

Axxius[®] 800



Axxius 800 Access Integration Platform Overview

The new standard
in access infrastructure
performance



Expanded functionality, more revenue, at dramatically lower costs.

The Network Infrastructure Challenge

Network technologies...increased network traffic...transport media...expensive DCS solutions...cell site infrastructure requirements...equipment deployments...physical space issues – the growing list of internal and external challenges facing service providers is becoming increasingly complex. These issues aggravate the inefficiency of traditional broadband communications equipment and can present significant capex and opex obstacles that cut into revenue.



The Carrier Access solution: Solving today's problems and delivering tomorrow's services

The Axxius® 800 Access Integration Platform is an extremely compact, highly integrated solution that serves today's voice and data needs and delivers tomorrow's next-generation services. It solves the problems of multiple boxes, scalability, space, power, and environmental constraints associated with delivering voice and data services in wireless and wireline networks. This versatile, single-unit solution converges the functions of multiple different products into one scalable, integrated and managed platform that grooms and delivers services at dramatically lower costs. As a result, the Axxius 800 defines a new level of functionality, cost-effectiveness and performance for access needs at cell sites, MTSOs, customer premises, or MTUs, and enables carriers to provide additional services that deliver more revenue at dramatically lower costs.

As a true carrier-quality platform offering full common card redundancy and a 1:7 T1 service protection ratio, the Axxius 800 supplies high-availability for today's critical service needs. Plus, outside plant environmental hardening helps ensure reliable operation under even the most extreme conditions.



The Axxius 800 delivers advanced voice and data services on a single platform

The Axxius 800 integrates many different access and bandwidth management functions into a single modular platform. By delivering transport, edge routing, and bandwidth 3/1/0 grooming intelligence to network access points, the Axxius 800 eliminates bandwidth under-utilization and costly inefficiencies between Central Offices (COs); between wireless cell site radios and periphery equipment; and between the high-speed carrier edge or core networks. Its modular architecture allows it to function as a:

- ☞ wireline service delivery platform
- ☞ 1/0 cross-connect or access multiplexer
- ☞ 3/1/0 digital cross-connect
- ☞ replacement for back-to-back M13 multiplexers
- ☞ DS3 add/drop multiplexer

Unprecedented Scalable Bandwidth and Capacity

The Axxius 800 provides expansive network and service capacity within a remarkably small unit. The advanced bandwidth management capability of the Axxius 800 includes full 3/1/0 cross-connect functionality, scaling from DS0 granularity up to dual DS3 – ensuring the most efficient use of network resources.

With eight slots for a wide variety of hardened service cards and another two slots for redundant controller cards, the Axxius 800 provides connections for a broad combination of voice and data services. It can deploy up to 36 T1 tributary circuits or any mix of voice and high-speed data services, satisfying the demanding bandwidth requirements of DCS stacks or wireless cell site radios and periphery equipment in just two rack units (RU) of space.

This unmatched flexibility in access infrastructure performance results in more services and revenues derived from a given set of network assets. As the ideal solution for fulfilling the demands of provider networks, the Axxius 800 readily meets growing service and bandwidth requirements.



Integrated solutions



The Axxius 800 is a carrier-quality platform designed for full redundancy with the rear panel fully connectorized and designed for tight confines. Its base platform includes 1+1 Power Supply slots, 1+1 Controller Card slots, 1+1 Broadband Interface slots, the Control Panel Interface Card, and 8+1 universal Service Card slots.



The Quad-Port DS1 Controller Card provides four DS1 ports with integrated CSUs and a built-in I/O cross-connect matrix – providing full, non-blocking connectivity between the DS1 Controller Card T1 ports and any of the eight Service Card slots. It can operate as both a wireline service delivery platform and as a small I/O cross-connect or access multiplexer delivering T1/FT1 links, V.35, 10/100 Ethernet ports, FXO, ISDN BRI and OCU-DP interfaces to remote cell sites or customer locations.



The Dual-Port DS3 Controller Card provides two DS3 ports with integrated CSUs and a built-in 3/1/O cross-connect matrix. It provides full, non-blocking connectivity between the DS3 Controller Card ports and any of the eight Service Card slots. The DS3 Controller Card replaces back-to-back M13 multiplexers and provides 3/1/O cross-connect capability to groom DS1 and DS0 services. In addition, it can operate as a DS3 add/drop multiplexer, delivering T1/FT1 tributaries to remote cell sites or customer locations.

Fully Optimize Facilities and Capabilities

The design and architecture of the Axxius 800 allows seamless migration to an incremental investment in emerging technologies and applications while reducing both capital expenses and operational costs. For example, in wireline implementations, the Axxius 800 offers crucial port relief off of CO "Big Iron" equipment (e.g., Class 5 switches, digital cross-connect systems, add/drop multiplexers, routers and ATM switches). Its compact design is a perfect solution for service providers looking to provide 3/1/0 cross-connect functionality in small or confined spaces. Meanwhile, larger service providers can cap the growth of expensive 3/1/0 cross-connect systems and even eliminate more costly 1/0 cross-connect systems altogether.

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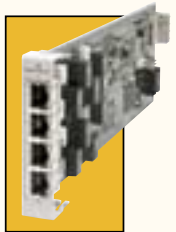
A variety of service cards is available for the Axxius 800, enabling wireless and wireline enterprises and serv



The Axxius 800 Power Supply options accept either 24 VDC or 48 VDC power, for both wireless and wireline applications. A single Power Supply is capable of powering the entire Axxius 800 unit. Equipping the Axxius 800 with two Power Supplies provides a simultaneously shared, redundant power feed to the Axxius 800 unit. Front-panel LEDs provide easy-to-read power status and alarms. Each Power Supply can remotely notify network operations and monitoring centers of low VDC output through the Axxius SNMP.



The Low-Speed Interface Protection Card provides increased redundancy and enhanced reliability for the Axxius 800 Access Integration Platform. The card allows T1 metallic spans to be automatically cut over to a hot-standby card installed in any Axxius 800 chassis service slot in the event of a card failure. As a result, a failed T1 can be protected and replaced without affecting service.



The Quad DS1 Service Card provides up to four T1 tributary ports with integrated CSU functionality supporting full drop-and-insert, fractional and full T1 data, and DS0 trunking for optimal T1 bandwidth utilization. The Axxius 800 can support up to 36 T1 access lines.



With the Quad DS1 ADPCM Service Card, the Axxius 800 provides an intelligent, compact device that can compress and groom voice traffic and allows the transport of analog and digital traffic over a single T1 facility, increasing bandwidth utilization and reducing costs. Using industry-standard Adaptive Differential Pulse Code Modulation (ADPCM), the ADPCM Service Card compresses selected voice timeslots from one of the T1 ports, increasing the voice and data capacity of T1 links.

In wireless implementations, the Axxius 800 allows carriers to address future access needs with exceptional 2.5G/3G access bandwidth, remote management and application delivery. Through upgradeable software and easy-to-replace cards, the Axxius 800 can be configured to deliver an ever-increasing array of wireline and wireless service offerings, as well as address future needs for ATM, IP and broadband transport.

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ice providers to cost-effectively deliver a customized mix of voice, video and data communications services.



The Quad-Port Terminal Server Router Card combines the performance and expandability of a selectable four-port RS-232 terminal server or a 10/100Base-TX Ethernet switch and routing functionality. The card provides a low-cost solution to help service providers remotely manage RS-232 and 10/100Base-TX Ethernet devices in wireless and wireline networks. By extending the carrier's LAN network to remote sites, the installed network can be used to provide connectivity to sites from the CO, MTSO, NOC, office, home, and even other cell or remote sites. It also supports telemetry and SCADA (Supervisory Control and Data Acquisition) connectivity systems used extensively by power, water, gas, and other utility companies, as well as delivers routing capabilities needed to offer 3G applications services.



The Order Wire Single-Channel POTS Card provides a standard FXS voice circuit. The card can be used for communications with the operations support group when remote locations are being serviced, or for providing a voice line without installing an additional external two-wire POTS line from a local carrier. This Service Card features a single RJ-11 telecom connection and is available with an integrated V.34 modem for remote management of the platform.



The Dual V.35 Service Card provides two individual interfaces for connectivity to high-speed serial synchronous Data Terminal Equipment (DTE) devices commonly deployed in customer and cell sites. Each V.35 port can be individually configured to support $n \times 56/64$ Kbps rates up to 1.536 Mbps. The Axxius 800 can provide up to 16 fractional T1 V.35 connections from any network T1.



The ISDN BRI Service Cards enable service providers and enterprises to deploy high-density, standards-based ISDN Basic Rate Interface (BRI) services over one or more T1 access lines. The cards support 3-DSO BRITE standard ISDN transport mode in which three DS0 channels support a BRI channel, providing eight BRI circuits per T1. The BRI channel consists of two Bearer channels (B-channels) at 64 Kbps each, and a 16 Kbps Data channel (D-channel), which is also transported in a full DS0.

Quality reliability



The FXO/DPT 8-Channel Voice Service Card provides high-density provisioning of reliable Foreign Exchange Office (FXO) or Direct Inward Dialing (DID) telephone services. Up to eight FXO or Dial Pulse Terminate (DPT) telephone line channels can be deployed on each card, which allows for the provisioning of up to 64 FXO or DPT lines in a single Axxius 800 chassis.



The OCU-DP Service Cards provide scalable, independently configurable, synchronous digital data service rates from 2.4 Kbps to 64 Kbps, including Switched 56 Kbps. The OCU-DP ports can be groomed and mapped into any of the DS1 system ports or the DS3 ports of the Controller. The OCU-DP Cards can be used to deliver DDS services over 4-wire local loops, interface termination for devices with integrated DSU/CSU (FRAD, routers, etc.) and provide SS7 signaling transfer point interfaces for consolidation over T1 or DS3 lines.

What makes the Axxius 800 different?

Feature

Consolidates bandwidth delivery, grooming, and management functions of multiple boxes into one 2 rack unit (RU) platform.

Rescues up to 35% or more of network bandwidth commonly wasted at the cell site or when providing fractional T1 service – redistributes residual bandwidth.

Industry-leading density and versatility with interfaces for: T1, V.35, POTS, OCU-DP, FXO, ISDN BRI, ADPCM Service Cards and Terminal Server Router Card for 10/100Base-TX Ethernet and RS-232 applications.

Carrier-quality design, 19- or 23-inch rack-mountable, 2 RU, passively-cooled, temperature-hardened enclosure (no fans or filters).

Remotely manages connectivity to all cell site equipment from MTSOs, NOCs, offices, homes – and even from other cell sites.

Benefit

Reduces capex by up to 83% and saves space requirement by up to 10x while maintaining or improving flexibility of service compared to traditional approaches.

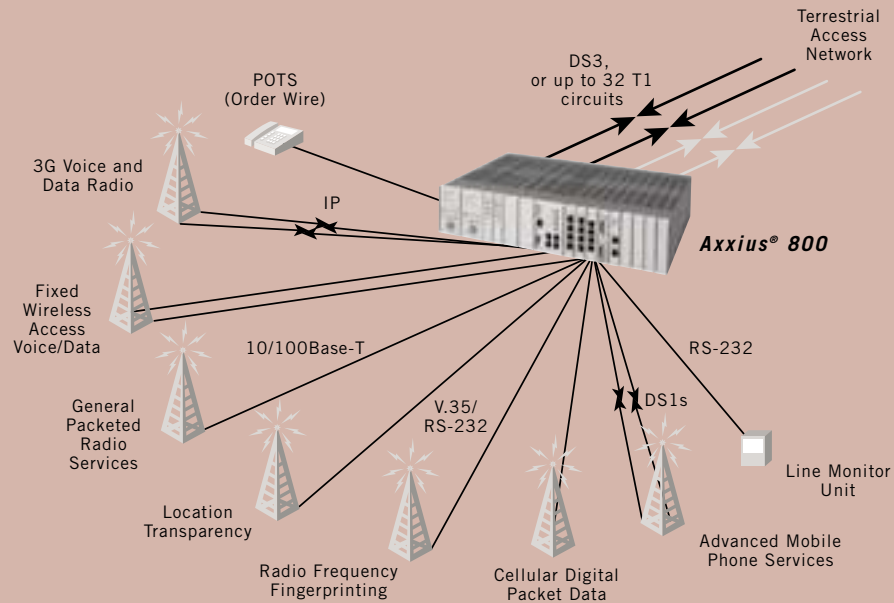
Increases available bandwidth at cell sites, COs, POPs, COLOs without waiting for more T1s. Improves network efficiency and maximizing leased lines allows service providers to deliver additional revenue-generating services at dramatically lower costs.

Accelerates revenue opportunities now and plans for service migration by adding services and management functionality without replacing equipment and extending the useful life of existing facilities and assets.

Hot-swappable service cards offer customizable mix of service. Compact, hardened platform satisfies the demanding bandwidth requirements of DCS stacks or wireless cell site radios and periphery equipment in just 2 RU of space.

Economically collects remote data and control systems information for real-time management and control, provides remote management connectivity, and connects disparate instruments and networks into a unified infrastructure for telemetry backhaul while eliminating the need for costly network upgrades.

The Axxius 800 has unmatched flexibility in access infrastructure performance.



The Axxius 800 can be configured to deliver the following applications:

- 36 T1
- 32 OCU-DP Digital Data Service (DDS) terminal
- 16 V.35 or synchronous RS-232 port drop-and-insert CSU/DSU
- 32 10/100 or Terminal Server Ports
- 64 FXO
- 64 ISDN BRI shelf
- 3/1/0 and 1/0 DCS capability



Increase network efficiency and improve service delivery and distribution

The Axxius 800 increases network efficiency by extending distributed DCS capabilities to POPs and COLOs. This enhanced DCS functionality enables previously idle DS0s from multiple T1s to be utilized for new service deployments and revenues. Its 3/1/0 DCS capability grooms traffic at the edge to reduce DS1 hand-offs for port relief in POP or COLO implementations, or the Axxius 800 can act as a DS3 add/drop multiplexer for economical service coverage.

For applications such as campus/office park deployments, the Axxius 800 enables the efficient delivery of DS1 leased line services with 3/1/0 DCS functionality, providing rapid service provisioning, as well as optional fractional T1 services to fill DS3 links. That same capability provides efficient backhaul to carrier POPs/COLOs and DS1 service delivery in other settings. In applications such as MTU implementations, the Axxius 800 optimizes transport facility use and allows service providers to efficiently serve customers with a DS3 or with multiple DS1s. The Axxius 800 also provides power and controller redundancy for mission-critical and large enterprise customers.

Outstanding operational savings

Advanced grooming, redundancy, and network management capabilities enable operators to reduce operating costs and enhance network reliability, flexibility, and utilization. The Axxius 800 helps to minimize network operating costs by ensuring that previously wasted bandwidth is used, reducing equipment space needs, and decreasing configuration time. Through a wide variety of service modules, a diverse set of CO/COLO/POP or wireless site assets can be readily interfaced with a single economical, space- and bandwidth-saving platform, further reducing network costs and extending the useful life of existing facilities and assets.

Easy integration in confined spaces

Designed for environments challenged by climate and limited space, such as POPs, COLOs, cell site cabinets or huts, the Axxius 800 is a two rack unit, feature-rich system. The rear panel of the Axxius 800 chassis is fully connectorized and its Control Panel provides all the physical interfaces and electrical T1 or DS3 circuit interfaces.

SOLVE for

Simple remote end-to-end management

The Carrier Access NetworkValet® Element Management System enables carriers to reduce service and maintenance costs by remotely configuring, monitoring, and testing the Axxius 800 from anywhere on the network. Operators can make instantaneous service changes, check the operation of equipment, and often fix problems without sending a service technician to a remote site. This remote end-to-end management allows service providers to control and test equipment right up to the service demarcation point.

The Axxius 800 provides 10 user-defined alarm inputs for supporting remote monitoring alarm closures from remote power, security and HVAC systems. This built-in capability eliminates the need for external alarm monitoring and transport devices. The 10 user-defined alarms can be individually named and prioritized (critical, major, or minor) and are reported to the system alarm/event logs.

Always-on availability

Setting the new standard for both wireline and wireless access infrastructures, the Axxius 800 is designed to be the most dependable product in its class. Due to its mission-critical nature and expected deployment environments, this true carrier-quality platform offers full common card redundancy and 1:n service protection, providing continuous availability for today's critical service needs. Plus, outside plant environmental hardening helps ensure reliable operation under the harshest conditions.

As with all Carrier Access solutions, the Axxius 800 is manufactured in our world-class ISO 9001 facility and is designed to meet the highest quality standards.

We solve for x

Carrier Access manufactures broadband access and service delivery platforms for both landline and wireless communications carriers. Our solutions enable our customers to expand service revenues, lower operating costs, and extend capital budgets. Founded in 1992, Carrier Access has delivered more than 3.2 million voice and data lines for customers in North American and International markets. The company focuses on broadband access from central offices to customer premises, next-generation wireless transport and data infrastructure, and enterprise service delivery. Carrier Access products meet and exceed the highest industry interoperability, reliability, and quality standards; including Telcordia™ OSMINE, NEBS Level-3, and ISO 9001.





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