

ADTRAN

## 6212-4

## SDN Programmable XGS-PON Remote OLT



## Benefits

- Cuts headend space congestion, power consumption and fiber exhaust issues
- Supports Gigabit+ speeds and subscriber capacity via remote, non-blocking FTTH architecture
- Accelerates differentiated service creation via open, multi-vendor SDN programmability
- Up to 512 FTTH subscribers supported via 4 ports of 10G PON
- Purpose built to support gigabit broadband and SLA-based multi-gig business and backhaul services
- Supports low-latency services such as emerging augmented and virtual reality applications
- Aligned with Distributed Access Architectures (DAA) and Fiber Deep strategies (up to 80km)
- Robust outside plant design with strand mounting and environmentally sealed packaging
- Fully redundant power supplies and uplink connections

## Overview

**The ADTRAN SDX 6212-4 is an environmentally sealed, virtualized 10G XGS-PON Remote OLT.** Part of ADTRAN's portfolio of 4-port 10G PON devices, the SDX 6212-4 reduces time-to-market and subscriber connection costs by using Fibre to the Home (FTTH) and Distributed Access Architectures (DAA) to effectively deliver Gigabit and triple play services.

The next-generation SDX 6212-4 supports four XFP interfaces for 10/10G XGS-PON to support up to 128 users per PON (up to 512 subscribers across four PON ports). It offers four non-blocking 10G uplink interfaces, with embedded redundancy options, to ensure scalability to support next-generation residential, business and mobile backhaul/fronthaul services.

The ADTRAN family of remote and virtualized OLTs support modern SDN control protocols allowing MSOs to effectively execute their transition to virtualized, managed and orchestrated

SD-Access service architectures. In addition, SDX 6212-4 virtual R-OLT supports virtualization of Layer 3 processing and other functionality resulting in a simpler, greener, more cost-effective virtualized R-OLT architecture.

The ADTRAN SDX 6212-4 supports the Open Networking Forum (ONF) Trellis disaggregated, software-defined access (SD-Access) architecture that includes programmable elements, such as the ADTRAN SDX 8200 and 8300 series aggregation switches. From a programmability perspective, the SDX 6212-4 has open APIs that utilize standard NETCONF/YANG interfaces for all management functions, easing integration into an SDN environment.

The ADTRAN SDX 6212-4's environmentally hardened, clam-shell factor can withstand extreme weather conditions, while providing reliable broadband connectivity.



# ADTRAN 6212-4

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## Product Specifications

### System Features

- 4x 10GE/1GE uplink SFP+ ports
- 4x 10G/10G XGS-PON XFP ports
- CWDM and DWDM uplink optics supported
- Full-duplex switching capacity: 80 Gbps
- **Management interfaces:** RS-232C, 10/100/1000BASE-T

### Mechanical

- 11 x 19.5 x 10 in. (279 x 495 x 254 mm) (W x L x H)
- **Maximum Weight:** 30 lbs (13.6 kg)

### Electrical Power Specification

- **Maximum power consumption:** 85W
- Standard CATV plant power, pseudo square wave, 45 - 95 VAC RMS at 60Hz

### Environmental

- **Operating Temperature:** -40°C to 65°C
- **Humidity:** 5 – 95%

### PON

- Wire-speed processing
- 10 Gbps/10 Gbps symmetric rate (downstream/upstream)
- 128-bit Advanced Encryption Standard (AES) encryption engine for PON security and privacy with up to 128 unique keys.
- Forward Error Correction (FEC) encoding and decoding
- Flexible optical transceiver interfaces for multiple vendor support
- Hardware-based configurable Dynamic Bandwidth Allocation (DBA)
- Supports local and remote loopback test, and MEF services

### Layer 2

- **MAC address:** up to 64K (shared) MAC management
- VLAN
  - ◆ Max 4 K VLANs, 802.1Q support
  - ◆ 802.1ad Q-in-Q
  - ◆ Tagging/stacking
  - ◆ Port to VLAN mapping
  - ◆ Service to VLAN mapping
- Link aggregation
  - ◆ 802.3ad link aggregation
  - ◆ Load-balancing based on source and destination MAC/IP

### Security

- Packet Filtering
  - ◆ DHCP filtering
  - ◆ Packet filtering with ACLs
  - ◆ EtherType VLAN ID

### Layer 3

- Multicast
  - ◆ IGMP v2/v3
  - ◆ IGMP snooping , IGMP join/leave, IGMP join filter/count limit
- DHCP
  - ◆ DHCP Relay, Blocks illegal IP users, DHCP option 82, DHCP Snooping

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## Quality of Service

- **Layer 2:** source/destination MAC address, VLAN ID, COS field
- **Marking/remarking:** DSCP, 802.1p
- Packet drop
- Mirroring to port, redirect to port
- 8 queues per port
- SPQ, DWRR, hybrid (SPQ+DWRR)
- Egress rate shaping per port/queue with 1 Mbps unit
- IP anti-spoofing
- ARP packet traffic limit
- Blocking of user-to-user flows
- Subscriber isolation

## System Security

- **Access control:** RADIUS; TACACS+; DHCP, DHCP 82/60 options, and static IP
- CPU packet filtering with ACL
- CPU packet rate-limit

## Management

- Remote access
  - ◆ SSH, NETCONF
- OS/configuration
  - ◆ Remote OS upgrade using TFTP, FTP, SFTP
  - ◆ Dual flash image
  - ◆ Remote configuration data download

## Ordering Information

Equipment	Part No.
SDX 6212-4 SDN Programmable 10G PON	11971430F1

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**ADTRAN, Inc.**  
901 Explorer Boulevard  
Huntsville, AL 35806

**General Information**  
800 9ADTRAN  
256 963 8000  
[www.adtran.com/contactus](http://www.adtran.com/contactus)

**Canada—Montreal, Quebec**  
+1 877 923 8726  
+1 514 940 2888  
[sales.canada@adtran.com](mailto:sales.canada@adtran.com)

**Mexico and Central America**  
+1 52 55 5280 0265 Mexico  
[sales.cala@adtran.com](mailto:sales.cala@adtran.com)

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