

# A-3010

## CHANNELIZED T3 ACCESS AGGREGATION SWITCH FOR ATM, FRAME RELAY, TDM AND VLAN TRAFFIC

### A-3010 SPECIFICATIONS

#### A-3010 Network Interfaces

##### 28 DSX-1 ports via 1 channelized DS-3

- Connector: dual BNC, 75Ω, rear panel
- ATM speed: clear channel at full T1
- FR speed: full/fractional (Nx64) T1
- Frame formats: ESF
- Line code: B8ZS
- Port mapping: ADM
- Optional channelization of logical DS-1 ports to DS-0 level for frame relay and TDM (CES) termination (enables multiple end-users per DS-1, up to 336 frame relay users and 672 TDM users)

##### 1 DS-3 port option for single-slot chassis

- Connector: dual BNC, 75Ω, rear panel
- Frame formats: C-bit or M23
- Line code: B3ZS
- Speed: clear channel at full DS-3
- Port mapping: ADM or PLCP

##### Ethernet/VLAN (optional on single-slot models)

- IEEE 802.1Q virtual bridged local area network
- VLAN-to-ATM PVC mapping
- IETF 1483 bridged PDU support
- Access via 10/100BaseT Ethernet

#### 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
  - 15 user-assignable priorities including one default priority
- Informational CAC
- Traffic policing: single and dual leaky bucket
- Traffic shaping: single and dual leaky bucket, configurable per-VC upstream and downstream
- Congestion control: AAL5 autodetect with EPD and PPD procedures
- Cell payload scrambling options

##### IMA (Optional)

- ATM Forum inverse multiplexing over ATM (IMA) 1.0, 1.1
- Up to 12 groups, up to eight circuits per group

### THE ASC A-3010

The MultiStream™ A-3010 aggregates and switches multi-protocol traffic from 28 logical DS-1 circuits over a channelized DS-3 port and an optional clear-channel DS-3 port. Protocol options that can be supported include ATM, inverse multiplexing over ATM (IMA), frame relay, multilink frame relay (MFR), channelized DS-1 frame relay, as well as bridged Ethernet/VLAN traffic from the 10/100BaseT port. The A-3010 can operate either stand-alone in a single-slot chassis or as an access card in the 18-slot A-4000.

ASC's MultiStream™ A-3010 provides flexible, upgradeable bandwidth from fractional T1 to NxT1 levels with IMA and MFR inverse multiplexing. It also features the unique ability to pack frame relay and TDM circuits on a single interface. With strong quality of service (QoS) capabilities, the A-3010 enables service providers to offer and meet customer service level agreements (SLAs).

The NEBS-3 certified A-3010 offers remote provisioning of multiple protocols for any port. ASC provides multiple choices for local and centralized management, including a Web-based element manager, CLI, SNMP agent, and an ASCmanager—a full EMS based on Solaris/Oracle platforms.



## A-3010 SPECIFICATIONS

### Frame Relay (Optional)

- UNI (FRF.1.1 and FRF.4)
- NNI (FRF.2.1 and FRF 10)
- LMI/annex A, annex D, gang of four
- CIR policing, FECN/BECN
- Per VC queuing
- 15 assignable priorities including one default priority

### Multilink Frame Relay (MFR) (Optional)

- Frame Relay Forum multilink frame relay (MFR) FRF.16
- Up to 12 groups, up to eight circuits per group

### ATM-to-Frame Relay Interworking (Optional)

- Network interworking FRF.5
- Service interworking FRF.8.1 – transparent mode and translation mode
- ILMI/LMI interworking
- EFCI-to-FECN/BECN mapping
- CLP-to-DE mapping

### Circuit Emulation Service (CES) (Optional)

- T1 TDM voice connections converted to CES virtual connections
- Non-structured CES for clear channel T1
- Structured CES for Nx64 fractional T1
- Channel associated signaling (CAS)
- AF-vtoa-0078.000
- AF-vtoa-0085.000
- TU-T Rec I.363 B-ISDN ADM adaptation layer (AAL) specification

### Switching (optional on single-slot models)

- Any-to-any port mapping for PVCs
- Supports any-to-any mapping between DS-1 channels inside the channelized DS-3
- IMA and MFR groups supported
- VPCCs

### Management & User Interface

- HTTP manager for standard Web-browser access
- Full SNMP v1 agent includes traps for dynamic alarming
- Full suite of standard and enterprise MIBs for SNMP management
- ASCII configuration file upload/download via FTP over 10/100BaseT Ethernet port or in-band
- CLI manager via telnet over 10/100BaseT Ethernet, craft port (front panel DB-9 female connector) or in-band
- Support for optional ASCmanager (see ASCmanager data sheet)
- Configurable maximum transfer unit (MTU) size
- Extensive physical layer and network protocol statistics
- Detailed status per port and per connection
- Field-upgradeable FLASH file system holds dual code loads and configurations; upload and download by FTP
- RADIUS or TACACS+ admin authentication

### Timing Sources

- Internal timing: free-running stratum level-3
- External timing: BITS A and B
- Line timing: from any T1 or T3 interface
- User-definable timing hierarchy

### Alarms, Visual Diagnostics

- Event and alarm log with time-stamps in NVRAM
- Physical port and VC statistics collection in NVRAM
- Critical, major and minor alarm contact closures with front panel LEDs and alarm cutoff
- Front panel LEDs for power, timing, fan fail, and each T3 port
- Line status LED for each T1
- Alarms: RDI, LOS, LOF, OOF, AIS
- Optional Smartjack and FDL loop codes for DS-1 channels
- Optional BERT line testing on DS-1 or DS-3 ports, manual or timed automated testing

### Certifications

- Safety: UL 1950, EN 60950/IEC950, CSA 22.2 950
- Emissions: EN 55022/CISPR 22, FCC part 15 Class A
- Immunity: EN 61000
- NEBS Level 3: GR-1089, GR-63
- CE approved
- RBOC colocation certified: SBC

### Environmental

- Size: 1.75" (1U) H x 19"W x 18"D
- Rack mountable, 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
- Optional external AC power supply
- 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:
  - 1 channelized DS-3 port
  - ATM support
  - Rack mountable chassis
- Orderable options:
  - DS-3 port
  - Frame relay support
  - MFR software
  - IMA software
  - ATM-to-frame relay interworking
  - Ethernet VLAN support
  - Channelized frame relay (1:0)
  - Channelized frame relay and CES (1:0)
  - Switching software
  - External AC power supply, rack mounted or in-line
  - ASC NetAssure support
    - Feature upgrades
    - Priority tech support
    - Expedited repair

### Contact Info

NSGDatacom  
(ASC Products Group)  
3863 Centerview Drive  
Chantilly, VA 20151  
Tel (703) 793-2000  
Fax (703) 793-2001  
www.asc.com

