

Active Ethernet ONT Series



Total Access 324E, Total Access 354E, and Total Access 372E Optical Network Terminal (ONT) Devices

Product Features

- Environmentally hardened for indoor and outdoor deployments
- Supports voice, video and data
- VoIP using SIP or MGCP
- Traditional voice using GR-303, TR-008, or TR-57
- 10/100/1000 Base-T Ethernet Port(s)
- IPTV video support
- Traffic management through priority queuing, scheduling, policing and traffic shaping
- Fiber cable management
- QoS with four traffic classes as per IEEE 802.1p
- Full IEEE 802.1Q VLAN ID processing per port
- Supports Transparent LAN Services (TLS)
- Supports SNMP
- Supported by AOE

The increasing popularity of bandwidth intensive applications has driven the demand for fiber access. To meet the increasing demands related to bandwidth, Active Ethernet is now a popular standards-based deployment option for fiber media from the Central Office (CO) to the customer premises and is the preferred technology choice of many service providers around the world for FTTH applications. ADTRAN's Active Ethernet ONTs provide carriers with a consistent and common approach for triple play service delivery to residential and business customers alike. This technology allows carriers to deliver traditional telephone services—Plain Old Telephone Services (POTS), high-speed data, and video services over the public communications networks with a deployment method that used standard Ethernet frames, alleviating the need for a transition protocol.

ADTRAN's Total Access® Active Ethernet ONT series may be used in conjunction with the Total Access 5000 Multi-Service Access and Aggregation Platform to support pure Fiber to the Premises (FTTP) applications with Active Ethernet solutions from central office, remote terminal and remote node locations. The optical network consists of an Optical Line Terminal (OLT) located at the central office and ONTs located at the customer premises, all supported by a common management solution. To allow for the transmission of downstream and upstream traffic on one single fiber, different wavelengths are used for each direction. Downstream traffic uses 1490 nm, while upstream traffic is carried on 1310 nm. The ONT employs diplexers to separate wavelengths. The Active Ethernet ONTs support broadband data delivery, triple play (voice, video and data), legacy voice services (GR-303, TR-008, and TR-57), Next Gen Voice over IP (VoIP)—SIP and MGCP, and a number of options for fiber connectivity.

The Active Ethernet ONTs can support a variety of physical optical connections and speeds. For gigabit Ethernet speeds, the Active Ethernet ONT can support either the GigE 2-fiber SFP modules or GigE 1-fiber (Bi-directional) SFP modules. The distances offered by the ADTRAN solution for GigE allows

single, bi-directional fiber with 1490 nm transmit wavelengths to distances of 10, 20, 40, and 80 kilometers.

The Total Access Active Ethernet ONTs leverage the industry-leading converged voice and data functionality widely deployed in ADTRAN 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 softswitch vendors, as well as integrated statistics and tools that allow carriers to quickly and easily troubleshoot network configuration issues, as well as monitor performance.

Features of the Total Access Active Ethernet ONTs include box-in-box, weatherproof and access controlled construction with entry ports for fiber, power, ground, Ethernet and telephone. 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. 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 softswitch 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 Active Ethernet ONTs are powered by an external UPS. The AC-powered UPS provides a nominal 12 VDC to the ONT. Management of the Total Access Series ONTs is performed over OMCI. Outdoor ONTs are environmentally hardened for installation inside or outside a residence as a particular installation demands. The ONTs provide a wealth of benefits for carriers of all types, deploying broadband solutions including voice, data, video, and HDTV. An industry-leading warranty and best-in-class technical support make ADTRAN® Total Access FTTP solutions the best value on the market today.

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Product Specifications

Voice Support

VoIP Protocol

- SIP
- MGCP

Traditional Voice

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

LEDs

- Power
- Network Status
- POTS
- ETH
- DS1 (Total Access 372E)

Mechanical Outdoor Units

- 9.75 in. W x 12 in. H x 4 in. D (Outdoor units with housing)
- 3 lbs, 8 oz (with housing)

Mechanical Indoor Units

- 9.3 in. W x 2.1 in. H x 6.7 in. D
- Weight: 1.25 lbs

Compliance

- FCC PART 15 Class B
- UL/CSA 60950

Interfaces

Voice Interfaces

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

Data Interfaces

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

DS1 Interfaces

- PWE3

- RJ-45

Power Connections

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

Management

- Remote management through SNMP 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:** 32°F to 102°F (-40°C to +65°C)
- **Storage Temperature:** -4°F to 158°F (-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

SFP-based Optics

- 10, 20, 40, or 80 kilometers

Enclosures

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

ONT Model	Application	Telephony	Gigabit Ethernet	T1
Total Access 324E	SFU/Indoor	2	4	—
Total Access 354E	SFU/SBU	2	4	—
Total Access 372E	SBU	8	2	4

Packet-based Voice Resources

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

Media Stream

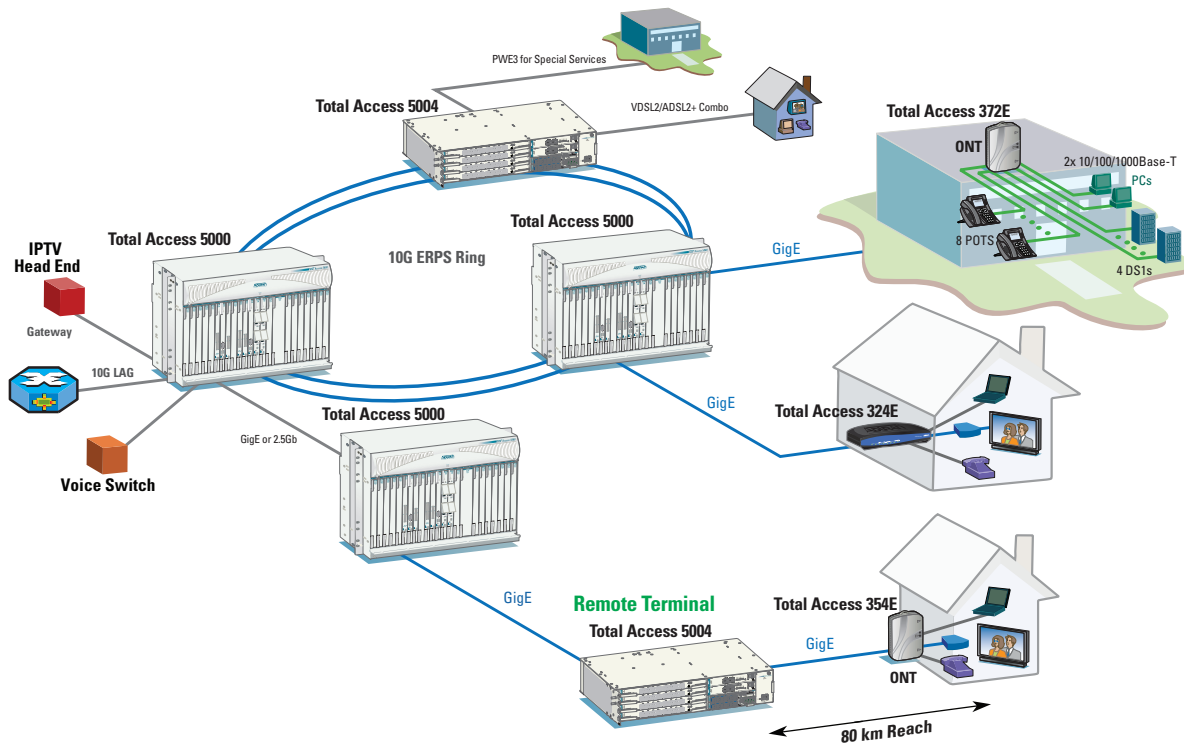
- RTP/UDP/IP (RFC 3550)
- RTP payload for DTMF digits (RFC 2833)
- SDP (RFC 2327)

Tone Services

- Local DTMF Detection
- Local Tone Generation
 - Dialtone
 - 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)



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Splice Tray Enclosure



Corning OptiTap™ Enclosure



Total Access 354E Back Panel

Ordering Information

Equipment	Part #
Active Ethernet ONTs	
Total Access 324E 2nd Gen.	1287737G1
Total Access 324E 2nd Gen. with UPS Connector	1287737G2
Total Access 354E Outdoor Single Family Unit	1287704G1
Total Access 372E Small Business Unit	1287723G1
Battery Backup Unit	
Total Access SFU ONT BBU	1187731G1
Total Access SBU ONT BBU	1187735G1
Housing and Spare Kits	
Total Access 354E	
Splice Housing	1187770G1
Opti-Tap Housing	1187771G1
Slack Storage Unit	1187772G1
Total Access 372E	
Splice Housing	1187775G1
Opti-Tap Housing	1187777G1
Total Access 300 SFU Spares Kit, Qty 5	1187700G1
Total Access 300 SBU Spares Kit, Qty 5	1187700G2

SFPs	
GigE, Bidirectional, Single Fiber (1310 nm Tx, 1490 nm Rx)	
10 km	1200487G10
20 km	1200487G20
40 km	1200487G40
80 km	1200487G80

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