

Reach (Technical) Feasibility of 100GE alternatives

SMF	10km 1310nm	40km 1310nm	10km 1550nm	40km 1550nm
10x10G DML	yes (10λ span can not be un-cooled)	yes (need new DML, RX APD or SOA)	yes (need new DML)	maybe (need new DML, RX APD or SOA)
10x10G EML	yes	yes (need RX APD or SOA)	yes	yes (need RX APD or SOA)
5x20G / 4x25G DML	yes (need new DML)	maybe (need new DML & RX SOA)	maybe (need new DML)	no
5x20G / 4x25G EML	yes (need new EML)	yes (need new EML & RX SOA)	yes	yes (need RX DC)
2x50G DQPSK ML	yes (need I/Q ML)	yes (need I/Q ML & RX DC & OA)	yes (need I/Q ML & RX DC)	yes (need I/Q ML & RX DC)
1x100G TDM ML	yes (need new ML & maybe RX DC)	yes (need new ML & RX DC & OA)	yes (need new ML & RX DC (& OA?))	yes (need new ML & RX DC (& OA?))

Green shading designates alternatives under detailed study by Fiber Optic Ad Hoc contributors.

Cost (1/Economic Feasibility) of 100GE alternatives

SMF	10km 1310nm	40km 1310nm	10km 1550nm	40km 1550nm
10x10G DML	mid	mid	low	mid
10x10G EML	mid	mid	mid	mid
5x20G / 4x25G DML	low	mid	low	not feasible
5x20G / 4x25G EML	mid	mid	mid	not economically feasible (RX DC)
2x50G DQPSK ML	high	not economically feasible (RX DC)	not economically feasible (RX DC)	not economically feasible (RX DC)
1x100G TDM ML	high (RX DC?)	not economically feasible (RX DC)	not economically feasible (RX DC)	not economically feasible (RX DC)

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