

6500-D7/S8

6500 Packet-Optical Platform



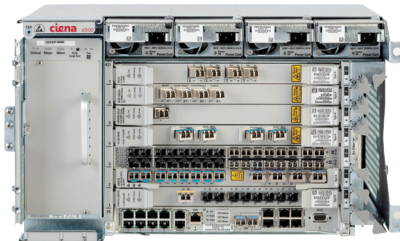
Designed for modernized network applications, the 6500-D7/S8 configurations converge comprehensive Ethernet, TDM, and WDM capabilities with packet/OTN switching and an intelligent control plane for cost-effective delivery of services.

The 6500-D7/S8 configurations are compact shelves that support a wide range of service modules, enabling customized configurations for various business applications. To offer flexible, cost-efficient deployment options, the 6500-D7 is tailored for photonic/transponder applications combined with muxponder card-based packet/OTN switching, while the 6500-S8 is optimized for packet/OTN centralized switching deployments with the ability to tune for packet and/or OTN in any ratio.

6500-D7 Optical Type 2

The 6500-D7 Optical Type 2 is a 6RU chassis offering integrated AC and DC powering options. When equipped with AC powering, it fits perfectly in enterprise applications,

Cost-effective WDM configuration with ROADM



6500-D7 Optical Type 2 with AC power

Compact 600G Packet/OTN Switch



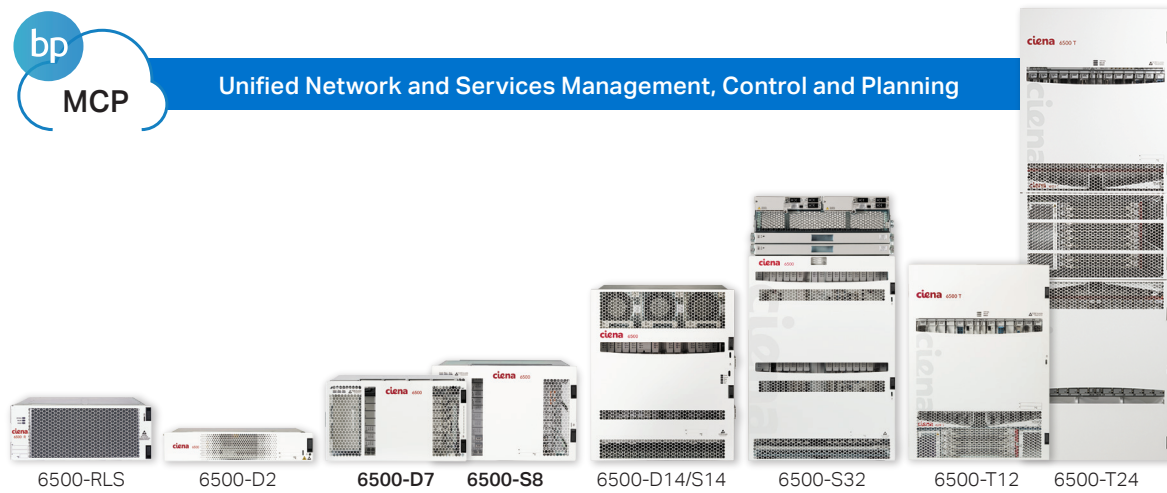
6500-S8 Packet-Optical with DC power

Figure 1. Service diversity and flexibility with the 6500-D7/S8

such as data centers, where only AC power is available. By using a Shelf Processor (SP) equipped with integrated Optical Service Channel (OSC) capabilities, customers can optimize shelf capacity for cost-effective service transport over a full range of photonic and transponder applications from 2.5G to 400G. Additional flexibility is enabled via modules that offer fully integrated packet switching within transport, and

Features and Benefits

- Provides cost-optimized configuration options for efficient transport of flexible services over 2.5G to 400G wavelengths
- Enables simplified operations and reduced sparring costs through seamless networking flexibility with the 6500 Family
- Leverages AC and DC powering options for a perfect fit into various customer environments
- Supports muxponder- and central fabric-based Optical Transport Network (OTN)/packet switching to address specific requirements
- Offers industry-leading WaveLogic coherent technology and intelligent control plane capabilities for scale and service differentiation
- Utilizes field-replaceable common equipment units, ensuring no service impact during failures for improved network availability



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

Figure 2. 6500 Family

card-based packet/OTN switching hardware is available for solutions that require simple point-to-point connectivity.

6500-S8 Packet-Optical

The 6500-S8 Packet-Optical chassis is optimized for switching at low-density sites, enabling customers to extend their meshed networks closer to the edge. This chassis provides 600G of integrated packet/OTN switching capacity, via 100G per slot density, for the most efficient use of network resources. Additionally, SP redundancy is available ensuring node/service availability. Ciena's OTN intelligent control plane can be leveraged to increase network availability and guarantee strict customer Service Level Agreements (SLAs). This chassis can also be used for photonic and broadband applications, enabling customers to standardize on a single platform that meets all of their networking needs.

The 6500-S8 can be also deployed in a Packet Transport System (PTS) configuration to address the growing need to maintain profitable delivery of TDM services while future-proofing investments toward an all-packet network modernization. The 6500 PTS enables network providers to

consolidate Digital Access Cross-connect System (DACS), Multi-Service Provisioning Platforms (MSPPs), and packet switching and transport functions, all in the same platform.

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—operators can use to rapidly plan, provision, turn-up and troubleshoot multilayer services.

The 6500-D7 and 6500-S8 are part of the 6500 Family of Packet-Optical Platforms, which offer multiple chassis form factors to provide flexible, cost-optimized configurations to best match site-specific requirements. The 6500 Family uses reusable cards with pluggable optics for reduced standardization cycles, reduced sparing expenses, and simplified network operations. The 6500-D7/S8 configurations adapt to a wide variety of requirements, enabling cost-effective delivery of flexible services leveraging packet/OTN switching with industry-leading coherent technology and proven control plane capabilities for the most efficient use of network bandwidth.

Technical Information

Shelf Variants	6500-D7 Optical Type 2	6500-S8 Packet-Optical
Physical Dimensions	10.5 in (H) x 17.3 in (W) x 11.1 in (D) 267 mm (H) x 441 mm (W) x 281 mm (D)	12.2 in (H) x 17.3 in (W) x 11.1 in (D) 310 mm (H) x 441 mm (W) x 281 mm (D)
Power Options	DC breaker/fused Max 50A 110/240V AC	DC breaker/fused Max 50A DC breaker/breakerless/fused Max 60A DC breaker/fused Max 40A (Broadband/Photonic)
Central Fabric Switching Capacity	N/A	600G Packet/OTN switching 800G Packet switching for PTS configuration
Number of service card slots	7	6 for Packet/OTN switching or Broadband applications 8 for Photonic applications 8 for PTS configurations
Supported service interface cards Packet/OTN switched modules	N/A	10x10G PKT/OTN 1x100G + 2x40G PKT/OTN 100G DWDM PKT/OTN 40G DWDM PKT/OTN 16x2.7G OTN 48xGbE
Packet Transport System (PTS) modules	N/A	800G PTS Fabric Card: 1x QSFP28/QSFP+, 2x SFP+ • Distributed I/O Modules (DIMs): - 84xDS1/E1 DIM - 24xDS3/E3/EC1 DIM • PDH card 2x DIM: 168x DS1/E1 ports or 48xDS3/E3/EC1 CEM • Ethernet/Optical: MRO 2xSFP+/14xSFP: - 16xOC-3/12/STM-1/4 or - 8xOC-48/STM-16 or - 2x OC192/STM-64 or - 16x100FX/GbE (10/100/1000BaseT) or - 2x10GbE ports
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 with integrated OPS (Optical Protection Switch) • Coherent 100GE/OTU4 transponder • Coherent 100G muxponder (10x10G) • Coherent 100G/150G/200G line cards: metro, regional, long haul, ultra long haul, enhanced PMD, submarine • FIPS-certified AES-256 wire-speed coherent 100G/200G encryption solution • Coherent 200G client card: 2x100GE or 5x40GE/10GE • Coherent 100G client cards: 10x10GE, 10x10G multi-rate, 2x40G+2x10G, 100GbE/OTU4 client • Coherent 40G line cards: metro, regional, long haul, ultra long haul, enhanced PMD, submarine, colorless • Coherent 40G client cards: 4x10G multi-rate, 40G multi-rate • 4x10G multi-rate OTR: FIPS-certified AES-256 encryption and uncontrolled OSP Class 2 variants • 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 uncontrolled OSP Class 2 variant 	
Environmental Characteristics		
Operating Temperature	+41° F to +104° F (+5° C to +40° C) +23° F to +131° F (-5° C to +55° C) short term	
Relative Humidity	5% to 85% (non-condensing)	
Earthquake/seismic	Zone 4	