



## Alcatel 1603 SMX

### SONET Multi-Service Network Element



The Alcatel 1603 SMX is a multi-service SONET network element that provides reliability and interoperability. Designed for service providers requiring drop rates from DS1 to OC-12 and line rates up to OC-48, the Alcatel 1603 SMX brings low cost and high-density to the metro access market. With more than 5,000 systems deployed, the 1603 SMX is a solid and proven platform. Transport flexibility is demonstrated by assorted interfaces for deployment agility, full SONET standards compliance and up to 16 OC-3 single-shelf drop capability. Network efficiency increases with VT 1.5 or STS-1 level grooming and STS level bandwidth management across the entire OC-x payload. In addition, an M13 transmultiplexer provides DS3 to VT payload mapping.

The Alcatel 1603 SMX helps reduce network operating costs with easy in-service, in-shelf upgrades. Its reduced footprint features low power consumption to minimize operating costs. Simplified "point-and-click" network management and FTP downloads save time and effort. Alcatel patented Edge Management Gateway (EMG) functionality facilitates edge-device management by SNMP through the SONET DCC. Universal optical interfaces ensure ease of connectivity and reduces spares.

The Alcatel 1603 SMX features an architecture optimized for network security and reliability complemented by binary database-backup capability that allows rapid backup and

recovery. Its robust performance comes from full compliance with NEBS Level 3, GR-253 and GR-418 requirements and it is temperature hardened, allowing placement in unconditioned spaces.

The Alcatel 1603 SMX is backed by Alcatel's long standing reputation for building end-to-end, carrier-class solutions.

Call or visit us today at:  
1-800-ALCATEL or  
[www.alcatel.com](http://www.alcatel.com).

## Power

- ▼ Three load sharing power supplies (-48 vDC):
  - Input Power range:
    - 40 to -57 vDC
  - Power Consumption: 250 W (typical application)
  - Power and Ground Distribution:
    - 48 vDC with return, Signal and Frame ground
- ▼ Built-in fusing: (-48 vDC) and fuse failure alarm

## Mechanical Dimensions

- ▼ Main shelf Height: 14 in (35.56 cm, or 8 rack spaces)
- ▼ Facility Expansion Shelf Height (if required): 3.5 in (8.89 cm or 2 rack spaces)
- ▼ Depth: 12 in (30.48 cm)
- ▼ Width: 23 in (58.42 cm) channel or unequal flange
- ▼ Weight: 70 lbs. (31.81 kg), fully populated

## Interface Specifications

- ▼ UPSR, 2F-BLSR, Linear, Terminal, Linear Taper, Point-to-Point

## Optical

- ▼ Optical Line Rates
  - 155.52 Mbps (OC-3)
  - 622.08 Mbps (OC-12)
  - 2.49 Gbps (OC-48)
- ▼ Wavelength: 1310 nm or 1550 nm, excluding precision optics modules
- ▼ Optical Connectors: ST, SC, FC, and LC

## Asynchronous

- ▼ Asynchronous Line Rates:
  - 44.736 Mbps (DS-3)
  - 1.544 Mbps (DS-1)
- ▼ Maximum Distance to Cross-connect
  - STS-1, DS3: up to 450 ft., depending upon cable type
  - DS1: 655 ft. on 22AWG ABAM; 450 ft. on 26 AWG ABTM
- ▼ Electrical Connectors: STS-1, DS3: BNC, and DS1: Wire wrap

## Environmental

- ▼ Fully temperature hardened optics: -40° to +65°C (-40°F to +50°F)
- ▼ Operating Temperatures:
  - Without fans: -40°C to +50°C (-40°F to +122°F)
  - With fans: -40°C to +65°C (-40°F to +149°F)
- ▼ Storage Temperatures of -40°C to +85°C (-40°F to +185°F)

## Maintenance and Provisioning

- ▼ Provisioned and maintained through 1353 GEM Craft management system, a GUI application residing on an ordinary PC.
- ▼ 1 GHz Pentium III processor (733 MHz minimum)
- ▼ 512 MB RAM (256 MB for some network elements)
- ▼ 10 GB hard drive
- ▼ 10/100 Base T Fast Ethernet NIC
- ▼ CD-ROM drive
- ▼ Communication and Control Interfaces:
  - 12 External alarms and controls, 2 orderwire channels, office alarms, TBOS, RS-422, 802.3 LAN, 10Base2 or 10BaseT, Direct X.25
- ▼ Local and Express Orderwire
- ▼ Customer Definable Alarms and Controls (CDAC) and remote user Telemetry Byte-Oriented Serial (TBOS) interface

## System Specifications

- ▼ Timing: 1.544 Mbps sync, OC-3, OC-12, OC-48, or EC-1
- ▼ Sync Features: Holdover, Synchronization Messaging, Internal, Stratum 3 Stability, 4.6 ppm clock
- ▼ Transmission Delay: VT Groomed: 50 µs max, not VT Groomed: 25 µs max
- ▼ Switching Time: 50 ms maximum after detection of fault
- ▼ SMX surpasses Telcordia's GR-418 requirements and objectives specifications.
- ▼ Certifications: ISO 9001, BellCore CSQP, UL Listed, EMI, and NEBS LEVEL 3
- ▼ The SMX uses the standard OSI 7 layer stack to ensure interoperability and has been tested with SIF and Telcordia.
- ▼ Telcordia: Full GR-253 Compliance, GR-1377, DCC, TL1
- ▼ Remote Control Capability: SONET DCC, SML (DCC embedded in DS1), Edge Management Gateway (SNMP), FTP, Binary Database Backup

## Interface Capacities (per shelf)

### Line Side:

- ▼ OC-3/OC-3c, OC-12/OC-12c, OC-48, One active and one protect east, one active and one protect west

### Drop Side

- ▼ 10/100Base T: 16
- ▼ DS1: 112
- ▼ DS3/STS-1: 48
- ▼ OC-3/OC-3c: 16
- ▼ OC-12/OC-12c: 4