OPTI-6100 Series
Optical Access
Multi-Service Provisioning Platform (MSPP)

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The OPTI-6100 is perfectly suited for delivery of high density DS1s or E1s, Ethernet over SONET, Ethernet over PDH, TDM over Pseudowire, multiple DS3/E3 delivery, customer premises service delivery, and mobile backhaul. Interworking with both SONET and SDH optical networks is achieved through the use of industry standard protocols and extensive field testing. Services are configured via plug-in units, which are provisioned according to the service needs of individual locations. This flexibility of multiple plug-in units eliminates the need for separate network elements and minimizes CAPEX and OPEX by delivering multiple services from one system. Most plug-in units may be optionally protected, minimizing possible service failures to either the network facilities or to end customers, and enabling “carrier class” reliability. System upgrades are easily made through in-service software downloads, through either local systems or ADTRAN’s Total Access Element Management System (EMS).

This robust platform offers carrier class reliability and is engineered to integrate easily into existing networks. The OPTI-6100 is interoperable with many other vendors’ Telcordia TR-253 and ITU-T G70x compliant multiplexers, and is fully compatible with the complete suite of ADTRAN multi-service access and aggregation platforms and NTUs. In addition to being reliable and interoperable, this platform is fully supported by ADTRAN’s legendary extended warranty, which is included with the purchase of the OPTI-6100.

This high-density platform delivers maximum performance in an efficient package. A high degree of integration results in reduction of inventory and operational expenses while supporting delivery of multiple network access services. In fact, the industry’s most diverse set of network interfaces (OC-3/STM-1 through OC-48) is offered from this SONET/SDH access network element. SONET and SDH operation are selectable by loading the appropriate software onto the individual modules. Where space is of primary concern, the OPTI-6100 SMX chassis requires less space, battery capacity, and power. It is a compact version of the OPTI-6100 MX chassis and uses all the same plug-in units. The reduced installed cost is further improved by decreased real estate costs and enhanced by the optional complete and self-contained wallmount system.

Featuring built-in versatility, this platform is perfect for a wide variety of applications, topologies, and locations. Metro Ethernet service delivery, mobile backhaul, customer premises services delivery (i.e., DS1/E1 and Ethernet delivery), high density, flexible cross connect provisioning, pseudowire conversion, and large enterprise applications are all supported. In addition, an expanding suite of applications is provided from the same platform facilitated by ADTRAN’s Total Access EMS. Single management platform for ADTRAN systems. Fault, configuration, accounting, performance, and security management functions.

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Service providers globally have identified ADTRAN’s OPTI-6100® as the best choice for optical access multi-service delivery and aggregation. This compact, yet high-density, full featured global platform enables the flexible delivery of high bandwidth fiber-based services, such as DS1/E1, DS3/E3/EC-1, Ethernet (10/100/1000), OC-3/STM-1, OC-12/STM-4 and OC-48.

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Converged business services
(TDM and Packet)

Lighting up existing dark fiber is a significant source of revenue for service providers. The high capacity DCS functionality facilitates this application by adding flexibility to data routing. Independent of the type service being delivered, from DS1s/E1s to high-speed Ethernet delivery, this chassis supports a wide variety of service offerings.

High voltage-colocated and lightning-prone Cell Sites—DS1/E1 delivery

Optimized for DS1/E1 and Ethernet delivery, this application is characterized by an architecture of low-speed (OC-3) survivable rings, connecting remote microwave radio sites. The integrated DCS functionality of the chassis performs grooming and routing of the ring traffic. To improve the transport quality, specific modifications have been made to the chassis to support direct physical connection to radio/microwave equipment reducing the number of active and passive network elements and interfaces. This application requires remote maintenance which is supported by an SNMP/T1 interface, which can be tailored to service providers’ specific operations infrastructure implementation. ADTRAN’s ESPM and SPPM modules provide the necessary for outside plant protection and powering for DS1/E1 interfaces.

SONET/SDH Ring/Term/Subtending/Cell Sites/OSP Cabs (mobile backhaul)

High Density cross connect and grooming
(for wireless-microwave and ADM applications)

The OPTI-6100 is an ideal solution for microwave-based networks. It has the ability to provide for any-to-any cross connect. For example, in an OC-3 radio system, any DS1 from any DS3 may be dropped and added at any location.

Converged business services
(TM and Packet)

Through the utilization of next-generation SONET/SDH technology, the OPTI-6100 provides the ability to combine traditional TDM services with emerging packet-based services within the same compact network element.
High voltage—colocated and lightning-prone Cell Sites—DS1/E1 delivery

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ADTRAN's Total Access Element Management System (EMS) supports the full suite of ADTRAN Total Access products, including the OPTI-6100 (MX and SMX Chassis). Total Access EMS is an all-Java application that provides configuration, performance, network assurance, and provisioning functions for ADTRAN's systems. The OPTI-6100 is manageable in both IP and OSI domains. Both TL-1 and SNMP interfaces are supported and the craft menus enable easier, quicker operations. The DCC implementation facilitates the communication of alarms, maintenance information, control functions, and administration capabilities back to the central operations office.

ADTRAN makes available TL-1 commands and SNMP MIBs for customer use in supporting the OPTI-6100 via third-party OSS systems.

<table>
<thead>
<tr>
<th>OPTI-6100 Flexibility At-A-Glance</th>
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<tbody>
<tr>
<td><strong>SONET</strong></td>
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<tr>
<td><strong>Tributary (Customer) Interfaces</strong></td>
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<tr>
<td>MX</td>
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**Mounting Options**
- Rackmount
- Wallmount or Rackmount

**Dimensions**
- Rackmount: 3.5 in. H x 17.5 in. W x 11.5 in. D
- Wallmount or Rackmount: 3.5 in. H x 6.5 in. W x 11.5 in. D
- Rackmount: 19 in. H x 445 mm W x 250 mm D
- Wallmount or Rackmount: 19 in. H x 278 mm W x 293 mm D

**Optionally Protected Low-Speed Interfaces**
- DS1, DS3/EC1, OC-3, OC-12
- E1 and DS3

**Network Interfaces**
- OC-3, OC-12, OC-48
- STM1, STM4

**Optical Redundancy**
- 1+1 (SONET APS or UPSR)
- 1+1 (Linear MSP or SNCP)

**Topoogy**
- UPSR ADM ring, OC-3/12/OC-48
- SNCP ADM ring, STM-1/4 Architecture
- Up to 68 km using 1310/1550 nm, one or two fiber
- Subtended off a GR-253 compliant SONET ADM

**Range**
- UPSR ADM ring, OC-3/12/OC-48
- SNCP ADM ring, STM-1/4 Architecture

**Manageability**
- DCC within the SONET framework
- DCC with the TMN framework

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**Building out/upgrading legacy SONET/SDH rings**

Through its ability to interoperate with legacy gateway network element (GNE) nodes in existing SONET/SDH networks, the OPTI-6100 has the ability to provide services as a natural evolution to an installed ring network.

The OPTI-6100, through its extended environmental performance, enables network operators to deploy services in rugged outside plant environments. Protection and powering modules are available to provide for interface to OSP facilities for DS1/ETs and to power remote NIUs when needed.

**OPTI-6100 Cabinet and Wallmount Solutions**

Northbound Interface
- SONET/SDH Ring
- Remote Site

Central Office
- OPTI-6100 (MX)
- Customer Site
- Ethernet (10/100)
- DS1/EC1
- DS3/EC1

**OPTI-6100 Cabinet and Wallmount Solutions**

- DC-3/10/12/16
- Variety of capacities
- Wall, pad, and pole mounting
- Four tributary module slots
- DC-3/12-248
- Variety of capacities
- Wall, pad, and pole mounting
- Tilt-down access
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<th>MX</th>
<th>SDH</th>
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<tr>
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<td>84 DS1s</td>
<td>28 DS1s</td>
<td>63 E1s</td>
<td>21 E1s</td>
</tr>
<tr>
<td>12 DS3/1E1</td>
<td>6 DS3/1E1</td>
<td>12 OC-3s</td>
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<td></td>
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<tr>
<td>12 OC-12s</td>
<td>6 OC-12s</td>
<td>6 DS3 TRANSMUX</td>
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<td>48 Ethernet ports</td>
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**Optionally Protected Low-Speed Interfaces**

- DS1, DS3/E1, OC-3, OC-12
- E1 and DS3

**Network Interfaces**

- OC-3, OC-12, OC-48
- STM1, STM4

**Optional Redundancy**

- 1+1 (SONET APS or UPSR)
- 1+1 (Linear MSP or SNCP)

**Topology**

- UPSR ADM ring, OC-3/OC-12/OC-48
- SNCP ADM ring, STM-1/4 Architecture
- Up to 80 km using 1310/1550 nm, one or two fiber
- Subtended off a GR-253 compliant SONET ADM
- Subtended off an SDH compliant multiplexer
- STM-1/4 Architecture

**Range**

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- Subtended off an SDH compliant multiplexer
- STM-1/4 Architecture

**Manageability**

- DCI within the SONET framework
- DCI with the TMN framework

**OPTI-6100 Cabinet and Wallmount Solutions**

**OPTI-6100 Cabinet Solutions**

- DC-3/12/48
- Variety of capacities
- Wall, pad, and pole mounting

**OPTI-6100 Wallmount Enclosure**

- Tilt-down access
- Four tributary module slots
- OC-3/12