

ADTRAN

SDX 8210-54CE

10G Aggregation Carrier Ethernet Switch



Benefits

- Deliver SLA-based enterprise services via comprehensive MEF support
- Offer broadband video from multiple video content providers and deployment models
- Supports stringent backhaul services features including low latency/jitter, network timing sync.
- Accelerates differentiated service creation via open, multi-vendor, SDN programmability
- Supports the uncertain demand of emerging differentiated services through datacenter switching architectures.
- Improves customer experience via strong traffic management and QoS feature set
- Avoids vendor-specific component lock-in via open interfaces and APIs

Overview

The ADTRAN SDX 8200 and 8300 series access and aggregation switches apply open, programmable SDN models and data center scaling principles. These differentiated attributes allow our next generation services access solution to achieve the massive scalability required to support the uncertain demand of emerging differentiated broadband services and to support the consolidation of SLA-based enterprise and backhaul services.

High-Performance, Meshed Switching

The ADTRAN access and aggregation switches support switching capacity up to 3.2Tbps and offer 10G SFP+, 40G QSFP+, and 100G QSFP28 interface configurations. This allows these highly flexible solutions to be deployed as either a Spine, Top of Rack/Leaf switch or middle of row Leaf switch to interconnect computing and storage functions; as well as aggregate Fiber-to-the Premises and Carrier Ethernet access and aggregation components.

Traffic Management and Service Assurance

To ensure high customer Quality of Experience these switches use efficient meshed network protocols like Layer 3 BGP with ECMP, segment routing, and multi-chassis LAG load sharing, providing strong performance guarantees when scaling the system. The switches also support VxLANs for virtualized datacenter environments, allowing faster scale while logically isolating tenant apps and physical compute resources. The switches also feature hot-swappable power supplies and

fans, and redundant AC or DC power supplies ensuring non-stop, continuous operations for critical service provider and enterprise datacenter environments.

Multi-market, Multi-service Consolidation

These switches are an integral part of a next generation access solution supporting the consolidation of 1 and 10Gbps services across multiple market segments. Residential broadband, mobile backhaul/fronthaul and enterprise networking and cloud connectivity services can be simultaneously deployed on a common architecture due to its comprehensive feature set combined with its enormous scale. Operators can offer broadband video from multiple video content providers via unicast and multi-cast IPTV and OTT deployment models. Deliver SLA-based enterprise and mobile back and fronthaul services through MEF CE2.0 compliance, Ethernet OAM and PM as well as support for stringent network timing distribution and synchronization.

Open, SDN-programmable Architecture

These switches support open interfaces and open APIs from vendor-neutral SDN controllers helping operators avoid vendor-specific component and process lock-in that lead to long release schedules that stifle the agility of in-house DevOps teams. The switches support multiple, Linux-based Network Operating Systems, and offer Open-Flow and NETCONF/YANG APIs for SDN programmability.



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Product Specifications

SDX 8210-54CE 10G Aggregation Carrier Ethernet Switch

Ports

- **Switch Ports**
 - 48 x 10G SFP+ ports.
 - 6 x 100G QSFP28 ports
- **Management ports on port side**
 - 1 x RJ-45 serial console
 - 1 x RJ-45 100/1000BASE-T management
 - 1 x USB Type A storage

CPU Modules

- Open Intel Quad-core architecture
- 8GB SDRAM
- 8GB NAND flash
- 32GB mSATA

Performance

- Line Rate L2/L3 Forwarding
- Switching Capacity: 880 Gbps Bi-directional
- Jumbo frames support up to 9216 Bytes
- Packet Buffer Size: 16 MB integrated packet buffer

Scale Numbers and QoS

- 128K simultaneous S-TAG, C-TAG combinations
- 750K MAC addresses
- Support for full range of 4096 VLANs
- 128K active multicast replication groups
- 54 LAG/LACP sessions per device
- 128K 3R3C policers, 96K 1R2C policers
- 16K MEPs – all can be used for loss and delay measurements
- Multiple QoS classes per VLAN
- Buffering
 - On chip - 64K buffers of 256B each
 - 8GB DDR4 expandable packet buffer
 - Allocated and shared across all ports and queues

Physical & Environmental

- **Dimensions (WxDxH):** 43.8 x 51.5 x 4.35 cm (17.3 x 20.3 x 1.7 in)
- **Weight:** 10 kg (23 lb)
- **Operating Temperature:** 0°C to 45°C (32°F to 113°F)
- **Storage Temperature:** -40°C to 70°C (-40°F to 158°F)
- **Operating Humidity:** 5% to 95% non-condensing
- **Operating Altitude:** 0 to 10,000 feet
- **Chassis:** 1U, 19 in. Rack Mountable Metal Enclosure
- **Power Supply:** Redundant, AC/DC Power Supply
 - 100-250V at 50 or 60 Hz
- **Redundancy:**
 - Hot Swappable Power Supplies
 - Hot Swappable Fans

LEDS

- QSFP 28 Port LEDs: Link Status, Activity, Rate
- Ethernet Management Port LED: Link Status, Activity
- Console Port LED: Link Status
- System LEDs: Diagnostic, Locator, PSU and Fan Status

Power

- PSUs: 2 redundant, load-sharing, hot-swappable AC or -48 VDC
- Input Voltage: 90 to 240 VAC at 50-60 Hz. -36 to -72 VDC.
- PSU Efficiency: Up to 93% for AC PSUs
- Power input option: 12 VDC
- Max Power: 350 W, without pluggable optics
- Typical Power: 310 W, without pluggable optics

Ethernet Services Support

- **Classification of Traffic Based on:**
 - Per UNI Port, CE VLAN ID (C-tag) and/or CE
 - VLAN P-Bits, Source and/or Destination MAC Address, DSCP Fields
 - Single Stack VLAN and Double Stack VLANs (Q-in-Q)
- Manipulation Based on 802.1q and DSCP Field
- STAG TPID Provisioning Supports 802.1ad and 802.1Q Standards
- Port-based Service Support

10G Aggregation Carrier Ethernet

- Service Scale and Flexibility
- MEF 9, 14, 20, 23.1, 30, 33 Compliant E-Line, E-LAN, E-Tree, E-Access
- Strict Priority and WDRR Scheduling
- Support for full VLAN Range plus Tag Stacking
- Supports 10k Jumbo Frame in Four Byte Increments
- Ingress Policers (tr3CM), CIR and EIR Settings to 64 Kbps Granularity, Configurable Burst through EBS and CBS Settings
- Egress Shaping Per Port and Per Queue
- Hierarchical QoS

IPTV Support

- IGMP v2 and v3
- Dynamic Host Configuration Protocol (DHCP) Support with Option 82
- Lightweight DHCPv4 and DHCPv6 Relay Agent Support

Layer 3 Features

- VxLAN
- Virtual Routing and Forwarding (VRF)
- BGPv4
- RIPv2
- OSPFv3
- IS-IS
- BFD
- VRRP
- LDP
- MPLS
- RSVP
- L2VPN (VPWS and VPLS)
- L3VPN
- Segment Routing
- Multicast Routing (PIM-SM, DM, SSM)

Security

- Accounting and Authorization (RADIUS, AAA, TACACS+)
- ACL Logging and Mirroring
- DHCP Snooping
- DOS Protection
- Ingress/Egress L2/L3/L4 ACL
- IP Source Guard
- Management IP Filtering (SNMP/Telnet/SSH)
- Port MAC Locking
- Static MAC Filtering

Network Timing and Synchronization

- ADTRAN Differential and Adaptive Timing Methods
- Synchronous Ethernet

Network Management and Monitoring

- NETCONF/YANG
- CLI
- Telnet/SSH
- FTP/SFTP
- IPv4/IPv6 management
- DHCPv4, DHCPv6
- Port Mirroring
- sFlow
- SNMPv3
- Syslog

Regulatory Agency Approvals

- FCC Part 15 Class A
- FCC Part 68
- UL 60950, CAN/CSA C22.2 No.60950
- EN 60950, IEC 60950, AS 3260/ AS NZS60950
- RoHS Compliant
- ITU-T K21:2000
- CE Marking
- NEBS Level 3

SDX 8210-54CE

Ordering Information

Equipment	Part No.
SDX 8210-54CE switch bundle (Front-to-back DC powered)	41971111F1
SDX 8210-54CE switch bundle (Back-to-front DC powered)	41971111F2
SDX 8210-54CE switch bundle (Front-to-back AC powered)	41971111F3
SDX 8210-54CE switch chassis	11971111F1

Accessories	
Front-to-back fan module	11971032F1
Back-to-front fan module	11971032F2
Front-to-back DC power supply module	11971033F1
Back-to-front DC power supply module	11971033F2
Front-to-back AC power supply module	11971034F1
Back-to-front AC power supply module	11971034F2
23inch rack mount (2-post)	11971031F1
21inch rack mount (2-post)	11971031F2
19inch rack mount (4-post)	11971031F3



ADTRAN, Inc.
901 Explorer Boulevard
Huntsville, AL 35806

General Information
+1 256 963 8000
www.adtran.com/contactus

Headquarters—EMEA
ADTRAN GmbH
Erika-Mann-Str. 25
80636 Munich-Germany
+49 89 411097 111
sales.europe@adtran.com

Central-/East and West Europe
+49 89 411097 111
sales.cewe@adtran.com

South Europe
+49 89 411097 111
sales.southeurope@adtran.com

North Europe and CIS
+49 89 411097 111
sales.ne@adtran.com

Middle East and Africa
+49 89 411097 111
sales.mea@adtran.com

Asia
+61 3 9658 0500
sales.asia@adtran.com

Australia/New Zealand
+61 3 9658 0500
sales.australia@adtran.com

I641971111F1-8A

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