

High Density Broadband Services Access Platform

The ASC family is the broadband services access platform for service providers' points of presence (PoP) and central offices (CO). ASC dramatically lowers the costs of delivering broadband services, including capital equipment, provisioning, rack space, trunks, and upstream switch costs. The ASC family scales from compact, entry-level models through high-density chassis supporting over 1000 T1/E1 connections per telco rack.

A-4000 aggregates traffic from up to 336 T1/E1 connections, or from as many as 56 T3/E3 connections. Egress is via up to 16 T3/E3 or four OC-3c ATM connections. A-4000 is ideal for delivering services using ATM, frame relay, and TDM, including hybrid voice, video, and data applications. In conjunction with the stackable, single-slot ASC models, A-4000 provides a cost effective access solution at any scale.

MultiStream™ Technology ASC's groundbreaking MultiStream technology offers maximum flexibility to provide just the right access bandwidth — from fractional T1/E1 to NxT1/E1 levels — through any port and with any protocol. MultiStream software adds incremental bandwidth capacity remotely, without interrupting service.

- **NxT1/E1 Options** Supports bundling of T1s/E1s with IMA and MFR to fill the cost and bandwidth gap between T1/E1 and T3/E3.
- **Software Configurable Ports** All ports are individually and remotely software configurable for ATM, IMA, frame relay, or MFR.
- **ATM-Frame Relay Interworking** Converts traffic between protocols using FRF.5 and FRF.8.

High Density With 18 useable slots, over 300 T1/E1 ports are supported in a chassis, and over 1000 T1/E1 ports in a standard telco rack.

Legacy TDM Support A-4000 supports time division multiplexing (TDM) traffic with circuit emulation services (CES). ASC modules support structured and non-structured CES for fractional and full T1/E1 TDM traffic.

Virtual Path Cross Connect (VPCC) 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 (SLA) and integrated services.

Management Support Includes Web-page-based element manager, full SNMP agent, CLI, and ASCII configuration-file uploads/downloads.

Redundancy ASC-4000 offers 1:1 redundancy for network trunk cards, and 1:n redundancy for access cards.

Carrier Class A-4000 is NEBS-3 certified, and has internal redundant stratum level 3 timing. High availability features include hot-swappable cards, fault resilient backplane with no single point of failure, redundant and hot-swappable fans, and distributed power. Power options include both AC and DC sources.

Benefits

Affordable PoPs ASC offers low entry cost and “pay as you grow” scalability. 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-4000 Connections Capability Summary

	Available Card	Ports	Protocols
14 Access Slots	A-1000	12 T1/E1	ATM, IMA, FR, MFR
	A-1240	24 T1/E1	ATM, IMA, FR, MFR, TDM
	A-2000	4 T3/E3	ATM, FR
4 Network Slots	A-2000	4 T3/E3	ATM
	A-5010	1 OC-3c*/1 STM-1	ATM

*Multi mode/short haul or single mode/Intermediate reach options

A-4000 Specifications

Access-Ports Modules

A-1000 and A-1000E

- 12 DSX-1/E1 ports individually configurable for ATM, inverse multiplexing over ATM (IMA), frame relay, multilink frame relay (MFR)
- 50-pin female telco connector
- Speed: clear channel at full T1 rates or Nx64 fractional rates
- Frame formats
 - T1 model: SF (D4) or ESF
 - E1 model: TU-T G.704
- Line codes
 - T1 model: B8ZS, AMI
 - E1 model: HDB3, AMI

A-1240 and A-1240E

- 24 DSX-1/E1 ports individually configurable for ATM, IMA, frame relay, MFR or TDM (CES)
- 100 Pin SCSI, pigtail to two 50-pin female telco connectors.
- Speed: clear channel at full T1 rates or Nx64 fractional rates
- Frame formats
 - T1 model: SF (D4) or ESF
 - E1 model: CCITT, G.704
- Line codes
 - T1 model: B8ZS, AMI
 - E1 model: HDB3, AMI

A-2000 and A-2000E

- 4 T3/E3 ATM, frame relay
- Dual BNC, 75Ω connector
- Speed: clear channel
- Frame formats
 - T3 model: C-bit parity, M23
 - E3 model: ITU-T G.832 ADM mapping
ITU-T G.751 ADM mapping
ITU-T G.751 PLCP mapping
- Line code
 - T3 model: B3ZS
 - E3 model: HDB3

Network-Ports Modules

A-2000 and A-2000E (see above)

A-5010 Module

- One ATM OC-3c/STM-1 port
- Multi mode/short haul or single mode/intermediate reach options
- Connector: DIN 47256 on front panel
- Frame format: I.432/G.709 SONET or STM-1, software configurable

Refer to data sheets for these ASC products for more information

High Availability

- All cards are hot swappable
- Fault resilient backplane
- Redundant timing
- Redundant network management
- Redundant BITS interfaces
- Redundant CO alarm contact closures
- Redundant, hot swappable fan trays
- Dual DC feeds
- AC version with load sharing/redundant AD/DC rectifiers

Management & User Interface

- Ethernet management interface
- Embedded HTTP server supports management from standard Web browser
- Full-featured command line interface via front panel DB-9 female connector craft port or inband RFC 1483 connection
- Upload/download ASCII configuration files via FTP over Ethernet or inband
- SNMP agent includes traps defined for dynamic alarming

Timing

- Internal stratum level 3
- Timing modes: free run, external BITS, line (access or mux), or loop

Certifications

- Safety: UL 1950, EN 60950/IEC950, CSA 22.2 950, CE
- Emissions: EN 55022/CISPR 22, FCC Part 15 class A, CE
- Immunity: EN 61000, CE
- NEBS level 3: GR-1089, GR-63

Environmental

- Size: 24.5" (14U) H x 17.5" W x 20" D
- Rackmountable center or flush mount
- Operating temperature: 5°C to 40°C
- Temperature short term: -5°C to 50°C
- Temperature storage: -40°C to 70°C
- Humidity: 5% to 80% (relative, non condensing)
- Altitude: -197 to 10,000 ft
- Weight: 103 lbs. fully loaded
- Dual voltage input feeds: -48 VDC @ 20 amps fully loaded
- Optional AC power converter
- Max. power consumption: DC dissipation 1000 watts
- Cooling: field-serviceable air filter and dual fan trays

Contact

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