

# Broadmore 1700

Release 4.1

## TDM and Serial Circuit Transport for ATM Networks

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### Key Benefits :

- Secure encrypted network access – includes SNMPv3 with AES, DES and 3DES encryption, FIPS 140-2 validation, certificate #478
- ATM DS3 NIM/SAM – combines voice, data and video into an ATM network at DS3 speeds
- Bulk termination of TDM and Serial applications with QoS
- ATM network extension over SATCOM
- KG Re-Sync supported on the Cell Bearing Interfaces (CBI) and HSSI

## Securely provision circuits at the optical edge

The Broadmore® family of products improves network reliability and service availability while simplifying operations and management under strict security requirements. The platform couples these benefits with the ability to expand old legacy products with new, including encrypted, real-time data, satellite, and IP-enabled services. 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.

### Application Grooming

The Broadmore 1700 provisions and grooms up to 12 slots of TDM and serial-based Service Access Modules (SAM) consisting of DS3, DS1, E3, E1 and serial interfaces (Custom, RS-232, RS-530, RS-422, HSSI) using logical ATM connections. ATM conversion is accomplished using standards-based ATM Forum Circuit Emulation Service (CES) supporting both Permanent Virtual Circuits (PVCs) and Switched Virtual Circuits (SVCs). Quality of Service (QoS) for voice, video and data are preserved, with the benefits of a converged network.

### Networked Digital Cross Connect

The Broadmore 1700 enhances the Digital Cross-connect (DCS) capabilities of the ATM network with a one-bit resolution in provisioning of serial applications. The network planner is no longer limited to the traditional TDM and SONET boundaries for transport. Optimizing the muxing strengths and capabilities of ATM while leveraging the SONET resiliency, the Multi-Bit-Rate (MBR) SAM permits the network planner to optimize rather than waste precious bandwidth.

### Mission Critical Communications Support

Designed to meet the specific needs of the DOD and Intelligence communities, the Broadmore platform transports applications like RADAR, audio, video, and EAM traf-

fic while utilizing asymmetrical data rates to avoid wasting bandwidth. Selective dual BITS Inputs enable redundant clock sources to be provisioned so that loss of a clock source does not disrupt critical communications.

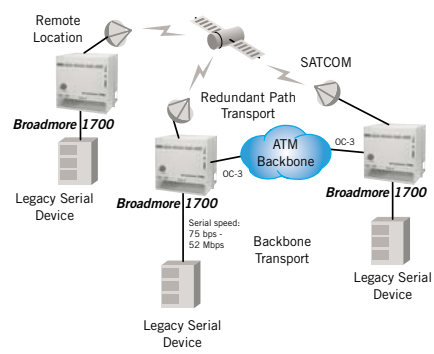
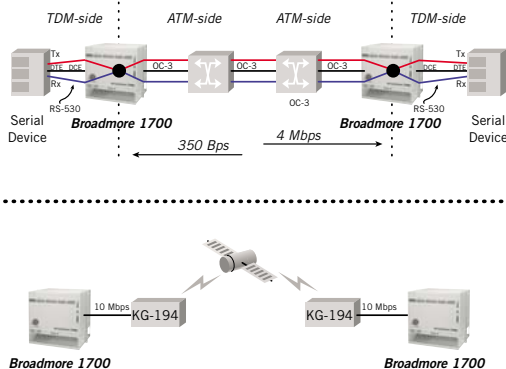
### Removing Terrestrial Boundaries

The Broadmore 1700 enables network planners to extend the ATM network over the SATCOM network on an application-by-application basis to any forward-deployed location. With standards-based RS-530 and HSSI interfaces, each application is provisioned with the necessary bandwidth through the ATM network over the SATCOM network, ensuring that no one application uses more than the allocated amount of bandwidth per application and data is received in the order that it is transmitted. Up to 52 Mbps of SATCOM bandwidth can be provisioned per HSSI CBI module. The CBI HSSI and CBI-RS-530 interfaces support crypto re-sync for those environments that require Bulk Encryption.

### Critical Applications Rely On Critical Links

The Broadmore 1700 offers security and availability for transport of sensitive information by offering both Digital Protection Switching (DPS) and SONET Automatic Protection Switching (APS) options on the NIM uplinks. Dual CPUs with automatic software and configuration synchronization ensure all configuration changes are stored and shared. Release 4.1 also includes SNMPv3 secure support, which enables sessions to support privacy using FIPS 140-2 validated DES, 3DES and AES encryption modes and password authentication. 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. Redundant power options in either AC or DC formats mean the Broadmore is ready to be deployed in any environment.

## Solution Diagram for the Broadmore 1700 Platform



## Technical Specifications for the Broadmore 1700 Platform

### System Architecture :

- Mid-plane architecture
- Internal Stratum 3E clock with dual BITS clock inputs
- Redundant CPUs, NIMs, backplane, power input
- DS3, OC-12c/STM-4c or OC-3c/STM-1c ATM network interfaces
- Up to 80 TIs, 60 EIs, 11 DS-3s, or 11 E3s per chassis

### Components :

For all modules, see individual module specification sheets

- OC-12c and OC-3c Network Interface Modules (NIMs):
  - SONET/SDH OC-12c/STM-4c 622.08 Mbps: network synchronization
  - SONET/SDH OC-3c/STM-1c, 155.52 Mbps: network synchronization
  - Single mode and multi-mode options
  - Optical connectors type: SC
- Cell Bearing Interfaces (CBI & HSSI) NIM/SAMs:
  - 1 full-duplex port per card
  - 56 Kbps to 16.384 Mbps CBI (to 52Mbps HSSI) data rates
  - Data rates controllable in 1Kbps increments
  - Configurable crypto-resync support in 0.1 second increments
  - UNI 3.1/4.0 PVCs
  - Operate as Network Interface (NIM) or Service Access (SAM)
  - DS3 ATM NIM/SAM module also available
- DS1 (T1) or E1 Circuit Emulation Service Access Module (SAM):
  - 8 ports per card
  - RJ-48 connectors
  - CES Version 2 (AAL1) and ITU-T recommendation I.363: structured (Nx64), T1 (1 to 24 ATM PVCs or SVCs per port), E1
  - (1 to 31 ATM PVCs or SVCs per port), unstructured T1 or E1
  - Clocking: Network, BITS, Port, Adaptive, SRTS (unstructured), Loop
- DS3 (T3) or E3 Structured, Unstructured Circuit Emulation SAMs:
  - 1 port per card (structured) or 3 ports per card (unstructured)
  - BNC connector access on rear
  - CES Version 2 (AAL1) and ITU-T recommendation I.363: structured (N x 64) DS3 (1 to 672 ATM PVCs or SVCs per port)
  - DS3 options: C Bit parity, M13 (structured) or clear channel (unstructured)
  - Clocking: Network, BITS, Adaptive, SRTS, Loop
- Multi-Bit Rate Serial SAM:
  - 4 full-duplex, programmable serial ports per card
  - DB-26 Connectors support universal RS-232, RS-422, RS-449, RS-530, or V.35 interfaces
  - 75bps to 10 Mbps synchronous, and 75 to 115 kbps asynchronous
  - Data rates controllable in 1bps increments by port
  - Various clocking and networking timing options
- High Bit Rate Serial SAM:
  - 4 full-duplex, programmable serial ports per card
  - RJ-48 connectors support RS-422 serial electrical interface
  - Provisionable from 75 bps to 24 Mbps synchronous in 1 Bit increments by port
  - Various clocking and networking timing options

### Management :

- RS-232/V.24 async craft port
- SNMP v1 & v2 (RFC 1213, MIB II)
- 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:

- RSA SecurID® User Client v5.0.2
- SNMPv3

### 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 3.0, 3.1, and 4.0 Signaling
- ATM Forum compliant ILM1 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
  - Dual BITS clock inputs with internal Stratum 3E holdover clock

### 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 loop-backs (structured DS3: DS3 port; unstructured DS3, E3 port; structured DS1, E1)
- Service loop-backs (structured DS3: DS3 port, tributary and DS0; unstructured DS3, E3: port; structured DS1)
- Internal BERT generation and monitoring (structured DS3, unstructured DS3, E3)
- FEAC loop-back generation and detection

### Power :

- -48 VDC dual inputs
- 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 60950
- Joint Interoperability Test Command (JITC) Certified
- DISA Information Assurance (IA) Tested
- FIPS 140-2, Level 1 Validated, Certificate 478

### 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%