

6500-S32

6500 Packet-Optical Platform

Designed for high-capacity networking, the 6500-S32 Packet-Optical Platform converges comprehensive Ethernet, TDM, and WDM capabilities with unconstrained hybrid packet/OTN switching and an intelligent control plane to maximize the bandwidth efficiency and flexibility of the overall network.

The 6500-S32 is a 22RU chassis tailored for high-density applications in the network core, supporting a wide variety of services including the full mix of Ethernet, OTN, SDH/SONET, Fibre Channel, video, and transparent DWDM services. To offer flexible deployment options, the 6500-S32 is equipped with 32 service card-carrying slots that can be customized to support 2.5G to 100G switched or 2.5G to 400G DWDM applications. Various line and equipment protection options are available, including common equipment redundancy, enabling a range of differentiated service offerings for increased network availability.

The 6500-S32 supports the complete suite of photonic architectures including directionless, colorless, contentionless, and flexible grid Reconfigurable Optical Add-Drop Multiplexers (ROADMs) for the power to send any service anywhere in the network, dynamically. A full range of Wavelength Selective Switch (WSS) cards and filters provide optimized performance and cost for varying degree branching sites.

The 6500-S32 offers 3.2 Tb/s of integrated packet/OTN centralized switching with the ability to adjust the amount of packet and/or OTN capacity as required—ideal for any-to-any network connectivity flexibility. For applications with predictable point-to-point connectivity, the shelf also supports muxponder-based packet and OTN switching, enabling cost-optimized solutions for these specific service connectivity requirements. These capabilities combine with sub-wavelength grooming to ensure the most efficient bandwidth utilization and scaling of the network.

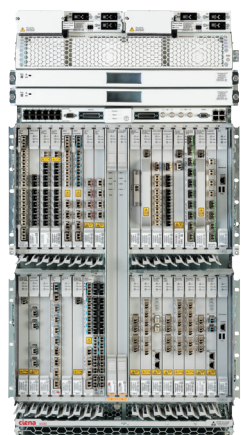
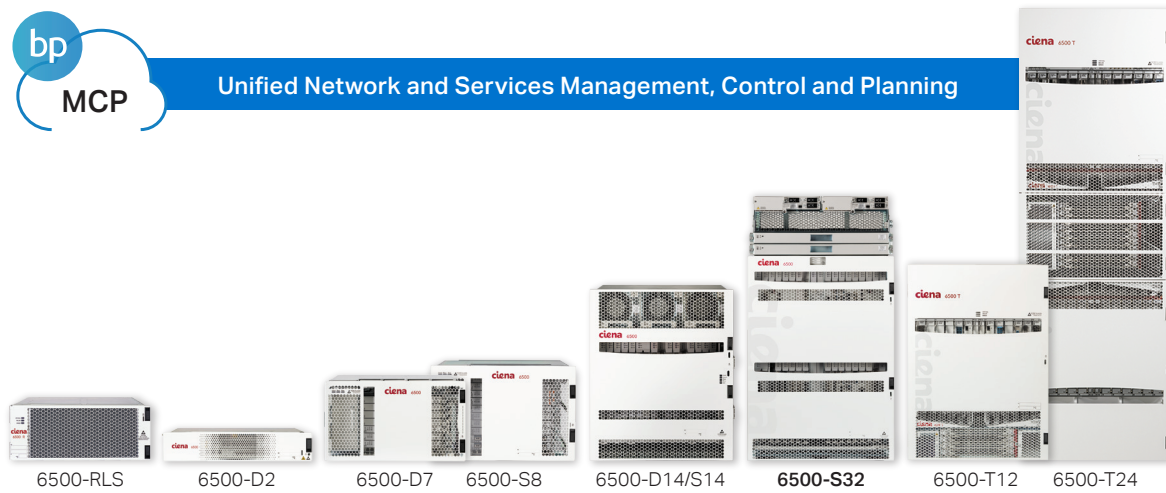


Figure 1. 6500-S32 packet/OTN switched configuration with integrated three-way ROADM



Features and Benefits

- Utilizes 3.2 Tb/s of unrestricted hybrid packet/OTN switching for the most efficient use of network resources
- Supports the full suite of photonic architectures for service transport over high-capacity wavelengths from 2.5G to 400G
- Enables simplified operations and reduced sparring costs through seamless networking flexibility with the 6500 Family
- Supports both muxponder- and central fabric-based packet/OTN switching solutions, enabling cost-optimized configurations
- Offers industry-leading WaveLogic coherent technology and intelligent control plane capabilities for scale and service differentiation
- Provides a range of differentiated service offerings through various line and equipment protection options



Single converged platform addressing networking requirements from the edge to the core

Figure 2. 6500 Family

Ciena’s intelligent control plane allows the network to automate and distribute many functions formerly performed through a combination of centralized management systems and manual processes. Operators can leverage both photonic and OTN control planes on the 6500-S32 for several advantages, including:

- Accurate inventory of equipment and bandwidth resources
- Faster service provisioning and turn-up
- Tunable SLAs via flexible protection and restoration options
- Network optimization and maintenance

Additionally, Ciena’s Blue Planet Manage, Control and Plan (MCP) provides end-to-end network and service lifecycle management across Ciena’s packet-optical infrastructure. Through software-defined control, MCP provides a unified interface—GUI or open REST APIs—with which operators can rapidly plan, provision, turn up, and troubleshoot multi-layer services.

The 6500-S32 is part of the 6500 Family of Packet-Optical Platforms, which offers various chassis form factors to provide flexible, cost-optimized configurations to best match site-specific requirements. Tailored for high-capacity applications, the 6500-S32 offers packet/OTN switching with industry-leading coherent and control plane capabilities, enabling cost-effective delivery of a flexible range of services across the network.

Technical Information

Physical Dimensions	22U 38.5 in (H) x 19.6 in (W) x 10.9 in (D) (977mm x 498mm x 278mm)
Power Options	Redundant breaker/fused 3x60A power cards Redundant breaker/fused 4x60A power cards (NTK603AB only)
Capacity	Packet/OTN: 3.2 Tb/s Packet/OTN XC: up to 3.2T System: Up to 30.4 Tb/s WDM: 2.5G to 400G
Number of service card slots	32
Supported service interface cards Packet/OTN switched modules	10x10G PKT/OTN 1x100G + 2x40G PKT/OTN 100G DWDM PKT/OTN 16x2.7G OTN 48xGbE
Photonic Modules	Full suite of passive filters, 50GHz, 75GHz, 100GHz, flexible grid ROADMs, EDFAs, Smart Raman, and Colorless, Directionless, Contentionless, Coherent Select Architecture
Transponders/Muxponders	<ul style="list-style-type: none"> • 400G ADM-on-a-blade: 2x100G/200G coherent line(s) muxponder (36 client ports) • Coherent 400G muxponder (4x100G) with integrated OPS (Optical Protection Switch) • Coherent 400G flexible service transponder (34 client ports) with integrated OPS (Optical Protection Switch) • Coherent 100GE/OTU4 transponder • Coherent 100G muxponder (10x10G) • Coherent tunability from 100G to 400G in 50G increments • Coherent 200G client card: 2x100GE or 5x40GE/10GE • Coherent 100G client cards: 10x10GE, 10x10G multi-rate, 2x40G+2x10G, 100GbE/OTU4 client • FIPS-certified AES-256 wire-speed coherent 100G/200G encryption solution • Coherent 40G line cards: metro, regional, long haul, ultra long haul, enhanced PMD, submarine, colorless • 4x10G multi-rate OTR: FIPS-certified AES-256 encryption and OSP Class 2 GR-3108-CORE variant • SONET/SDH 10G ADM-on-a-blade: SuperMux • Ethernet: 152G eMOTR, 68G eMOTR Edge, 30G L2MOTR • OTN modules: 8-port OTN Flex MOTR (2.7G), 1+8 port OTN Flex MOTR (10G) with OSP Class 2 GR-3108-CORE variant
Certifications	Common Criteria Network Device Collaborative Protection Profile FIPS 140-2 Level 2 and 3 FIPS 197 AES-256 BSI (German Federal Office of Information Security) IBM GDPS SAN environments: Dell/EMC, Brocade and Cisco switches
Environmental Characteristics Operating Temperature Relative Humidity Earthquake/seismic	+41°F to +104°F (+5°C to +40°C) normal +23°F to +122°F (-5°C to +50°C) short term 5% to 85% (non-condensing) Zone 4