

DATACENTER & COMMUNICATIONS

MARKET OVERVIEW

Optical connectivity is the foundation of modern data-driven infrastructure.

As datacenter traffic continues to grow, driven by artificial intelligence (AI), cloud computing, and high-speed networking, reliable, scalable optical solutions are essential.

From datacenter interconnects (DCI) to long- and ultra-long-haul networks, optical technologies enable higher bandwidth, lower power consumption, and scalability.

MARKETS WE SERVE

Scale-Up: Short-reach interconnects within a single system or rack (<10 m), evolving from copper to optics to enable higher density, lower power, and better performance.

Scale-Out: Optical interconnects linking servers and racks across a data center (10 m–10 km), prioritizing flexibility and pluggable transceivers.

Scale-Across: High-performance, low-latency optical networking connecting AI workloads across multiple datacenters using DCI and disaggregated transport systems.

Core Network: High-capacity optical backbone networks that transport massive volumes of data between regions, metro networks, and major datacenters, supporting the rapid growth of cloud and AI traffic.

SOLUTION CATEGORIES

Coherent provides a broad portfolio of optical solutions designed for AI datacenters and advanced networks, offering multiple levels of integration to meet performance, scalability, and power requirements.

Scale-Up & Scale-Out

Short- to medium-reach optical connectivity within AI datacenters, enabling high-bandwidth communication between GPUs, servers, and switches across systems, racks, and clusters.

CPO Solutions (Co-Packaged Optics)

Integrated optical engines co-packaged with switch or compute ASICs to deliver ultra-high bandwidth, improved power efficiency, and greater density for next-generation AI infrastructure.

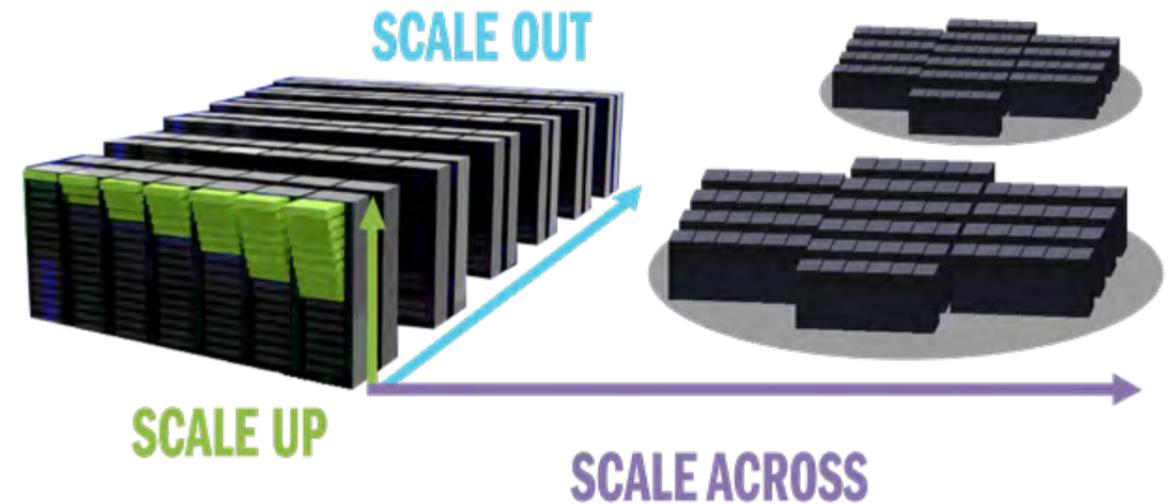
Datacenter Transceivers

Pluggable optical modules that provide high-speed connectivity between servers, switches, and racks across datacenter networks.



Need help designing your AI datacenter network?

Contact a Coherent expert



Scale-Across & Core Networks

High-capacity optical networking that connects datacenters and backbone infrastructure, enabling low-latency communication and scalable transport for distributed AI and cloud workloads.

DCI Transceivers

High-performance optical modules that enable long-reach datacenter interconnects with high bandwidth, low latency, and reliable data transmission.

Wavelength Management

Advanced optical systems that optimize fiber capacity by managing multiple wavelengths to maximize network performance and scalability.

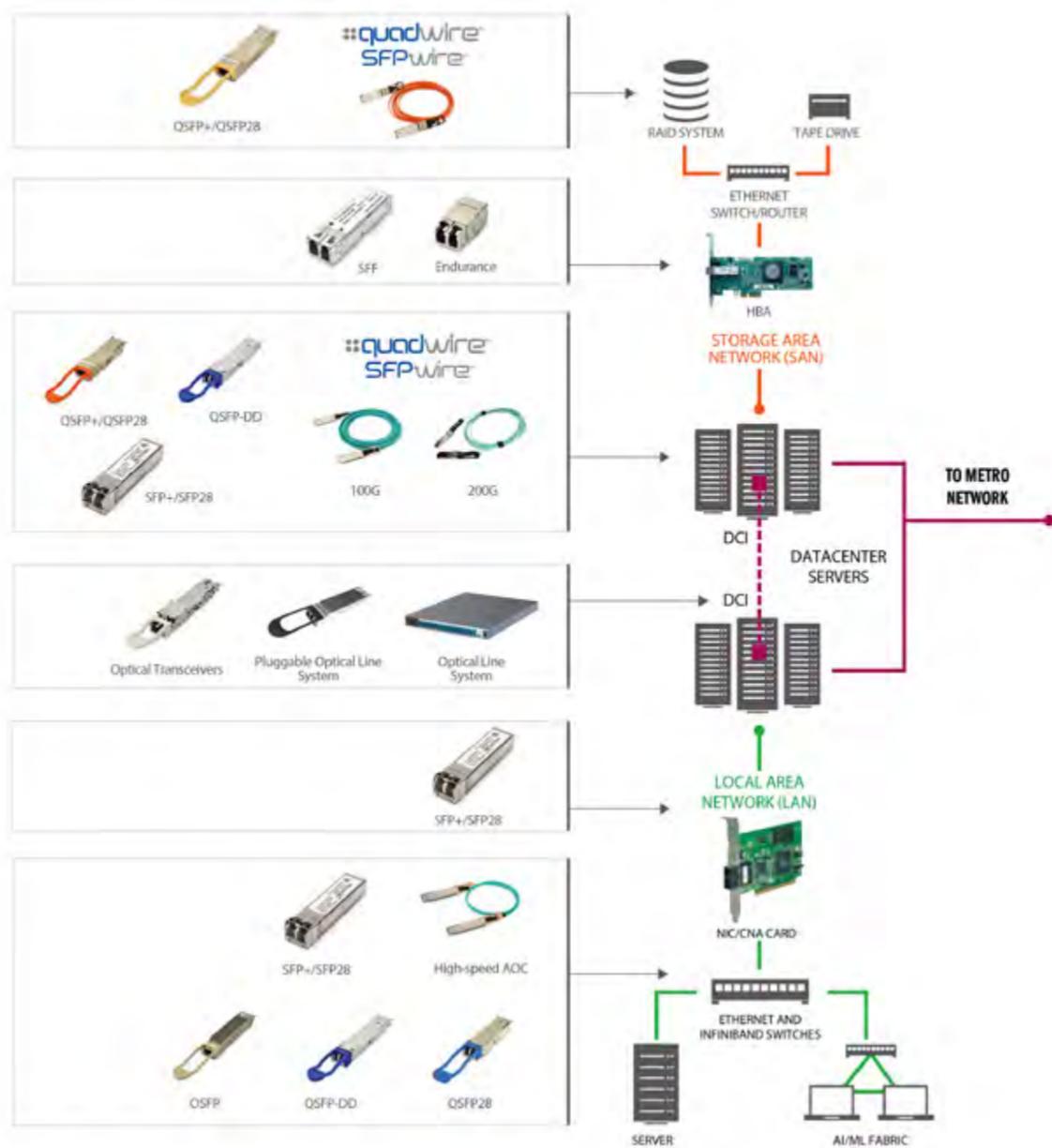
Communication Components

High-speed optical building blocks—including lasers, detectors, modulators, and photonic devices—that enable high-bandwidth data transmission across datacenter and telecom networks.

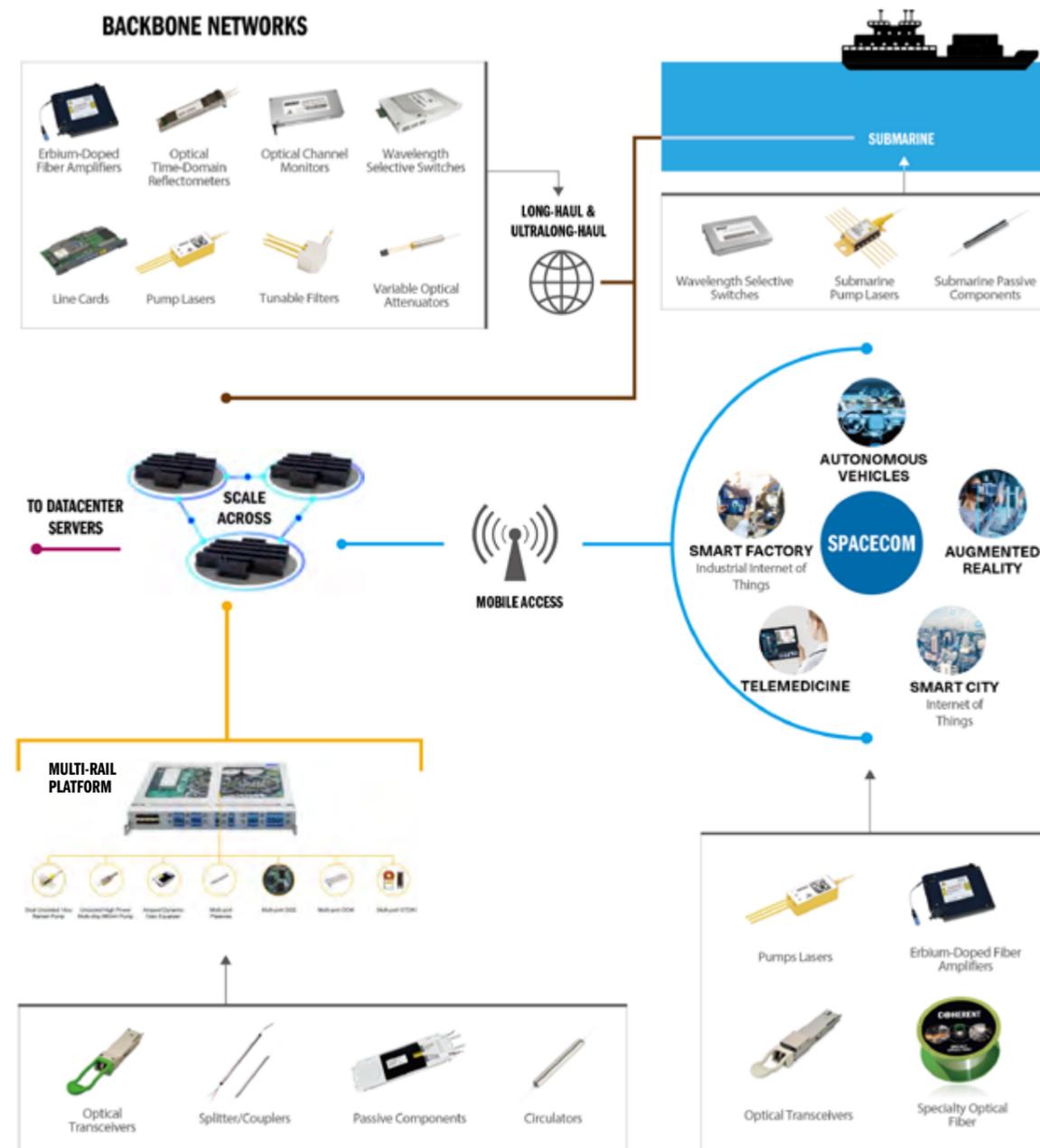
OPTICAL SOLUTIONS FROM DATACENTER TO CORE NETWORK

With the broadest product portfolio in the industry, Coherent is dedicated to helping our customers leverage the power and speed of optical communications. Our world-class products meet the increasing demands for network bandwidth and data storage. For more than three decades, we have provided components and subsystems to networking equipment manufacturers, datacenter operators, and telecom service providers.

DATACENTER



COMMUNICATIONS



WHY COHERENT

Coherent combines deep optical expertise with large-scale manufacturing to deliver reliable, high-performance optical communications solutions for critical infrastructure.

SUPPLIER RESILIENCE

High-volume production capabilities support consistent quality and long-term supply across global deployments.

Ensuring reliable delivery and competitive advantage in any business climate with a diversified global manufacturing footprint

VERTICAL TECHNOLOGY STACK

In-house design and manufacturing of key optical components enable performance optimization and tighter quality control.

RELIABILITY & LIFECYCLE SUPPORT

Products are designed, qualified, and manufactured to meet demanding operational requirements, with long-term lifecycle support.

Explore additional resources:

- Pluggable Transceiver datasheets
- Active Optical Cable (AOC) datasheets
- Subsystems & Components documentation

[Visit the Coherent Datacenter & Communications webpage to learn more.](#)

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