Adtran

SDX 2200 Series

Next-generation Gfast DPUs

| Gigabit | Open architecture | Sealed | Low TCO | SDN Enabled |

Benefits

- **Most complete and open second generation Gfast portfolio**
- **From 4-port to 48-port symmetric, Gigabit-ready Gfast DPUs**
- **GPON, XGS-PON, or Ethernet point-to-point uplink options**
- **Up to 212MHz with fallback to VDSL2**
- **Choice of housing, mounting, and power variants**
- **Indoor or sealed, weather-hardened outdoor DPUs**
- **Wall, pedestal, pole, pit, or rack mount**
- **Local AC or reverse powering (RPF)**
- **Next-generation NETCONF/YANG management or traditional OMCI management models**
- **Portfolio of Gigabit-ready CPE**

Overview

The Adtran SDX 2200 Series is the second generation of Gfast distribution point units (DPUs) and a complementary solution to existing GPON or next-generation XGS-PON networks. Service providers can leverage these DPUs to support the extension of fiber deeper into the network and offer symmetric Gigabit service rates to subscribers in multi-dwelling units (MDUs).

Extend the reach of your fiber

Service providers can leverage the SDX 2200 Series of Gfast DPUs to extend Gigabit services using fiber-to-the-x architectures over existing in-building or in-home wiring. This approach eliminates the need for costly and time consuming fiber trenching and rewiring ondividual homes or living units, speeding up Gigabit service coverage and enabling faster monetization of fiber investments. Expanded 212MHz spectrum and built-in dynamic time assignment (DTA), allows service providers to cost-effectively deliver symmetric Gigabit services by dynamically allocating upstream and downstream bandwidth capacity according to customer application needs. The SDX 2200 Series comes with a broad variety of port densities, enabling service providers to tailor their investment to the needs of each deployment scenario.

Most complete second-generation Gfast portfolio

The Adtran SDX 2200 Series is the broadest and most comprehensive second-generation Gfast portfolio in the industry, ideal for a wide variety of deployment scenarios from single-family homes (SFUs) to medium-density garden-style apartments to dense high-rise condominiums. Built from a common hardware and software platform, SDX 2200 Series Gfast DPUs offers a wide variety of port densities (4, 8, 16, 24 and 48 ports), flexible powering options (including local and field-proven reverse power variants) and are available in both indoor and sealed outdoor housing.

Indoor units are designed for either rack or wall mounting, while sealed outdoor units can be mounted on an exterior wall, in a pedestal, on a pole or in an underground handhole. The Adtran portfolio also includes Gigabit-ready Gfast modems for placement within the living unit.

Open, programmable and scalable network management

The Adtran Gfast solution is complemented by our Mosaic platform, offering a modern management system with full FCAPS functionality with an intuitive GUI for device configuration and service activation. Open, standards-based north-bound APIs simplify integration into existing IT/OSS systems, streamline the automation of network and service management, and simplify migration to SDN-based orchestration and management systems. The Gfast DPUs can also be OMCI-managed from the OLT, and support Gfast profile management and assurance via our Mosaic Software Suite, which uses NETCONF/YANG for comprehensive control.

SDX 2200 SERIES

Portfolio Summary

Indoor low-density Gfast DPUs

- 4-port variant only
- GPON uplink
- Protection from dust, tools, etc. (IP30 rated)
- AC and reverse power variants
- OMCI management and service assurance from Mosaic platform via NETCONF/YANG

Outdoor medium-density Gfast DPUs

- 8 and 16-port variants
- 1/10GbE P2P or GPON/XGS-PON uplink
- Sealed, weather-resistant (IP67 rated)
- AC and reverse power variants
- OMCI management and service assurance from Mosaic platform via NETCONF/YANG

Indoor medium-density Gfast DPUs

- 8 and 16-port variants
- 1/10GbE P2P or GPON/XGS-PON uplink
- Protection from dust, tools, etc. (IP30 rated)
- AC and reverse power variants
- OMCI management and service assurance from Mosaic platform via NETCONF/YANG

Indoor high-density Gfast DPUs

- 24 and 48-port variants
- 2x 1/10GbE P2P or GPON/XGS-PON uplink
- Temperature-hardened, 2RU
- Protection from dust, tools, etc. (IP30 rated)
- AC-powered
- OMCI management and service assurance from Mosaic platform via NETCONF/YANG
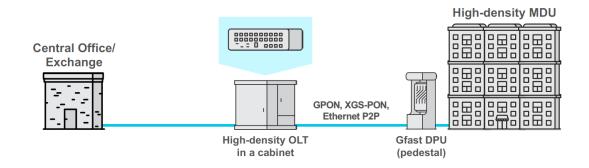
Gfast bridge modem CPEs

- 10/100/1000Base-T LAN interface (RJ45 connector)
- Gfast interface connectes CPE to Gfast DPU via telephone line (RJ11 connector)
- Integrated reverse power injector option (15W or 21W)
- Desktop or wall mount installation options
- +12VDC power feed with AC/DC adapter

Accessories

- Wall and pole mounting kits
- Kits include applicable accessories and cables such as:
  - PON and GigE pluggables
  - Ground wire
  - Subscriber cables
  - Fiber optic cables
- External reverse power injectors

SDX 2200 SERIES

Applications in your network

Product specifications

Feature	Indoor low-density DPUs		Indoor high-density DPUs			
	SDX 2221-04		**SDX 2221-24**		**SDX 2221-48**	
Part number	11321708F2	11321708F4	11321714F2	11321714F3	11321774F3	11321774F5
Market	ETSI	ETSI	ETSI	ANSI/ETSI	ANSI/ETSI	ETSI
Wiring support	Twisted pair	Twisted pair	Twisted pair	Twisted pair	Twisted pair	Twisted pair
Powering	AC w/ MELT	RPF 15W	AC w/ MELT	AC	AC	AC w/ MELT
Indoor/outdoor (IP-rating)	Indoor (IP30)		Indoor			
Subscriber ports	4		24		48	
Ethernet interface (SFP+)*	1GbE or 10GbE		2x 1GbE or 2x 10GbE			
Access technology interface*	1x GPON/XGS-PON		1x GPON/XGS-PON			
OMCI management (PON basic config)	Yes		Yes			
NETCONF/YANG management	Yes		Yes			
Mounting	Wall		Rack, wall			
Operating temperature range	+5ºC to +40ºC		−33ºC to +70ºC		−40ºC to +70ºC	
Storage temperature range	−33ºC to +40ºC		−40ºC to +85ºC		−40ºC to +85ºC	
Operating environment	up to 85% non-condensing		up to 85% non-condensing		up to 95% non-condensing	

One active port at a time

SDX 2200 SERIES

Feature	Indoor medium-density DPUs					
	SDX 2221-08			**SDX 2221-16**		
Part number	11321772F1	11321772F2	11321772F3	11321782F1	11321782F2	11321782F3
Market	ETSI	ETSI	ETSI	ETSI	ETSI	ETSI
Wiring support	Twisted pair	Twisted pair	Twisted pair	Twisted pair	Twisted pair	Twisted pair
Powering	AC w/ MELT	AC	RPF 15W	AC w/ MELT	AC	RPF 21W
Indoor/outdoor (IP-rating)	Indoor (IP30)			Indoor (IP30)		
Subscriber ports	8			16		
Ethernet interface (SFP+)*	1GbE or 10GbE			1GbE or 10GbE		
Access technology interface*	1x GPON/XGS-PON			1x GPON/XGS-PON		
OMCI management (PON basic config)	Yes			Yes		
NETCONF/YANG management	Yes			Yes		
Mounting	Wall			Wall		
Operating temperature range	+5ºC to +40ºC			+5ºC to +40ºC		
Storage temperature range	−33ºC to +40ºC			−33ºC to +40ºC		
Operating environment	up to 85% non-condensing			up to 85% non-condensing		

One active port at a time

SDX 2200 SERIES

Feature	Outdoor medium-density DPUs									
	SDX 2221-08						SDX 2221-16			
Part number	11321771F6	11321771F4	11321771F9	11321771F10	11321771F12	11321771F13	11321781F2	11321781F4	11321781F9	11321781F12
Market	ETSI	ETSI	ETSI	ETSI	ANSI	ANSI	ANSI	ETSI	ETSI	ANSI
Wiring support	Twisted pair	Twisted pair	Twisted pair	Twisted pair	Twisted pair	Twisted pair	Twisted pair	Twisted pair	Twisted pair	Twisted pair
Powering	RPF 15W	AC w/ MELT	AC	RPF 21W	AC	RPF 15W	RPF 21W	AC w/ MELT	AC	AC
Indoor/outdoor (IP-rating)	Outdoor (IP67)						Outdoor (IP67)			
Subscriber ports	8						16			
Ethernet interface (SFP+)*	1GbE or 10GbE						1GbE or 10GbE			
Access technology interface*	1x GPON/XGS-PON						1x GPON/XGS-PON			
OMCI management (PON basic config)	Yes						Yes			
NETCONF/ YANG management	Yes						Yes			
Mounting	Pedestal, wall, pit or pole						Pedestal, wall, pit or pole			
Operating temperature range	−40ºC to +65ºC						−40ºC to +65ºC			
Storage temperature range	−40ºC to +85ºC						−40ºC to +85ºC			
Operating environment	100% condensing						100% condensing			

One active port at a time

Feature	Gfast bridge modem CPEs	
	422G	423G
Part number	11321713F22	11321713F23
LAN ports (10/100/1000Base-T)	1	1
WAN wiring support	Twisted pair	Twisted pair
Reverse power injector		Integrated
Reverse power output		15W (SR2) or 21W (SR3) (automatic detection)

SDX 2200 SERIES

Product specifications

Interfaces

- Network interface
  - GPON, XGS-PON, or Ethernet point-to-point uplink options
  - Up to 2Gbps (aggregate downstream and upstream rate)
  - Forward Error Correction (FEC)
- Subscriber interfaces:
  - 4, 8, 16, 24, or 48-port Gfast subscriber interfaces
  - Integrated copper connector

Subscriber line

- ITU-T G.9700/G.9701 Gfast 212MHz profile support
- ITU-T G.993 VDSL2 17a/35b profile fallback support
- ITU-T G.993.5 self-FEXT cancellation (G.vector)
- Gfast and VDSL2 coexistence support (automatic start-frequency control)
- Dynamic Time Assignment (DTA)
- Coordinated DTA (cDTA)
- Seamless Rate Adaptation (SRA)
- Save Our Sowtime (SOS)
- Fast Rate Adaptation (FRA)
- Online Reconfiguration (OLR)
- Configurable ratio of downstream symbols to upstream symbols
- Physical layer retransmission
- RMC Parameter Adjustment (RPA)
- Transmitter Initiated Gain Adjustment (TIGA)
- Power Spectral Density (PSD) shaping and notching
- Integrated line test functions - SELT and MELT options

Ethernet services

- 802.1d bridging
- Virtual switch based on 802.1q VLAN
- VLAN tagging/detagging per Ethernet Port
- VLAN stacking (Q-in-Q) and VLAN translation
- Class of Service (CoS) based on VLAN-ID
- 802.1p bit marking/remarking
- Quality of Service (QoS) traffic management
- Ethernet performance data and statistics
- DHCP/DHCPv6/PPPoE host protocol policy
- DHCP/PPPoE mode per EVC and per EVC-map and CE-VLAN range
- ARP mode per EVC
- Optional trusted subscriber port

IPTV support

- IGMPv2 (RFC 2236) support
- Lightweight IGMPv3 (RFC 5790) support
- DHCP Option 82 support

Access control

- MAC address ACL on UNI (source/destination MAC address filter with wild cards)
- Limitation of MAC addresses per UNI and per EVC per UNI (MAC address flooding control)
- MAC Anti-spoofing
- IP Anti-spoofing
- Port isolation within the VLAN
- Overload protection
- NTPv4 message authentication
- SSH session between Persistent Management Agent (PMA) and DPU
- SFTP client with public-key authentication
- ACL support per DPU

Network management and monitoring

- NETCONF/YANG network orchestration and control
- SFTP or HTTPS file transfer
- Untagged, priority-tagged, and tagged management traffic (EVC configurable)
- Protected DPU software upgrade
- CPE remote management and software download over Gfast link by using:
  - Embedded Operations Channel (EOC), according to Annexes S of ITU-T G.9701 Amd3/G.997.2 Amd3
  - TR-069 protocol

SDX 2200 SERIES

Fault and performance management

- 15-minute and 24-hour interval counters (current and previous statistics)
- Persistent configuration data for DPU operation without PMA link
- DPU alarm notifications with provisioned alarm severities
- Threshold crossing alarms (e.g., temperatures, line/channel characteristics)
- LED indication for power, operation status/errors, and network status
- Access Node Control Protocol (ANCP) support

Power options

- Local AC power: 100VAC to 230VAC
- 1 to 2 line powering pairs: +/- 190VDC per pair
- Reverse power class 2: 15W
- Reverse power class 3: 21W

Regulatory approvals

- ETSI EN 300 019
- ETSI EN 300 386
- ETSI EN 60950
- ETS 300 753
- ETS ES 201 468
- GR-3108, Issue 3
- GR-1089-CORE, Issue 6
- GR-63-CORE, Issue 4
- GR-950-CORE, Issue 3
- UL 60950-1/21/22
- DTAG TS 0364/96
- DTAG 1TR9
- ITU-T K.72/31/35
- ITU-T K.45
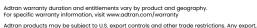- FCC Part 15
- RoHS 6 of 6 Compliant

SDX 2200 SERIES

Ordering information

Equipment	Item detail		Part No.
SDX 2221-04	Indoor low-density DPUs	4-port, AC w/ MELT, ETSI	11321708F2
		4-port, reverse power 15W, ETSI	11321708F4
SDX 2221-08	Indoor medium-density DPUs	8-port, AC w/ MELT, ETSI	1321772F1
		8-port, AC, ETSI	11321772F2
		8-port, reverse power 15W, ETSI	11321772F3
	Outdoor medium-density DPUs	8-port, reverse power 15W, ETSI	11321771F6
		8-port, AC w/ MELT, ETSI	11321771F4
		8-port, AC, ETSI	11321771F9
		8-port, reverse power 21W, ETSI	11321771F10
		8-port, AC, ANSI	11321771F12
		8-port, reverse power 15W, ANSI	11321771F13
SDX 2221-16	Indoor medium-density DPUs	16-port, AC w/ MELT, ETSI	11321782F1
		16-port, AC, ETSI	11321782F2
		16-port, reverse power 21W, ETSI	11321782F3
	Outdoor medium-density DPUs	16-port, reverse power 21W, ANSI	11321781F2
		16-port, AC w/ MELT, ETSI	11321781F4
		16-port, AC, ETSI	11321781F9
		16-port, AC, ANSI	11321781F12
SDX 2221-24	Indoor high-density DPUs	24-port, AC w/ MELT, ETSI	11321714F2
		24-port, AC, ANSI/ETSI	11321714F3
SDX 2221-48	Indoor high-density DPUs	48-port, AC, ANSI/ETSI	11321774F3
		48-port, AC w/ MELT, ETSI	11321774F5
422G	Gfast bridge modem CPEs	One 10/100/1000Base-T LAN port	11321713F22
423G		One 10/100/1000Base-T LAN port with RPF	11321713F23
Accessories	Wall mount Kit	Bracket, metal cover and cover plate	11321751F5
	Pole mount Kit	Brackets and pan head screws	11321751F8
	External reverse power injectors	15W, ANSI/ETSI	11321713F82
		21W, ANSI/ETSI	11321713F83

TL9000
TL19.1270

ADTRAN
Certified
Supplier
ISO 9001
ISO 14001
TL 9000