

# Customization Process for Upgraded Version of Optical Backplane Connector for Field Operations



## AI Overview

Upgrading optical backplane connectors for field operations involves modular design, blind-mating alignment, ferrule customization, and ruggedized deployment to ensure high-speed, high-density, and reliable optical connectivity. Key Steps in the Customization Process

1. Define System Requirements and Fiber Density Begin by assessing the operational environment and system requirements, including data rates, fiber count, and mechanical constraints. High-density systems may require MT ferrules with multiple fiber configurations (1x2, 1x4, 1x6, 1x8) to optimize space and scalability, as seen in Molex VFI systems. Consider whether singlemode or multimode fibers are needed based on signal integrity and distance requirements.
2. Select Connector Type and Standard Compliance Choose a connector family that aligns with industry standards for interoperability and ruggedness. Options include: VITA 66.1/66.4 for VPX systems, supporting blind-mate MT ferrules and high-speed data transfer. LightCONEX for SWaP-constrained defense applications, offering spring-loaded MT ferrules for shock and vibration tolerance. VFI Optical Backplane System for modular, plug-and-play upgrades in data centers.
3. Mechanical and Blind-Mating Customization Design the connector housing to allow precise alignment of ferrules using split sleeves or floating inserts. Blind-mating features reduce installation force and minimize downtime during field operations. Floating inserts in X- and Y-directions ensure proper MT-to-MT alignment under vibration or thermal expansion.
4. Modular and Scalable Design Incorporate modularity to allow field upgrades without full system redesign. For example, VFI connectors enable ferrule r...

## Article Content

### Nicomatic Releases Rugged Optical Backplane Interconnects

Nicomatic has released its rugged VITA 66 optical backplane interconnects, a standard for optical backplane interconnects in the VPX (VITA 46) ecosystem. The connector is designed to

### Optical Backplane Connectors Market Report: Size, Growth, Trends ...

Optical Backplane Connectors Market size is projected to reach \$3.86 Bn by 2031, growing at a CAGR of 6.65% during the forecast period 2024-2031. The report provides key trends, growth drivers,

### Backplane Connectors | TE Connectivity

Our portfolio of backplane connectors features high-performance right angle, co-planar, and mezzanine interconnects, used for mating printed circuit boards together. TE engineers use sophisticated 3D

### VITA 66.1 and 66.4

Amphenol's VITA 66 family of fiber optic connector products are ruggedized blind-mate optical MT module/backplane connector systems designed to meet the VITA 66.1 and 66.4 open architecture

### Co-Packaged Optics (CPO) Solutions for Fiber Interconnect

NKO board-to-board connector Senko's CPO module internal schematic using board-to-board connectors Optical Backplane Approach Currently, in the production of high-speed optical

### High Speed Backplane Design | Cadence

Master high-speed backplane design with insights on routing, signal integrity, material selection, and connectors using OrCAD X.

### Backplanes | Open.Tech

Our backplane connectors provide reliable high-speed connectivity and signal integrity, while our backplane modules facilitate power and signal distribution along with system integration in complex

### On Board Interconnect » SENKO Advanced Components, Inc.

The bridge between optics and electronics is getting smaller. SENKO is leading the way with On-Board Connectivity solutions.

### VITA 66 | Nicomatic

High density: supports up to 24 optical channels per connector (48 with 2 MT ferrules). The VITA 66 standard is compatible with the VPX (VITA 65) standard, providing seamless integration with other

### Cable Backplanes Come of Age

Cable backplanes have been a longtime feature of high-performance computing, undergoing several evolutions to keep up with speed and bandwidth

### High Speed Backplane Connectors | TE Connectivity

High-speed backplane connectors for keeping data flowing Our broad portfolio of high-speed backplane connectors provides you with the design flexibility you require to solve specific performance

### VPX optical interconnects | Smiths Interconnect

VPX Optical Interconnects The Light CONEX ® LC Series of optical plug-in and backplane module connectors for VPX systems are Smiths Interconnects"

### Optical Backplane Connectors

Optical backplane connectors allow the connection of optical fibers through blind mating interfaces in similar fashion to electrical backplane connectors. These dense and highly engineered interfaces

### Greg Powers, Market Development Manager

Expanding Options in VPX Connectivity You can never have too much bandwidth. High-speed processing and growing amounts of data to be communicated require generous bandwidth from the

### VPX Backplanes Go Optical

VPX Backplanes Go Optical VPX backplanes surpass 40 Gbps in copper Ethernet and also gain a backplane optical interface connector. By Michael Munroe, Technical Specialist, Elma Bustronic

### Backplane Routing Topology for Gigabit Copper and Fiber Networks

Some Backplane Routing and Design Requirements There are some basic design aspects that must be considered for any high speed backplane, but the exact layout and construction

### Versatile Format Interconnect (VFI) | Molex

The Versatile Format Interconnect (VFI) Optical Backplane System offers flexible density options, reduced contamination risk and high optical performance, using MT-ferrule footprints.

### Custom Backplane Design: Key Considerations for Optimal ...

Custom backplane design is a multifaceted process that requires careful planning, expert knowledge, and attention to detail. From maintaining signal integrity to ensuring efficient power distribution and

#### A Novel Architecture for High Capacity Optical Backplane

The switching capability required by data centers is rapidly developing, however, the technical limitations of the optical devices have created bottlenecks in their performance. Additionally, architectures that

#### High Speed Backplane Interconnect Solutions

The emergence of faster data rates and decreasing signal rise times requires better performing, high-speed connectors. TE Connectivity's (TE) broad portfolio of high speed backplane connectors

#### High Speed Backplane Design and PCB Layout Tips

If you need to connect multiple boards into a larger system and provide interconnections between them, you'll likely use a backplane to arrange these boards. Backplanes are advanced

#### Backplane Connectors

Offering a broad portfolio of backplane connectors that include SOSA aligned optical, COTS plus hard metric, VITA standard and high speed twinax interconnects. Our interconnect solutions address the

#### Optical Backplane Connectors

As with electrical backplane connectors there are versions of optical backplane connectors supporting coplanar, orthogonal and standard card cage designs as well as newer rack scale drawers/sled

#### LightCONEX Optical Backplane connectors | Smiths Interconnect

The LightCONEX ® optical interconnect family includes plug-in and backplane module connectors that have been developed to be compliant with the forthcoming VITA 66.5 standard and in alignment with

#### Custom Backplanes

Our experienced field (FAE) and customer engineering teams are on hand to ensure that your custom backplane system requirements are met in the most efficient manner.

#### Your Sustainability Transformation Partner | Fujitsu Global

Our purpose: Make the world more sustainable by building trust in society through innovation.

#### Advanced Backplane Fabrication | Design, Manufacturing & Test

Our in-house technical team has decades of experience with high speed backplane design, layout, mechanical and thermal design, signal integrity, power distribution and advanced connector selection.

#### LightCONEX LC Series

The Light CONEX ® series of optical plug-in and backplane module connectors for VPX systems is Smiths Interconnects' answer to the stringent SWaP requirements of today's defense applications in

#### Quick Reference Guide High Speed Backplane Interconnect Solutions

High Speed Backplane Interconnect Solutions The emergence of faster data rates, and decreasing signal rise times, requires better performing, high speed connectors. TE Connectivity's broad

## Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://www.dknconsulting.co.za>

Email: [info@dknconsulting.co.za](mailto:info@dknconsulting.co.za)

Phone: +31 6 2948 7351

Address: Herengracht 123, 1015 BT Amsterdam, Netherlands

This document is for informational purposes only. Specifications subject to change without notice.

