

ADTRAN

6210-4

SDN Programmable 10G-EPON Remote OLT
SDX Series

10 Gbps	 FTTH	\$ Low TCO	 Sealed	SDN Enabled
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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-EPON
- 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
- Expedites OSS/IT on-boarding to fully-featured CableLabs DPoE™ 1.0 and 2.0 compliant systems
- 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 6210-4 is an environmentally sealed, virtualized 10G EPON Remote OLT. Part of ADTRAN's portfolio of 4-port 10G EPON devices, the SDX 6210-4 reduces time-to-market and subscriber connection costs by using Fiber to the Home (FTTH) and Distributed Access Architectures (DAA) to effectively deliver Gigabit and triple play services.

The next-generation SDX 6210-4 supports four XFP interfaces for 10/10G EPON 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 bridge the management horizon with support of both DOCSIS provisioning over EPON (DPoE 1.0 and 2.0) and modern SDN control protocols allowing MSOs to effectively

execute their transition to virtualized, managed and orchestrated SD-Access service architectures. In addition, SDX 6210-4 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 6210-4 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 6210-4 has open APIs that utilize standard NETCONF/YANG interfaces for all management functions, easing integration into an SDN environment.

The ADTRAN SDX 6210-4's environmentally hardened, clam-shell factor can withstand extreme weather conditions, while providing reliable broadband connectivity.



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Product Specifications

System Features

- 4x 10GE/1GE uplink SFP+ ports
- 4x 10G/10G EPON 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 plat power, pseudo square wave, 45 - 95 VAC RMS at 60Hz

Environmental

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

DPoE

- Max 16 bidirectional unicast LLID per 10G ONU
- Max 1K bidirectional unicast LLID per OLT port
- 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.
- AES-128 bidirectional encryption
- 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
- DPoE 2.0 features including IPv6, multicast, IP-SG with sub-bundle interfaces and L2-HSD support

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
 - ◆ Destination/source IP address

Layer 3

- Routing
 - ◆ Static routing
 - ◆ RIPv2 (IPv4), RIPng (IPv6)
 - ◆ Policy Based Routing (PBR) ECMP max 8 routes: restricted by software—Max 16 K routing entries
- Multicast
 - ◆ PIM-SM, PIM-SSM
 - ◆ IGMP v2/v3
 - ◆ Max. 1K (IPMC) group support ,
 - ◆ IGMP snooping , IGMP join/leave, IGMP join filter/ count limit
- DHCP
 - ◆ DHCP Relay, Blocks illegal IP users, DHCP option 82, DHCP Snooping, DAI (Dynamic ARP Inspection)

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Quality of Service

- **Layer 2:** source/destination MAC address, VLAN ID, COS field
- **Layer 3:** source/destination IP address, DSCP
- TCP control flag
- **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
- Abnormal traffic blocking
 - ◆ Block the illegal source MAC address
 - ◆ ALL 0's, 1's, system Mac, default G/W Mac
 - ◆ Block the illegal source IP address storming control
 - ◆ Broadcast, DLF, multicast packet rate control
 - ◆ Cut-off of illegal traffic per source MAC
- IP anti-spoofing
- ARP packet traffic limit
- Blocking of user-to-user flows
- Subscriber isolation

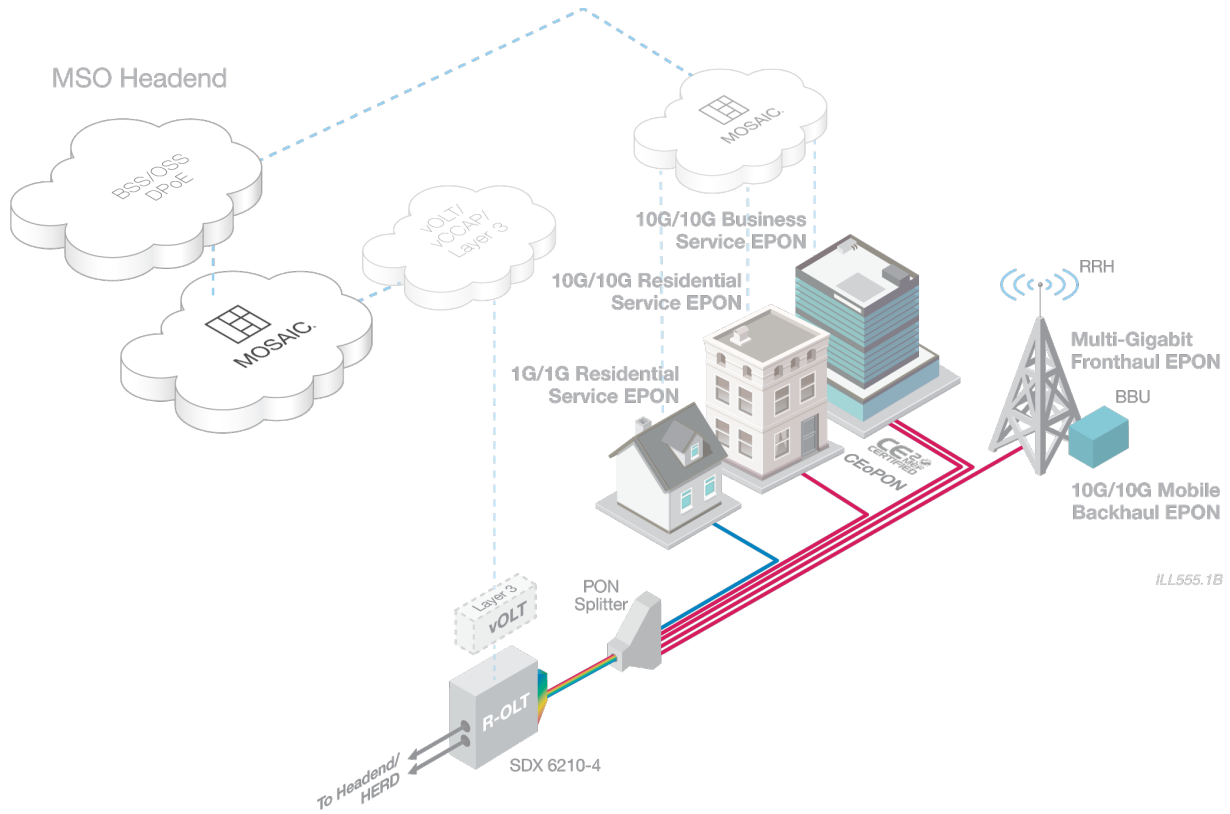
System Security

- **Access control:** RADIUS; TACACS+; Telnet, SNMP (in DPoE app) with ACL; DHCP, DHCP 82/60 options, and static IP
- CPU packet filtering with ACL
- CPU overload packet traffic sender block
- CPU packet rate-limit

Management

- Remote access
 - ◆ Telnet, SSH, SNMP (with DPoE app)
- OS/configuration
 - ◆ Remote OS upgrade using TFTP, FTP
 - ◆ Dual flash image
 - ◆ Remote configuration data download
- Others
 - ◆ NTP
 - ◆ Packet monitoring with TCPDUMP
 - ◆ Type-based port, CPU packet statistics

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Ordering Information

Equipment	Part No.
SDX 6210-4 SDN Programmable, 10G EPON virtual Remote OLT	11971420F1



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