

# Alcatel-Lucent 1696 Metrospan

RELEASE 3.1

The Alcatel-Lucent 1696 Metrospan is a highly compact and flexible wavelength division multiplexing (WDM) platform designed for both metro-core and metro-access applications in metropolitan networks. The Alcatel-Lucent 1696 Metrospan provides a cost-optimized, managed platform that supports different services, network topologies and traffic matrices as well as protocol transparency. Supporting a wide range of data rates, the Alcatel-Lucent 1696 Metrospan facilitates the delivery of services in a variety of environments and applications. The platform scales quickly, thereby reducing time-to-market for new broadband services.



## Features

- Two available sizes, with 1 to 32 channels
- Coarse and dense WDM on the same platform
- Support for IP-router interconnection and new-service backhaul
- Support for small form-factor pluggable (SFP) and 10Gb/s form-factor pluggable (XFP) laser modules
- Gain equalization of individual wavelengths
- Forward error correction (FEC) technology
- Innovative aggregation capabilities

## Benefits

- Reduces operations and maintenance (O&M) complexity and cost structure
- Enables storage area network (SAN) extensions and high performance computing (HPC)
- Reduces time-to-market for new services
- Provides data-center protection and data sharing in campus networks
- Enables long-distance cooperation among public/private companies in multicampus networks
- Optimizes the use of leased dark fiber
- Allows metropolitan/national research networks to share IP and fiber channel (FC) connectivity
- Enables long-distance broadband transport networks



## Technical Specifications

- Optical add/drop multiplexing (OADM)/WDM network capabilities
- CWDM and DWDM technologies
- Topologies
  - Ring
  - Point-to-point
  - Star
  - Linear
  - Mesh
- 8 CWDM wavelengths per fiber
- 32 DWDM wavelengths per fiber
- Up to 16 nodes per ring
- Up to 600-km network circumference (no regeneration)
- Supports any combination of 2.5-b/s and 10-Gb/s line rates
- Operates on all fiber types
  - SMF-28
  - NZDSF
  - DSF
- Supports multiple rings within the same shelf
- Optional dispersion compensation modules

### Optical-Layer Intelligence

- Fully automatic channel-power equalization and monitoring

### Service Interfaces

- SONET
  - OC-3
  - OC-12
  - OC-48
  - OC-192
- SDH
  - STM-1
  - STM-4
  - STM-16
  - STM-64

- GigE, 10 GigE LAN and WAN
- SONET/SDH multiplexing
  - 4 x OC-3/STM-1
  - 4 x OC-12/STM-4
  - 4 x OC-48/STM-16
- Data multiplexing
  - 2 x GigE
  - 10 x GigE
- SAN
  - ESCON
  - FICON
  - FC
- Other protocols supported
  - ETR/CLO
  - Digital video: DVB-ASI, DV-SDI, HD-SDI
  - FE
  - FDDI
  - ATM
  - Any combination of the preceding protocols
- Plug-in modules
  - Black and white
  - CWDM
  - DWDM SFP
- Alien wavelengths
- Interoperable with SONET/SDH ADMs and optical cross connects (OXC), 2R and 3R transport mode

### Pay-As-You-Grow Scalability

- In-service network scalability without service disruption
- Optional egress and ingress broadband amplifiers
- Network planning, independent of traffic forecast

### Flexible Protection Options

- Flexible protection/restoration options based on wavelength service
- Diverse routed protection
- Optical-channel protection options
- 1 + 1 client protection
- Fiber-level facility protection

## Integrated SLA Support and Monitoring

- Proactive service management for wavelength services
- ITU-T G.709 frame
- Flexible service-level alarms

### Carrier-Class Availability

- Delivers 99.999% availability
- All cards hot-swappable
- Non-stop distributed, reliable and scalable software architecture

### Network Manager Value-Added Software Suite

- Full-featured OAM&P management functionality
- Network-management interfaces
  - Q3
  - Web
  - CLI
  - TL1
- Network-management access: 10/100Base-T with RJ-45 and BNC connector
- Craft interface: serial TIA/EIA-232 with DB9 connector
- Easy integration into existing OSS environments via:
  - SNMP
  - TL1
  - CORBA TMF 814
- Telcordia OSMINE support, including:
  - TIRKS
  - NMA
  - TRANSPORT

## Physical Dimensions

### Metrospan Shelf

- Height: 443 mm (17.4 in.)
- Width: 534 mm (21 in.)
- Depth: 270 mm (10.6 in.)

### Metrospan Compact Shelf

- Height: 132 mm (5.2 in.)
- Width: 444.5 mm (17.5 in.)
- Depth: 271.8 mm (10.7 in.)

### Optical Amplifier

- Single-stage and dual-stage, erbium doped silica amplifier
- Mid-stage access (double stage one) allows FIX OADM or DCU
- Wavelength range: 1,530 nm to 1,560 nm
- Output power: +17 dBm

### Optical Supervisory Channel

- Bit rate: 4/100 Mb/s
- Output wavelength: 1,510 nm

### Operating Environment

- Power
  - 48 V DC or 115/240 V AC (with external converter)
  - 400 W/1,600 W per shelf
- Operating temperature: 0°C to 50°C (32°F to 122°F)
- Shock/vibration: Zone 4 earthquake
- Humidity: 5% to 95%