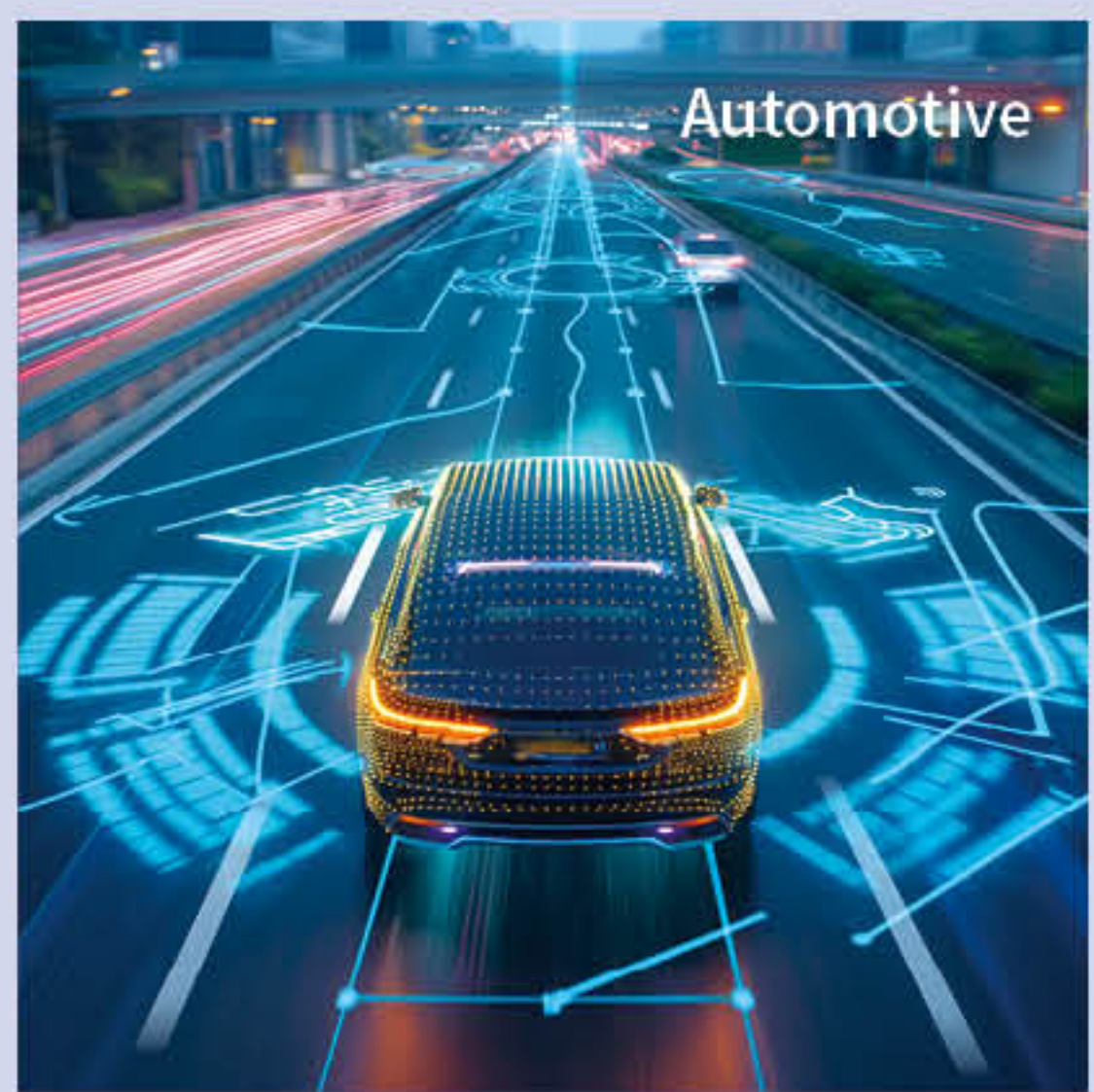




AI Data Center & CPO Connectivity Solutions

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AI DATA CENTER CONNECTIVITY SOLUTIONS

Enabling scalable, high-density optical connectivity from structured cabling to next-generation AI infrastructure.

01

INFRASTRUCTURE LAYER

Backbone Cabling
for Data Center

02

SWITCH LAYER

High-density cabling
between switches

03

SERVER LAYER

High-speed interconnect
to AI servers and devices

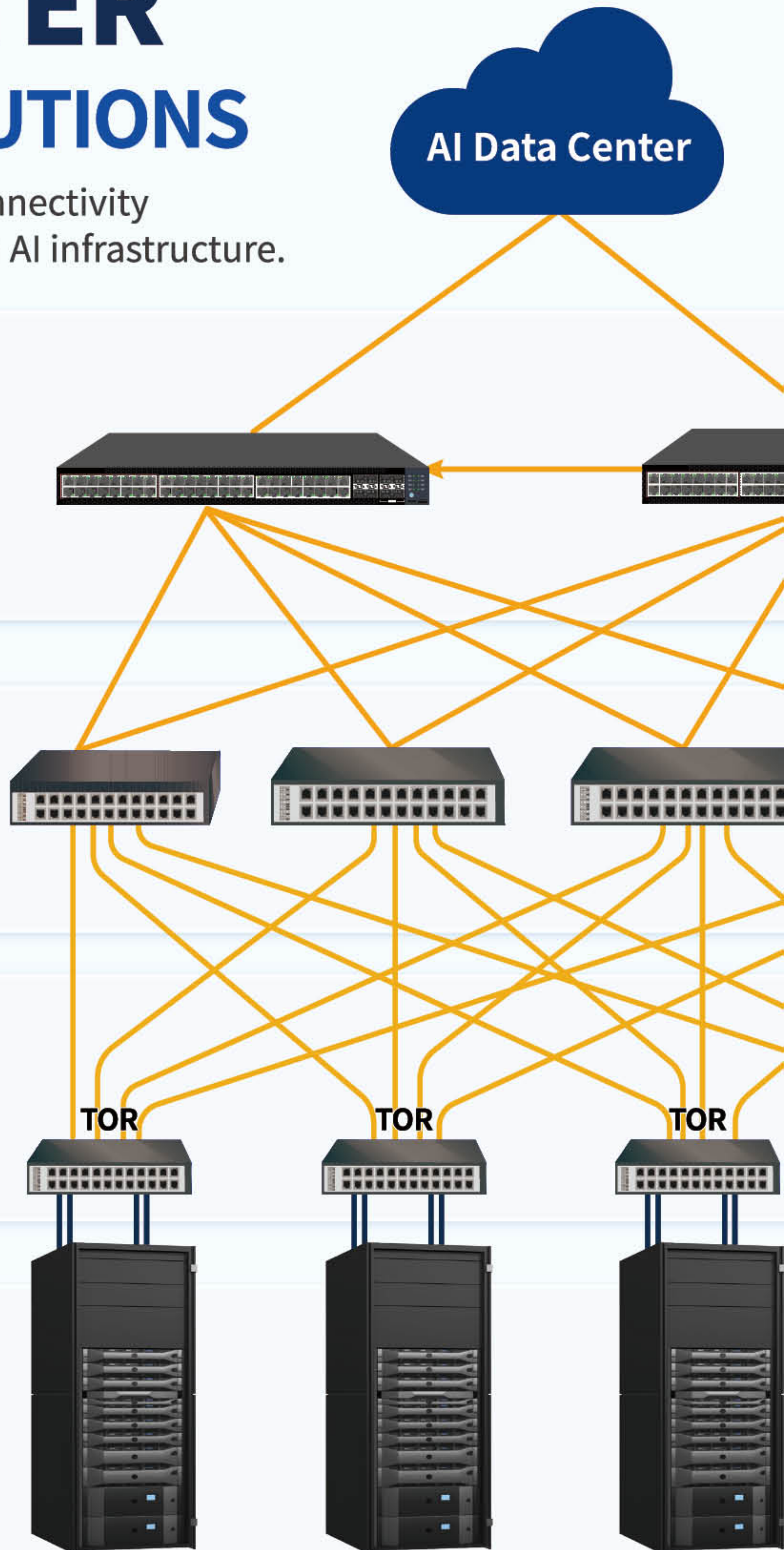
Core /
Spine Switch

Leaf Switch

TOR
(Top of rack)
Switches

AI Server /
Storage
GPU Cluster

AI Data Center



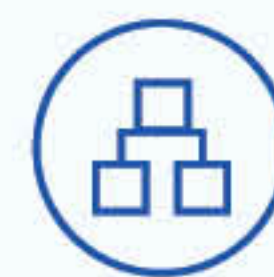
HIGH DENSITY

Space-saving design
for maximum density



HIGH PERFORMANCE

Low insertion loss
for reliable transmission

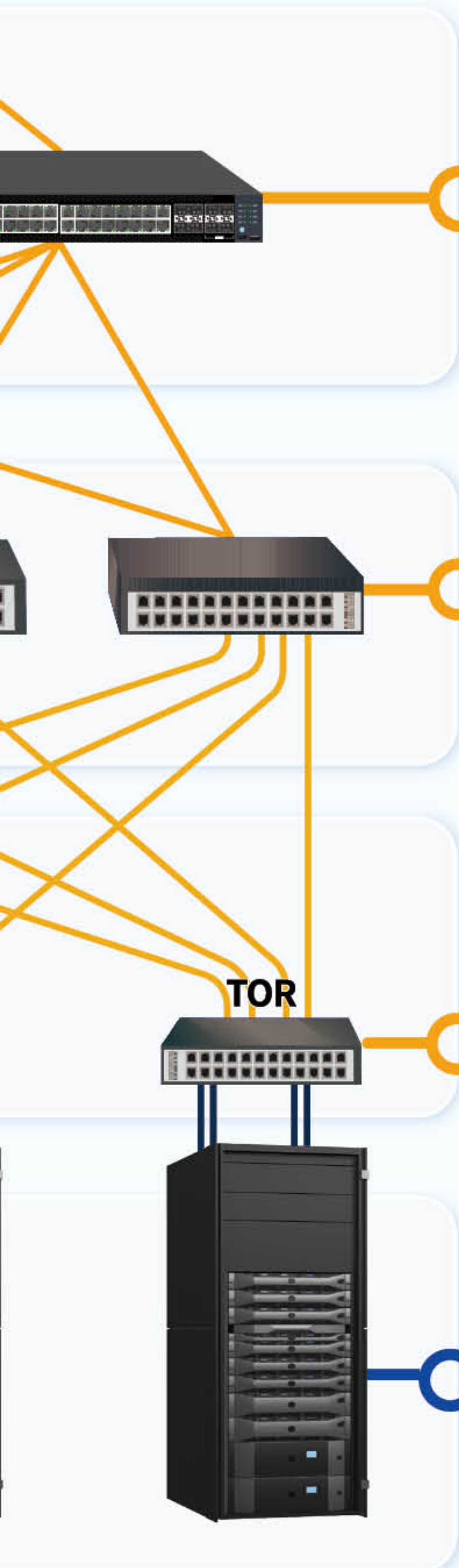


SCALABILITY

Ready for 800G, 1.6T
and beyond

Note: **Orange** lines represent optical(fiber) connectivity. **Dark blue** lines represent copper connectivity.

— Optical (fiber)
— Copper



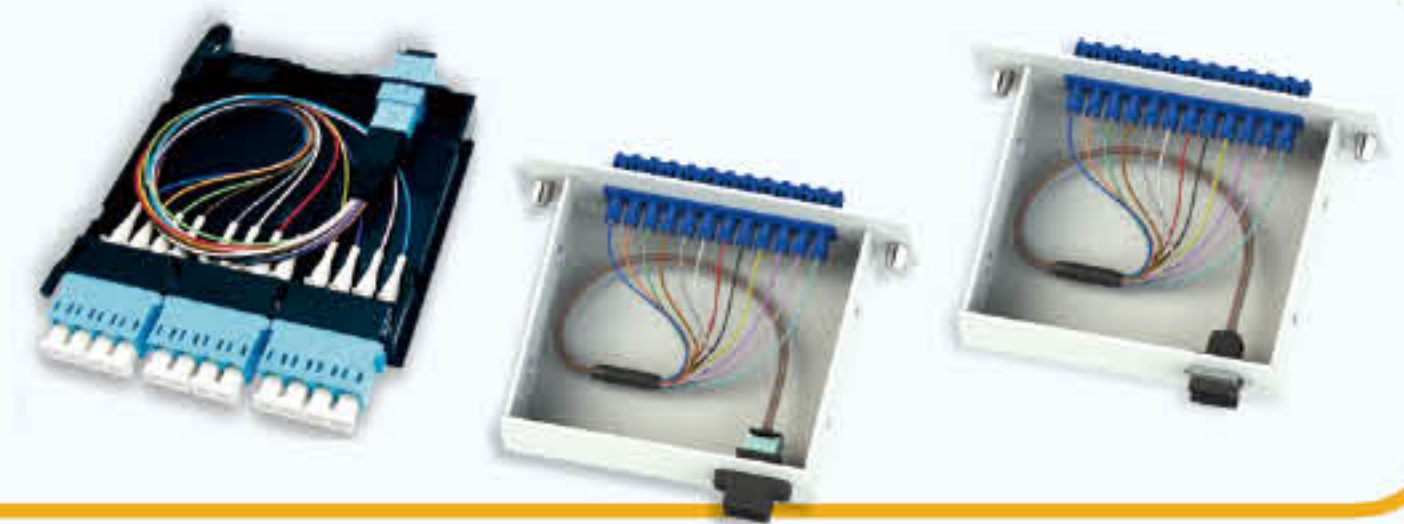
01 TRUNK CABLE

High fiber count trunk cable for backbone cabling



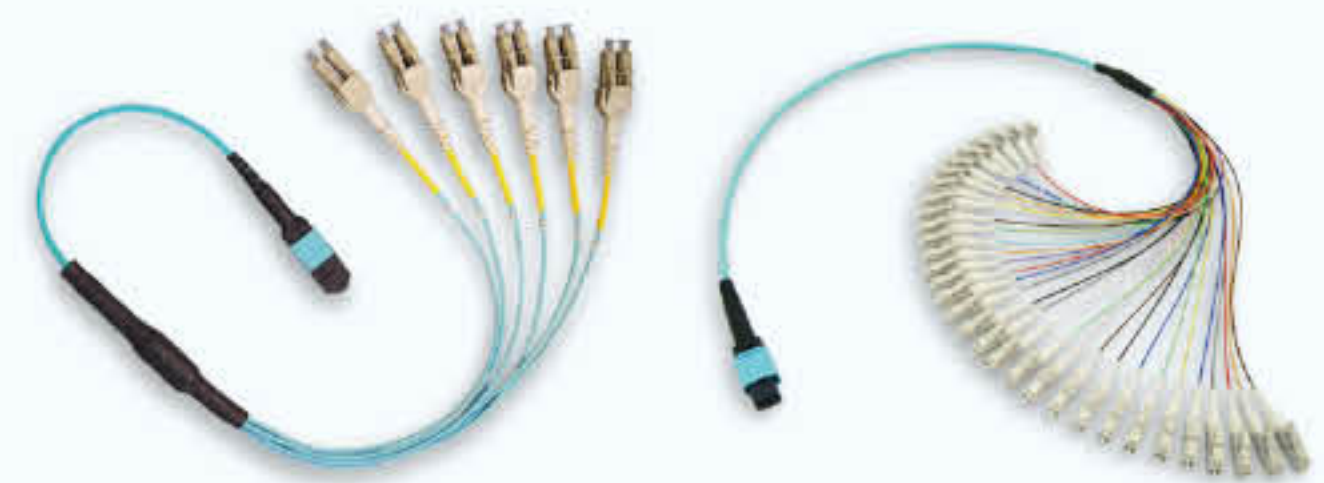
02 HIGH DENSITY PANEL CASSETTE

Modular panel cassette for high-density cable management



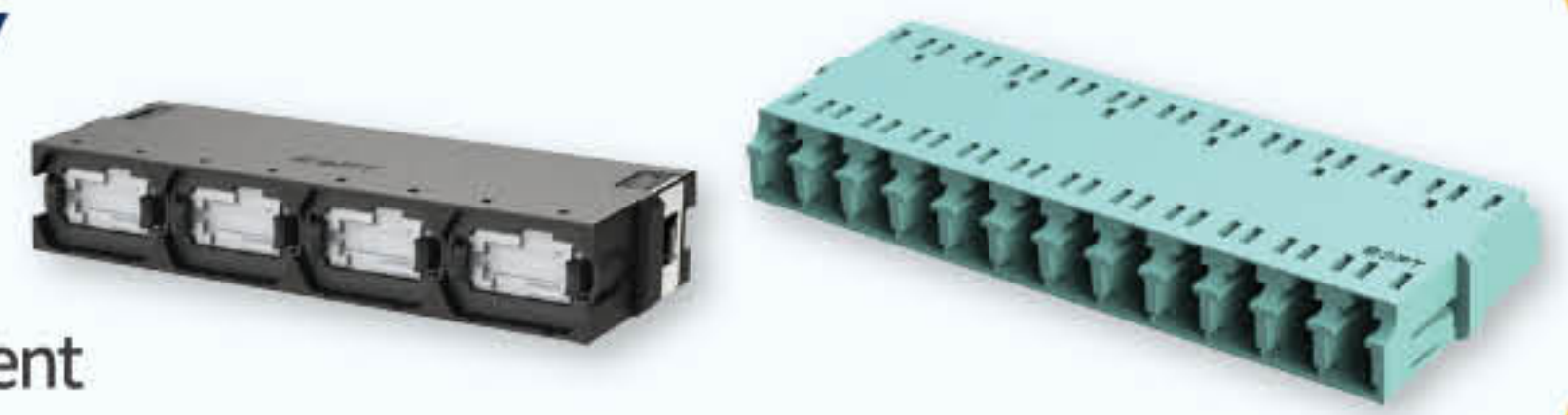
03 HIGH DENSITY PATCHCORD

MPO/MTP patchcord and breakout cable assemblies



04 HIGH DENSITY ADAPTER

MPO/LC adapters for flexible deployment



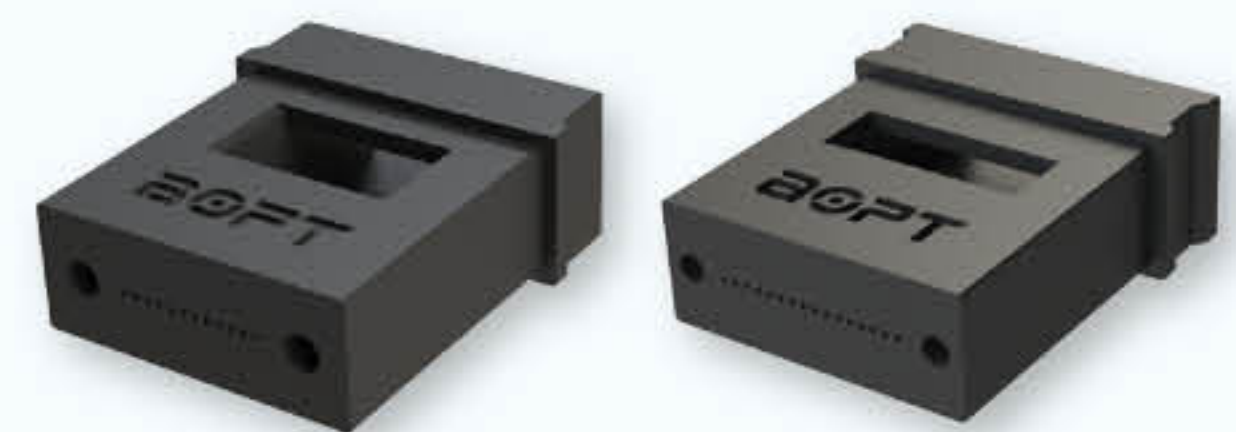
05 HIGH DENSITY CONNECTOR

MPO/LC EZ-Pull connectors for flexible deployment



06 MT FERRULE SERIES

High precision MT ferrule for high-density connections



07 TRANSCEIVER / AOC

High-speed optical solutions for AI switches



08 AEC / ACC / DAC

High-speed copper solutions for AI servers

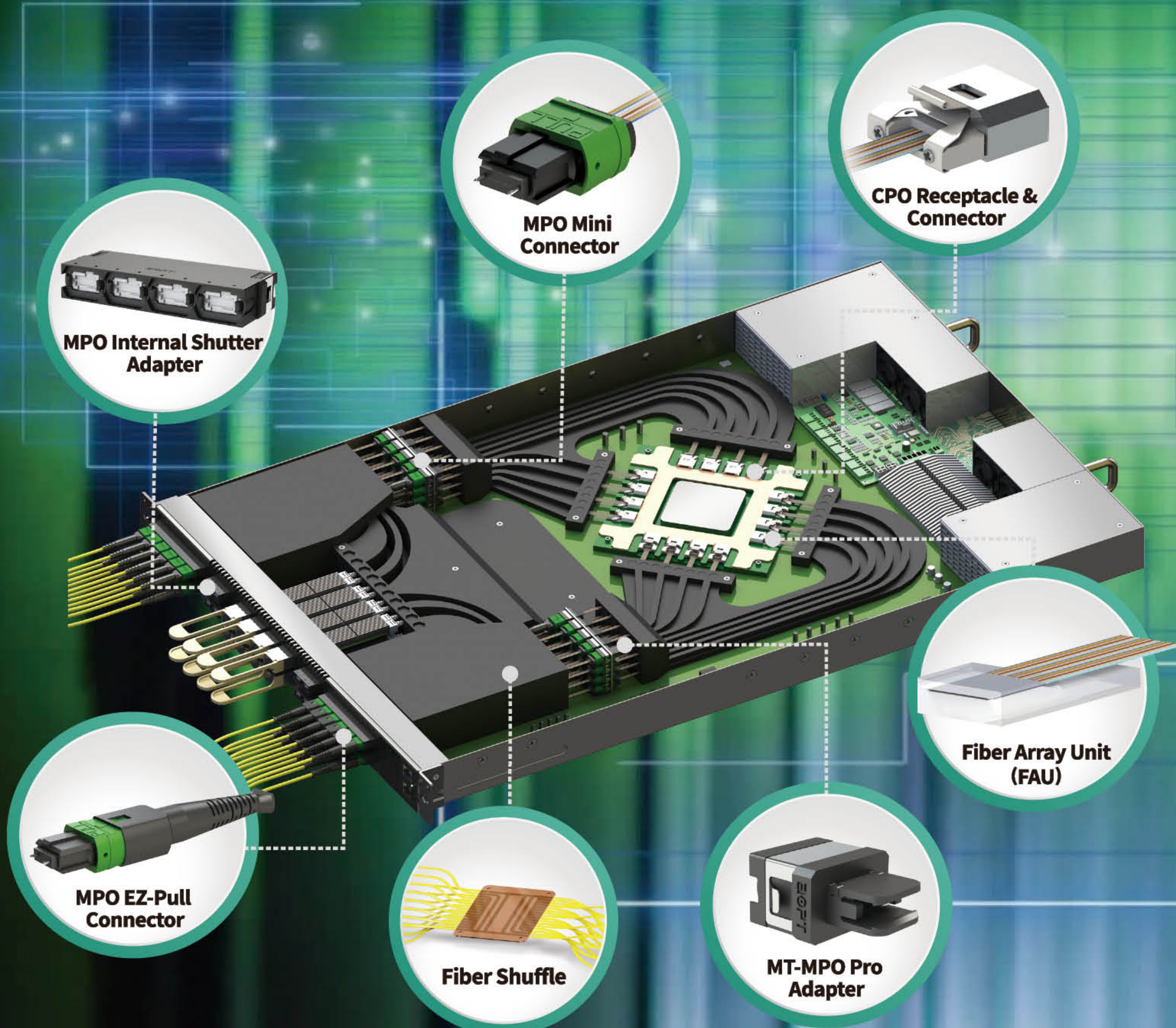


RELIABILITY
Tested for AI-grade performance

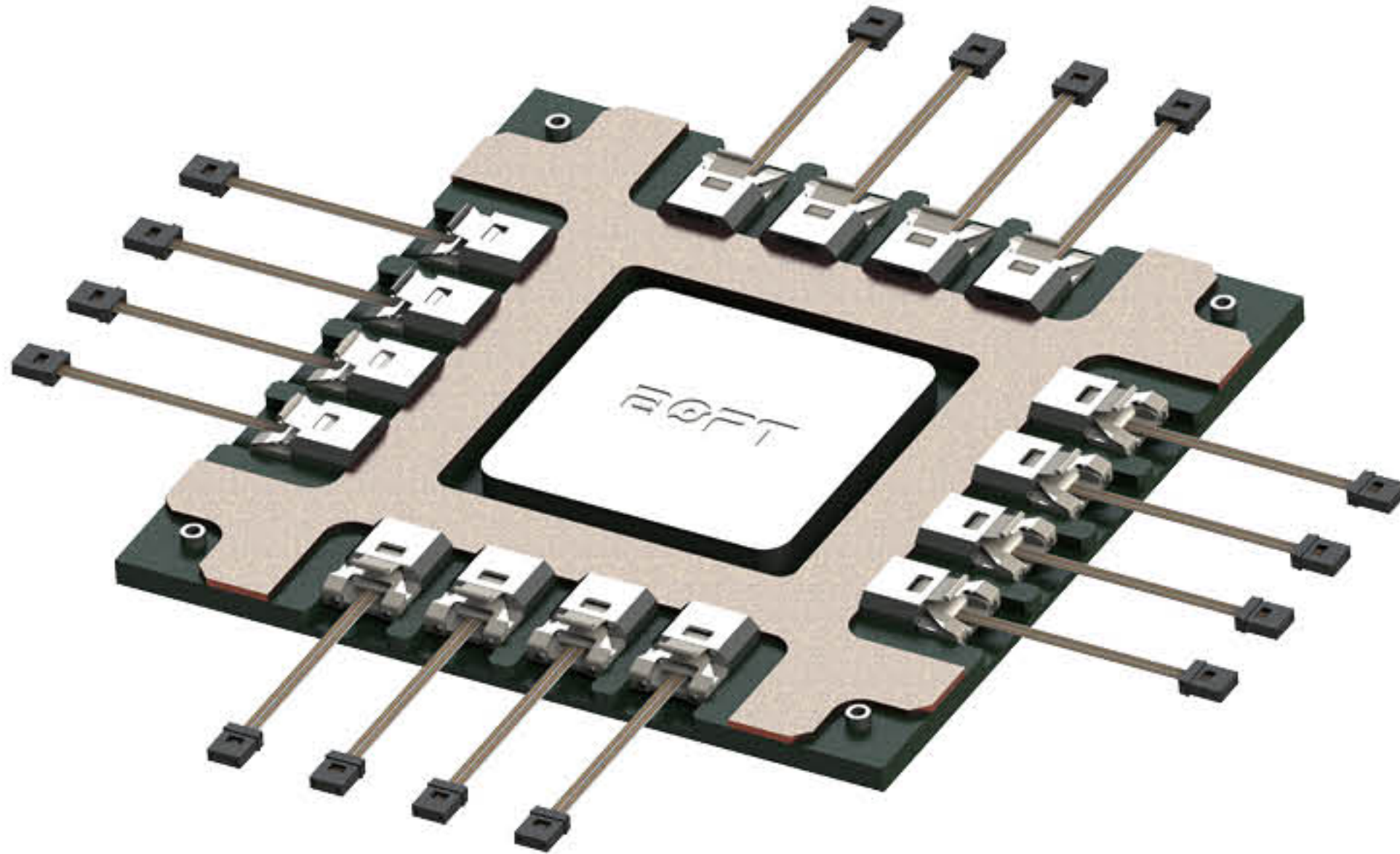
CPO Connectivity Solutions

Precision Optical Connectivity for AI-Scale CPO Architectures

ACON OPTICS delivers comprehensive CPO connectivity solutions designed to enable high-density, high-bandwidth optical integration for next-generation AI data center infrastructures. From chip-level Grating and Edge Coupling interfaces to high-density Fiber Array Units and precision FA-MT interconnects, our platform ensures sub-micron alignment accuracy, low-loss optical performance, and scalable system integration across advanced CPO architectures.



CPO GC Solution



Description

ACON OPTICS delivers high-density Grating Coupling (GC) solutions with micron-level precision, enabling reliable and scalable optical connectivity for next-generation AI infrastructure. Designed for high-bandwidth CPO systems, our GC solutions feature optimized optical paths and modular architectures for precise fiber-to-chip alignment.

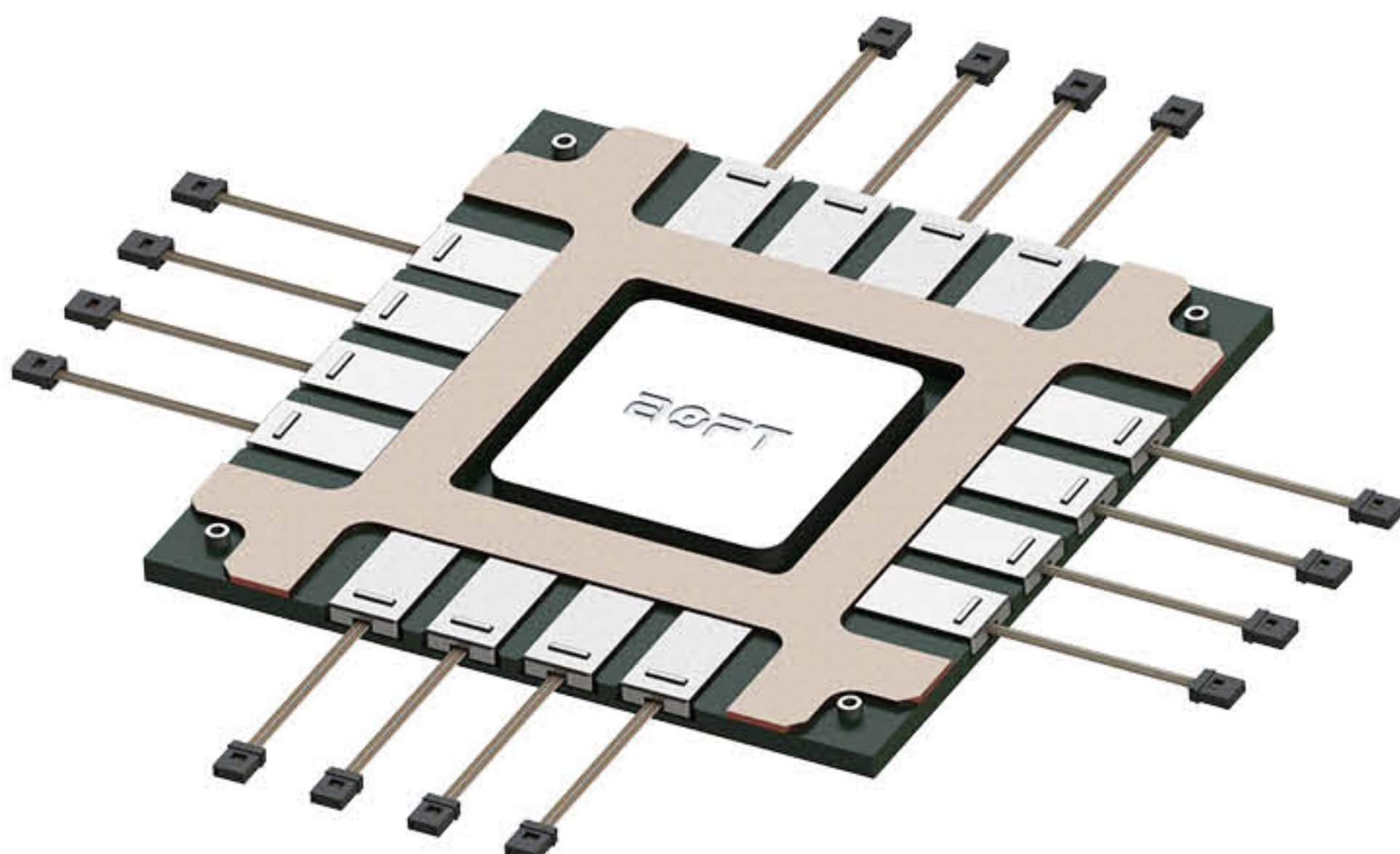
Features

- Micron-level alignment precision
- Detachable modular design
- Optimized grating optical interface
- Stable coupling performance
- AI-scale reliability

Key Specifications

- Fiber count: 80+
- FAU core pitch accuracy: $\leq 0.5 \mu\text{m}$
- CPO receptacle critical accuracy : $\leq 0.5 \mu\text{m}$
- Guide hole accuracy: $\leq 0.5 \mu\text{m}$
- SM fiber OD & concentricity: $\leq 0.1 \mu\text{m}$

CPO EC Solution



Description

ACON OPTICS delivers high-precision Edge Coupling (EC) solutions designed for high-density CPO architectures. Featuring micron-level alignment and low-loss optical interfaces, our detachable modular design ensures reliable and scalable connectivity for AI-scale systems.

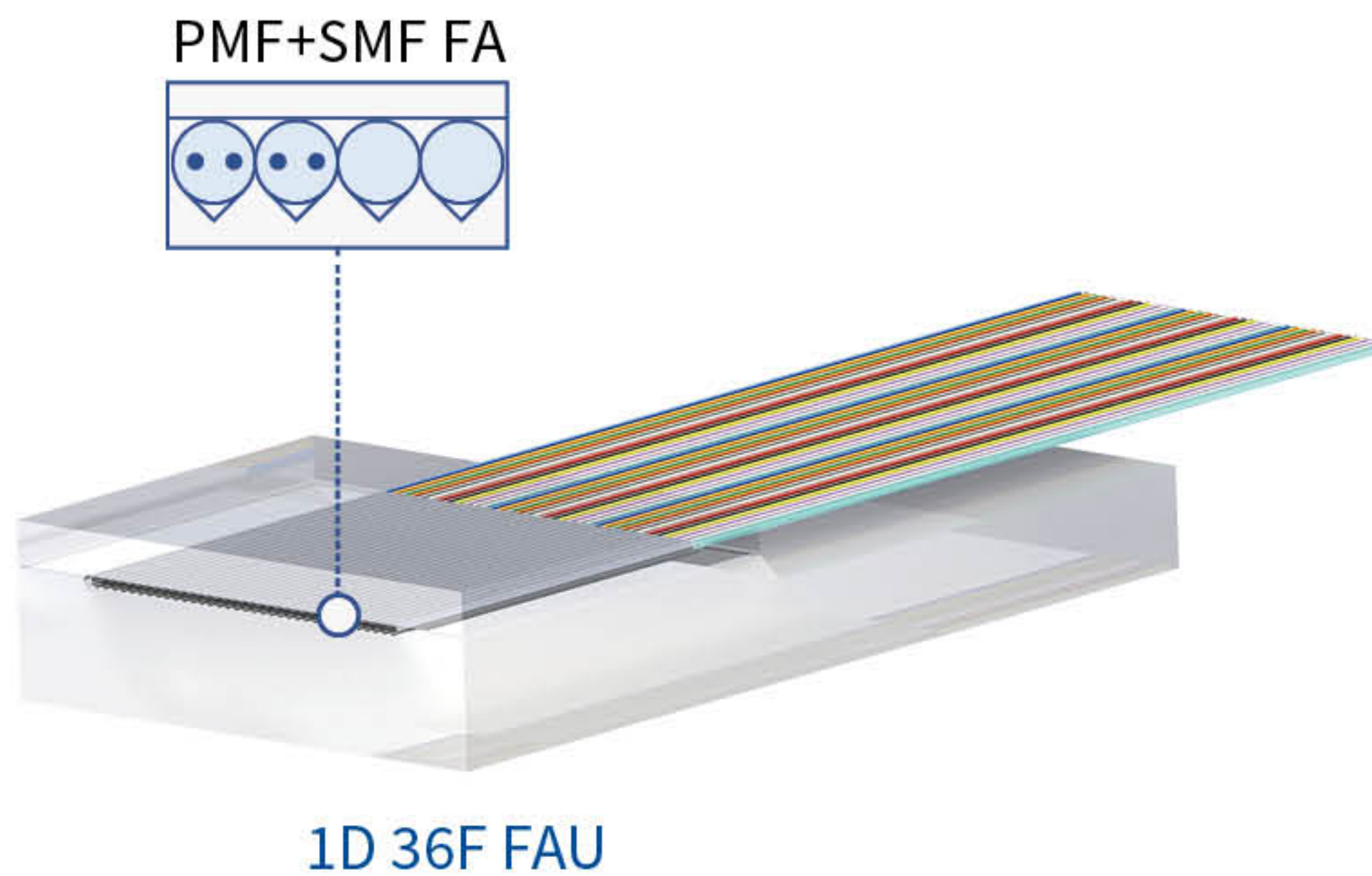
Features

- Micron-level precision
- Detachable modular design
- Optimized optical paths
- Advanced tolerance control
- AI-scale reliability

Key Specifications

- Fiber count: 40+
- FAU v-groove accuracy: $\leq 0.5 \mu\text{m}$
- CPO receptacle critical accuracy : $\leq 0.5 \mu\text{m}$
- Guide hole accuracy: $\leq 0.5 \mu\text{m}$
- SM fiber OD & concentricity: $\leq 0.1 \mu\text{m}$

1D Fiber Array Unit (FAU)



Description

ACON OPTICS delivers high-density Fiber Array Units (FAU) engineered for advanced CPO architectures. Featuring sub-micron pitch accuracy and automated fiber alignment, our FAU solutions enable low-loss coupling and ultra-compact integration for AI-scale optical interconnect systems.

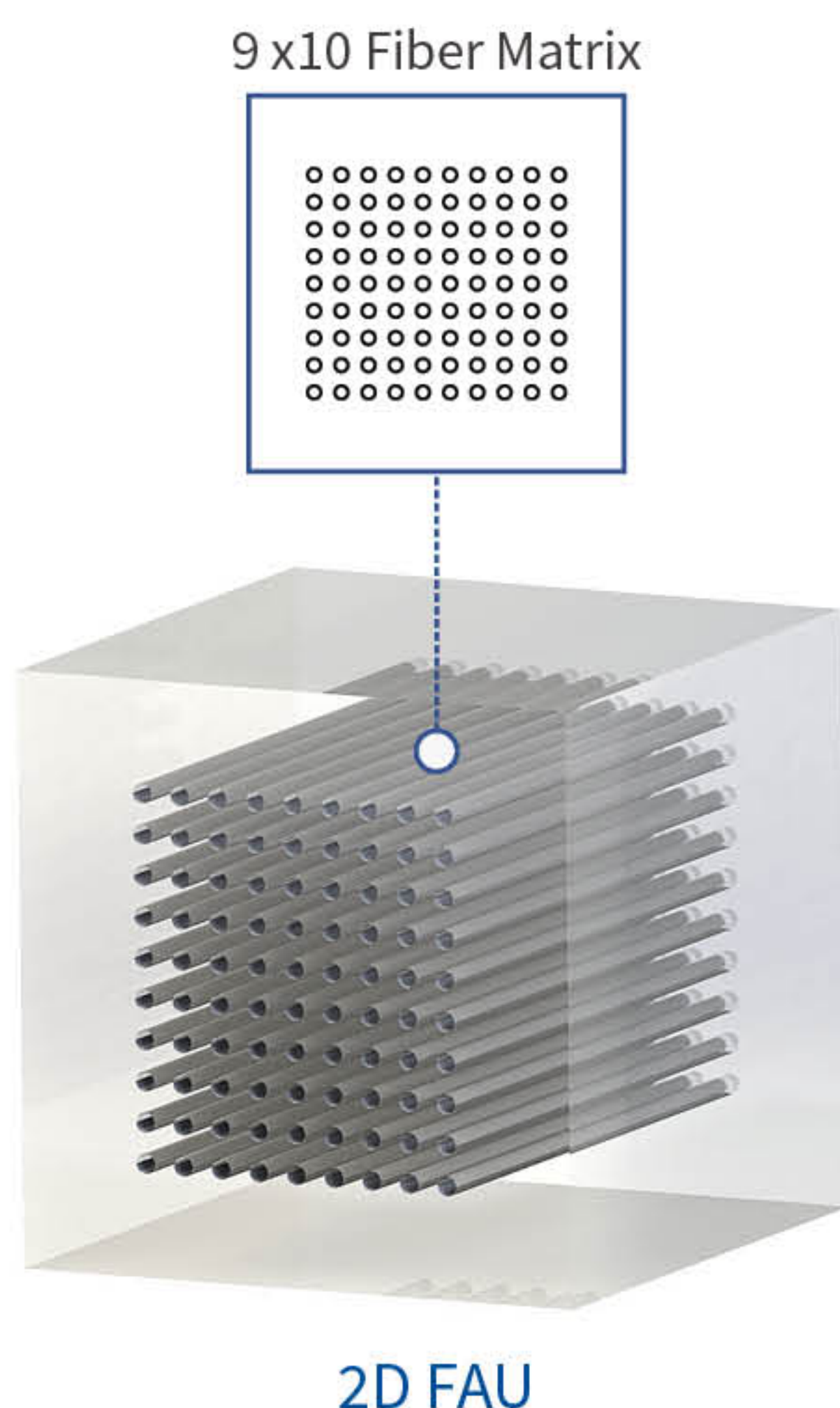
Features

- 1D & 2D high-density fiber arrays
- Sub-micron pitch accuracy
- Automated PM fiber alignment
- Minimal insertion loss

1D Fiber Array Unit (FAU) Specifications

Parameter	Specification
Fiber Count	100+
Material	BF33 / JGS2
Core Pitch	127 μm or 250 μm
Core Pitch Tolerance	$\pm 0.5 \mu\text{m}$
Polish Angle	0° or 8°
Thickness	1 – 5 mm

2D Fiber Array Unit (FAU)



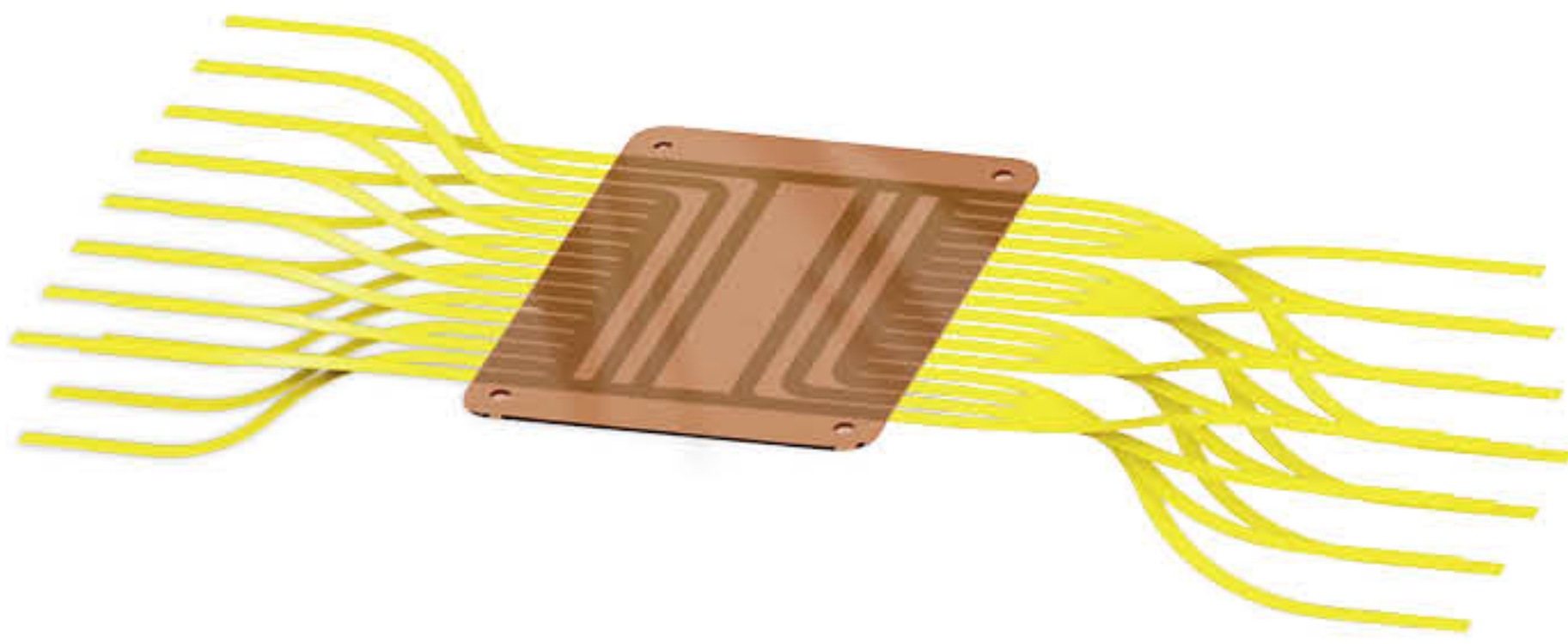
Features

- 1D & 2D high-density fiber arrays
- Sub-micron pitch accuracy
- Automated PM fiber alignment
- Minimal insertion loss

2D Fiber Array Unit (FAU) Specifications:

Parameter	Specification
Fiber Count	2000+
Material	BF33 / JGS2
Core Pitch	127 μm , 165 μm , or 250 μm
Core Pitch Tolerance	$\pm 0.5 \mu\text{m}$
Fiber Hole Angle	0° – 15°
Fiber Hole Angle Tolerance	$\pm 0.2^\circ$
Thickness	1 – 5 mm
Fiber Hole Diameter	80 μm or 125 μm
Fiber Hole Diameter Tolerance	$\pm 0.5 \mu\text{m}$

Fiber Shuffle



Description

The ACON OPTICS Fiber Shuffle is a Flexible Optical Backplane designed for AI data centers, Co-Packaged Optics (CPO), and high-performance computing (HPC) systems. Built on an ultra-thin flexible substrate, it enables precise, high-density fiber routing within a compact footprint, reducing cable congestion, improving airflow, and simplifying next-generation optical interconnections.

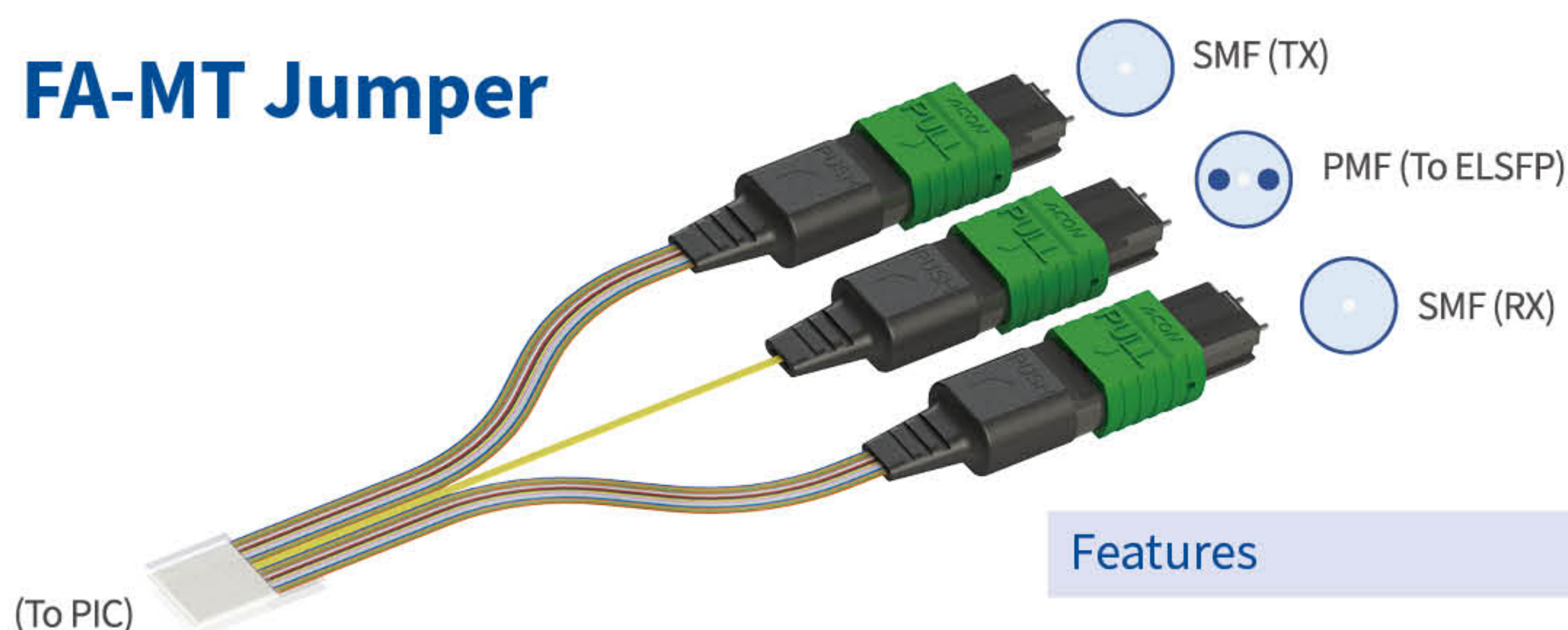
Features

- Ultra-Thin Flexible Design for optimized routing space
- High-Density Fiber Management with customizable routing architecture
- Low Insertion Loss (≤ 0.35 dB) for reliable optical performance
- Minimum Bend Radius ≥ 5 mm to minimize optical loss
- Reduce Fiber Congestion for simplified cable management
- Optimize Airflow & Rack Space for enhanced thermal management
- Compatible with MT Ferrules, MPO/MTP & Fiber Arrays
- Blind-Mate Ready for fast system integration

Applications

- AI Data Centers
- Co-Packaged Optics (CPO)
- High-Performance Computing (HPC)
- Optical Circuit Switches (OCS)
- Optical Backplanes
- Telecommunications Networks

FA-MT Jumper



Description

ACON OPTICS delivers high-precision FA-MT jumpers engineered to connect chip-level fiber arrays with system-level optical interfaces. Featuring sub-micron alignment accuracy and low-loss optical performance, enabling reliable, high-bandwidth signal transmission across advanced CPO and AI-scale data center architectures

Features

- Fiber count: 40+
- Low-loss MPO interface (≤ 0.35 db)
- Sub-micron alignment accuracy
- SMF / PMF compatibility
- Robust pluggable design
- Simplified maintenance

Applications

- AI Data Centers
- Co-Packaged Optics (CPO) Systems
- Silicon Photonics Interconnects
- High-Performance Computing (HPC)