

The Alcatel 7270 Multiservice Concentrator (MSC), formerly the 36177 Multiservices Platform*, seamlessly extends broadband core network capabilities and services to the customer premises. Based on the technology of the industry-leading Alcatel 7470 Multiservice Platform (MSP), formerly the 36170 Multiservices Switch*, the 7270 can be installed as either customer-located or remote central office equipment. By bringing ATM adaptation and traffic consolidation to the network edge, the platform significantly reduces network costs and simplifies network operations, administration and maintenance (OAM).

The 7270 Multiservice Concentrator aligns completely with the system features, traffic management and call control capabilities of the 7470. The platform is manageable by the Alcatel suite of network and service management products, including the Alcatel 5620 Network Manager (NM), formerly the 46020 Network Manager*. Importantly, the platform offers a significant cost advantage to those already using the 7470 and the 5620 in their networks by reducing training costs and increasing speed to market.



Powerful, flexible
multiservice access
for customer-located
or remote central
office installations



Target applications for the 7270 include:

- ▼ consolidation of access services such as leased lines, public branch exchange (PBX) interconnection, voice compression, local area network (LAN) interconnection, frame relay and cell relay over the asynchronous transfer mode (ATM) transport network
- ▼ cost-effective remote deployment at business services points of presence (POPs)

Architecture and physical configuration

The 7270 has been carefully designed and packaged to ensure easy installation, commissioning and maintenance in space-limited environments. Two models are available: a six-slot chassis, ideal for use in an enterprise configuration, and an eight-slot chassis, suitable for carrier use. Both are available as a desktop unit, or as a 48 cm (19 in.) or 58 cm (23 in.) rack-mount unit.

In a non-redundant system, one slot contains the integrated Control/Switching Hub card and the remaining slots are available as universal card slots (UCSs). In a redundant system, two slots are used for the Control/ Switching Hub cards. All Control, Switching Hub and interface cards are common to both the six-slot and eight-slot 7270.

The system can be configured as a non-redundant unit in situations where cost is a priority or as a fully redundant unit in situations where a higher fault tolerance is needed. For redundancy on the network connection link (aggregate) 1+1 automatic protection switching is supported on the OC-3/ STM-1 cell relay interface cards.

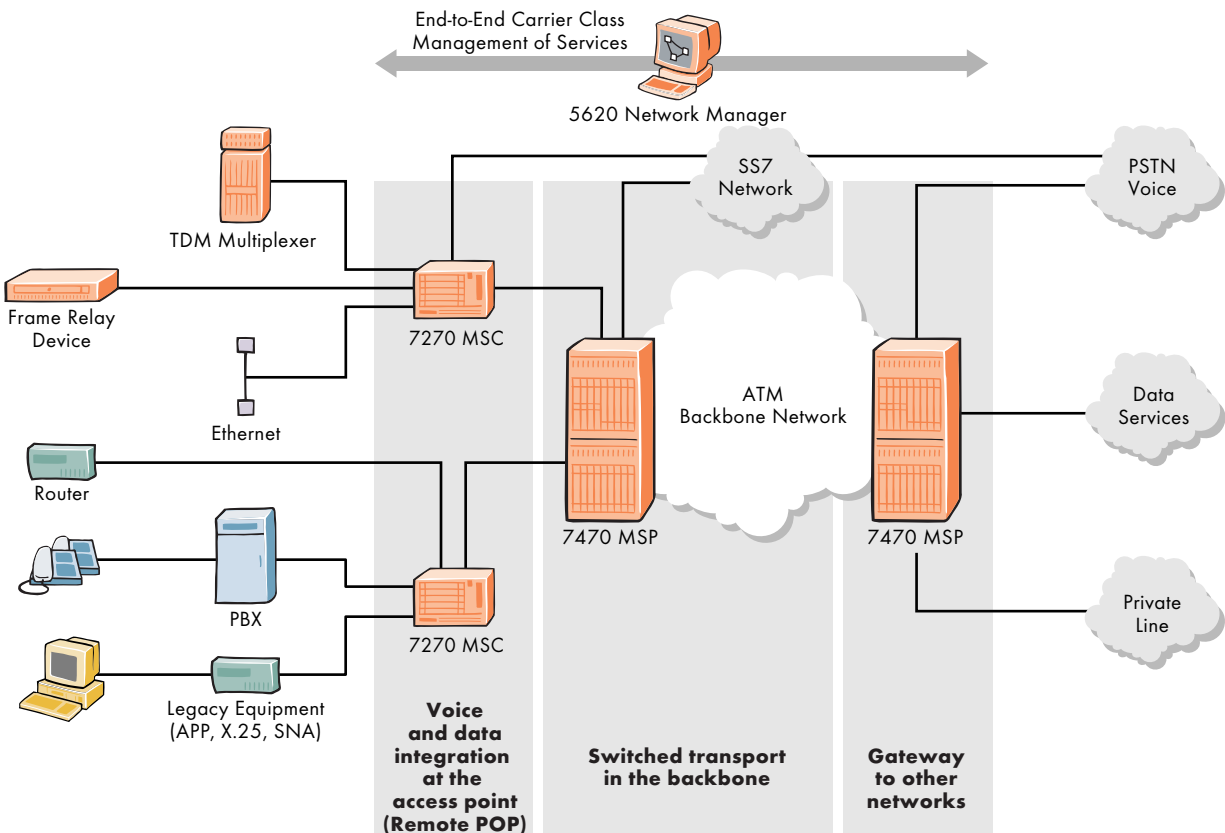
The 7270 uses a mid-plane design in which the card slots are split into two functions. The main cards, which plug in from the front, provide the core functionality. The I/O modules, which plug in from the back, provide the physical interface breakout.

All of the main cards can be replaced or upgraded without disrupting any of the system cabling. Furthermore, 1+1 redundancy on the OC-3/STM-1 interfaces allows these cards to be replaced or upgraded without any disruption to service. Cards also include operational and diagnostic LED displays to help maintenance personnel gauge the status of the system at a glance.

Each power supply provides sufficient power for three slots – one supply will power three slots, two supplies are sufficient for six slots, etc. Adding additional supplies beyond this requirement provides the 7270 with power supply redundancy.

All cards and modules within the platform are field-replaceable, including fans and power supplies.

▼ The 7270 provides multiservice aggregation, and aligns with the features and services provided by the 7470 Multiservice Platform.



Switched and permanent virtual circuits

The 7270 Multiservice Concentrator supports point-to-point and point-to-multipoint connections for permanent virtual circuits (PVCs), soft PVCs (SPVCs) and switched virtual circuits (SVCs). SPVCs are permanent connections that use signaling resources to set up and take down network connections, providing faster rerouting while maintaining interoperability with standard PVCs. SVCs are established on an as-needed basis to allow dynamic bandwidth allocation.

Universal services

The 7270 is ideal for consolidating different traffic types, including switched voice, frame relay, private line, Ethernet and cell relay. It has the necessary system, traffic management, and network management features for large-scale network services, based on a future-proof ATM infrastructure.

Traffic management

The 7270 provides traffic management and congestion control features that are fully compliant with ATM Forum Traffic Management Specification, version 4.0 (TM4). These include an industry-leading connection admission control feature for determining whether connection requests can be accepted. Alcatel switches support best-in-class ATM traffic management functionality to assure guaranteed quality of service (QoS) per virtual circuit (VC) or virtual path (VP), including: cell loss priority, early packet discard (EPD) and partial packet discard (PPD). The 7270 Multiservice Concentrator provides extensive traffic shaping and policing through a fully programmable usage parameter control (UPC) feature, which complies with the TM4 industry standard.

Administration and maintenance

The 7270 supports a full spectrum of fault management features, including connectivity verification and alarm surveillance.

Software upgrades can easily be applied locally or remotely through the network using the industry-standard file transfer protocol (FTP).

Network management

The industry-leading family of Alcatel network and service management products, including the powerful 5620 Network Manager, manages the 7270.

The 5620 provides element and network management functions, including alarm monitoring and card configuration, as well as network event monitoring and statistics collection.

In addition, the 5620 provides VP/VC connection management, including resource allocation, connectivity verification, and fault detection with associated rerouting.

If the platform or one of its network connections experiences a problem, details of the condition will be forwarded to the 5620, which has been installed at a central monitoring location.

The 5620 controls trunks and can display network maps and overlay links by traffic class for ease of configuration and monitoring. It also supports partitioning for independent virtual private network (VPN) configuration and management.

Node management

The node management terminal interface (NMTI) can be used locally or remotely through a Telnet session. This craft interface can be used for configuration and diagnostics, as well as for receiving and/or responding to alarms.

Technical Summary

Features List

- ▼ Fully redundant switching fabric (optional)
- ▼ Fully redundant control card (optional)
- ▼ Switching throughput of 800 Mb/s
- ▼ 6-slot model: 5 UCSs (non-redundant system) or 4 UCSs (redundant system)
- 8-slot model: 7 UCSs (non-redundant system) or 6 UCSs (redundant system)
- ▼ Point-to-point and point-to-multipoint connections
- ▼ SVCs, SPVCs, PVCs
- ▼ Integrated 1+1 Automatic Protection Switching (APS) for OC-3 and STM-1 interfaces
- ▼ Ethernet or serial management port

Traffic Management

- ▼ As per Bellcore GR-001110-CORE, GR-001248-CORE, ATM Forum TM4 and ITU I.371
- ▼ Service categories: CBR, RT-VBR, NRT-VBR, ABR, UBR
- ▼ EPD and PPD support
- ▼ Per VC and VP aggregation, traffic shaping and UPC policing
- ▼ Per VC queuing
- ▼ Virtual source (VS)/virtual destination (VD) support for ABR
- ▼ CLP bit support

Signaling/SVCs

- ▼ ITU Q.2931, Q.2961
- ▼ ATM Forum UNI v.3.1, UNI v.4.0, PNNI v.1.0, B-ICI v.2.0 (B-ISUP)
- ▼ Q.931 to PNNI or AINI interworking
- ▼ QSIG to PNNI or AINI interworking

Cell Relay

- ▼ OC-3/STM-1 ATM UNI/NNI card
- ▼ Triple-port DS3/E3
- ▼ Octal T1/E1 inverse multiplexed ATM (IMA)
- ▼ All interfaces, except T1/E1 cell relay, support traffic shaping

Frame Relay

- ▼ 4-port channelized T1/E1 frame relay card
- ▼ 16-port programmable serial interface frame relay card supporting V.35, V.28 and X.21 interface types
- ▼ Frame relay/ATM service interworking – FRF.8
- ▼ Frame relay/ATM network interworking – FRF.5
- ▼ HDLC frame forwarding for transport of legacy protocols (PPP, X.25, SNA)

Alcatel, the Alcatel logo, MainStreet and Newbridge are registered trademarks of Alcatel. All other trademarks are the property of their respective owners. Alcatel assumes no responsibility for the accuracy of the information presented, which is subject to change without notice.

© 2000 Alcatel. All rights reserved. 10565

3CL 00469 0014 TQZCA Ed.02

Private Line

- ▼ 8-port T1/E1 circuit emulation card
- ▼ Up to 8 unstructured ports per card
- ▼ Up to 248 structured 64 kb/s channels per card
- ▼ PVC, SPVC and SVC connection support
- ▼ Single-port DS3 circuit emulation card channelized to the DS1 level

Switched Voice

- ▼ Quad T1/E1 voice over ATM services card with up to 120 voice channels per card
- ▼ G.711, G.726/G.727 (ADPCM), G.729A/B (CS-A-CELP) compressed voice
- ▼ Silence suppression, integrated echo cancellation, jitter management
- ▼ Voice over frame relay service interworking – FRF.11
- ▼ Fax/modem detection and transport
- ▼ SVC interworking for call-by-call setup
- ▼ Q.931 (NI2, ETSI) and QSIG signaling

Ethernet

- ▼ 4-port 10/100 Mb/s card
- ▼ 10/100BaseTX I/O card with 4 RJ-45 connectors
- ▼ 100BaseFX SMF/MMF I/O cards with 4 duplex SC connectors
- ▼ Self-learning LAN bridge
- ▼ RFC 1483 Ethernet over ATM encapsulation
- ▼ Spanning Tree Protocol

Synchronization

- ▼ External BITS (Building Integrated Timing Supply) 1.544 Mb/s or G.703 2.048 Mb/s input and output
- ▼ Line derived synchronization input
- ▼ Stratum 3 compliant

Maintenance

- ▼ Dual bank flash for fail-safe software upgrade
- ▼ Alarm logs and remote alarm signaling
- ▼ Performance monitoring with threshold crossing alerts
- ▼ ATM layer OAM (F4/F5) support

- ▼ Operational and diagnostic LED displays
- ▼ Circuit, equipment and line loopbacks
- ▼ Network inventory support from 5620

Physical Description

Eight-slot unit:

- ▼ Height: 44 cm (17.5 in.) (10 VU)
- ▼ Width: 48 cm (19 in.)
- ▼ Depth: 45.5 cm (18 in.)
- ▼ 58 cm (23 in.) or 48 cm (19 in.) rack-mount unit, or desktop unit

Six-slot unit:

- ▼ Height: 26.5 cm (10.5 in.) (6 VU)
- ▼ Width: 48 cm (19 in.)
- ▼ Depth: 45.5 cm (18 in.)
- ▼ 58 cm (23 in.) or 48 cm (19 in.) rack-mount unit or desktop unit

Operating Environment

- ▼ 0° to 40° C (32° to 104° F)
- ▼ 5% to 95% relative humidity, noncondensing
- ▼ 60 m (197 ft.) below sea level to 1,800 m (5,905 ft.) above sea level

Product Safety

- ▼ CSA C22.2 No. 950, UL1950, EN 60950

EMC Standards

- ▼ Part 15, Industry Canada CES-003, EN 55022, EN 50082-1

Network Attachment

- ▼ FCC Part 68, CTR 12, Industry Canada CS-03

Power

- ▼ Autoranging 100/240 V AC power supply
- ▼ 48 V/60 V DC power supply
- ▼ Maximum power consumption:
 - 6-Slot: 450 W
 - 8-Slot: 750 W
- ▼ Typical power consumption: 250 W
- ▼ Optional n + 1 redundant power supply
- ▼ Active load sharing between supplies

* This product belonged to the Newbridge family. Newbridge was acquired by Alcatel in May 2000.

