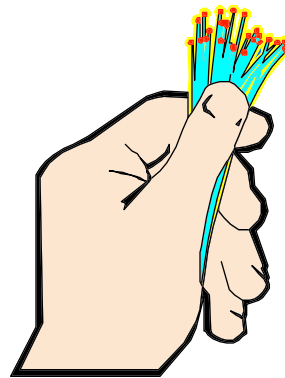


The **DIRECT OPTICAL INTERCONNECTION SYSTEM**

A Proposal for Long Haul p1394b Applications

A New Fiber Optic Component System Offering
Significant Cost, Safety and Performance
Advantages for Long Haul p1394b Applications



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Presentation Agenda

- Performance Requirements - p1394b / “ BOF “
- **The DIRECT OPTICAL INTERCONNECTION SYSTEM**
- Customer Implementation Options
- Product Status
- Summary

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p1394b Connector Requirements per 1394-SIG/BOF

Cost of Ownership

- Low Cost Components
- Comparable to CAT - 5
- Amateur Maintenance
- Low Cost Install Tools
- Amateur Installation
- Low Profile Solution

Performance / Function

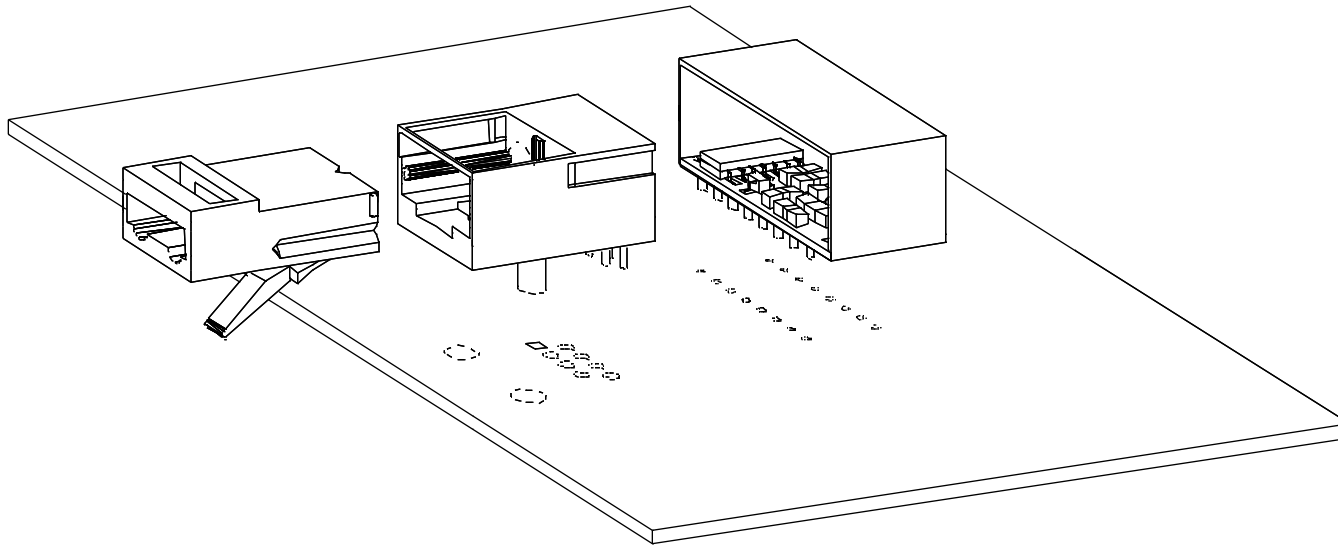
- Duplex, Assymmetric & Differentiated
- Equipment, Dongles & Wall Plates
- Datarates from 125MBd - 4.0GBd
- Compatible with RJ-45 Aperture
- MMF Cables (GOF or POF)
- Eye Safe in Normal Use



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WHAT IS **DIRECT**?



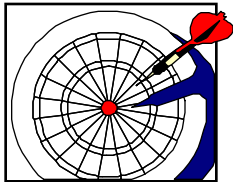
DIRECT

“Drop-In Replacement of Electromagnetic Component Technology”

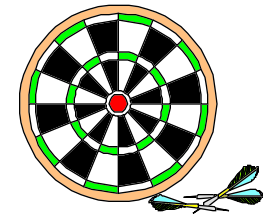


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PERFORMANCE TARGETS



- **Drop-In** Optoelectronic Component Replacements for Standard Twisted Pair Interfaces
- Eliminate Cost Penalty for Choosing Optoelectronics over Electromagnetic Alternatives
- Integrated Optics, Interface Electronics and Mechanical Functions to Reduce Costs
- Optical Fiber Installation Cost and Mounting Density Equal to Twisted Pair Cabling

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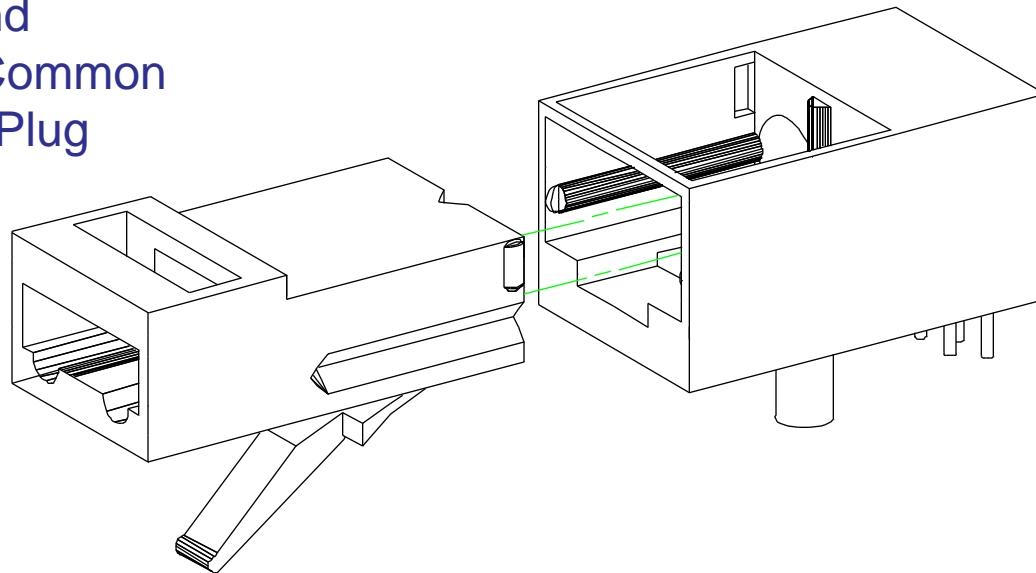
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DIRECT RJ-45 PRODUCT IMPLEMENTATION

- **DIRECT** Optical Plug Latching and Strain Relief Is Common to RJ-45 Cable Plug



- **DIRECT** PCB mounted Optoelectronic Jack Is Footprint Compatible with Standard RJ-45 Jack

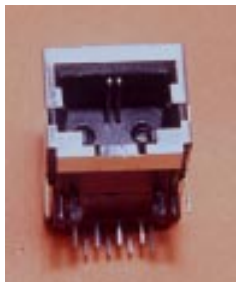
- **DIRECT** Optical Plug Cannot Mate with Standard Twisted Pair Modular Jack

- **DIRECT** Optical Jack Cannot Mate with Standard Twisted Pair Modular Plug

The **DIRECT OPTICAL INTERCONNECTION SYSTEM**

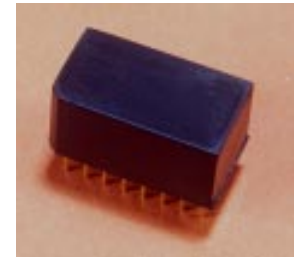
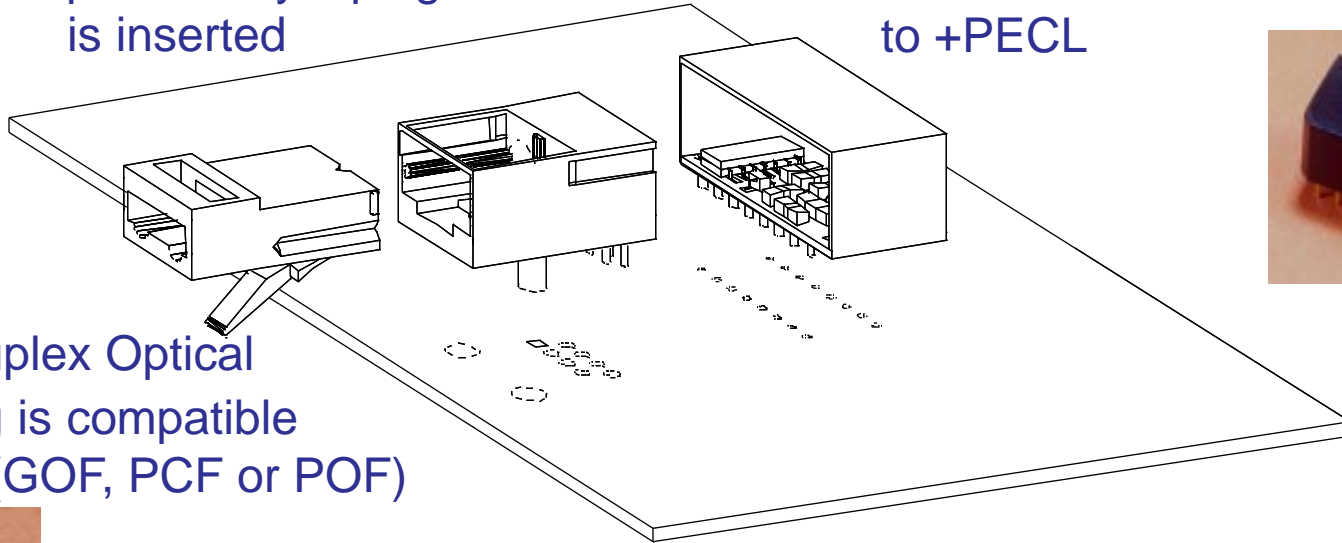
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DIRECT COMPONENTS



- **DIRECT** PCB mounted Optoelectronic Jack activates optical power only if plug is inserted

- **DIRECT** PCB mounted Transceiver Modules interface optoelectronic drivers and receivers to +PECL



- **DIRECT** Duplex Optical Cable Plug is compatible with MMF (GOF, PCF or POF)



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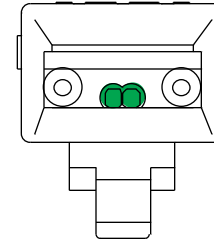
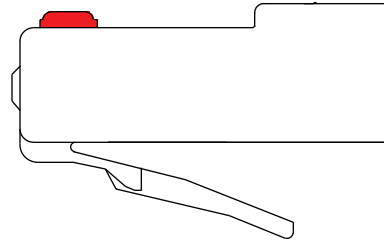
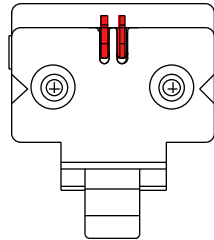
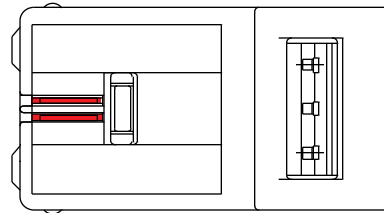
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ADVANCED PERFORMANCE OPTIONS

SUPPORT FOR BATTERY POWERED DEVICES



Integral Modular Plug **Electrical Contacts** Enable Simultaneous Optical and Electrical Power or Electronic Signal Transmission



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FIELD INSTALLATION PROCESS - POF CABLES

1



Strip the Plastic Jacket from the Individual Plastic Optical Fibers to the Length Indicated on the Tool Guide

2



Place the Modular Optical Plug into the Crimping Nest and Insert the Stripped Ends of the Fiber into the Back End of the Plug

3



Squeeze the Tool Handles to Crimp the Strain Relief and Cleave the End of the Plastic Fiber to the Proper Length

4



Remove the Finished Termination and Snap into the Modular Receptacle - No Polishing or Heat Processing Is Necessary

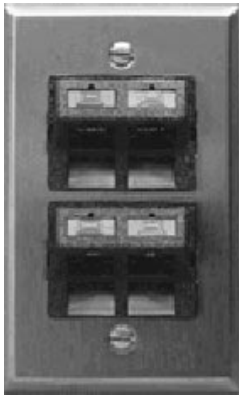
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ADDITIONAL **DIRECT** PRODUCTS



- **DIRECT** Passive Couplers Mount in Existing RJ-45 Wall Plates and Cross-Connect Panels



- **DIRECT** Patch Cords for Cross-Connects and Station Cabling

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CUSTOMER IMPLEMENTATION OPTIONS

Cable Structure

- Plastic Optical Fiber (POF)
- Plastic Clad Fiber (PCF)
- Glass Optical Fiber (GOF)

Eye Safety

- Optomechanical Shutoff
- Electronic Shutoff if No Signal Detect

Data Rates - Cable Structures

- 10MBd to 200MBd (POF) up to 100 meters
- 10MBd to 2.5GBd (GRINPOF) up to 100 meters
- 10MBd to 4.0GBd (GOF) up to 300 meters



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PRODUCT AVAILABILITY

ITEM

SCHEDULE

• DIRECT Active PCB Jacks	
10/100 MBd	Now
200MBd	Now
400MBd	03/15/98
• DIRECT PCB Interface Modules	
10/100 MBd	Now
200MBd	Now
400MBd	03/15/98
• DIRECT Cable Plugs	
POF	Now
PCF	Now
GOF	03/15/98
• DIRECT Couplers	
POF	Now
PCF	Now
GOF	03/15/98



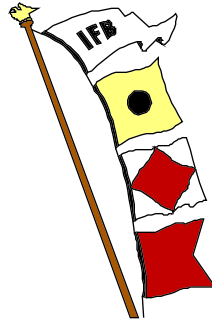
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Features



- RJ-45 Footprint and Plug Interface
- Excludes UTP, STP, ST, SC, FC & ATM
- One Tool Installation Procedure (POF)
- Optical Power Shutoff if Plug Is Removed
- Low Profile Jack & Interface Modules

Benefits



- Total Installed Cost Equal to CAT - 5!
- Eliminates Improper Mating Options
- Suitable for Amateur Installations
- Integral Eye Safety in Normal Use
- PCB Design and Layout Flexibility

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A Proposal for Long Haul p1394b Applications



DIRECT SUMMARY



- Low Acquisition, Maintenance and Installation Costs
- Robust, Secure Operation with Integral Safety Features
- Differentiated Performance in Home Multimedia Applications

The **DIRECT OPTICAL INTERCONNECTION SYSTEM** Is the Right Choice for Next Generation Data Communications Applications!

