

The **Entra** FPXT-B OLT Line Card is a high-capacity access node that addresses the needs of cable operators' Ethernet Passive Optical Network (EPON) fiber deployments. The device also meets the gigabit bandwidth demands of today's residential and business users. High-bandwidth service throughput is enabled by market-leading switching and uplink capacity, as well as backplane technology that provides non-blocking connectivity to each user port.

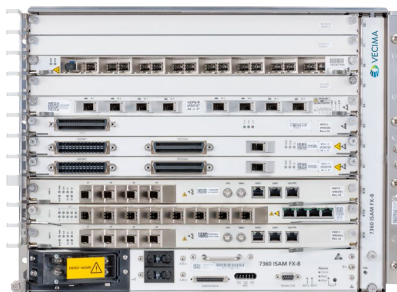
The Entra FPXT-B OLT Line Card cable multiple system operators (MSOs) to transactionalize provisioning and support the greater scale required for fiber-based service offerings. DPoE reduces operating expenses (OPEX) by allowing MSOs to integrate and manage the Line Card as they do their DOCSIS® network. By deploying these technologies, MSOs can position themselves to deliver higher bit rates, use their fiber more efficiently, and capture a greater share of the lucrative commercial services market.



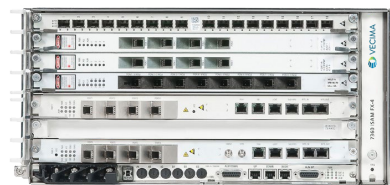
Entra FPXT-B OLT Line Card

Vecima resells the Nokia 7360 ISAM FX platform, augmenting it with the FPXT-B and DPoE™ capabilities, to provide Cable operators with an industry proven 10G EPON service delivery system. Operators have a choice of two shelf sizes that can be mounted in the headend, hub or outside plant – a 4 slot version or an 8 slot version know as FX-4 and FX-8. Both ANSI and ETSI versions of the equipment is available.

These flexible equipment options ensure that MSOs can cost effectively address any deployment scenario.



7360 ISAM FX-8



7360 ISAM FX-4

## Highlights

- High-capacity non-blocking backplane
- High-capacity 1.28 Tb/s controller card (network termination [NT]) with 360 Gb/s network capacity (can be used as uplink, downlink or direct user link)
- Full NT redundancy with active/active and load sharing options
- 4-slot (FX-4) and 8-slot (FX-8) shelf options
- DPoE 2.0™ feature set
- Simultaneously supports multiple Line Card symmetric and asymmetric rates including 10/10, 10/1, 2/1 and 1/1 Gb/s
- Supports IPv4 + IPv6 IP high-speed data (IPHSD) service, IPTV/multicast and DPoE 2.0 Metro Ethernet Forum (MEF) service on a single platform
- Internet Group Management Protocol (IGMP) and high-bandwidth capabilities enable customers to deploy unicast and multicast video
- IP/Ethernet access platform supports Multiprotocol Label Switching (MPLS)
- Added resilience with support for MPLS and link aggregation (LAG)
- Shelf-size options to support any network size or deployment model in a headend, hub or outside plant
- Enables a smooth migration from DOCSIS to fiber-based DPoE-based services
- Advanced traffic management capabilities for premium video delivery
- Automatic configuration and transparent optical network unit (ONU) management with DPoE
- Leverages existing DOCSIS provisioning system with DPoE support
- Supports current practices and proven ISAM technology

# FPXT-B OLT Line Card Technical Specifications

Physical	Management
<ul style="list-style-type: none"> <li>•FX-4</li> </ul>	<ul style="list-style-type: none"> <li>•DOCSIS provisioning of Line Card with existing DOCSIS operations support systems (OSS)</li> </ul>
Height: 222 mm (8.7 in) Width: 446.5 mm (17.6 in), can be used in 19-in rack Depth: 278.3 mm (11 in)	<b>Eco-sustainability (European Telecommunications Standards Institute [ETSI])</b>
<ul style="list-style-type: none"> <li>•FX-8</li> </ul>	<ul style="list-style-type: none"> <li>•Product lifetime maximized by modular, shelfbased concept and by implementing new features and functionalities through remote software download</li> <li>•Power consumption targets Code of Conduct (CoC) power consumption limits</li> <li>•Compliant with the European Directive 2002/95/EC on the restriction of hazardous substances (RoHS)</li> <li>•Product collection and treatment under Vecima responsibility complies with the national laws on product treatment applied at the end of life for Waste Electrical and Electronic Equipment (WEEE), implementing the European Directive (2002/96/EC)</li> <li>•Product packaging materials are free from hydrochlorofluorocarbons (HCFCs)</li> <li>•Plastic product packaging material is marked according to ISO 11469, referring to ISO 1043 (97/129/EEC)</li> </ul>
Height: 355 mm (14 in) Width: 446.5 mm (17.6 in), can be used in 19-in rack Depth: 278.3 mm (11 in)	<b>Standards compliances</b>
•Rack mounting pitch: 25 mm (1 in)	<ul style="list-style-type: none"> <li>•EPON               <ul style="list-style-type: none"> <li>IEEE 802.3 av, IEEE 802.3-2018 EPON/10G EPON applicable clauses</li> </ul> </li> <li>•Environmental               <ul style="list-style-type: none"> <li>ETS EN 300 019-1-1 storage – Class 1.1 weather protected, partly temperaturecontrolled locations</li> <li>ETS EN 300 019-1-2 transport – Class 2.3 public transportation</li> <li>ETS EN 300 019-1-3 stationary use – Class 3.1E and Class 3.3 (assuming no condensation and icing)</li> <li>GR-63-CORE</li> <li>TP76200MP</li> <li>GR-3108-CORE</li> </ul> </li> <li>•Powering               <ul style="list-style-type: none"> <li>ETS EN 300 132-2</li> </ul> </li> <li>•Protection               <ul style="list-style-type: none"> <li>ITU-T K.20 enhanced and K.45 basic</li> </ul> </li> <li>•Safety               <ul style="list-style-type: none"> <li>IEC 60950, EN60950 Class 1, AS/NZS 60950.1</li> <li>UL/CSA 60950-1-03</li> <li>EN 60950-1</li> </ul> </li> <li>•Electromagnetic compatibility (EMC)               <ul style="list-style-type: none"> <li>ETS EN 300 386 for telecommunications center installation environment</li> <li>ETS ES 201 468</li> <li>GR-1089-CORE</li> <li>FCC Part 15 Class A</li> <li>EN 55022</li> </ul> </li> <li>•Acoustic noise               <ul style="list-style-type: none"> <li>ETS 300 753</li> </ul> </li> </ul>
<b>Operating environment</b>	
<ul style="list-style-type: none"> <li>•Temperature: -40°C to 65°C (-40°F to 149°F)</li> <li>•Relative humidity: 5% to 93%, non-condensing</li> <li>•Over-temperature sensors and shutdown</li> </ul>	
<b>Power requirements</b>	
<ul style="list-style-type: none"> <li>•Input: 48 V DC/60 V DC nominal</li> <li>•Fully redundant power feeding (Branch A and B)</li> </ul>	
<b>Full service platforms</b>	
<ul style="list-style-type: none"> <li>•Multiservice access support           <ul style="list-style-type: none"> <li>IPTV services</li> <li>Multimedia service</li> <li>High-speed internet access (HSIA)</li> <li>Business access</li> <li>Cell site backhaul</li> </ul> </li> <li>•Line termination (LT) card support: high-density 8-port 10 Gb/s line card with high-capacity, non-blocking backplane</li> <li>•NT support:           <ul style="list-style-type: none"> <li>ISAM FANT-F               <ul style="list-style-type: none"> <li>480 Gb/s switching matrix (bidirectional)</li> <li>Active/Active redundancy</li> <li>160 Gb/s uplink capacity</li> <li>Small form-factor pluggable (SFP+) cages</li> </ul> </li> <li>ISAM FANT-G               <ul style="list-style-type: none"> <li>1.28 Tb/s switching matrix (bidirectional)</li> <li>Active/Active redundancy in the data plane and active/standby in the control and management plane</li> <li>360 Gb/s uplink capacity</li> <li>C form-factor pluggable (CFP4)</li> </ul> </li> </ul> </li> <li>•Network termination input output (NTIO) support:           <ul style="list-style-type: none"> <li>FNIO-A               <ul style="list-style-type: none"> <li>Eight configurable 10 Gb/s or 1 Gb/s network links</li> <li>SFP+ cages</li> <li>Used as uplink, downlink or direct user link</li> </ul> </li> </ul> </li> </ul>	