

Universal Access Gateway

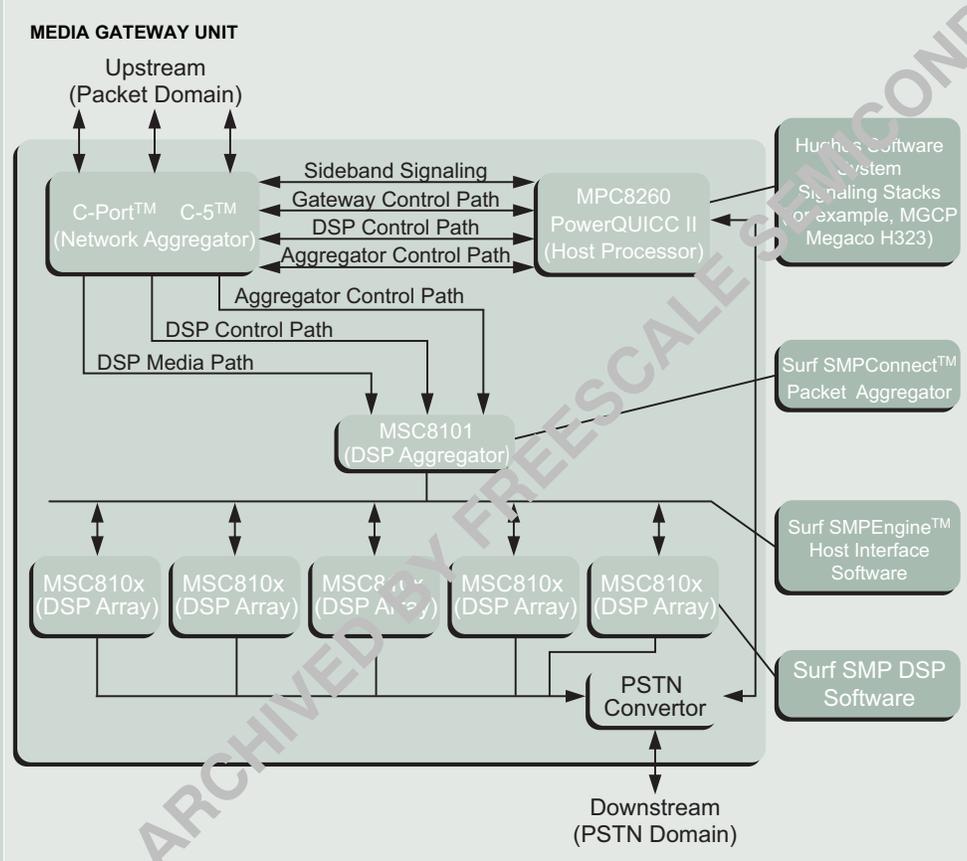
Overview

The Universal Access Gateway provides multiservice support for voice, fax, and data calls over packet to meet the increasing demands of network convergence. Products require increasing flexibility and may be located at a variety of network nodes; for

example, the ingress or egress points-of-presence for a central office (CO) switch, or even acting as a virtual private network (VPN) interfacing with the enterprise network.

Key Benefits

- > Provides a complete hardware and software solution for converged packet voice, fax, and modem applications
- > Supports the latest standard algorithms and protocols



Freescale Ordering Information

Part Number	Product Highlights	Additional Information
XC8101M1375C	332-pin FC-BGA package; 275 MHz; 1375 MMACS; 137 MHz CPM; 63 MHz system bus; 275 MHz EFCOP	1.6, 3.3 V, 512K-byte unified program and data memory configurable by the application, 4 ALUs, EFCOP, CPM, system integration unit, 16-channel DMA, 64-bit 60x-compatible system bus. Suitable for networking infrastructure applications such as 2.5G and 3G wireless infrastructure, IP telephony (voice, fax, modem, and video IP gateways), ATM edge/carrier switching and transmissions and centralized DSP services (compression and echo cancellation)
XPC8260 PowerQUICC™ II	CPU/CPM/bus speed (MHz); 166/133/66 (HFB); 200/133/66 (IFB); 200/166/66 (IHB)	Supports fast Ethernet HDLC channels and OC-3 ATM up to 200 MHz CPU, 166 MHz CPM, 66 MHz bus
MCC501RX233TD0B	233 MHz C-5 Network Processor, 838-pin HITCE CBGA package, 5 Gbps throughput	Targeted applications are broadband access, wireless infrastructure, multiservice access platforms, media gateways, and high-function routing

Design Challenges

In a fiercely competitive market, system designers juggle the issues of power, density, cost, and scalability to achieve a best-in-class product. An ever-increasing list of standard algorithms and protocols (e.g., V.92, G.729e, and I.366.2) must be supported to keep up with market requirements. Also, the evolution from circuit-switched to packet networks requires detailed knowledge of legacy public switched telephone network (PSTN) signaling standards, as well as those required to interwork efficiently with the newer ATM-, IP-, and Frame Relay-based networks. Successful products conquer all of these issues, providing a seamless evolution to the new converged network.

Freescale Semiconductor Solution

Freescale Semiconductor's Smart Networks-enabled packet telephony solutions have taken a new approach to meeting system challenges. These solutions build on the foundation of Freescale Semiconductor's leading StarCore®-based networking DSPs and PowerQUICC integrated communications processors, coupled with the industry-proven systems expertise of our packet telephony partners. For example, the Figure on page 1 illustrates a Media Gateway Unit employing Surf Communication Solutions' software and Hughes Software Systems' signaling stacks, along with Freescale Semiconductor silicon.

The Surf Multi-access Pool (SMP) provides the DSP software solution for converged voice over IP (VoIP), (FoIP), and modem applications. Hughes Software Systems' communication protocol stacks and frameworks further the integration level of Freescale Semiconductor's packet telephony solutions, delivering market-tested and proven gateway software based on the latest standards, including Media Gateway Control protocols such as MGCP and MEGACO.

Development Tools

Tool Type	Product Name	Vendor	Description
RTOS and API	OSE RTOS RTXC	OSE Systems (www.enea.com) Quadros Systems (www.quadros.com)	RTOS and API
Software Development, Integration, and Debug Environment	Microsoft CodeWarrior™ StarCore C++/C software Development Tool Suite Tornado	Green Hills Software (www.ghs.com) Metrowerks (www.metrowerks.com) TASKING (www.tasking.com) Wind River Systems (www.windriver.com)	Software Development, Integration, and Debug Environment
Co-Simulation	Signal Processing Worksystems (SPW) N2C Design System Seamless Coverification	Cadence (www.cadence.com) CoWare (www.coware.com) Mentor Graphics (www.mentorgraphics.com)	Co-Simulation
System Level Modeling and Simulation	System Level Design N2C Design System MATLAB, Simulink COSSAP	Cadence (www.cadence.com) CoWare (www.coware.com) Matlab (www.matlab.com) Synopsys (www.synopsys.com)	System Level Modeling and Simulation
Device Simulator	PrimeLayer Communications Suite	PrimeLayer Software, Inc. (www.primelayer.com)	Device Simulator
Hardware Development Environment	MSC8101ADS	Metrowerks (www.metrowerks.com)	Hardware Development Environment
Device Driver Software	DriveWay-MSC8101	Aisys (www.aisysinc.com)	Device Driver Software

Third Party Tools

Vendor	Description	Contact Information
Surf Communication Solutions Inc.	Advanced universal port solution for converged packet voice, packet fax, V.9x modems, and high-speed data services.	www.surf-com.com
Hughes Software Systems	Interoperable and versatile protocol stacks for the voice over packet (VoP), general packet radio service (GPRS), and universal mobile telephone system (UMTS) markets.	www.hssworld.com

Online Topics

Description

MSC8101: Network-Ready DSP

MPC8260: PowerQUICC II Integrated Communications Processor

Remote Access Servers and Remote Access Concentrators: Problems and Solutions

Engineering the Multi-Channel Universal Port DSP Application

Implementing High-Quality Voice Solutions: The Technology Behind a Carrier Class VoIP Interworking Between Mobile Cellular and Fixed Networks

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Notes

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SG2120
REV 2
12/2004

December2004