

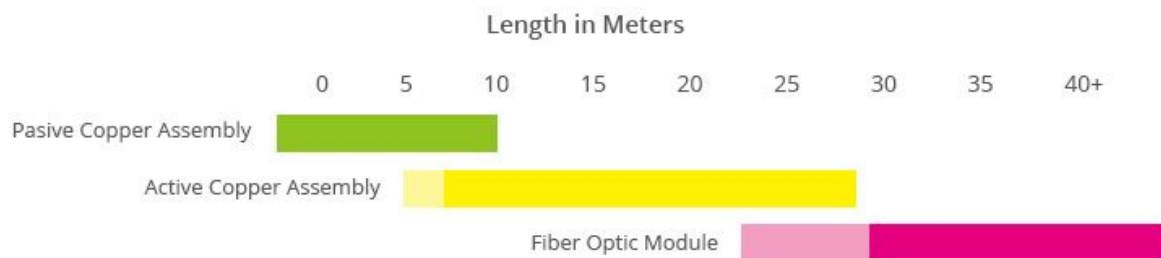


Application Notes:

Active Optical Cable(AOC) is the ideal medium for long-distance network communications and it use single mode silicon photonics (SiPh) to enable long transmitting on single mode fiber, using a fraction of the power of other brands while providing streamlined installation for high-performance computing and storage applications.

Direct Attach Copper Cable(DAC) Uses the same port as an optical transceiver, there are two types of DAC cables: Active copper cable and passive copper cable, passive copper cable dose not consume power, and Actively equalized cables enable longer cable lengths. With significant cost savings and power savings. it is becoming common in modern very-short-range high-speed differential signaling applications.

Copper & Optical Assembly Length in Meters:



- Passive copper cable assemblies (PCCA) will have value to roughly 8 meters based on the most recent loss budget agreements.
- Active copper cable assemblies(ACCA) provide longer range(8 to 25 meter) than passive cable assemblies and higher reliability solution than SFP+ SR optical modules.
(PS: the performance of ACCA at 8 to 12 meters is better than above 12 meters.)
- Active optical cable (AOC)---the accepted medium for long-distance network communications, It applies to the connection above 25 meters.

The Features of Active Optical Cables (AOC) Compared to Direct Attach Copper Cable(DAC)

- Longer reach
- Bit Error Rate (BER) 1000 times better than copper cables
- Lower weight and tighter bend radius enable simpler cable management
- Thinner cable allows better airflow for cooling
- Lower power consumption
- No need for power-hungry conditioning ICs on the host board
- Improved EMI
- More expensive than Direct Attach Copper Cable



- Higher thermal environment impacts the junction temperatures of the emiconductors in the optics module
- Multiple lasers complicate the inherent weaknesses of the optical cables

The Features of Active Copper Cable Compared to Passive Copper Cable

- Longer reach
- Maximizing cable density
- Reaching 10 to 15 bit error ratio (BER) between AWG32 and AWG28
- Air cooling from small-gauge cable
- High-performance option to the interconnect arena
- Thinner and lighter
- Power consumption
- More expensive than passive copper cable

Fiberstore's **Active Optical Cables (AOC)** and **Direct Attach Copper Cables(DAC)** can be substituted by interfacing to systems via a broad range of standard MSA connectors including SFP+, QSFP+, and CXP. The cables are electrically compliant with InfiniBand* FDR / QDR / DDR, Ethernet (10, 40 and 120 Gbps), Fibre Channel (8 and 10 Gbps), SAS 3.0 and 2.1 (12 and 6 Gbps) and other protocol applications. This three type of cables possess different advantages, Customers can choose the highest cost-effective products according to the needs.

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