**asc**
*Advanced Switching Communications*

# 4 T3/E3 Access Platform for ATM and Frame Relay Traffic

A-2000

The ASC product family is the broadband services access platform for service providers' points of presence (PoPs). ASC dramatically lowers the cost of delivering broadband services, including capital equipment, provisioning, rack space, trunks, and upstream switch costs.

A-2000 aggregates ATM and frame relay-traffic from four T3/E3 circuits and an optional OC-3c. It's ideal for delivering ATM and frame relay-based services, including hybrid voice, video, and data services, or for aggregating traffic from DSLAMs. Inherently scalable, A-2000 operates either stand-alone in it single-slot chassis, or as an access card in the 18-slot A-4000.

**Software Configurable Ports**   All ports are individually and remotely software configurable for ATM or frame relay.

**Multiple Trunk Options**   The network-side port can be any T3/E3, or the optional OC-3c.

**Compact**   4 T3/E3 ports, optional OC-3c port in single rack unit (1 RU) chassis.

**Virtual Path Cross Connect**   Establishes blocks of connections to eliminate repetitive provisioning tasks.

**Quality of Service (QoS) Support**   Advanced traffic engineering supports multiple service classes to enable value-added service level agreements and integrated services.

**Management Support**   Includes Web-based element manager, full SNMP agent, CLI, and configuration-file downloads.

**Carrier Class**   A-2000 is NEBS-3 certified, and has internal stratum level 3 timing.

## Benefits

**Affordable PoPs**   ASC offers low entry cost and "pay as you grow" scaleability. Innovative packaging, with industry-leading density, minimizes space costs.

**Remote Provisioning**   Improve customer responsiveness. By choosing protocols and configuring ports remotely, you speed provisioning and eliminate costly onsite visits.

**Reduce Trunk Facilities Costs**   By aggregating with multiple network trunk options, you can "rightsize" trunks to exploit statistical gain and eliminate wasted bandwidth.

**Reduce Switch Costs**   By aggregating and adapting lower-speed lines to a high speed, single protocol network trunk, you avoid wasting expensive core switch capacity.

**Adapt to the Future**   ASC flexible software protocol engine prepares your network to adapt to additional protocols and new functions with software upgrades.

# A-2000 Specifications

## A-2000 Network Interfaces
### 4 DSX-3 Ports
- Connector: dual BNC 75W rear panel
- Speed: clear channel at full DS-3
- Frame formats: C-bit parity or M23
- Line code: B3ZS

### 1 OC-3c Port option for single-slot chassis
- Connector: dual SC duplex female, front panel
- Single-mode or multi-mode order option
- Frame format: I.432/G.709 SONET

## A-2000E Network Interfaces
### 4 E3 Ports
- Connector: dual BNC 75W rear panel
- Speed: clear channel at full DS-3
- Frame formats:
    - ITU-T G.832 ADM mapping
    - ITU-T G.751 ADM mapping
    - ITU-T G.751 PLCP mapping
- Line code: HDB3

### 1 OC-3c Port option for single-slot chassis
- Connector: dual SC duplex female, front panel
- Single-mode or multi-mode order option
- Frame format: I.432/G.709 SDH STM-1

## Protocol Support
### ATM
- ATM UNI 3.0, 3.1, 4.0
- Virtual UNI on network-side port
- ILMI
- Connections: VPCC, PVCC, PVPC
- Class of service categories:
    - CBR, nrtVBR, rtVBR, and UBR
- Per VC queuing
- 14 assignable priorities plus one default priority
- Informational CAC
- Traffic policing: single and dual leaky bucket options
- Congestion control: AAL5 autodetect with EPD and PPD procedures

### Frame relay DS-3/E3 ports only
- UNI (FRF.1 & FRF.4)
- NNI (FRF.2 & FRF.10)
- FR/ATM service interworking – FRF.8
- FR/ATM network interworking – FRF.5
- LMI/annex A, annex D
- CIR policing, FECN/BECN
- Per VC queuing
- 15 assignable priorities including one default

## Management & User Interface
- HTTP manager for standard Web-browser access
- Full SNMP v1 agent includes traps for dynamic alarming
- FLASH memory-based file system holds dual code loads and configurations
- ASCII configuration file upload/download via FTP over 10BaseT or in-band
- Command line interface via telnet over 10BaseT or via front-panel craft port (DB-9 female connector) or via in-band
- MIB support includes:
    - MIB II support with extensions
    - Enterprise MIB
    - MIB II RFC 2233
    - ATM MIB RFC 2515
    - OC-3c SONET RFC 2558
    - DS-3 RFC 2496
- Extensive physical layer and network protocol statistics
- Per-port and per-connections detailed status with user-configurable polling

## Timing Sources
- Internal: stratum level 3
- External: BITS A and B primary reference source via wire wrap pins
- Line: DSX-3 or OC-3c interface
- User-definable timing hierarchy

## Alarms & Visual Diagnostics
- Event and alarm log in NVRAM
- Physical port and VC statistics collection in NVRAM
- Critical, major and minor alarms contact closures with front panel LEDs and alarm cut off
- Front panel LEDs for power, timing, fan fail and OC-3c mux port.
- Line status LED for each DS-3
- Loopbacks: local and remote
- Alarms: RDI, AIS, LOS, LOF, OOF

## Certifications
- Safety: UL 1950, EN 60950/IEC950, CSA 950
- Emissions: EN 55022/CISPR 22
- Immunity: EN 61000
- NEBS level 3: GR-1089, GR-63
- CE approved

## Environmental
- Size: 1.75"(1U) H x 19" W x 18"D
- Rackmountable center or flush mount
- Operating temp: 0° to 40° C, short term -5° to 50°C
- Temperature storage: -40° to 70°C
- Humidity: 5% to 80% (relative, non condensing)
- Weight: 9 lbs.
- Dual voltage input feeds: -48 VDC @ 1.7A, via 2 euro block connectors
- Typical DC power: under 50 watts, 168 BTU
- Max DC power: 85 watts, 286 BTU
- Cooling: field serviceable air filter and fan tray with redundant fans

## Ordering Information
- Base System:
    - Available in T3 and E3 versions
    - 4 T3 or E3 ports
    - Rackmountable chassis
- Orderable options:
    - OC-3c mux port, multi-mode
    - OC-3c mux port, single-mode, intermediate reach
    - ATM-to-frame relay interworking
    - External AC power supply

## Contact Info
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