



Total Access

300

GPON SFU ONT Series



## Benefits

- G.984 compliant
- Environmentally hardened for indoor and outdoor deployments
- Full Class B+ optics, capable of 30 km reach
- Optional internal opti-Fit mounting
- 10/100/1000 Base-T Ethernet port(s)
- RF over glass supportn (ONT specific)
- HPNA supportn(ONT specific)
- Fiber cable management
- Native Ethernet trans- port over GPON (GEMBased)
- VoIP using SIP or MGCP
- Traditional voice using GR-303, TR-008, or TR-57
- IPTV video support
- Traffic management through priority queuing, scheduling, policing and traffic shaping
- VLAN stacking (Q-in-Q), VLAN tagging/untagging
- QoS with four traffic classes as per IEEE 802.1p
- Full IEEE 802.1Q VLAN ID processing per port
- Full OMCI integration

## Overview

**Carriers today are dealing with increasing competition, operational costs, and demand for bandwidth.** To address these concerns, ADTRAN® offers a complete suite of fiber access solutions that are enabling carriers to compete more cost-effectively while expanding broadband services to un-served and under-served areas, like those targeted by the American Recovery and Reinvestment Act and Connect American Fund.

With fiber access solutions like Gigabit Passive Optical Networking (GPON) carriers have a new means to compete in an environment where bandwidth is king. GPON provides the flexibility, reliability, and bandwidth to give carriers a competitive advantage in today's market. ADTRAN offers a range of differentiated GPON Optical Network Terminal (ONT) solutions to address residential, business, and cell-site applications.

The Total Access® 300 Series of GPON ONTs is designed to address the residential market with industry-leading voice, data, and video capabilities. This series includes the Total Access 351, 352, 352H, 361, 362, 362H, 362R Outdoor ONTs and Total Access 324 and 334 Indoor ONTs. With Total Access GPON ONTs, carriers can benefit from the high data rates of fiber-optic transmission and the flexibility offered by ADTRAN's portfolio of Ethernet-based systems that can be easily configured for new, customized service offerings.

Total Access 300 Series ONTs work seamlessly with ADTRAN's widely deployed Total Access 5000 Series Multiservice Access and Aggregation Platform. Functioning as a highly capable GPON OLT and flexible carrier-class access platform, the Total Access 5000 bridges the gap between existing and next-generation network architectures like GPON. It makes a carrier's access network capable of meeting a variety of legacy and emerging system requirements. Its Ethernet architecture allows carriers to increase bandwidth while offering differentiated capabilities. Coupled with Total Access 300 Series ONTs, it provides an end-to-end GPON deployment strategy that is supported by a common management solution.

Total Access 300 Series ONTs leverage the industry-leading converged voice and data functionality widely deployed in ADTRAN integrated access, IP gateway, and Voice over IP (VoIP) platforms, with millions of ports currently deployed. Based on the ADTRAN Operating System (AOS), each ONT provides unmatched SIP and MGCP interoperability with a host of major soft-switch vendors, as well as integrated statistics and tools that allow carriers to quickly and easily troubleshoot network configuration issues, and monitor performance.

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Total Access 300 Series Outdoor ONTs features include box-in-box, weatherproof and access- controlled construction with entry ports for fiber, power, ground, Ethernet, telephone, RFoG (specific models), and HPNA (specific models). Each device supports 2.5 Gbps GPON applications per the ITU-T G.984.2 specification. Data services are delivered over 10/100/1000Base-T Ethernet interfaces. Telephone service is supported by POTS interfaces.

The POTS ports use in-band signaling tones and currents to determine call status. GPON Encapsulation Mode (GEM) is used to carry Ethernet traffic. SIP, MGCP, GR-303, TR-008, and TR-57 are all available to support a wide variety of network models. Voice traffic is carried as VoIP packets to either the Total Access 5000 integrated Voice Gateway Module for access to legacy TDM interfaces, or as SIP or MGCP to an external soft-switch to support voice services. A full suite of Quality of Service (QoS) features are available with support for 802.1Q VLANs and 802.1p for prioritization.

Total Access 300 Series Outdoor ONTs are powered by an external universal power supply (UPS). The AC-powered UPS provides a nominal 12 VDC to the ONT. Total Access 300 Series Indoor ONTs are optionally powered by an external UPS or directly connected to a 120 VAC power source. Management of Total Access 300 Series ONTs is performed over OMCI as specified in G.984.4. These outdoor ONTs are environmentally hardened for installation inside or outside a residence. The ONTs are accepted by the Rural Utilities Service (RUS) and provide a wealth of benefits for carriers of all types, deploying broad- band solutions including voice, data, video, and HDTV.

## Product Specifications

### Voice Support

#### VoIP Protocol

- SIP
- MGCP

#### Traditional Voice

- GR-303
- TR-008
- TR-57

### LEDs

- Power
- Network Status
- POTS
- ETH

### Mechanical Outdoor Units

- 9.75" W x 12" H x 4" D
- 3 lbs., 0.5 oz. weight

### Mechanical Indoor Units

- 9.3" W x 2.1" H x 6.7" D
- 1.25 lbs. weight

### Compliance

- FCC PART 15 Class B
- UL /CSA 60950
- RoHS 5 of 6 Compliant

## Interfaces

### Voice Interfaces

- 2 POTS lines
- RJ-11 and screw-down terminals
- 5 REN per line
- 10 REN per unit
- 1,000 ft. drop length

### Data Interfaces

- RJ-45 10/100/1000Base-T Ethernet ports
- Auto-sensing
- Auto MDI/MDIX

### RF Video Interfaces (ONT specific)

- F-Type connector
- 1610nm RF return path

### Video PON Optical Output (ONT specific)

- Output wavelength 1610+ 10nm
- Optical output Power 1 dBm min.

### Video—RF Output (ONT specific)

- **Impedance:** 75-ohms
- **Connector Type:** F-Type
- **Bandwidth:** 54MHz to 1GHz
- **RF Output Power:** 15dBmV/ch to 24.5dBmV/ch
- **RF Output Tilt:** 2dB to 7dB from 54 to 870MHz
- **Channel Loading:** up to 82 (Analog), up to 200 (Digital)
- **CNR:** 46dB min
- **CSO:** -56dBc max
- **CTB:** -56dBc max

### HPNA Interface (ONT specific)

- HPNA 3.1 compliant

## Power Connections Battery Backup

- 12 VDC (nominal) from external battery backup/power supply
- 5-wire battery backup/power supply status signals
- Screw-down terminal

## Power Connections Indoor AC

- 12 VDC external power supply connects to 120 VAC source
- External power supply provided with appropriate
- Indoor ONT models

## Management

- Remote management through SNMP and TL1 to Total Access 5000 GPON OLT
- Ethernet interface on Total Access 5000 for IP management access
- Craft interface on Total Access 5000 for VT100 management access
- OMCI between ONT and OLT
- AOS statistics and debug capabilities

## Environmental Outdoor

- **Operating Temperature:** -40°C to +65°C
- **Storage Temperature:** -40°C to +85°C
- **Relative Humidity:** Up to 95%, non-condensing

## Environmental Indoor

- **Operating Temperature:** 0°C to 40°C
- **Storage Temperature:** -20°C to +70°C
- **Relative Humidity:** Up to 95%, non-condensing

## Optics

- Class B+ compliant as specified in G.984.2
- Up to 30km reach with 32x split
- SC/APC for GPON uplink

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## Enclosures for Outdoor Units

- Corning OptiTap™ mounting for pre-terminated fiber cable
- Slack storage tray
- Wind-driven rain protection

## Packet-based Voice Resources

- CODECs
- G.711-64k PCM
- G.729a-8k CS-ACELP
- G.168 Echo Cancellation

## Media Stream

- RTP/UDP/IP (RFC 3550)
- RTP payload for DTMF digits (RFC 2833)
- SDP (RFC 2327)

## Tone Services

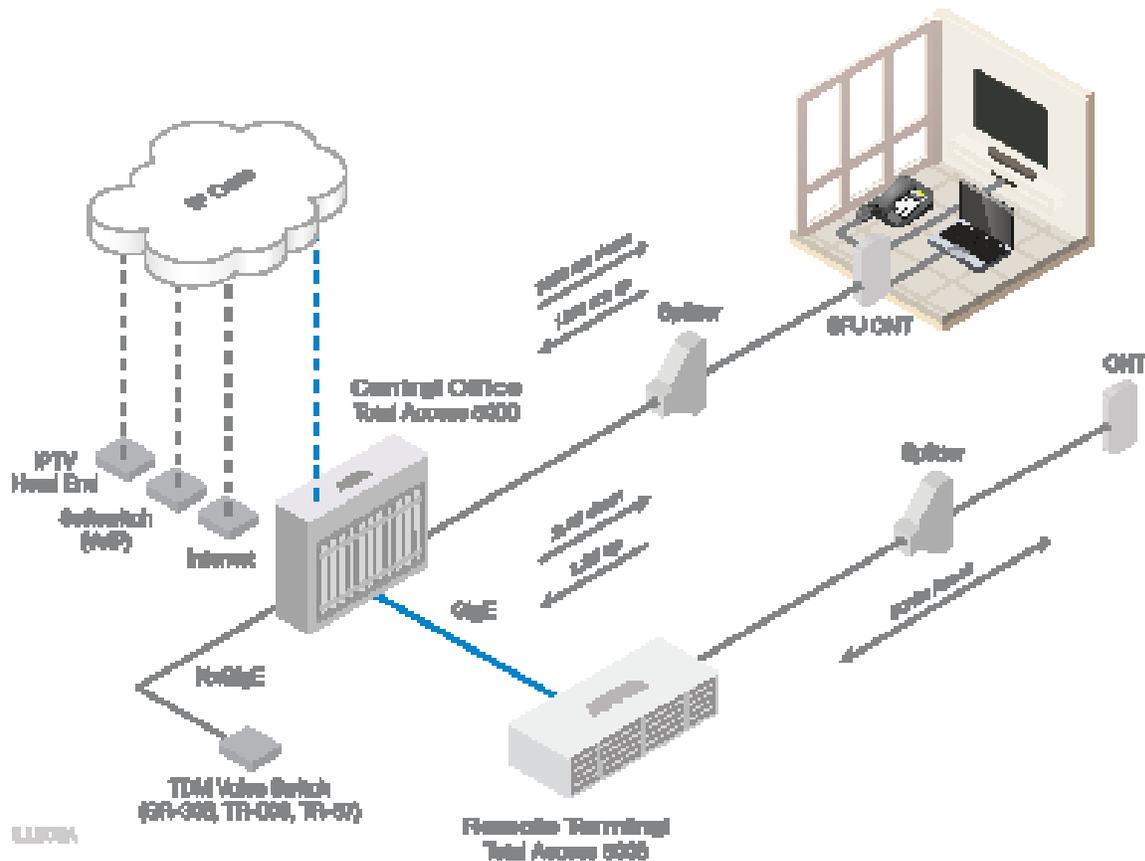
- Local DTMF Detection
- Local Tone Generation
- Dial tone
- Busy
- Call Waiting
- Alternate Call Waiting
- Receiver Off Hook
- Ringing
- Distinctive Ring

## Calling Feature Support

(varies with feature server/gateway)

- Caller ID
- Name and Number (MDMF, SDMF)
- Call Waiting IAD
- Voice Mail
- Stutter dialtone
- Visual Message Waiting Indicator (VMWI)
- Call Hold
- Call Forward
- Busy Line
- No Answer
- Call Transfer
- Blind, Attended
- Call Waiting
- Distinctive Ring
- Do Not Disturb
- Three-way Calling
- Call Return
- Speed Dial
- 3-way Conferencing (3WC)





## Fiber To The Premises (FTTP)

ADTRAN Total Access 5000 Multiservice Access and Aggregation Platform enables multiplay service delivery over an all Ethernet access platform capable of delivering FSAN-compliant GPON. OLT modules can be installed in any access slot in the Total Access 5000 enabling FTTP service delivery. Services are delivered over a single fiber up to 30km from a central office or remote terminal, providing 2.4Gb of bandwidth over the PON. The ADTRAN OLT is completely ITU-T G.984 standards-compliant and offers unprecedented bandwidth per subscriber.

The Total Access Series ONTs work seamlessly with ADTRAN Total Access 5000 Series Multiservice Access and Aggregation Platform. With its Ethernet architecture, the Total Access 5000 allows carriers to increase bandwidth while offering differentiated capabilities. Coupled with Total Access Series ONTs, this provides an end-to-end GPON deployment strategy that is supported by a common management solution.

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## Ordering Information

Indoor ONTs							
ONT Model	Part Number	Application	POTS	GigE Ports	HPNA	RF Video	Battery Backup/UPS
Total Access 324	1287735G1	SFU/Indoor	2	4	—	—	No, AC only
Total Access 324 w/UPS Connector	1287735G2	SFU/Indoor	2	4	—	—	Yes
Total Access 334	1287736G1	SFU/Indoor	2	4	—	1	No, AC only
Total Access 334 w/UPS Connector	1287736G2	SFU/Indoor	2	4	—	1	Yes

Outdoor ONTs							
ONT Model	Housing	Part Number	Application	POTS	GigE Ports	HPNA	RF Video
Total Access 351	Splice	4287701G2	SFU	2	1	—	—
Total Access 352	Splice	4287702G2	SFU	2	2	—	—
Total Access 352	Opti-tap	4287702G3	SFU	2	2	—	—
Total Access 352H	Splice	4287702G4	SFU	2	2	1	—
Total Access 362	Splice	4287712G12	SFU	2	2	—	1
Total Access 362	Opti-tap	4287712G13	SFU	2	2	—	1
Total Access 362H	Splice	4287712G14	SFU	2	4	1	1
Total Access 362R	Splice	4287715G12	SFU	2	2	—	1 (w/RF return)

ONT Cartridge Only (No Housing)	Part Number	SFU Housing and Spare Kits	Part Number
Total Access 351, 2ND GEN	1287701G1	Total Access 350 ONT NID HSG SPLICE	1187770G1
Total Access 352, 2ND GEN	1287702G1	Total Access 350 ONT NID HSG OPTITAP	1187771G1
Total Access 352H, 2ND GEN	1287702G3	Total Access 350 ONT Slack Storage Unit	1187772G1
Total Access 362, 2ND GEN	1287712G1	Total Access 300 SFU Spares Kit, Qty 5	1187700G1
Total Access 362H, 2ND GEN	1287712G3	ONT UPS, GPON	1187731G1
Total Access 362R 2ND GEN	1287715G1	GPON UPS Cable, 50 FT	1187732G1
Total Access 324	1287735G1		
Total Access 324 W/UPS CONN	1287735G2		
Total Access 334	1287736G1		
Total Access 334 W/UPS CONN	1287736G2		
Total Access 364	1287713G1		

MDU Housing Details	Part Number
MDU UPS, GPON	1187733G1
GPON MDU SPLITTER	1187734G1
ONT INSTALLATION ACC KIT	1187736G1
Total Access 380 MDU, SPLICE	1187773G1



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