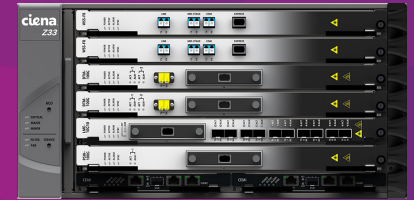


DATA SHEET

Z33

Packet-Optical Platform



The Z33 is Ciena's environmentally hardened packet-optical platform optimized for edge and aggregation deployments.

Part of the Z-Series family, the mid-sized Z33 system balances flexibility with low cost to efficiently scale network capacity at the edge. The modular six-slot shelf supports the full range of Z-Series Ethernet, wavelength, OTN, and SONET/SDH modules to enable switching, aggregation, grooming, and transport for any mix of services. Service modules also support pluggable SFPs/XFPs for media and reach flexibility.

At just 5RU in height, the Z33 complements the Z22 and Z77 platforms for a complete solution from the edge to the metro core. With a holistic approach to the transport network, the Z-Series enables scalable, service rich networks with operational simplicity and capital efficiency.

Flexibility and scalability

With support for a wide variety of powerful Ethernet aggregation switching, SDH/SONET, as well as DWDM muxponding and transponding modules, the Z33 delivers a full range of packet, TDM, and wavelength services. All service modules support pluggable SFP/SFP+/XFP/CFPs for pay-as-you-grow economics.

Optional ROADM modules further enable the Z33 to support full optical level (OO) add/drop multiplexing with scalability up to ninety-six 10G and/or 100G channels per fiber.

Rounding out support for wholesale, wavelength services and the need to muxpond and transpond certain services, the Z33 supports a complete range of transport requirements, with integrated Optical Transport Network (OTN) encapsulation.

Driven by IPTV, VOD, 2/3/4G wireless backhaul, Carrier Ethernet 2.0, and rapidly scaling Internet services, the Ciena Z33 grooms services into discrete high-capacity

Features and benefits

Scalable, cost-effective operation

- Flexible platform architecture supports scalability for investment protection, common sparing and inventory, operational consistency, and pay-as-you-grow capacity and functionality

SDN

- Supported by Ciena's Blue Planet Software-Defined Network (SDN) Platform to simplify multilayer network design, operations, SLA assurance, and service orchestration

Flexible, multilayer transport

- Supports a range of applications, with seamless transport and networking integration, enabling multilayer network efficiencies with single-layer simplicity

Energy efficient

- Reduces power consumption and truck rolls, saving energy and the environment

Environmentally hardened chassis

- Extends service delivery into outside plant cabinets

Compact footprint

- Houses six multiservice slots, plus two common control modules, in a compact 5RU chassis

10G/100G wavelengths. As services scale, the Z33 provides the option to transport multiple 10G/100G wavelengths per fiber using DWDM.

Applications

Understanding and embracing the multilayer aspect of evolving networks, the Ciena Z33 introduces multiple functions in one fully integrated system:

- MEF Carrier Ethernet 2.0 (CE2.0) certified services with 1, 10, and 100 GbE aggregation, switching and Connection-Oriented Ethernet (COE) transport
- SONET/SDH multiplexing and cross-connect functionality with scalability up to OC-192/STM-64
- OTN digital wrapper functionality
- 10G/100G DWDM transport

In addition, the Z33 is supported by Ciena's Blue Planet, an SDN platform that provides network virtualization and service-enabling capabilities.

Compact, scalable design

The Ciena Z33 provides six multi-service slots, plus two common control modules to support multilayer add/drop multiplexing and transport in a compact, 19-in. (483 mm) wide chassis.

The Z33's high-density design provides support for up to 200 Gb/s of packet throughput per slot in just 5RU of rack space.

Key features

- Scalability for investment protection, common sparing and inventory, operational consistency, and pay-as-you-grow capacity and functionality
 - Get started at a low cost
 - Add cards as needed
 - Pair switch cards to increase switch capacity
 - Add SFP/SFP+/XFP/CFPs as needed

- Option to add DWDM and up to eight degrees of WSS for scale-efficient ROADM functionality
 - Up to 8-, 40-, or 96-channel terminal DWDM for OEO flexibility
 - Up to 96 channels of DWDM with ROADM for OOO efficiencies as traffic scales
- Advanced technology modules that support a range of applications
 - Scalable Ethernet capacity with advanced COE for resilient, carrier-grade packet transport
 - Seamless TDM-to-packet transition for flexible and efficient phased migration of networks from TDM to packet
 - SDH/SONET upgrade alternative, providing grooming and 10G transport of sub-rate services
 - Multilayer wholesale transport flexibility with OTN support for improved performance and management with transparency
 - Fiber relief options ranging from aggregation and transport at 10G/100G or the combination of multiple 10G/100G channels per fiber with DWDM
 - OTN on all trunk connections for enhanced performance and management on all services
- Up to 200 Gb/s per-slot capacity
- Flexibility to redeploy Z33 cards in larger-capacity Z77 for further expansion of capacity and functionality
- Multilayer network efficiencies with single-layer simplicity through multilayer transport and networking integration
- Greater utilization of network resources and lower operational costs via Blue Planet
- Integrated approach for reduced power consumption and truck rolls, saving energy and lowering environmental impact

Technical specifications

System overview

Modules

- Service module slots: 6
- Common control module slots: 2
- Hot-swap capabilities on all modules
- Front access for all modules and connection interfaces

Chassis capacity

- Packet: up to 800 Gb/s of packet services
 - 400 Gb/s full-mesh (slots 1-4)
 - 400 Gb/s (paired slots 5,6)
- SDH/SONET: up to 60 Gb/s of services
- Optical: 8, 40, or 96 channels @ 10/100 Gb/s. C-band terminal mux and ROADMs

Physical interfaces

- Pluggable optical modules, fixed and tunable

Maximum port densities:

Interface Type	Ports/Chassis
FE/GbE	108
10GbE	120
100GbE	6
OC-3/12, STM-1/4	96
OC-48/STM-16	48
OC-192/STM-64	60
2.5G/OTU1	48
10G/OTU2	60
100G/OTU4	6

Redundancy and protection

- Redundant fans
- Redundant power connections
- 1:1 equipment protection for all common cards and service modules
- Carrier Ethernet protection
 - IEEE 802.3 ad Link Aggregation
 - IEEE 802.1Qay and G.8031 Path Protection
 - G.8032v2 Ethernet Ring Protection
- SDH/SONET protection
 - 1+1 APS/MSP
 - UPSR/SNCP

Synchronization

- Stratum 3-compliant timing subsystem
- Redundant DS1 and 2MHz timing inputs
- Derived DS1 timing outputs
- Line-timed SDH/SONET and Sync-E Ethernet support
- Power connectors: dual-feed quick-connect terminal block
- Alarm connectors: quick-connect terminal block

Management

- 4x10/100/1000Base-T DCN interfaces
- System alarm outputs: CRITICAL, MAJOR, MINOR, AUDIBLE, FAILSAFE
- System alarm inputs: ACO
- Provisionable environmental alarm outputs: 2
- Provisionable environmental alarm inputs: 5
- SNMP v2, CLI, TL1

Physical

Shelf dimensions

- Depth: 12" (305 mm) from rack mount (14.85" or 377 mm total)
- Width: 19" (483 mm)
- Height: 8.75" (222 mm)

Weight: 27 lbs (12.25 kg); includes 2 CEMs and fan tray

Power

- Dual -48 VDC nominal (-40 VDC to -60 VDC)
- Optional 1RU AC/DC solution supporting 120/240 VAC inputs
- Maximum power consumption: 1000 watts

Environmental

- 40° to +65° C operating temperature*
- 5% to 85% operating relative humidity (non-condensing)
- 13,000 ft (4,000 m) altitude

Compliance/safety

- NEBS 3 Certified (GR-63 CORE, GR-1089)
- UL/CSA Listed
- UE/CE-Marked: EN 60950, EN 55022, EN 61000, ETSI EN 300 386 V1.3.3
- CB Scheme Certified 60950
- FCC, Subpart B, Part 15, Class A
- RoHS compliant

*While the Z33 chassis is environmentally hardened, not all supported interface modules meet these specifications.

Environmentally hardened interface modules include the following:

- LAD-8i terminal multiplexer
- FLX-216i OTN muxponder
- PME-216i Ethernet switching and transport module

Connect with Ciena now 