Alcatel 7270 MSC

Multiservice Concentrator | Release 6.0

The Alcatel 7270 Multiservice Concentrator (MSC) is a carrier class edge services switch that adapts, aggregates and implements services for ATM/IP/MPLS converged networks. Providing advanced traffic management on a standards-based platform, it enables the profitable delivery of differentiated services for managed IP/MPLS, video, ATM, frame relay and private line applications.

In addition to its service delivery role, the fully managed Alcatel 7270 MSC allows carriers to optimize their network infrastructure by providing broadband aggregation for 2G/2.5G/3G mobile, fixed wireless and DSL traffic.

There are two variants of the Alcatel 7270 MSC, a 6-slot version suited for customer located applications, and an 8-slot variant suited for carrier infrastructure applications. All control, switching hub and interface cards are common to both the 6-slot and 8-slot Alcatel 7270 MSC.

Ensuring profitable service delivery with a scalable, flexible and reliable platform

Technical Summary

Cell Relay Services

- High performance virtual circuit (VC) and virtual path (VP) switched virtual connections (SVCs), soft permanent virtual circuits (S-PVCs), and permanent virtual circuits (PVCs) capabilities
- A wide range of interface speeds from DS0 to OC-3/STM-1
- Supports UNI 3.1, UNI 4.0, and PNNI
- 1+1 automatic protection switching for all optical interfaces
- Standard service interworking functions for connections that terminate on frame relay or circuit emulation endpoints

Frame Relay Services

- All frame relay interfaces are configurable for UNI, NNI, PPP or transparent HDLC
- Frame relay/ATM network interworking (FRF.5) and service interworking (FRF.8)
- Four QoS levels for differentiated frame relay services
- Supports PVCs and frame relay SVCs
- Supports IP-aware frame relay
- HDLC frame forwarding for transport of legacy protocols (PPP, X.25, SNA)

Circuit Emulation (Private Line) Services

- Uses circuit emulation card to transport private lines and other TDM traffic over a broadband infrastructure
- Consolidates T1 or E1 PBX trunks and hybrid circuits over a broadband infrastructure
- Supports point-to-point or point-to-multipoint services
- Provides integrated DCS functionality

Voice Services

- Proxy signaling interface to an external softswitch
- Compressed voice (G.729A, G.726 (32K ADPCM), G.711)
- QSIG and N-ISDN signaling for PBX networking
- Integral echo cancellation and silence suppression

IP Services

- IP routing and forwarding capabilities
- Differentiated IP CoS to subscribers for all service types
- Dynamic OSPFv2 routing
- Supports IP-VPNs
- Up to 768 virtual routers
- VLAN support (802.1Q)
- VC to VC forwarding
- IP over ATM, FR or Ethernet
- Supports transparent LANS, and remote LAN segments
- Self-learning LAN bridge
- Spanning Tree protocol
- RFC 1483 Ethernet over ATM encapsulation

Switched Services

- SVCs/SVPs
- S-PVCs /soft permanent virtual paths (SPVPs)
- ATM Forum UNI v.3.1, UNI v.4.0, PNNI v.1.0, AINI v.1.0, B-ICI v.2.0
- ITU-T Q.2931 and Q.2961
- ATM Forum ILMI 4.0
- Dynamic call routing using PNNI
- PNNI hierarchy (3 levels)
  SPVC hitless connection moves
- ATM Forum
  - PNNI path and connection trace
  - Network call correlation identifier (NCCI)
  - Call processing priorities for signaled connections
- Signaling congestion avoidance
- Switched services virtual backbone network

General

- Fully redundant, non-blocking switching fabric
- Switching throughput of 800 Mb/s
- Permanent and switched virtual ATM connections
- Supports S-PVCs for rapid and transparent rerouting around points of failure
- Standards-compliant ATM layer processing
- Full VPI/VCI range support at UNI, NNI
- Point-to-point and point-to-multipoint connections
- Ethernet or serial management port
- Round trip delay measurements

Traffic Management

- As per Telcordia (Bellcore) GR-1110-CORE, GR-1248-CORE, ATM Forum TM 4.0 and ITU-T I.371; VSVD and full ABR as per ATM Forum TM 4.0, including ER marking
- Nine QoS classes: CBR, 2 x rt-VBR, 3 x nrt-VBR, ABR, UBR and UBR+
- Efficient support of real time traffic (CBR, rt-VBR)
- Statistical multiplexing of non real time and real time traffic
- Ingress and egress traffic shaping
- Per-VC queuing and shaping
- Virtual path aggregation
- Ability to combine ingress policing and shaping

SNMP Support

- MIB II as per RFC 1213
- Interface table MIB as per RFC 1573
- SONET MIB as per RFC 1595
- DS3/E3 MIB as per RFC 1407
- ATM interfaces MIB as per RFC 1695
- ILMI MIB as per ATM Forum UNI v.3.1
- Enterprise MIB for PVC and S-PVC setup
- Frame relay services MIB
- Call routing statistics MIB
- OSPF MIB
- MPLS statistics MIB

Node, Network and Service Management

- Local or remote management interface through SNMP or the Alcatel 5620 Network Manager (NM)
- Centralized alarm management with audible and visual alarm notification
- Automatic discovery of equipment additions, deletions and changes
- Point-and-click provisioning
- Sophisticated link and path management
- Extensive performance data for SLAs and billing capabilities
- Open interfaces at the network and service levels for maximum business automation
- Customer assurance and self-provisioning support through the Alcatel 5620 AXiOSS VPN Service Manager (5620 AXiOSS VSM)

Capacity

ATM UNI/NNI interfaces

Unchannelized:

- 8-port T1/E1 with IMA option
- 3-port DS3/E3, STM-1 electrical
- OC-3/STM-1 with the following optical interfaces: SR, IR, LR, XLR

Frame relay UNI/NNI interfaces

Unchannelized:

- 16-port programmable serial interface (V.35, V.28 and X.21)

Channelized:

- 4-port T1/E1

Circuit emulation interfaces

Unchannelized:

- 8-port T1/E1

Channelized:

- 8-port T1/E1
- DS3 to the DS1 level

Ethernet interfaces

- 4-port 10/100 Mb/s Ethernet card
- 10/100Base-TX I/O card with RJ-45 connectors
- 100Base-FX SMF I/O
- 100Base-FX MMF I/O

Slots and ports

- 6-slot model: 5 UCSs (non redundant) or 4 UCSs (redundant)
- 8-slot model: 7 UCSs (non redundant) or 6 UCSs (redundant)

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Physical Description

8-slot unit

> Height: 10 VU, 44.5 cm (17.5 in.)
> Width: 48 cm (19 in.)
> Depth: 46 cm (18 in.)
> Rack-mount or desktop unit: 58 cm (23 in.) or 48 cm (19 in.)

6-slot unit

> Height: 6 VU, 26.5 cm (10.5 in.)
> Width: 48 cm (19 in.)
> Depth: 46 cm (18 in.)
> Rack-mount or desktop unit: 58 cm (23 in.) or 48 cm (19 in.)

Synchronization Sources

> BITS 1.544 MHz or G.703 2.048 MHz external
> Line derived
> Stratum 3-compliant
> 50 ppm SSU

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
> Test access connections
> Network inventory support from Alcatel 5620 NM

Operating Environment

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

Product Compliance

> EMC
- FCC Part 15
- Industry Canada ICES-003
- EN 55022
- EN 50082-1
- EN 300 386
- GR-1089-CORE
- PEC-1992-002
- AS/NZS 3548

> Safety
- CSA C22.2 No. 950
- UL 1950
- EN 60950
- IEC 60950
- AS/NZS 3260
- TS 001
- PEC-1992-002

> Environmental
- GR-63-CORE (NEBS Level 3)

> Network attachment
- FCC Part 68
- Industry Canada CS-03
- GR-253-CORE
- ANSI T1.105.03
- ANSI T1.105.06
- ANSI T1.102
- ANSI T1.403
- ANSI T1.404
- ITU-T G.703
- ITU-T G.707
- ITU-T G.823
- ITU-T G.824
- ITU-T G.825
- ITU-T G.957
- ACA TS 016
- ACA TS 026
- JATE (Green Book)
- PEC-1992-002

Power

> Autoranging 100 V/240 V AC power supply
> -48 V/-60 V DC power supply
> Maximum power consumption
- 6-slot: 450 W
- 8-slot: 880 W

> Typical power consumption: 250 W
> Optional *n* + 1 redundant power supply
> Active load sharing between supplies

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