

# AC2041

## Multiservice ShDSL Network Termination Device



### Flexible

Multiservice ShDSL terminal with E1, serial interface (up to 2048 kbps) and

### Convenient and Cost-Effective

Substitutes outdated leased-line network equipment with inexpensive and highly scalable network infrastructure

### Reliable

Provides ATM Circuit Emulation Services (CES), with up to eight independent channels, over E1 and serial interfaces



AC2041 is a 4-wire ShDSL Multiservice Network Termination. The ShDSL interface is configurable as a single link with an aggregate symmetric rate up to 4608 kbps (using 2-pair bonding) or as 2 independent ShDSL links (2 different links up to 2312 kbps each).

### Configurable Connectivity

AC2041 offers flexible ShDSL Network Termination Point with different operating modes:

- ATM Circuit Emulation Service
- Frame Relay to ATM Interworking
- Cell Bridging to transport ATM cells between the ShDSL network interface and the E1 service interface
- IP Routing and MAC Bridging

### High-Performance Digital Subscriber Line Access Multiplexer Transmission

Used over an ATM based network, AC2041 connected to a DSLAM, terminates the physical ShDSL and many other xDSL links. AC2041 cross connects and concentrates up to 128 Virtual Circuit Connections (VCC) over a single or a dual high speed link to the backbone ATM network, reaching up to 4608kbps (4-wire mode).

Deploying an inexpensive and highly scalable network infrastructure using AC2041 replaces obsolete DCE, HDSL transceivers, TDM cross-connects, and other leased linework equipment.

# AC2041

## Technical Specifications



### LED Indicators

- PWR
- RDY
- E1: LOS,LFA,ACT,AIS (alarms)
- ShDSL (Link, Sync)
- VX (Act)

### Physical Interfaces

- Balanced and unbalanced E1 G.703/G.704 interface with RJ-45 or external adapter-BALUN
- V.35, V.36/RS.449,X.21/V.11 (ITU-T V.35, ITU-T V.36, ITU-T V.11, TIA/EIA-530, TIA/EIA RS-449, proprietary 25pole female connector1)
- 2 switched 10/100bT Ethernet ports with RJ-45 connectors
- Local configuration auxiliary interface one RS-232 interface(DB9 cable)

### ShDSL Network Interfaces

- ShDSL interface: up to 4608 kbps
- ETSI TS 101 524
- ITU G.991.2
- Line rate up from 200 kbps to 4608 kbps

### Operating Modes

- Circuit Emulation Service
- Frame Relay to ATM
- Cell bridging
- Simultaneous Circuit Emulation and Frame Relay to ATM interworking services on E1 and serial interface

### Frame Relay

- Support for up to 128 PVCs
- FRF.1 UNI
- Up to 10 classes for traffic policy

### Interworking Function

- Configurable per VCs
- Network Interworking FRF.5
- Service Interworking FRF.8.1
- Transparent mode
- Protocol Translation (RFC2427, RFC2684)

### Circuit Emulation Service

- Structured and unstructured data mode
- Payout buffer size
- Partial cell filling
- CES ATM forum atm-vtoa-0078.000

### Mixed Mode Features

- Up to 128 ATM VCs
- Up to 128 NIW or SIW channels
- CBR and UBR configurable for VC
- 8 CES channel

### IP Routing

- Enhanced Network Address and Port Translation (NAPT) engine, supporting a number of advanced features including a number of Application Level Gateways (ALGs): H.323, VPN pass through, FTP, CMP, IGMP
- Extended Access Lists
- DHCP Server
- DNS Server/Forwarder
- IP services (ICMP, IGMP, Telnet, TFTP)
- IPoA (rfc 2684), PPPoA (rfc 2364) and PPPoE client (rfc 2516).
- Extensive monitoring, tracing and troubleshooting facilities (including IP ping, ATM ping and tracer)
- Multicast traffic support
- VPN and Tunneling: PPTP server, PPTP client, IP-SEC, GRE, IPinIP

### Timing

- Local
- Adaptive
- Network

### Local Management Interface (LMI)

- Selectable Q.933 Annex A or ANSI T1.617 Annex D)
- Standard or bi-directional procedures
- Management local or remotely configured and operated using a designed ATM VCC

### Management and Configuration

- Password Protected Access:
  - 2 login levels
  - Local authentication

### Local Management

- Console port
- Extensive CLI
- Windows® based wizard for configuration and firmware download
- Remote Management (configuring a dedicated VC maintenance and using a remote host)
  - CLI (internal Telnet Server)
  - HTTP (embedded WEB Server)
  - SNMP Agent (v1, v2c)
  - Syslog
  - Ping MIB
- Firmware upgrades: Local and Remote (TFTP client embedded)

### Environment

- Operating Temperature: -5° + 45°C (23° + 113°F)
- Non-Operating Temperature: -40° + 70°C (-40° + 158°F)
- Operating Humidity: 10 + 93% (non-condensing)

### Compliance & Approvals

- Storage: ETSI EN 300 019-2-1 T 1.3
- Transportation: ETS 300 019-2-2, T 2.3
- Operating Conditions: ETS 300 019-2-3, T 3.2
- EMC: EN 55022, EN 55024, EN 61000-3-2, EN 61000-3-3
- Protection: ITU-T K.21
- Safety: EN 60950-1

### Power

- External power supply
- AC input voltage: 100 to 240 Vac
- AC input frequency: 50 to 60 Hz
- AC input current: 0.2 to 0.38 A

### Dimensions

- Length 180 mm
- Width 145 mm
- Height 40 mm

### Notes

- 1 *Dedicated cable available*

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