

ADTRAN

# GPON/XGS-PON

Wi-Fi 6 Service Delivery Gateways



FTTH



IPTV



Wi-Fi 6



Zero-Touch



VoIP



Gigabit

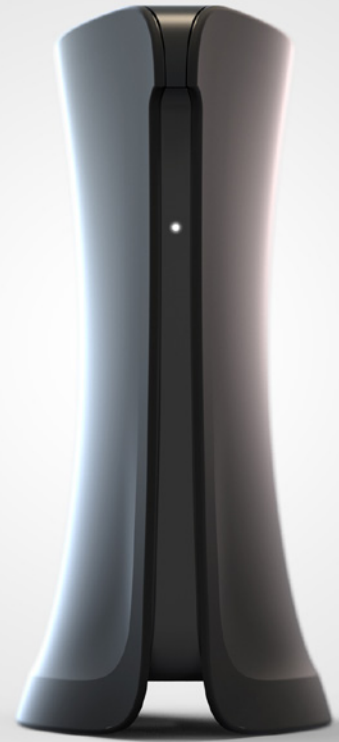


Programmable

# GPON/XGS-PON Wi-Fi 6 Service Delivery Gateways

## Benefits

- Supports gigabit broadband over Wi-Fi 6
- Rapid home installation
- Remote service troubleshooting and home management via TR-069
- Optimised for multiuser homes via OFDMA and MU-MIMO technology
- Provides Class of Service (CoS) levels for prioritising multiuser, multiservices
- Supports both PON and Active Ethernet deployment models
- USB 3.0 interface and storage support
- Provides two SIP-enabled phone ports
- Supports both IPTV and OTT 4K video
- Supports whole home mesh Wi-Fi



-  FTTH
-  VoIP
-  IPTV
-  Gigabit
-  Wi-Fi 6
-  Programmable
-  Zero-Touch

## Overview

ADTRAN is building a next-generation platform for smart home services with Wi-Fi 6. SDGs allow more devices to connect and stream simultaneously, without impacting speed or reliability. This is achieved by scheduling multiple streams at once and efficiently packing and scheduling data.

### The Solution

ADTRAN® GPON/XGS-PON Wireless Residential Gateways are integrated wireless routers and gateways supporting Wi-Fi 6 (802.11ax) - the latest Wi-Fi standard with four times the data capacity to handle growing home network needs.

### Enhanced Multiuser HDTV Quality over Wireless

ADTRAN® GPON/XGS-PON Wireless Residential Gateways include built-in dual-band concurrent 802.11ax radios with OFDMA and MU-MIMO to deliver wired-equivalent performance, including full 4K UHD video.

### The OFDMA Advantage

OFDMA can significantly reduce contention and preamble overhead, especially for short packets that are prevalent in many networks. Both OFDMA and multiuser MIMO are used to

parallelize control traffic wherever possible. The SDG-814-v6 OFDMA addition improves Wi-Fi in many directions, making it possible to lower latency and jitter as well as improve overall QoS.

### Game-changing Operational Savings

ADTRAN® GPON/XGS-PON Wireless Residential Gateways drastically reduce the time and labor required to install, provision, and initiate billing for a new service. This is a result of the eliminated home wiring due to a wireless feature set from the simplified and automated back-office ONT service provisioning.

A subscriber simply plugs in the Wireless Residential Gateway into the wall and the device automatically directs them to the auto-provisioning portal to choose their service options which then automatically provision the service and initiate the billing cycle.

# Product Specifications

## Ethernet Interfaces

- 4x 10/100/1000BASE-T Ports with RJ-45 Connectors
- Ethernet Port Auto Negotiation or Manual Configuration
- MDI/MDIX Automatic Sense
- Hardware Priority Queues on the Downstream Direction in Support of CoS

## Ethernet Services

- Symmetric 1 Gbps Throughput
- 802.1D Bridging
- 802.1x Authentication
- Virtual Switch Based on 802.1q VLAN
- VLAN Tagging/Untagging Per Ethernet Port
- VLAN Stacking (Q-in-Q) and VLAN Translation
- IP ToS/DSCP to 802.1p Mapping
- Quality of Service (QoS)
  - VLAN-ID
  - 802.1p Bit
  - DSCP to p Bit Translation
- Marking/Remarking of 802.1p
- IGMP v2/v3 Snooping
- Broadcast/Multicast Rate Limiting

## Gateway Features

- Multiple WAN Interfaces Supported
- WAN Connection
  - Point-to-Point Protocol over Ethernet (PPPoE)
  - Dynamic Host Configuration Protocol (DHCP)
  - Static
- DHCP Server for LAN Devices
- DNS Relay
- Network Address Translation (NAT)/ Network Address Port Translation (NAPT)
- Port Forwarding
- Static Routing
- Access Control List (ACL)
- VPN Pass Thru for Point to Point Tunneling Protocol (PPTP), Layer 2 Tunneling Protocol (L2TP) and IP Security Protocol (IPSec)
- Firewall

- Application Layer Gateway (ALG)
- Demilitarized Zone (DMZ)
- Dynamic Domain Name Server (DDNS)
- Network Time Protocol (NTP)
- Universal Plug and Play (uPnP)
- IGMP Proxy
- IPv6
  - Stateless Address Autoconfiguration (SLAAC)
  - DHCPv6
  - PPPoEv6
  - DNSv6

## WLAN Interface

- Compliant with IEEE 802.11 b/g/n/ac/ax
- 2.4 GHz and 5.0 GHz
- Dual Band Radios
  - 2.4 GHz 3x3
  - 5.0 GHz 4x4
- 4x SSIDs per Radio
- WPA3 Support
- Push Button WPS

## USB Interface

- 1 USB Host Interface
- Compliant to USB 3.0
- Network Storage

## POTS Interface

- RJ-11 Interface
- 3-REN, 50V RMS
- VoIP Voice: SIP
- Full CLASS Feature Set
- Both ANSI and ETSI POTS
- T.38 Facsimile
- Configurable Dial Plan
- Configurable Country Specific Ring-back Tones (Frequency and Cadence)
- DHCP Client or Static IP Configuration
- Optionally Metallic Loop Testing

# Product Specifications

## GPON Interface

- Compliant with ITU-T G.984 GPON Standards
- Compliant with ITU-T G.984.2 Amd1, Class C+
- Support G.984.5 Blocking Filter
- Multiple T-CONTs per Device
- Multiple GEM Ports per Device
- DBA Reporting by Piggyback Reports in the DBRu (Mode 0 and Mode 1)
- 802.1 Mapper Service Profile on U/S
- Mapping of GEM Ports into a T-CONT with Priority
- Queue-Based Scheduling
- Support Multicast GEM Port and Incidental Broadcast GEM Port

## XGS-PON Interface

- XGS-PON WAN Port
- Compliant with ITU-T G.9807 XGS-PON Standards
- DBA (Dynamic Bandwidth Allocation)
- Mapping of xGEM Ports into a T-CONT with Priority
- Queue-Based Scheduling

## Dimensions

- 249mm / 90mm / 195mm - (Height / Width / Depth)

## Power Supply

- +12V (Feed via External AC/DC Adapter)
- Dying Gasp Support
- Power Consumption: Less than 30W

## Working Environment

- Temperature: 41° F – 104° F (5° C – 40° C)
- Humidity: 5% – 85% Relative Humidity

## Safety and EMI

- CE Certificate
- FCC / Industry Canada Certified, UL Listed

## Environmental Directive

- RoHS 6 of 6

## LEDs

- Multifunction RGBW
- Fiber
- LAN 1-4 Link/Act
- 2.4GHz
- 5GHz
- WPS
- Tel 1/2

## OAM

- Standard Compliant OMCI (the Embedded Operations Channel) Interface as Defined by ITU-T G.988
- Provisioning All Kinds of Services including Ethernet, VoIP etc.
- Alarming and Performance Monitoring
- Remote Software Image Download over OMCI, as well as Activation and Rebooting
- Hold Two Software Sets with Software Image Integrity Checking and Automatic Rollback

## Ordering Information

SDG-814-v6	GPON/AE	17600132Fx*
SDG-825-v6	XGS-PON 2.5G	17600139Fx*

\*Available in US, UK, EU, and AU versions.

## 161760013xFx-8B

May Copyright © 2021 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](http://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](http://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/exportlicense](http://www.adtran.com/exportlicense).

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

**General Information**  
+1 256 963 8000  
[www.adtran.com/contactus](http://www.adtran.com/contactus)

**Headquarters—EMEA  
ADTRAN GmbH**  
[sales.cewe@adtran.com](mailto:sales.cewe@adtran.com)

**South Europe**  
[sales.southeurope@adtran.com](mailto:sales.southeurope@adtran.com)

**Middle East and Africa**  
[sales.mea@adtran.com](mailto:sales.mea@adtran.com)

**Australia/New Zealand**  
[sales.australia@adtran.com](mailto:sales.australia@adtran.com)