

DATA SHEET

Z22

Packet-Optical Platform



The Z22 is a compact, environmentally hardened packet-optical platform optimized for deployments at the network edge.

Part of the Z-Series family, the modular, carrier-grade Z22 platform provides up to 400 Gb/s of switching capacity in a single two-slot shelf and supports the full suite of Z-Series Ethernet, wavelength, OTN, and SONET/SDH modules.

At just 2RU in height, the Z22 delivers flexibility and cost efficiency in a compact footprint. It complements the Z33 and Z77 for a complete solution from the edge to the metro core. With a holistic approach to the transport network, the Ciena Z-Series enables scalable, service-rich networks with operational simplicity and capital efficiency.

Superior performance and scalability

The Z22 extends high-performance aggregation and scalable transport, providing guaranteed delivery of low-latency Ethernet services with sub-50 ms protection switching. The Z22 shelf is temperature-hardened and ensures carrier-grade reliability and availability through support for full equipment and network protection as well as hitless software upgrades. Advanced Ethernet OAM features work in concert with the Z77, Z33, and Ciena's Blue Planet Platform to satisfy the most demanding SLAs.

When equipped with two PSW-618 Ethernet switching and transport modules, the Z22 supports 36 GbE ports and twelve 10 GbE/OTU2. Alternatively, when equipped with two PSW-10G20 packet switching and transport modules, the Z22 supports forty 10 GbE ports.

The Z22 is also a compact 100G platform, supporting two 100GbE/OTU4 ports in just 2RU when equipped with either two DTM-100G transponder

Features and benefits

Compact, cost-efficient operation

- Integrates multiple functions for cost efficiency, space and power reductions, and operational simplicity at the network edge, all in a modular, compact 2RU high-density platform

SDN

- Simplifies multilayer network design, operations, SLA assurance, and service orchestration via support from Ciena's Blue Planet SDN Platform

Optimized for high-performance, Ethernet-centric applications

- Delivers improved efficiencies over alternative edge routing

Guaranteed Ethernet performance and QoS

- Delivers guaranteed Ethernet performance and QoS for MEF E-Line, E-LAN and E-Tree services through line-rate, non-blocking L2 switching with Connection-Oriented Ethernet

Compatibility with existing equipment

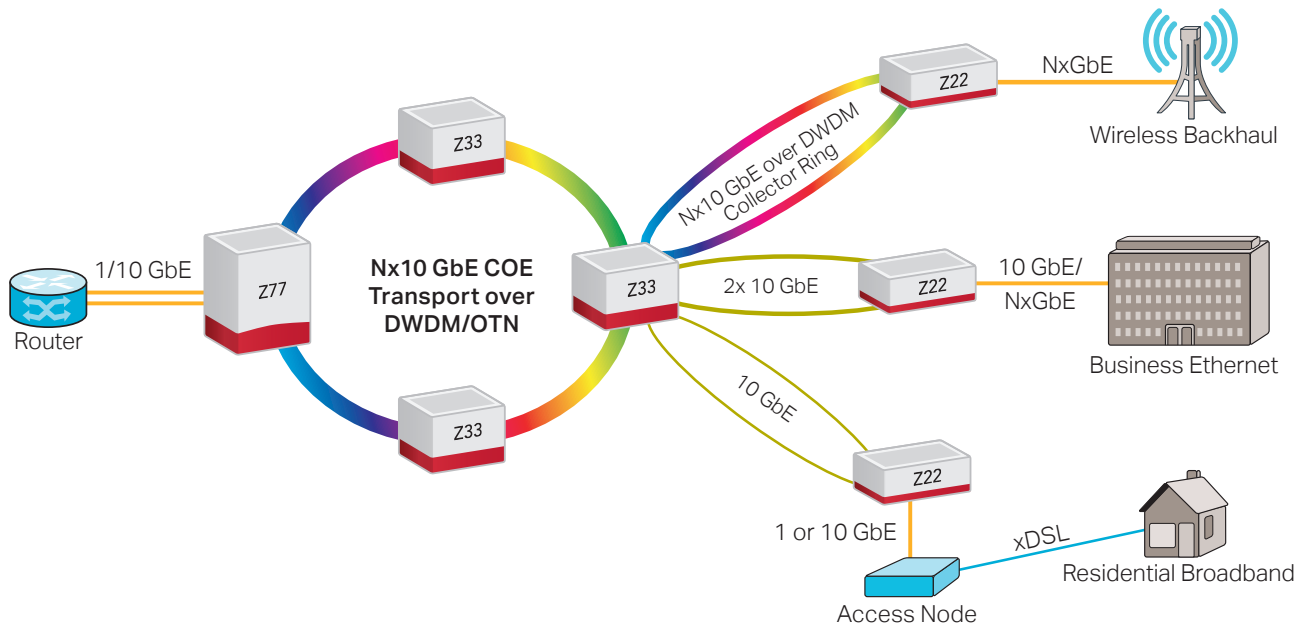
- Supports multivendor interoperability with standards-based sub-50 ms Ethernet protection switching

Environmentally hardened chassis

- Extends service delivery into outside plant cabinets

Streamlined management and monitoring

- Streamlines end-to-end network management and monitoring through advanced Ethernet OAM and OTN



Z22 Application: The Z22 is optimized for applications that extend Carrier Ethernet services and carrier-grade packet transport to the provider edge, such as high-performance, low-latency wireless backhaul and line-rate 1/10/100GbE business Ethernet services deployments. It also can also be deployed in remote cabinets for high-performance backhaul of broadband triple play services.

modules, two LME-10G10 muxponders, or two PSW-100G Ethernet switching modules. An optional DWDM module enables support for two integrated wavelengths that can overlay existing Ethernet or SONET/SDH services.

Applications

Optimized for applications at the Ethernet edge:

- High-performance backhaul from fiber-constrained cell sites
- Mission-critical, low-latency enterprise business Ethernet services
- In remote cabinets for high-capacity backhaul of broadband triple-play services

Key features

- Modular, compact (2RU) design
- Supports the full suite of Z-Series Ethernet, wavelength, OTN, and SONET/SDH modules
- Environmentally hardened shelf (-40° C to +65° C)
- High-density platform for reduced space and power consumption:
 - Configurable for up to 36 GbE ports, forty 10 GbE ports, or two 100 GbE/OTU4 ports and two DWDM channels
- Hitless software upgrades and full equipment protection
- 400 Gb/s of non-blocking service capacity
- Advanced Ethernet OAM features

Technical specifications

System overview

Separate Z22 systems are available with
-48 VDC and 24 VDC power (optional 1RU
AC/DC power solution available)

2 service module slots

2 common equipment module slots
(CEM2 slot also supports an integrated
DWDM module)

All modules are hot-swappable

Front access for all modules and connection
interfaces

System capacity: up to 400 Gb/s of packet
services per shelf

Physical interfaces: A wide-range of
pluggable modules (with different reach) are
supported to match the desired application

Alarm connectors: quick-connect terminal
block

Maximum port densities:

Interface Type	Ports/Chassis
FE/GBE	36
10GBE	40
OC-3/12, STM-1/4	32
OC-48/STM-16	16
OC-192/STM-64	10
2.5G/OTU1	16
10G/OTU2	20
100G/OTU4	2

Redundancy and protection

Redundant fans

Redundant power connections

Optional 1:1 equipment protection for
common cards and all service modules

Carrier Ethernet protection

IEEE 802.3 ad Link Aggregation

IEEE 802.1Qay and G.8031 Path Protection

G.8032v2 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

Management

2x10/100/1000Base-T DCN interfaces

System alarm outputs: CRITICAL, MAJOR,
MINOR, FAILSAFE

2 provisionable environmental alarm outputs

4 provisionable environmental alarm inputs
SNMP v2, CLI, TL1

EMS-based integration creates end-to-end
OAM regardless of topology or
packet/OTN mixed links

Optical Transport (LAD-2P, LAD-2G Modules)

Two ITU Grid DWDM channels plus 1310 nm
(LAD-2P) or 1550 nm (LAD-2G), east and
west directions

100 GHz channel spacing on DWDM
interfaces

Link budget: 8 to 16 dB (with 80 km DWDM XFPs)
Insertion loss

LAD-2P: 5.6 dB (DWDM), 1.2 dB (1310 nm)

LAD-2G 4.0 dB (DWDM), 3.6 dB (1550 nm)

Physical

Shelf dimensions

Depth: 12" (305 mm) from rack mount
(14.85" or 377 mm total)

Width: 19" (483 mm)

Height: 3.5" (89 mm)

Weight: 15 lbs (6.8 kg) with 2 CEMi cards and
fan tray

Power

Three options

Dual -48 VDC nominal (-40 VDC to -60 VDC)

Dual +24 VDC nominal (+18 VDC to +30 VDC)

1RU AC/DC solution supporting 120/240
VAC inputs

Maximum power consumption: 400 watts

Power connectors: dual-feed quick-connect
terminal block

Environmental

-40° to +65° C operating temperature
(industrial 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 V1.4.1

CB Scheme Certified IEC 60950-1 and
EN 60950-1

FCC, Subpart B, Part 15, Class A

RoHS compliant

*While the Z22 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

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