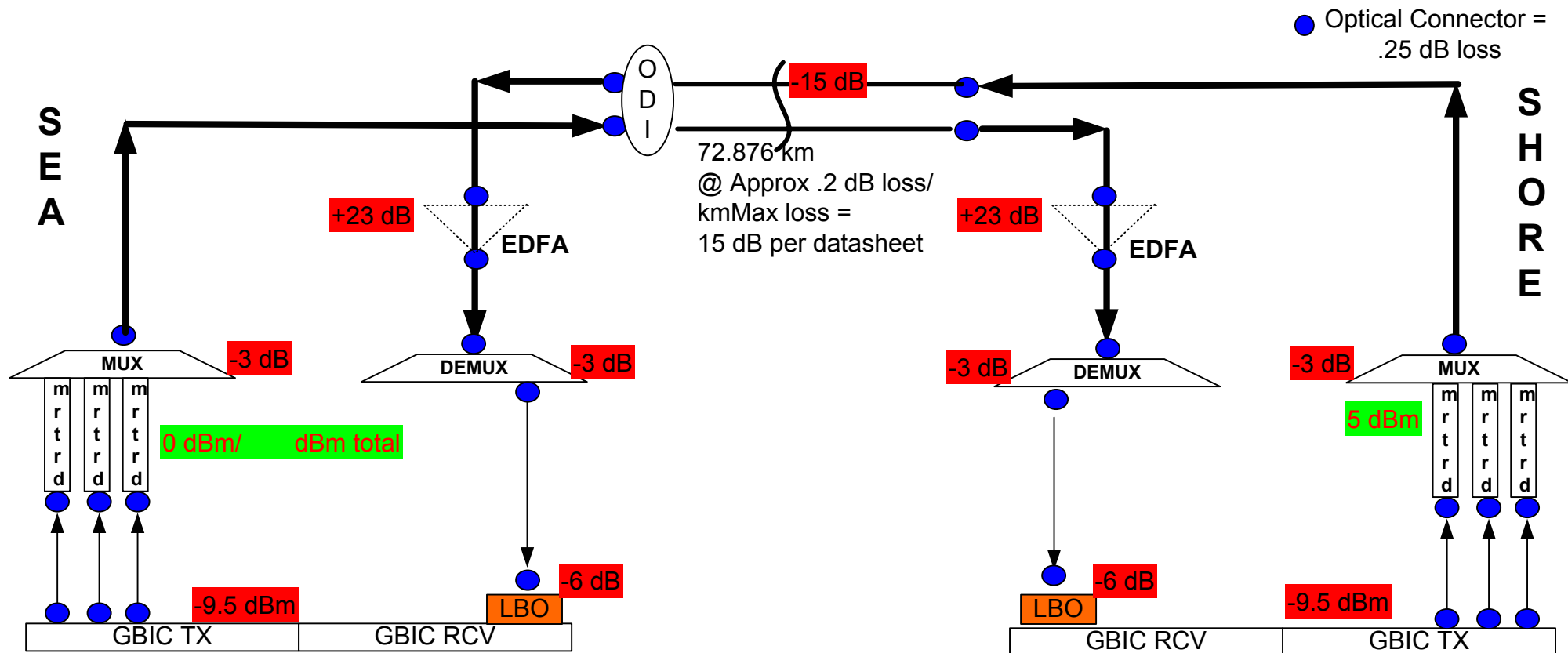


MARS Node - Optical Budget w/ pre-amp-EDFAs



NOTES:

- 1-1AOC28 EDFA limited to -10dBm input. Gain is 23dB
- 2-Receive Sensitivity: LX GBIC = -3 to -19 dBm -6LBO added at receive to prevent overload
- 3-MRTRD provides 0 dBm=1mW input. All 3 inject 3mW ≈ 5 dBm

Power for *one* added wavelength starting at sea tx GBIC thru shore rcv GBIC
 $0 -3 + (2 \times -.25) -15 + (2 \times -.25) +23 (-2 \times -.25) -3 + (2 \times -.25) -6 = -6 \text{ dBm}$

Adding aging allowance of -.01 dB/ km/ 30 years = -0.73 dB and design margin of -3 dB
 Power of wavelength at shore rcv GBIC = **-9.73 dB**