

Broadmore 500

Release 4.6

Optimized Circuit Conversion for ATM Networks

New in Release 4.6:

- Extended VP and VC options
- Script File Interpreter

Key Benefits:

- Secure encrypted network access – includes SNMPv3 with AES, 3DES encryption, FIPS 140-2 validation, certificate #478, Common Criteria EAL-3 validation, VR-06-0032
- IPv6 ready compliant Controller
- HSAM module supports up to 273Mbps of serial data
- Bulk termination of TDM and Serial applications with QoS and ATM network extension over SATCOM
- KG Re-Sync support on cell bearing interfaces including CBI and HSSI
- Adaptive, Network, Loop, and BITS timing options supported



Securely provision circuits at the optical edge

Cost-effective ATM Networking

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 and Common Criteria EAL-3 validation confirms that Broadmore is one of the most secure and reliable network access platforms of its kind. Release 4.6 adds enhanced virtual channel (VC) and virtual path (VP) options for the cell bearing interfaces and a new script file interpreter for quick provisioning changes between missions.

Application Grooming

The Broadmore 500 provisions and grooms up to three 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. TDM-to-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 benefits of a converged voice and data network.

Networked Digital Cross Connect

The Broadmore 500 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 traffic 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.

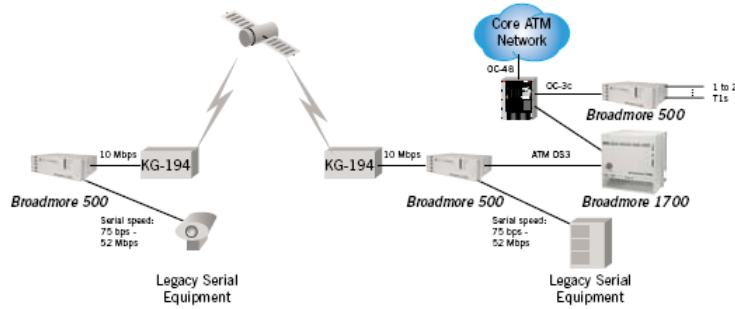
Removing Terrestrial Boundaries

The Broadmore 500 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 only 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 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, ensuring synchronization even when corrupt cells are received.

Mission Critical Communications Support

The Broadmore 500 offers security and high availability for transport of sensitive information. Redundant power options in either AC or DC formats means that the Broadmore 500 is ready to be deployed in any environment. With FIPS validated encryption, management and reporting are secure. 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 500 Platform



Technical Specifications for the Broadmore 500 Platform

System Architecture:

- Mid-plane design
- Internal Stratum 3E clock with dual BITS clock input
- Redundant A/C or DC power supply options
- DS3 or OC-3c/STM-1c ATM network interfaces
- Up to 24 T1s, 24 E1s, 1 DS-3s, or 1 E3s per chassis, plus serial

Components:

For all modules, see individual module specification sheets

- OC-3c Network Interface Modules (NIM):
 - SONET/SDH OC-3c/STM-1c, 155.52 Mbps: network synchronization
 - Single mode and multi-mode options
 - Optical connector type: SC
- RS-530 Cell Bearing Interface (CBI) NIM/SAM:
 - Provides ATM cell admission & aggregation over a RS-530 interface
 - 56 Kbps to 16.384 Mbps CBI data rates, 1 full-duplex port per card
 - Data rates controllable in 1Kbp increments
 - Configurable crypto-resync support in 0.1 second increments
 - UNI 3.1/4.0 PVCs
 - Operate as Network Interface or Service Access Module
 - DS3 ATM NIM/SAM version also available
- High-Speed Serial Cell Bearing Interface (HSSI) NIM/SAM:
 - Provides ATM cell admission & aggregation over a HSSI interface
 - 56 Kbps to 52 Mbps CBI data rates, 1 full-duplex port per card
 - Data rates controllable in 1Kbp increments
 - Configurable crypto-resync support in 0.1 second increments
 - UNI 3.1/4.0 PVCs
 - Operate as Network Interface or Service Access Module
- 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 (MBR) 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 (HBR) 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:

- SNMP v1, v2 & v3 (RFC 2574, 2575, RFC 1213.MIB, RFC 2571-76.MIB)
- IPv6 and IPv4 ready Controller
- In-band management:

- LAN Emulation Client
- CLIP (RFC-1577)
- Out-of-band management:
 - 10Base-T Ethernet port
 - RS-232/V.24 async craft port
- Command Line Interface (CLI) and text-based menu-driven management interface
- Optional security features:
 - FIPS 140-2 approved Secure Shell (SSHv2) and SFTP
 - Common Criteria validated CCEVS-VR-06-0032
 - RSA SecurID® User Client v5.0.2

Network Standards:

- ATM Forum compliant AAL-1 and AAL-5 QoS
- ATM Forum compliant SVCs and PVCs
- ATM Forum Circuit Emulation Service (CES) Version 2
- ITU-T and ANSI compliant UNI 3.0, 3.1 and 4.0 Signaling
- ATM Forum compliant ILMI 4.0
- Network Timing Protocol Client per RFC 1305

Redundancy:

- System Level:
 - Dual power: 110/220 VAC, 50/60 Hz or -48 VDC power options

Alarms:

- Dry contacts for major and minor alarms
- Alarm LEDs indicate major and minor alarms, user definable
- User-defined alarm configurations
- SNMP trap generation for user-defined alarms

Testing and Diagnostics:

- Internal BERT generation and monitoring on select service modules
- Network and Service loopback supported on select service modules
- FEAC loop-back generation and detection
- Remote diagnostics: Collects line-code violations, P-bit parity errors, framing bit, excessive zero event, C-bit parity, and far-end block error statistics on select interfaces.

Power :

- 110/220 VAC, 50/60 Hz or -48 VDC, dual power optional
- 70 W maximum for fully populated chassis
- Fused at 7.5 A
- Dedicated alarm / power module, integrated fan

Regulatory and Certifications:

- FCC Part 15, Class A radiated emissions
- ANSI/UL 60950, Safety of Information Technology Equipment.
- CSA C22.2 No. 950-95, Safety of Information Technology Equipment
- FIPS Validated (Certificate #478), Common Criteria EAL-3 validated

Physical:

- 5-slot chassis, front and back, cabling out the back
- Rack mountable in 19 in (48.26 cm) or 23 in (58.42 cm) racks
- Dimensions:
 - 5.5 in (H) x 17.25 in (W) x 15.3 in (D)
 - 13.97 cm (H) x 43.82 cm (W) x 36.86 cm (D)
- Weight: 21.25 lb (9.64 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), non-operating 40,000 ft

