



CodeWarrior™ Development Studio

Smart Packet Telephony 810X

Overview

The Smart Packet Telephony is a hardware reference design for small to large-scale media gateway equipment that can handle voice, fax or modem data services.

The reference platform and development kit are designed to give manufacturers of remote access servers (RAS) and IP-PBXs that are

based on Freescale™ StarCore™ DSPs a time-to-market advantage. System architects may use this evaluation platform to assess the capabilities of the Freescale StarCore architecture-based DSPs. It is also designed to facilitate rapid system development. Multiple third parties supply media gateway and remote access server software to complete the packet telephony solution.

This platform includes support for voice compression and echo cancellation, essential for voice-over-packet systems. Smart Packet Telephony consists of three main subsystems:

1. The PowerQUICC™ II (MPC8260) baseboard is designed to support Fast Ethernet interfaces to the packet network; is designed to provide a UTOPIA level-2 interface and H.100 TDM interface; and is designed to run essential application-specific protocols required by the target application.
2. The DSP subsystem is designed to run essential signal processing functions for voice, fax and modem data applications. At the heart of the DSP subsystem are multiple Freescale StarCore based DSPs in a PTMC form factor. There are up to 6 DSPs on a typical farm card. Typical functions include voice compression, DTMF detection, voice activity detection, echo cancellation and silence suppression, as well as modem and fax data modulation and demodulation. The DSP subsystem interfaces to the MPC8260 baseboard via the system 60x bus.

- > Packet Telephony DSP farm cards
 - DSP farm card with eight MSC8122+ DSPs, 8 x 16 MB SDRAMs, 4 MB Flash
 - DSP farm card with five MSC8122 DSPs and one MSC8101 DSP, 5 x 16MB SDRAM's, 4MB Flash
 - DSP farm card with four MSC711X DSPs, 4 x 16 MB DDR DRAMs
 - DSP farm card with six MSC 8101 DSPs, 6 x 8 MB SDRAMs, 4 MB Flash
 - DSP farm card with five MSC8102 DSPs and one MSC8101 DSP, 5 x 16 MB SDRAMs, 4 MB Flash
- 3. The PSTN subsystem connects to the DSP subsystem and offers four narrow-band T1/E1 TDM ports. The PSTN subsystem is also designed to support four analog PSTN ports for direct interfaces to standard analog voice terminals, and provides a TDM stream for the DSP array.

Product Highlights

- > MPC8260 baseboard
 - 128 MB SDRAM, 4 MB local SDRAM
 - 8 MB Flash
- > Four E1/T1 interfaces — terminate up to 128 PSTN or PBX DS-0s
- > Four POTS ports — terminate up to four analog POTS lines or trunks
- > H.100 connection
- > Four 10/100 Base-T Ethernet ports
- > One UTOPIA level-2 interface capable of bit rates of up to 155 Mbps
- > One RS-232 craft or management port
- > JTAG debug port
- > Interfaces: DSI, MII, TDM, HDI16, RS232

Software Features

- > Driver libraries for MPC8260 and StarCore DSPs
- > Board-level diagnostics
- > MPC8260 running Freescale supported Linux®
- > MPC8260 Uboot bootloader
- > Component-level board demonstrator
- > Schematics

Related Products

- > CodeWarrior Development Studio for StarCore DSP Architectures (DSP algorithm development)
- > CodeWarrior Development Studio for PowerPC® ISA, Communication Edition (8260 Program Development)
- > CodeWarrior Development Studio, Embedded Linux Edition for PowerPC Architectures (Linux Applications Development for the 8260 Baseboard)
- PowerTAP® Hardware Target Interface
- CodeWarrior HTI

Learn More: For more information about Freescale products, please visit www.freescale.com/codewarrior

FREESCALE and the FREESCALE logo are trademarks of Freescale Semiconductor, Inc. CODEWARRIOR and the CODEWARRIOR logo are trademarks of Metrowerks Corp. All other product or service names are the property of their respective owners.

© Freescale Semiconductor, Inc. 2005. © Metrowerks Corp. 2005. Metrowerks is a Freescale company. ALL RIGHTS RESERVED.

