



ADTRAN

2221-16TP/16CX

16-port Gfast Sealed, Outdoor ONU
SDX Series



Benefits

- Fully sealed enclosure for passive cooling enabling completely silent operation in residential areas
- Ultra-low Total Cost of Ownership (TCO) for triple-play service delivery
- Provides 16 ports of vectored 212 MHz Gfast and VDSL2 (2221-16TP only)
- AC, DC, Span-powered and reverse power options
- Supports IPTV video service
- Bypass relay function for smooth migration and zero-touch provisioning
- Advanced traffic management supports business services
- 1/10G GPON or 10G PON uplink options
- Supports EFM bonding for greater bandwidth and reach
- Supports FTTB, FTTdp, FTTCab and FTTH deployments
- Mosaic Cloud Platform Integration
- DPU management via NETCONF/YANG
- Optimized power consumption

Overview

Premium broadband services are fueling the need for pushing fiber deeper into the network and closer to the end user.

As this occurs, it provides an opportunity for network operators to leverage next-generation broadband technologies like VDSL2 17a Vectoring, VDSL2 35b (Super Vectoring), and Gfast.

The ADTRAN SDX 2221-16TP/16CX Gfast ONU allows service providers to realize up to 1.5 Gbps symmetric broadband speeds over existing copper or coax infrastructure. It rapidly enables advanced communications and entertainment services to previously hard-to-connect subscribers. Now if a location has a phone line, it can be served with Gigabit services.

Part of ADTRAN's comprehensive family of Gfast products, the SDX 2221 Series Gfast ONUs are purpose-built for Fiber-to-the-distribution point (FTTdp), Fiber-to-the-Building (FTTB), Fiber-to-the-Cabinet (FTTCab) or Fiber-to-the-Home (FTTH) markets. A fully sealed and submersible housing makes the SDX 2221-16TP/16CX ONUs robust and reliable network elements that can be deployed in pedestals, on poles, in low-profile "doghouse" enclosures and even in underground vaults and handholes.

The most cost-effective solutions for Distribution Point Units (DPUs) support long-term operation without requiring direct touch installation or maintenance. They also must be able to support a positive operator business case for only a small number of served subscribers. Concepts for simplified installation like "zero-touch" customer turn-up processes allow a single truck roll/site visit for hardware installation and then a zero-touch turn-up for every subsequent customer. The ADTRAN Gfast family of products provides a remote-controlled bypass system for each subscriber, supporting a smooth migration from existing DSL services.

The ADTRAN SDX 2221 Series Gfast DPUs are the industry's most open, programmable solutions and can be managed via any SDN controller or the ADTRAN Mosaic Cloud Platform. This allows for zero-touch installation and easy management of thousands of DPUs in the field, and provides a path to an open, software-defined network.

Fed with Active Ethernet, GPON or 10G PON, the SDX 2221-16TP/16CX ONUs support up to 16 subscribers with high-speed vectored 212 MHz Gfast data service, and are ideal for deep-fiber deployments to the curb, building, home, distribution point, or multi-dwelling unit (MDU). The SDX 2221-16TP Gfast ONUs support fallback to 106 MHz or VDSL2 (17a and 35b) providing a truly versatile ultra-broadband solution.

ADTRAN 2221-16TP/16CX

The SDX 2221-16TP/16CX Gfast ONUs support ultra-high-speed (up to 1.5 Gbps per pair) data rates, IPTV, and voice services over the existing in-building copper infrastructure. Services can be deployed rapidly and with minimal installation and construction costs. Combining the ability to be deployed in any outdoor or indoor environment with dramatically lower deployment costs, the SDX 2221 Series ONUs allow carriers to maximise the performance of Gfast for every subscriber in their network. It also enables operators to invest in a full FTTH network over a longer period of time, making the cost more manageable.

SDX 2221-16TP/16CX Gfast ONUs support remote (span), local or reverse powering.

ADTRAN Gfast solutions can be operationally aligned with FTTH architectures for common OMCI provisioning simplifying integration. They also work seamlessly with ADTRAN's widely deployed hiX5600 and Total Access 5000 Series Multi-Service Access Nodes (MSANs) and the SDX 8210 and 8310 Access/Aggregation switches, bridging the gap between existing and next-generation network architectures.

Product Specifications

Mechanical

- **Dimensions:** 17 in x 10 in x 3.3 in (44cm x 25.5cm x 8.5 cm) (H x W x D)
- **Weight:** < 7.0 kg (15 lbs.)
- **Outdoor Mounting:** Pedestal, Pole, Wall,
- Hand-hole, Dog House-style Cabinets

Interfaces

Network

- Two 1/10 Gbps P2P SFP
- GPON / 10G PON Uplink

Subscriber

- SDX 2221-16TP
 - ◆ 16 Gfast over copper
 - ◆ Integrated copper connector
- SDX 2221-16CX
 - ◆ 16 Gfast over coax

DSL Performance

- 212MHz Gfast (ITU-T G.9700 and G.9701)
- VDSL2 Profiles 17a and 35b
- G.vector ITU-T G.993.5
- Configurable Gfast frequency >2.2 MHz
- Programmable Downstream/Upstream Ratio (1:1 to 10:1)
- SRA, SOS, Physical Layer Retransmission

Ethernet Services

- 802.1D Bridging
- Virtual Switch Based on 802.1q VLAN
- VLAN Tagging/Untagging per Ethernet Port
- VLAN Stacking (Q-in-Q) and VLAN Translation
- Class of Service (CoS) Based on VLAN-ID, 802.1p Bit
- Marking/Remark of 802.1p

IPTV Support

- Internet Group Management Protocol v2 and v3
- Dynamic Host Configuration Protocol Support ((DHCP) with Option 82

Power Options

- **Reverse Power:** 15W (short loops); 21W (long loops)
- **Forward Line Power:** 1 to 2 Line Powering Pairs (+/- 190VDC per pair)*
- **Local DC Power:** -42 VDC to -56VDC*
- **Local AC Power:** 100VAC to 220VAC*

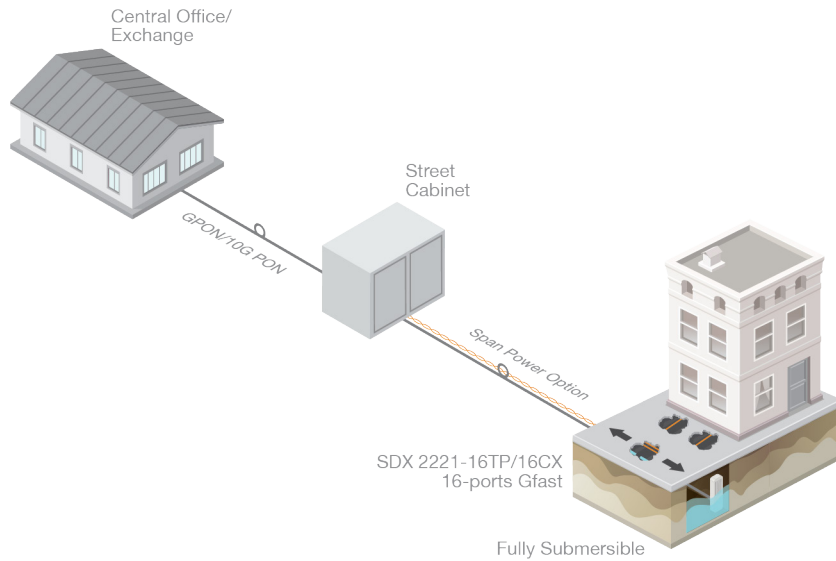
16-port Gfast Sealed, Outdoor ONU

Regulatory Approvals

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

Environmental

- **Operating Temperature:** -40° C to +65° C
(-40° F to +149° F)
- **Storage Temperature:** -40° C to +85° C
(-40° F to +185° F)
- **Relative Humidity:** 100%, Condensing,
Fully Submersible



ILL620A

Ordering Information

Equipment	Part No.
ADTRAN SDX 2221-16TP Gfast ONU (Twisted Pair)	11321781Fx*
ADTRAN SDX 2221-16CX Gfast ONU (Coax)	

*Multiple powering options

ADTRAN

Pulse Supply
909 Ridgebrook Road., Sparks, Maryland 21152, USA
TEL : +1-410-583-1701 FAX : +1-410-583-1704



E-mail: sales@pulsesupply.com
<https://www.pulsesupply.com/adtran>

611321781Fx-8B

April Copyright © 2019 ADTRAN, Inc. All rights reserved. ADTRAN believes the information in this publication to be accurate as of publication date, and is not responsible for error. Specifications subject to change without notice. ADTRAN® and the other trademarks listed at www.adtran.com/trademarks are registered trademarks of ADTRAN, Inc. or its affiliates in various countries. All other trademarks mentioned in this document are the property of their respective owners.

ADTRAN warranty duration and entitlements vary by product and geography. For specific warranty information, visit www.adtran.com/warranty.

ADTRAN products may be subject to U.S. export controls and other trade restrictions. Any export, re-export, or transfer of the products contrary to law is prohibited. For more information regarding exportation of ADTRAN items (e.g. commodities, technology, software), please visit www.adtran.com/expoertlicense.

ADTRAN
Certified
Supplier
ISO 9001
ISO 14001
TL 9000



TL9000
TL 90 1270