

# SDX 6000 Series

## Disaggregated OLTs



Quick installation



Flexible deployments



Efficient operation



Low power



Multi-gigabit

## Benefits

- Pay-as-you-grow disaggregated architecture
- Built for open, vendor-neutral aligned networks
- Easy-to-install, compact form factor for single person installation
- Fits all deployment scenarios from large-scale to niche applications
- Scale down to as few as 100 subscribers all the way up to 100,000
- Unmatched flexibility - standalone, chain, ring, leaf/spine architectures
- United under a single control and orchestration platform
- Inclusive of 10G Combo PON, XGS-PON, and GPON variants
- Advanced Combo PON technology delivers simultaneous GPON and XGS-PON connections through a single port

## Overview

The Adtran SDX 6000 Series of software-defined access (SD-Access) OLTs consists of open and disaggregated access devices that support a broad range of PON standards, including 10G Combo PON, XGS-PON, and GPON. These devices are built using modern design principles and apply lessons learned from data center networks. This approach is an architectural shift from previous networks that have historically relied on closed, monolithic systems managed by vendor-specific management systems. This evolution enables operators to vastly lower their costs to build, operate, innovate, and grow their networks.

### Open, Programmable, Scalable

Built around an open architecture, the SDX 6000 Series of OLTs can be aggregated by any high-density aggregation system, including the SDX 8000 Series of Nx100G next-generation aggregation switches. From a programmability perspective, these OLTs have open APIs that utilize standard NETCONF/YANG interfaces for all management functions, easing the integration into an SDN-controlled environment. For scalability, they are built around a pay-as-you-grow architecture where service providers simply add GPON/10G PON OLTs as needed without the upfront

investment or the system constraints of a big, iron chassis system. In addition to being open, programmable, and scalable, all embedded software functions in the OLT, including ONU management and PON provisioning, are virtualized and can be hosted on an external server to enable massive scalability and avoid the system constraints of embedded processing systems.

SDX 6000 Series OLTs offer all the carrier-class features (i.e., ONU management, clocking, VLAN tag manipulation, resiliency, etc.) of traditional chassis-based OLT systems but with more flexibility and scalability and an open architecture that cannot be matched by a closed, vendor-specific chassis system.

### Open, SDN-Programmable Architecture

The SDX 6000 Series is complemented by the Mosaic Software Suite, which offers a modern management system with full FCAPS functionality and an intuitive GUI for device configuration and service activation. Open, standards-based northbound APIs simplify integration into existing IT/OSS systems enabling automation of network and service management and easing the migration to SDN-based orchestration and management systems.

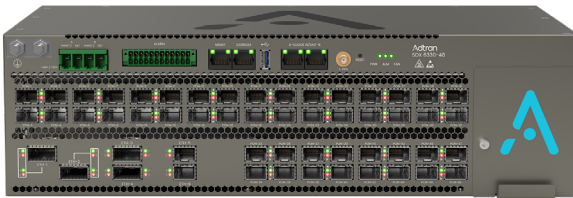
# SDX 6000 SERIES

## Portfolio summary

### SDX 6330-48

High-density 10G Combo PON OLT

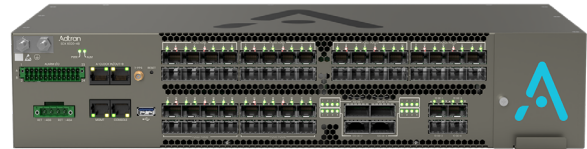
- 48 PON ports deliver simultaneous XGS-PON and GPON connections through a single port
- 2x200GbE, 2x100GbE, and 2x10/25GbE uplinks
- Side-to-side or front-to-back airflow options
- Hardened for remote cabinet deployment



### SDX 6020-48

High-density GPON OLT

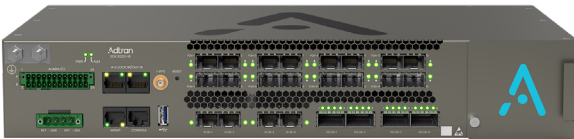
- 48 GPON ports
- 4x100GbE and 4x10GbE Uplinks
- Side-to-side airflow
- Lower power and cost per port for high-density sites



### SDX 6320-16

Medium-density 10G Combo PON OLT

- 16 PON ports deliver simultaneous XGS-PON and GPON connections through a single port
- 4x100GbE and 4x10GbE uplinks
- Side-to-side or front-to-back airflow options
- Hardened for remote cabinet deployment



### SDX 6010-16

Medium-density GPON OLT

- 16 GPON ports
- 2x40GbE and 4x10GbE uplinks
- Side-to-side or front-to-back airflow variants
- Side-to-side variant hardened for remote cabinet deployment



### SDX 6324-4

Low-density 10G Combo PON OLT

- 4 PON ports deliver simultaneous XGS-PON and GPON connections through a single port
- 4x10GbE uplinks
- Side-to-side or front-to-back airflow options
- Hardened for remote cabinet deployment



### SDX 6312-4

Low-density sealed 10G Combo PON OLT

- 4 PON ports deliver simultaneous XGS-PON and GPON connections through a single port
- 4x10GbE uplinks
- Environmentally sealed unit (IP68)
- Fanless conductive cooling
- Strand, pole, wall, or pedestal mount options





# SDX 6000 SERIES

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## Product specifications

### Interfaces

- ITU-T compliant for GPON and XGS-PON
- Class B+, C+, C++, and D SFP Support
  - 60 km extended range support
- Class N1, N2, D1, and D2 SFP+ support
  - 40 km extended range support
- Forward Error Correction (FEC)
- Type B PON redundancy (future)
- Rogue ONU detection (future)

### Uplink connectivity

- Daisy chaining For E-Line services
- Ethernet Ring Protection Switching (ERPS) (future)
- Ethernet Linear Protection Switching (ELPS)
- Multiprotocol Label Switching (MPLS)
  - Label Add/Remove Support
- Ethernet OAM
- LAG with LACP support, LLDP-enabled
- Zero Touch Provisioning (ZTP)

### Subscriber service delivery

- G.988 VEIP support for residential gateways
- Triple-play – voice, video, and data
- IGMP snooping and proxy
- DHCP relay for IPv4 and IPv6
- DHCP option 82 support
- PPPoE intermediate agent
- Proxy ARP

### Security

- TACACS+ and RADIUS (authentication, authorization)
- Subscriber Access Lists (ACL)
- AES encryption
- DoS protection
- Anti-spoofing prevention

### Traffic management

- HQoS architecture
  - Flexible multi-tier scheduling
  - Dual rate shapers per scheduled node
- Dynamic Bandwidth Allocation (DBA)
- E-Line and E-LAN forwarding schemes

### Network management and timing

- NETCONF/YANG
- CLI
- Telnet/SSH
- IPv4/IPv6 in-band/out-of-band management
- Syslog
- Synchronous Ethernet (SyncE) (future)
- 1588v2 precision time protocol (future)

### Regulatory standards

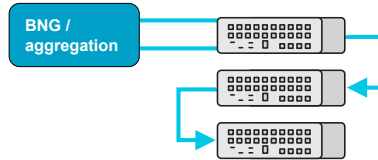
- Applicable UL/CUL standards
- Applicable EN/IEC/AS/NZS standards
- FCC Part 15 Class B
- CE Mark (meets applicable safety, EMC, and energy efficiency directives)
- NEBS Level 3

# SDX network architectures

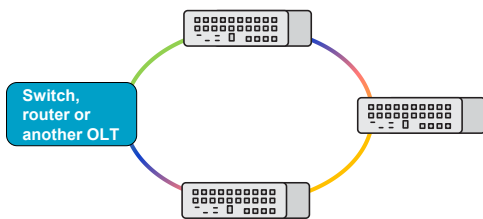
## 1 Standalone OLT



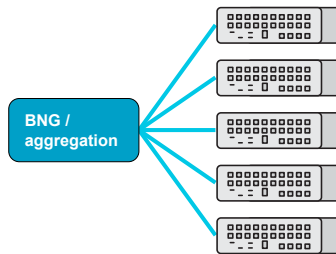
## 2 OLT chain



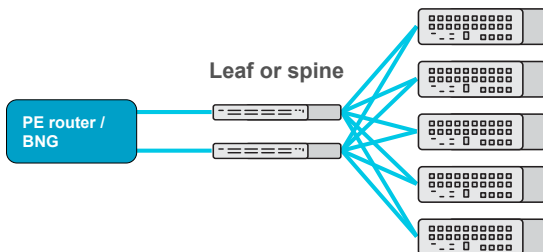
## 3 OLT ring



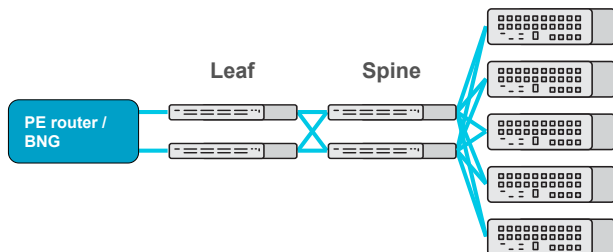
## 4 OLT star



## 5 Simple aggregation



## 6 Leaf spine aggregation



# SDX 6000 SERIES

## Ordering information

Equipment		Part No.
SDX 6330-48	48-port 10G Combo PON OLT	11971340F1
SDX 6320-16	16-port 10G Combo PON OLT	11971330F1
SDX 6324-4	4-port 10G Combo PON OLT	11971325F1
SDX 6020-48	48-port GPON OLT	11971301F1
SDX 6010-16	16-port GPON OLT, side-to-side airflow	11971305F1
	16-port GPON OLT, front-to-back airflow	11971305F2
SDX 6312-4	4-port sealed 10G Combo PON OLT, AC/DC power supply	41971310F1
	4-port sealed 10G Combo PON OLT, span power supply	41971310F2
	4-port sealed 10G Combo PON OLT, CATV power supply	41971310F3



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