

DATA SHEET

# 6200

## Packet-Optical Platform



### Efficient Transport of Any Service Over Any Network

As a single investment that ensures a smooth and long-term network evolution, Ciena's 6200 Packet-Optical Platform is a highly flexible, scalable, and compact edge device that enables operators to support both existing and new emerging services in customizable, cost-optimized configurations. The 6200 de-risks capital investment by performing aggregation in many network technologies, matching expenditure to revenue, regardless of how a new service is delivered.

The Ciena 6200 Packet-Optical Platform is a highly dense edge aggregation transport device that supports a mix of PDH, TDM, and Carrier Ethernet, all in one compact platform. It supports existing and emerging next-generation services with less equipment, resulting in simpler operations. The 6200 offers an elegant evolution to next-generation architectures and long-term network viability by providing operators the flexibility of transporting any mix of services over the network of their choice, be it Ethernet or SONET/SDH. Additionally, the 6200 offers AC and DC powering options providing flexibility to meet customer premises power requirements. With its service flexibility and compact, scalable form factor, the 6200 offers distinct benefits for wireless backhaul and business services applications.

### Architected For Simpler Network Evolution

With its integrated low-order TDM fabric and support for SONET/SDH network protection schemes, Ciena's 6200 easily fits into existing SONET/SDH architectures and can operate as a Multiservice Provisioning Platform (MSPP), enabling operators

### Features and Benefits

- Provides a highly scalable edge platform that supports up to 10G/10GE line rates with 60G low-order non-blocking TDM and 64G wire-speed Ethernet switching fabrics
- Supports a wide variety of services from E1/DS1 to 10G/10GE
- Routes each port on each card flexibly and independently over SONET/SDH or Ethernet
- Supports comprehensive packet transport capabilities including ITU G.8032, Ethernet OAM, SyncE, and 1588v2
- Leverages AC and DC powering options in a compact 2RU footprint for a perfect fit into customer premises locations
- Supports both redundant and non-redundant configurations

to continue to support profitable DS1/E1, DS3/E3, or Ethernet Private Line (EPL) revenue streams in a compact form factor. Integrated centralized packet switch capabilities with industry-leading 10GE densities can also be activated on the same shelf in parallel to provide a more efficient, lower cost transport of high-growth Ethernet services over a packet infrastructure. Operators have full flexibility of mapping any client port to any networking protocol, allowing for maximum leverage of hardware investment. Service providers can avoid building overlay networks and are afforded the flexibility of migrating to Ethernet infrastructures whenever their business needs dictate. Additionally, the 6200 provides Circuit Emulation capabilities in the form of Structure Agnostic TDM Aggregation (T1/E1 SAToP) and Circuit Emulation over Metro Ethernet Networks (MEF), such that traditional PDH circuits can be easily carried over metro and core backhaul packet networks.



Figure 1. 6200 Base + Expansion Chassis Configuration

The 6200 supports a full mix of asynchronous, SONET/SDH, and Ethernet services from 1.5 Mb/s to 10GE rates, in a compact 2U base chassis. An optional 3U extension chassis can be deployed when PDH protection or additional 155M/622M services require support. All optical interfaces are equipped with pluggable optics, allowing each port to be optimized for the specific reach and rate required.

## Applications

**Access Network Evolution** – For access network evolution, the 6200 offers a flexible service mix between TDM and Ethernet services to support growth requirements within a single network element, as well as a smooth evolution path to an all-packet architecture.

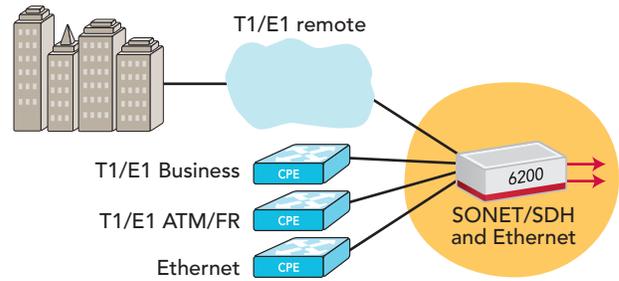


Figure 2. Access Network Evolution

**Wireless backhaul** – The 6200 can provide wireless backhaul of both DS1s/E1s and Ethernet traffic on a single, fully redundant platform capable of supporting multiple 10G rings in a very compact form factor. Furthermore, the 6200 supports ITU G.8032 Ethernet Ring Protection as well as VCAT, LCAS, and Ethernet OAM to ensure efficient bandwidth usage in both Ethernet and SONET/SDH networks.

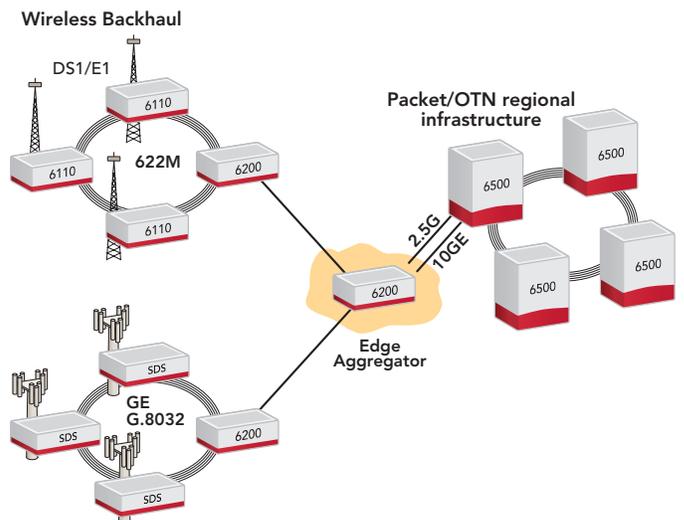


Figure 3. Wireless Backhaul Application

**Enterprise Business Services** – For enterprise business services, the 6200 can act as a customer demarcation device for a variety of services and offers efficient Ethernet connectivity with advanced traffic management capabilities and protection with G.8032 ring support. A simple, easy-to-use management solution is available, consisting of a web-based craft interface running on the 6200 for NE provisioning and an SNMP northbound interface for reporting alarms to a generic SNMP alarm browser.

**Feeder for Metro Optical Networks** – The 6200 can be subtended from Ciena’s larger optical platforms, such as the 6500 Packet-Optical Platform and 5400 Reconfigurable Switching System, to collect and groom E1s/DS1s, E3s/DS3s, Ethernet traffic (Layer 1 and Layer 2), and SONET/SDH optical services from metro edge locations. Its small footprint makes it well-suited for smaller customer locations where a full-sized SONET/SDH multiplexer does not prove-in. The 6200 can be subtended via flexible networking schemes, including BLSR/MS-SPRing, SNCP/UPSR, or 1+1 APS/MSP configurations. The capability to manage the 6200 using path DCC bytes allows it to be managed remotely over leased OC-3/12/48/192 or STM-1/4/16/64 circuits. Additional benefits include verified interworking with Ciena’s optical and packet portfolios and streamlined operations with Ciena’s OneControl Unified Management System.

## Network Management

The 6200 can be managed via the Site Manager craft user interface as well as by Ciena’s OneControl Unified Management System.

The 6100/6200 Site Manager craft interface enables complete nodal management of 6110, 6130 and 6200 network elements, via a single session. Site Manager provides a consolidated network view of active alarms and events, a shelf level view, as well as a craft web user interface launch point from the FCAPS menu. The Site Manager craft user interface can be deployed in a consolidated craft mode when managing a network comprised of 6500 or Common Photonic Layer (CPL) network elements, to obtain full nodal network management via a single craft session.

OneControl offers the operator a comprehensive set of management tools to manage the complete Ciena portfolio from access, metro, core, and subsea across the full breadth of protocol layers from photonic, TDM transport, to packet services. OneControl’s modular design puts tools at the fingertips of the operator so they can efficiently deploy new services and proactively provide service assurance. Through OneControl, NOC personnel have direct access to the 6200 craft web user interface for complete nodal management. Open OSS interfaces such as TL-1 and SNMP ensure a seamless integration into existing OSS systems and processes.

## Technical Information

### Dimensions H x W x D

Base Chassis:

88 mm/3.5 in. (2RU) x 444 mm/17.5 in. x  
235mm/9.2 in.

Base + Expansion Chassis:

220 mm/8.7 in. (5RU) x 444 mm/17.5 in. x  
235mm/9.2 in.

### Weight

Base: 6kg / 13.2lb

Base + Expansion: 13kg/28.7lb

### Power

Base Chassis:

AC power supply: 100V to 240V

DC power supply: -40V to -72V

Expansion Chassis:

DC power supply: -40V to -72V

### Mounting Options

19", ETSI, and 23" rack-mountable

### Service Interfaces

- 60G TDM Cross Connect  
1x10G+2x155M/622M/2.5G + 2x155M/622M  
aggregate
- 15G TDM Cross Connect 1x2.5G+2x155M  
aggregate
- 2x10GE + 2xGE 64G L2 switch
- 2xGE+4x10/100BT 6G L2 switch
- 4xGE+4xFE Circuit Pack
- 8xGE circuit pack
- 63xE1/DS1 Circuit Pack
- 63xE1/DS1(WP) Circuit Pack
- 6xE3/DS3 Circuit Pack
- 12xE3/DS3(WP) Circuit Pack
- 8x155M/2x622M/1x2.5G Circuit Pack

## Ethernet Switching

Ethernet services:

- Ethernet UNI
- Q-in-Q encapsulation
- Ethernet Private Line
- Ethernet Virtual Private Line

MAC and VLAN switching

QoS per client/per WAN port

Classification-based marking

Traffic Management

Scheduling

SyncE, 1588v2

## Circuit Emulation Services (CES)

T1/E1 SAToP (RFC4553)

CES over Ethernet per MEF 8

## Protection Options:

Unprotected

1+1 APS/MSP

UPSR/SNCP

2F BLSR/MS-SPRing

1:1 E3/DS3 protection

1:4 E1/DS1 protection

ITU-T G.8032 Ethernet Ring Protection

## Connection Management

Fully non-blocking VC11/VT1.5, VC12/VT2, VC3/  
STS-1, VC4/STS-3C, VC4-4c/STS-12C

LO and HO Virtual Concatenation

GFP-mapped Ethernet services

Hairpinning

Link Capacity Adjustment Scheme

## Management

Ethernet LAN port to a data communications  
network (DCN)

RS/MS/Path or Section/Line/Path DCC (IP and  
OSI)

L2 in-band management VLANs on packet  
interfaces

M1/F1 port for modem access or for user byte  
access

Site Manager Craft UI

Web-based Craft UI

OneControl Unified Management System

TL-1 and SNMP northbound interfaces

## Environmental Characteristics

Normal operating temp: 0 to 45C

Short term operating tem: -5C to 50C

Normal Operating humidity: 5% to 90% RH

## Safety Specifications / Standards

IEC/EN 60950-1:2001+A11:2004

Telcordia GR-1089-CORE, Iss.3

IEC/EN 60825-1:1994+A11: 1996 + A2:  
2001+A1:2002

IEC/EN 60825-2:2004

FDA 21 CFR 1040.10

CE mark (Conformité Européene)

Telcordia GR-63 CORE (NEBS)

## Bellcore GR-499-CORE, Iss.2

ETSI EN 300 019-2-3 Class3.1 (E)

EN55022, EN55024

EN 300 386 V1.3.3

ETS 300 132-2 V2.1.2

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