

Remote Access Server

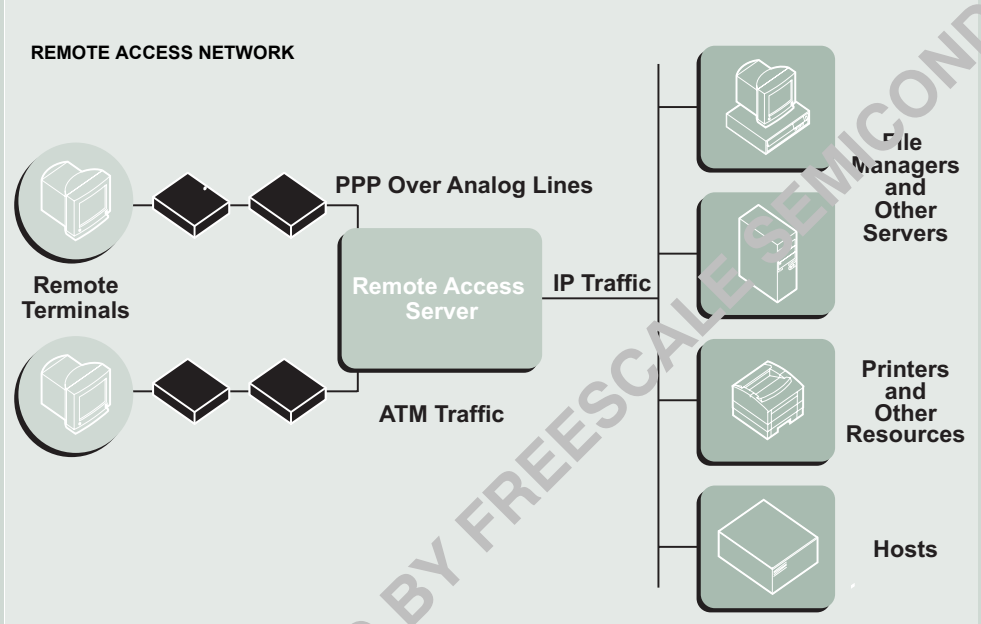
Overview

A remote access server enables users who are not on a local network to access, retrieve, file, and print services as though they were. For example, people telecommuting to the office from home may dial into a remote access server. Through

that server, users may access drives and printers in the office as though they were connected to the internal office LAN. Security is a paramount consideration in remote access applications.

Key Benefits

- > Provides intelligence for smart development of remote access server platforms
- > Delivers cutting edge features designed specifically for communications tasks



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Freescale Ordering Information

Part Number	Product Highlights	Additional Information
MPC8260	<ul style="list-style-type: none"> > 300 MHz maximum speed > 16K-bytes cache-L1 instructional > 16K-byte cache-L1 data > 64-entry translation lookaside buffers > Floating point unit 	www.freescale.com/netcomm
MPC185	Powerful security co-processor for any networking or computer system supporting the 60x bus protocol	www.freescale.com/securityprocessor

Design Challenges

The Figure on page 1 illustrates a remote access server that handles multiple traffic types:

- > Point-to-point protocol (PPP) or serial link Internet protocol (SLIP) over analog or DSL modems for long-distance access
- > ATM or other WAN protocols for broadband traffic
- > Routing functionality for such traffic; e.g., using IP
- > Asynchronous types of terminal services such as Telnet or TN3270
- > Virtual private network (VPN) (Internet Protocol Security, or IPSec) tunnel termination

Often, translation between different protocols must be provided.

The combination of interfaces and services presents a difficult challenge to server implementation, especially in light of time-to-market constraints. Traditional approaches required separate hardware and general-purpose CPUs for each interface type and protocol, resulting in many individual designs, along with limited reuse of software.

Freescale Semiconductor Solution

Freescale Semiconductor's comprehensive communications and networking processor portfolio provides

intelligence for a smart development for remote access server platforms.

Freescale Semiconductor's processor portfolio delivers cutting edge features designed specifically for communications tasks.

New Approach

Freescale Semiconductor's PowerQUICC™ family of integrated communications processors enables a new approach to design challenges, one that delivers this broad solution set within a single hardware architecture. The family's dual-core architecture allows the dedicated FISC communications processor and on-board memory to enable a single PowerQUICC-based interface to be built with a variety of different PHY interface types in order to create a common platform. Protocol software can be implemented within the PowerQUICC processor, while the core, which is compliant with PowerPC™ architecture, handles control/management plane functions.

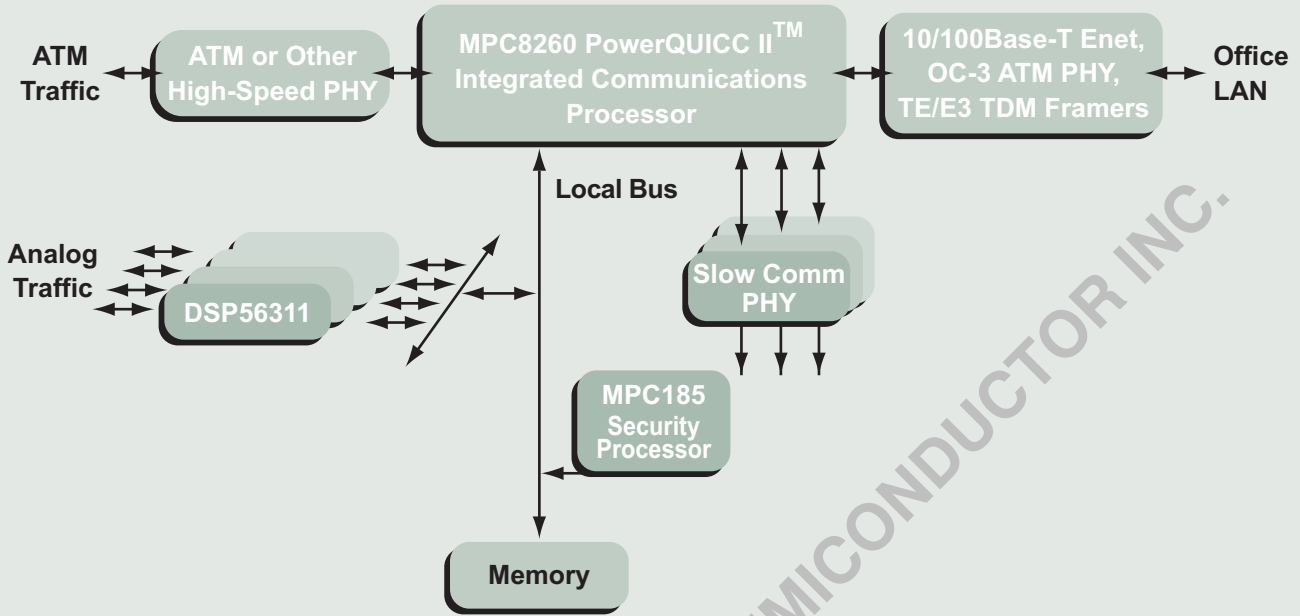
All members of Freescale Semiconductor's leading PowerQUICC II family of integrated communications processors are easily upgradable through downloadable microcode packages. These innovative microcode packages provide the ideal mix of control

and data plane functionality further enabling customers to speed time-to-market and focus on value-added product elements.

The Figure on page 3 depicts a design that uses Freescale Semiconductor's MPC8260 PowerQUICC II integrated communications processor in a remote server control configuration:

- > DSPs for the analog modem traffic can reside on the local bus; data can be transferred to and from the DSP bank using the flexible IDMA engine.
- > Depending on the needs of the office LAN, the MPC8260 is capable of 155 Mbps ATM over Universal Test and Operations Interface for ATM (UTOPIA), 10/100 Base-T Ethernet, or clear-channel E3.
- > Up to 256 high level data link control (HDLC) or transparent time division multiplex (TDM) channels can be supported.
- > Slower operation, administration, and maintenance (OAM) messaging to other areas of the server system can be accomplished using a variety of on-chip peripheral interfaces and serial channels.
- > Up to full rate OC-3 VPN (IPSec) support through the use of the MPC185 security processor.

REMOTE ACCESS SERVER



Select the specific family member that satisfies your data-handling requirements, and enjoy the benefits of a flexible, cost-effective design. In addition, the established code base and broad third-party support from Freescale Semiconductor's Smart Networks Alliance Program members further

enable cost-efficient solutions and accelerated time-to-market for remote server equipment suppliers.

The MPC185 security processor is easily integrated into PowerQuicc II systems via the 60x bus. The MPC185 achieves high performance through 60x bus mastering and immediate access to

system memory. By avoiding data transfers across bridges and secondary buses, the MPC185 provides PowerQuicc II system designers with the ultimate security chipset for midrange VPN and remote access server applications.

Development Tools

Tool Type	Product Name	Vendor	Description
Hardware	MPC8xxFADSMB	Freescale Semiconductor	For MPC8xx Family Application Development System Motherboard

PowerQUICC Integrated Communications Processors

- > MPC850 family, including the MPC850SR
- > MPC855T with Fast Ethernet support
- > MPC857T with enhanced ATM support
- > MPC860 family, including the MPC860SAR
- > MPC862 with enhanced ATM support

- > MPC8250, MPC8255, MPC8260, MPC8264, MPC8265, and MPC8266 PowerQUICC II next-generation family
- > MPC185 Security Processor
- > PowerQUICC and PowerQUICC II microcodes packages provide enhanced forwarding plane features

Notes

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