

Broadmore 1750

Release 4.1

TDM-to-ATM Conversion and Aggregation



Key Benefits:

- Provides DS3/E3 CES circuit provisioning from ATM networks
- Complies with ATM Forum CES version 2 standard
- Secure encrypted network access, including SNMPv3 secure support for privacy, using DES, 3DES and AES encryption modes and FIPS 140-2 validation, certificate #478
- Provides unprecedented network availability through Distributed Protection Switching (DPS) and SONET APS, protecting both logical and physical interface
- Offers 1:n DS3/E3 service circuit protection
- Distributes redundant -48VDC power rails to each module
- NEBS Level-3, Type 2-certified

Bridge the gap between ATM transport and TDM service delivery

The Broadmore® family of products improves network reliability and service availability while simplifying operations and management under strict security requirements. The product couples these benefits with the proven cost-efficiency and high performance of ATM networks to TDM-based DS3 or E3 service creation.

The Broadmore 1750 enables service providers to extend capital budgets, reduce operating costs, and accelerate service availability. By encapsulating TDM-based traffic within ATM cells using standards-based Circuit Emulation Service (CES), the Broadmore 1750 allows traffic to be transported over Permanent or Switched Virtual Circuits (PVCs or SVCs). Concurrently, it concentrates lower-speed DS3 and E3 circuits onto a single high-speed OC-12c/STM-4c optical ATM circuit.

Slash Backhaul and Interconnection Costs

Traditionally, service providers are forced to maintain multiple DS3 or E3 physical circuits at both the network edge and at the core office, requiring significant coaxial cabling and complex provisioning of ATM switches, SONET Add/Drop Multiplexers (ADM), and Digital Cross-Connect Systems (DCS). The Broadmore 1750 reduces backhaul and interconnection costs by logically provisioning DS3/E3 circuits at the network edge as ATM virtual circuits.

The Broadmore 1750 concentrates traffic over a single optical ATM connection directly into an ATM switch to be carried over an ATM network. This allows DS3/E3 circuits to be virtually provisioned end-to-end over PVCs or SVCs instead of using costly physical circuits. The ATM switch routes more traffic and this reduces the need to buy more switches, conserving limited floor and rack space.

Service providers save time and reduce operating costs by provisioning DS3/E3 circuits directly through an easy-to-use menu-driven interface. Simplifying the provisioning of these circuits also helps reduce service provisioning time and costs while improving customer satisfaction.

Critical Applications Rely on Critical Links

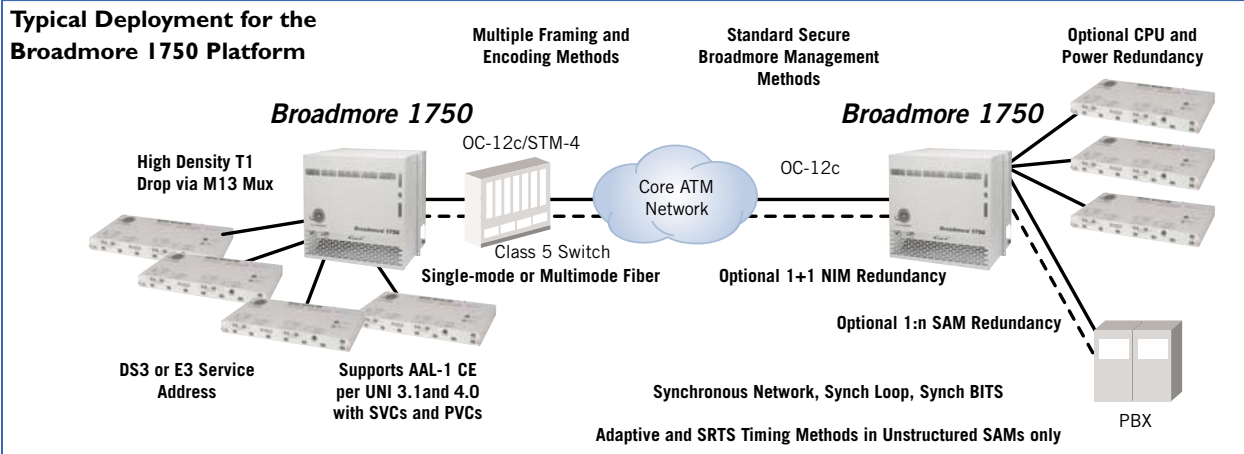
The Broadmore 1750 provides carrier-class reliability in its 17-slot chassis through 1+1 SONET automatic protection switching (APS), 1:n DS3/E3 drop-side protection, fully redundant CPU, common equipment, and dual power supplies. Digital Protection Switching (DPS) and SONET Automatic Protection Switching (APS) options on the NIM uplinks protect security and availability. Dual CPUs with automatic software and configuration synchronization ensure all configuration changes are stored and shared between the primary and secondary CPU.

Carrier-class Security and Reliability

In addition to the SecurID® (v5.0.2) and Secure Shell (SSH v2.0) that provide secure encrypted network access across the entire Broadmore platform, the addition of FIPS 140-2 validation confirms that Broadmore is one of the most secure and reliable network access platform of its kind.

Redundant power options in either AC or DC formats mean the Broadmore is ready to be deployed in any environment. Release 4.1 also includes the integration of SNMPv3 secure support, which enables SNMP sessions to support privacy using validated DES, 3DES and AES encryption modes. Authentication can be initiated using SHA-1 or MD5 and be password based. When combined with an approved network management system, the Broadmore platform provides high confidence that all sessions are secure. Finally, an easy-to-use intuitive user interface means less time provisioning and more time spent standing up circuits.

Typical Deployment for the Broadmore 1750 Platform



Technical Specifications for the Broadmore 1750 Platform

Requirements :

- Requires Broadmore Release 4.1 or higher to support all features listed

System Architecture :

- Midplane architecture with 17-slots both front and back
- Dynamically allocated ATM cell bus, non-blocking ingress queuing
- Modular ATM multiplexer composed of SAMs and NIMs
- Up to 11 DS3/E3s in a single chassis with 1:n DS3/E3 SAM protection
- Support for PVCs or SVCs
- Internal Stratum 3E clock with dual BITS clock inputs
- Redundant CPUs, NIMs, SAMs, backplane, power supplies
- OC-12c/STM-4c ATM network interfaces

Management :

- RS-232/V.24 async craft port
- SNMP v1, v2 & v3 (RFC 2574, 2575, RFC 1213-MIB)
- In-band management:
 - LAN Emulation Client
 - CLIP (RFC-1577)
- Out-of-band management:
 - 10Base-T Ethernet port
 - RS-232/V.24 async craft port
- Management interface:
 - Command Line Interface (CLI)
 - Text-based menu-driven
- Optional security features:
 - FIPS 140-2 approved Secure Shell (SSH) v2.0
 - RSA SecurID® User Client v5.0.2

Network Standards :

- ATM Forum compliant AAL1 and AAL5 QoS
- ATM Forum compliant SVCs and PVCs
- ATM Forum Circuit Emulation Service v2.0 (CES)
- ITU-T and ANSI compliant UNI 3.1, and 4.0 point-to-point
- ATM Forum compliant ILMI 4.0

Redundancy :

- System Level:
 - Backplane: redundant segment protection
 - Dual Power -48VDC power rails to each card
- Interface Level:
 - CPUs: 1:1
 - NIMs: 1+1 SONET APS per Telcordia™ GR-253-CORE
 - Digital Protection Switching
 - SAMs: 1:n equipment protection
 - Dual BITS clock inputs with internal Stratum 3E holdover clock

OC-12c/STM-4c Network Interface Module (NIM) :

- SONET/SDH OC-12c/STM-4c 622.08 Mbps: network synchronization
- Both single mode and multi-mode NIMs available
- "SC" optical connectors on unit front for network interface

DS3 (E3) Unchannelized Circuit Emulation SAM :

- 3 BNC port pairs per module, 44.736 Mbps (34.368 Mbps E3) per port, 75 Ω impedance
- Unchannelized CES Version 2 (AAL1) and ITU-T recommendation I.363
- DS3 options: C Bit parity, clear channel, M13
- Clocking: network, BITS, adaptive, SRTS, and loop
- Up to 5 like modules supported per chassis (with 1:4 protection)

DS3 Channelized Circuit Emulation SAM :

- 1 BNC port pair per module, 44.736 Mbps per port, 75 Ω impedance
- AAL-1 Circuit Emulation per UNI 3.1/4.0 with 1 to 672 ATM SVCs or PVCs supported
- DS3 options: C Bit parity, M13
- Clocking: network, BITS, and loop
- Up to 5 like modules supported (with 1:4 protection) or up to 12 modules (with 1:1 protection) with optional 3-Fan Tray

Alarms :

- Dry contacts for major and minor alarms
- LEDs indicating major and minor alarms
- User-defined alarm configuration
- SNMP trap generation for user-defined alarms

Testing & Diagnostics :

- Network loopbacks
- Service loopbacks
- Internal BERT generation and monitoring
- FEAC loopback generation and detection

Power :

- -48VDC dual inputs labeled A and B
- 240 W maximum for fully populated system
- Fused at 7.5 A
- Alarm power module/1 slot

Regulatory Approvals :

- FCC Part 15, Class A radiated emissions
- ANSI/UL 1950
- NEBS Level-3, Type 2 certified according to Telcordia GR-63-CORE & GR-1089-CORE
- FIPS 140-2, Level 1, certified

Physical (17-slot Chassis) :

- Card slots: 1 to 12 SAMs, 1 or 2 NIMs, 1 or 2 CPUs, 1 Alarm Power Module
- Rack mountable in 19 in (48.26 cm) or 23 in (58.42 cm) racks
- Dimensions:
 - 17.5 in (H) x 17.25 in (W) x 15.3 in (D)
 - 44.45 cm (H) x 43.82 cm (W) x 38.86 cm (D)
- Weight: 31 lb (14.1 kg) with common equipment

Environment :

- Operating temperature range: 50 °F to 122 °F (10 °C to 50 °C)
- Storage temperature range: -4 °F to 158 °F (-20 °C to 70 °C)
- Relative humidity (non-condensing) range: 5% to 80%
- Maximum operating altitude: 10,000 ft (3,048 m)
- Maximum non-operating altitude: 40,000 ft (12,192 m)