



Total Access

5000

Carrier Ethernet Transport Optical Switch (ETOS-10)



## Benefits

- Eliminates multi-box complexity with converged access, aggregation, and packet optical transport via a single platform
- Premium service scalability with multi 10GE aggregation and transport with subtended rings
- Over 200 Gbps switching capacity in redundant mode
- Carrier-class resiliency and redundancy with cross slot Ethernet access and transport ring ERPS topology via ITU-T G.8032v2
- MEF compliant
- SLA Management via Ethernet OAM performance monitoring tool sets
- Extreme temperature hardened for street cabinet deployments

## Overview

**Systems at the core are increasingly more elaborate and complex and are being developed to handle even more data.** The requirements at the edge are entirely different; simplicity, multiservice, integration, and cost rule. Typically, only a few wavelengths are required to start. Space is often a premium, especially in huts and street cabinets. In some cases, the equipment needs to be environmentally and temperature hardened.

ADTRAN's Optical Networking Edge (ONE) delivers an innovative right-sized Packet Optical Solution integrated with access and transport. It is optimized for metro area and network edge transport. With ONE, service providers can easily scale their network for gigabit services, expand multiservice capability, enhance network resiliency and migrate from legacy SONET/SDH/TDM platforms to next-generation 10G fiber access platforms.

The ADTRAN® Total Access® 5000 offers a versatile Carrier Ethernet Transport Optical Switch (ETOS) as part of the Optical Networking Edge (ONE™) product line. The addition of the ETOS-10 module to the ADTRAN Total Access 5000 allows service providers the ability to deliver and aggregate both 1 GigE and 10 GigE carrier-grade services. Services which can then be transported on a per wavelength basis, using only a single fiber uplink to aggregate and transport multiple services whether for residential triple play, mobile backhaul or business Ethernet services. The core Ethernet features of this product include a flexible Ethernet processor and a leading density of 10 Gigabit Ethernet SFP+ standard or DWDM fiber interfaces. The ETOS-10 supports flexible traffic management; Ethernet flow mapping, prioritization, tagging; and versatile management options which are required to respond to the demand for premium services.

# TOTAL ACCESS 5000

---

## Product Specifications

### Front Panel Interfaces

- Eight 1/2.5/10 GigE Interfaces (SFP+ cages)
- Two 1/2.5 GigE Interfaces (SFP cages)
- Every port is either Network NNI or Customer NNI configurable
- 1GBASE-T/10GBASE-T (SFP/SFP+) supported for RJ45 copper connections
- Support either 10 Gbps or 1 Gbps ITU-T G.8032v2 Ethernet Ring Protection Switching (ERPS)

### Wavelength-Division Multiplexing Interfaces

- Dense WDM support (DWDM)
  - ◆ The High Speed (HS) 10 Gig SFP+ and the Mid Speed (MS) GE SFP interfaces support 44/88 DWDM wavelengths for interfacing the optical DWDM layer and delivery of high bit rate multi wavelengths network connection
- Coarse WDM support (CWDM)
  - ◆ The Mid Speed (MS) GE SFP interfaces support eight CWDM wavelengths for interfacing the optical WDM layer and delivery of multi wavelengths over a single fiber

### Physical Dimensions

- Standard TA5000 single slot width, standard height card
- Rack mountable solution in 19"(482.6mm) or 23" (584.2 mm) wide telecom racks

### Power Considerations

- Redundant, Dual A and B fed -48 VDC nominal
  - ◆ TA5000 chassis provides power connection
- Typical power consumption is 69W

### Environmental Hardening

- **Operating Temperature:** -40 F to 149 F (-40°C to 65 °C)  
(Note: Not all SFP+ options are currently extreme temperature rated)
- **Storage Temperature:** -40 F to 185 F (-40°C to 85 °C)
- **Relative Humidity:** 5% to 95%, non-condensing

### Regulatory Compliance

- FCC Part 15
- UL/CUL Listed
- Applicable International Safety Requirements
- Meets CE Marking Requirements
- Telcordia NEBS
- RoHS Compliant

### Ethernet Services Support

- Classification of Traffic based on:
  - ◆ Per UNI port, CE VLAN ID (C-Tag) and/or CE VLAN P-bits, DSCP fields
- Single stack VLAN and double stack VLANs (Q-in-Q)
  - ◆ Manipulation based on 802.1p and DSCP fields
  - ◆ STAG TPID provisioning supports 802.1ad and 802.1Q standards
  - ◆ Port based service support
- Services Scale and Flexibility
  - ◆ MEF 9, 14 compliant EPL, EVPL
  - ◆ MEF 9, 14 compliant ELAN
  - ◆ 8 Queues, Strict Priority and Weighted Round Robin Schedulers
  - ◆ Configurable EtherType and TPID for service flexibility
  - ◆ VLAN IDs 0 – 4095; EVC configurable in the range of 2–4094
  - ◆ MTU of 10k Jumbo frames
  - ◆ 32k active MAC address
  - ◆ 4k EVC per device
  - ◆ Up to 1536 ingress policers (trTCM) per device, CIR and EIR settings to 64kbps granularity, Configurable Burst through EBS, CBS settings
  - ◆ Egress shaping per port

# Carrier Ethernet Transport Optical Switch (ETOS-10)

---

## **Fault and Performance Management**

- IEEE 802.3ah Link OAM
- IEEE 802.1ag Connectivity Fault Management (CFM)
- ITU-T Y.1731 Layer 2 Performance Monitoring

## **Clock Synchronization/Recovery**

- Synchronous Ethernet defined by ITU-T G.8261/8262

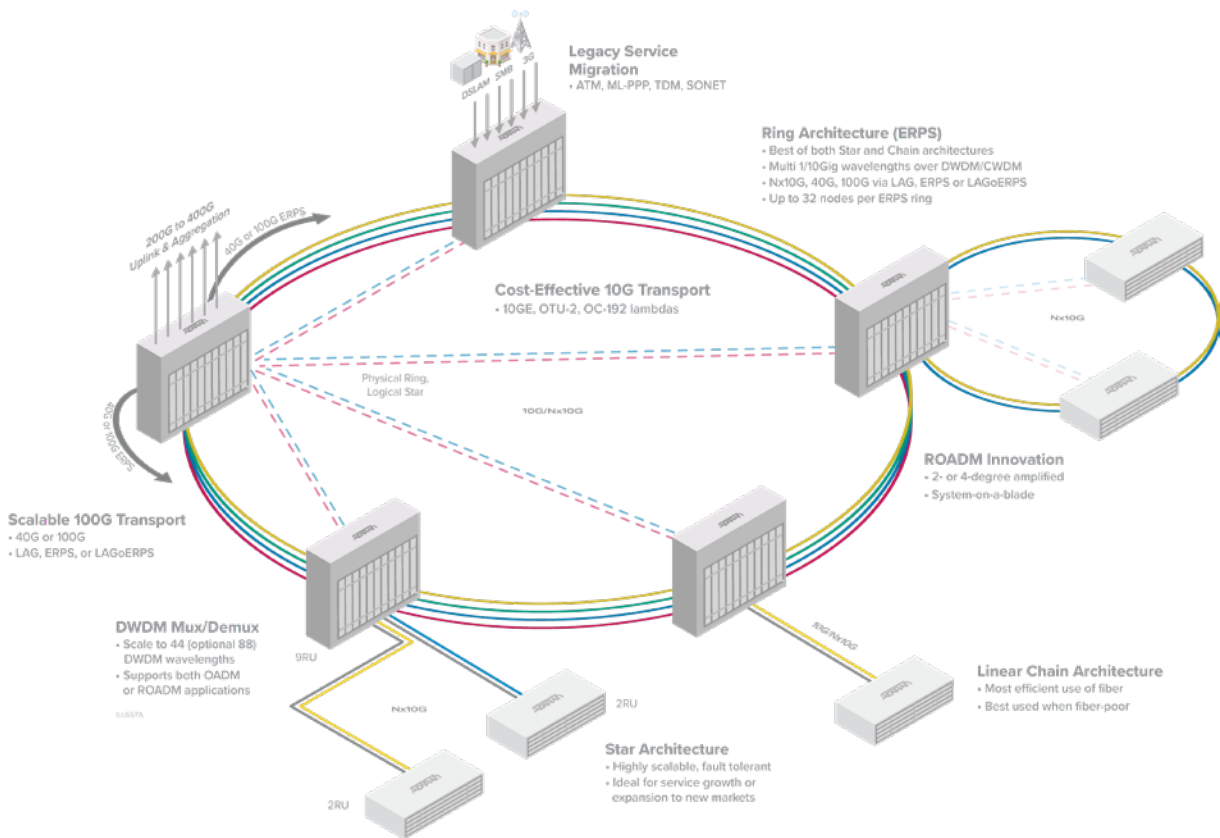
## **Facilities Protection**

- Ethernet Ring Protection Switching (ERPS) ITU-T G.8032v2
  - ◆ Fully ERPS-compliant failover times
- Link Aggregation Control Protocol (LACP)
- Equipment Redundancy Option
  - ◆ 50ms switchover based on fault detection or craft initiated command

## **Device Management**

- Common operational model (i.e. FCAPS) used for every Ethernet access method
- Standard TA5000 Management via the TA5000 SCM card and connections
- Telnet via an IP-based connection to SCM
  - ◆ Inband management on any VLAN from 2 to 4094
- AOE Network Management
- SNMPv1/2

# TOTAL ACCESS 5000



## Ordering Information

Equipment	Part No.
ONE ETOS-10 Module	1174130F2



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

**General Information**  
 800 9ADTRAN  
 256 963 8000  
[www.adtran.com/contactus](http://www.adtran.com/contactus)

**Canada—Montreal, Quebec**  
 +1 877 923 8726  
 +1 514 940 2888  
[sales.canada@adtran.com](mailto:sales.canada@adtran.com)

**Mexico and Central America**  
 +1 52 55 5280 0265 Mexico  
[sales.cala@adtran.com](mailto:sales.cala@adtran.com)

**1174130F2-8D**

July Copyright © 2020 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).



ISO 9001  
 ISO 14001  
 TL 9000

**EQUIPMENT  
FOR SALE**

# ADTRAN TA 5000 ONE ETOS-10 MODULE

**Part # 1174130F2**



The ADTRAN® Total Access® 5000 offers a versatile Carrier Ethernet Transport Optical Switch (ETOS) as part of the Optical Networking Edge (ONE™) product line. The addition of the ETOS-10 module to the ADTRAN Total Access 5000 allows service providers the ability to deliver and aggregate both 1 GigE and 10 GigE carrier-grade services. Services which can then be transported on a per wavelength basis, using only a single fiber uplink to aggregate and transport multiple services whether for residential triple play, mobile backhaul or business Ethernet services.

**ADTRAN®**

**Contact Today  
For Current Inventory**

Visit [TELECOMCAULIFFE.com](http://TELECOMCAULIFFE.com)

✓ REDUCING LEADTIMES    ✓ COST SAVINGS    ✓ LIFETIME WARRANTY    ✓ SUSTAINABLE SOLUTIONS

**PICS** | **TELECOMCAULIFFE**  
A PICS TELECOM TEAM

**BILL MCAULIFFE**  
*Director of Sales – National Accounts*

[TEAMMCAULIFFE@PICSTELECOM.COM](mailto:TEAMMCAULIFFE@PICSTELECOM.COM) | 585.746.6383 | [TELECOMCAULIFFE.COM](http://TELECOMCAULIFFE.COM)