

Mode Conditioning Patch cords

It is known that multimode optical fibre links that use laser based transmitters may be limited in bandwidth to values less than half those of the over-filled launch bandwidth. The bandwidth is very low in the case of centre-launch condition. Optronics mode conditioning patchcords are specifically designed for launching your gigabit signal into the conventional 62.5/125 or 50/125 fibre with very high bandwidth. The Optronics mode conditioning patchcords can improve the transmission bandwidth by 3 to 4 times and also greatly reduces modal noise.



Typical Application

Today's Gigabit Ethernet Switches use VCSEL's, as the old technology LED emitters can not produce the signals required in these high bandwidth applications. The new mode conditioning assemblies are designed for use in 62.5/125 or 50/125 multimode fibre optic cabling systems, where these assemblies allow long wavelength 1300nm signals to be transmitted over good quality fibre at distances of up to 550m. The VCSEL devices used in Gigabit Ethernet applications are based on a singlemode launch condition and operate over both singlemode and multimode fibre.

Differential mode delay occurs when the transmitter device launches a singlemode laser signal into the centre of the multimode fibre, resulting in the transmission of multiple signals and high attenuation. Such signals can confuse the receiver device, with resultant limitations on the operating bandwidth and especially the drive distances of Gigabit Ethernet. The 62.5/125 fibre will typically only allow a distance of 220-270m for Gigabit Ethernet using lower cost lasers operating at the 850nm. SX wavelength and longer distance requirements have to be met by the use of 1300nm electronics in conjunction with a Mode-Conditioning launch lead. The Optronics mode conditioning cable assembly eliminates differential mode delay by moving the singlemode launch to an offset position away from the centre of the fibre.

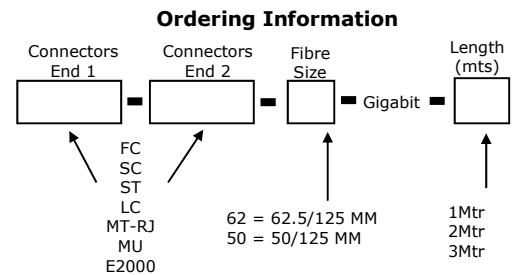
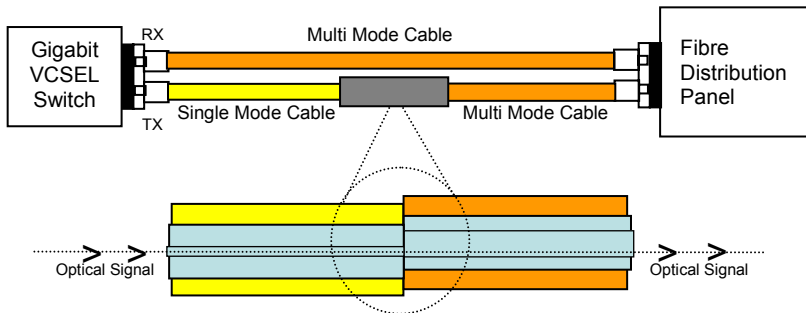
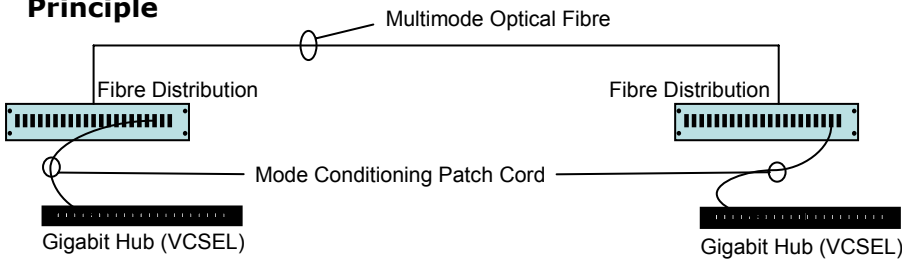
Features

- **Increased transmission bandwidth by as much as 4 times**
- **Reduced modal noise**
- **Low insertion loss (< 1dB)**
- **Easy installation**
- **Various connector options**

Specifications

<p>Description</p> <p>Operating wavelength: 1310nm</p> <p>Maximum insertion loss: 0.5dB</p> <p>Coupled power ratio (CPR): 28 to 40dB 12 to 20dB</p> <p>Back reflection S/M channel: 30dB M/M channel: 20dB</p> <p>Connector finish: PC or APC</p> <p>Ferrule radius of curvature: 10 to 25mm</p> <p>Fibre height: -50 to 50nm</p> <p>Maximum angular offset: 1°</p> <p>Sheath colour: Orange (yellow for SM leg)</p>	<p>62.5µm MMF 50µm MMF</p>	<p>Connectors available</p> <p>Types: FC, FC/APC, ST, SC, SC/APC, MT-RJ, MU</p> <p>Length: 2000mm ± 10mm Other lengths available to order</p> <p>For full information on the Optronics connectors used on the FibreFab patch cords, please contact the address below for a connector data sheet.</p> <p>Intermateability</p> <p>Optically and mechanically compatible with all equivalent connectors. Compliant with IEC 874-14.</p> <p>Product Packaging</p> <p>Each patch cord is packaged individually and individually identified for traceability, test certification is supplied for each assembly.</p>	<p>Temperature Cycling</p> <p>(IEC 874-1 sec. 4.5.22) -40 to +75°C, 40 cycles =0.2dB Change</p> <p>High Temperature:</p> <p>(IEC 874-1 sec. 4.5.18) 75°C for 96 hours =0.2dB Change</p> <p>Damp Heat:</p> <p>(IEC 874-1 sec. 4.5.19) 60°C at 95% RH, 96 hours =0.2dB Change</p> <p>Vibration (Mated Pair):</p> <p>(IEC 874-1 sec. 4.5.1) 10-55 Hz, 1.5mm P to P =0.3dB Change</p> <p>Mating Durability:</p> <p>(IEC 874-1 sec. 4.5.32) 1000 mating cycles Clean every 25 < 0.2 dB Change</p> <p>Operating Temperature</p> <p>-40°C to +85°C</p>
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Mode Conditioning Principle



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