

Mode Conditioning Patch Cords

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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

- ▶ Provides the functions of attenuator and cable assembly simultaneously
- ▶ Low Back Reflection
- ▶ 100% Insertion Loss Testing
- ▶ Connector varieties available
- ▶ Conforms to the requirements of EIA/TIA standards
- ▶ Inexpensive and compact

OPTRONICS



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Specifications

Description	62.5µm MMF	50µm MMF
Operating wavelength:	1310nm	
Maximum insertion loss:	0.5dB	
Coupled power ratio (CPR)	28 to 40dB	12 to 20dB
Back reflection S/M channel	30dB	
M/M channel	20dB	
Connector finish:	PC or APC	
Ferrule radius of curvature:	10 to 25mm	
Fibre height:	-50 to 50nm	
Maximum angular offset:	1°	
Sheath colour:	Orange (yellow for SM leg)	

Connectors available

Types: FC, FC/APC, ST, SC, SC/APC, MT-RJ, MU

Length: 2000mm ± 10mm

Other lengths available to order

For full information on the Optronic connectors used on the FibreFab patch cords, please contact the address below for a connector data sheet.

Intermateability

Optically and mechanically compatible with all equivalent connectors.

Compliant with IEC 874-14.

Product Packaging

Each patch cord is packaged individually and individually identified for traceability, test certification is supplied for each assembly.

Temperature Cycling

(IEC 874-1 sec. 4.5.22)-40 to +75°C, 40 cycles=0.2dB Change

High Temperature:

(IEC 874-1 sec. 4.5.18)75°C for 96 hours=0.2dB Change

Damp Heat:

(IEC 874-1 sec. 4.5.19)60°C at 95% RH, 96 hours=0.2dB Change

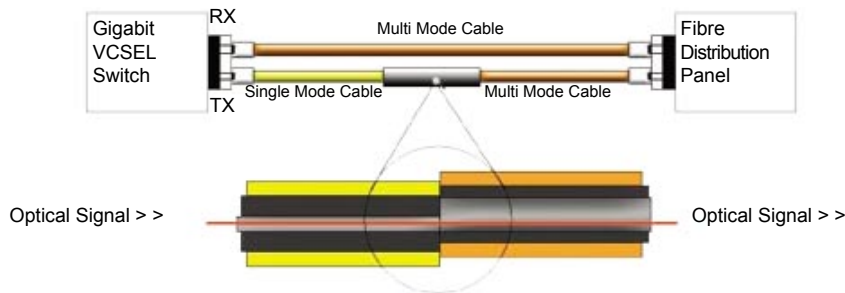
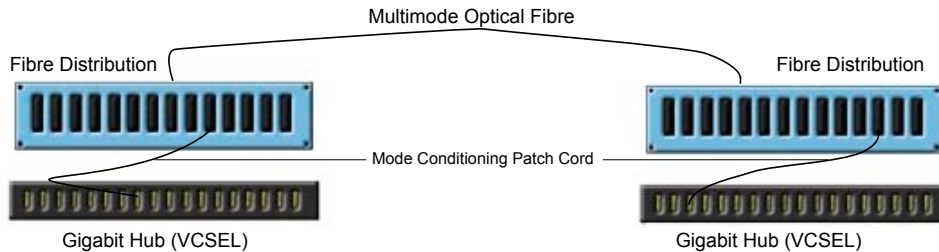
Vibration (Mated Pair):

(IEC 874-1 sec. 4.5.1) 10-55 Hz, 1.5mm P to P =0.3dB Change

Mating Durability:

(IEC 874-1 sec. 4.5.32) 1000 mating cycles Clean every 25 < 0.2 dB Change

Operating Temperature -40°C to +85°C



Ordering Information

