Product Brief

TMPR4938XB–300/333 (TX4938) 64-bit RISC Processor

Highlights

- 32-bit/66 MHz PCIC Rev 2.2 supports up to 4 PCI devices
- NAND flash controller with IPL (Initial Program Loader)
- 2 Ethernet MACs
- High system performance and low-power consumption of 1.5W at 333 MHz
- Package: 484-pin PBGA

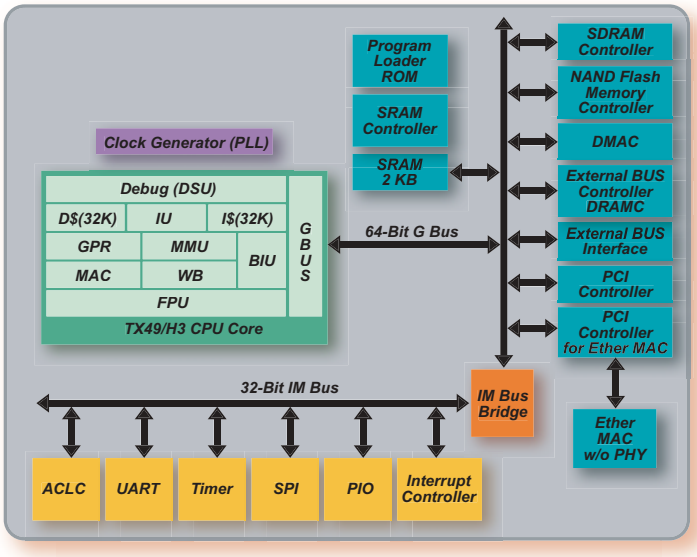
Description

The TX4938 MIPS RISC microprocessor is a highly integrated ASSP solution based on the Toshiba TX49/H3 processor core, a 64-bit MIPS I, II, III Instruction Set Architecture (ISA) compatible with additional instructions. The TX4938 has as peripheral functions an external bus controller, an SDRAM controller, a NAND flash controller, a PCI controller, a DMA controller, an interrupt controller, an AC-link controller, serial and parallel ports, a timer/counter and peripheral circuits such as Ethernet MAC.

Features

- TX49/H3 core (on-chip IEEE754 compliant single/double precision FPU)
- SDRAM controller (4 channels: 64-bit/133 MHz)
- NAND flash memory controller
- External bus controller (8 channels)
- 32-bit PCI controller (33 MHz/66 MHz)
- Direct memory access controller: 8 channels (4 channels are dedicated to AC-link controller)
- Serial I/O port (2 channels)
- Parallel I/O port (maximum 16-bits)
- Synchronous serial interface
- Timer/counter (3 channels)
- AC-link controller (AC97 interface)
- Ethernet MAC (2 channels)
- On-chip ROM for program loader
- On-chip SRAM (2 KB)
- Low-power consumption (typ. 1.5W)
  - Internal: 1.5V
  - I/O: 3.3V
  - Reduced power mode (halt)
- CPU maximum operating frequency: 300 MHz/333 MHz
- IEEE1149.1 (JTAG) support: debugging support unit
- Package: 484-pin PBGA
  64 pins are thermal ball for heat dissipation

Block Diagram



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Product Brief

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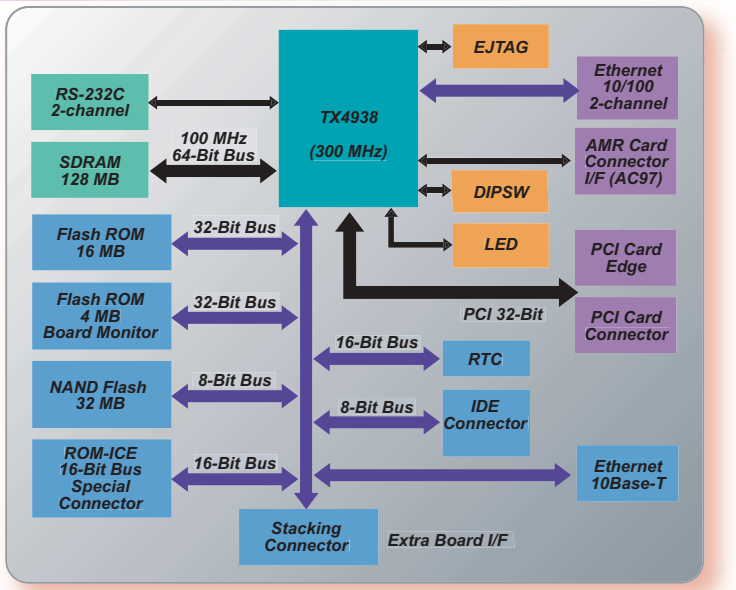
TX4938XB Reference Board Block Diagram



TX System RISC Development Tools

Product Name: TMPR4938XB-300

Reference Boards:

Main Ref. Board–RBHMA4500 (CE)
I/O Daughter Card–RBHIO3100
PCI 3.3 V Backplane–RBHBK4200

Operating Systems:

Wind River—VxWorks
Monta Vista—Linux
Microsoft—Windows CE.NET

Development Tools:

Green Hills—MULTI 2000 Compiler & Debugger
Red Hat—GNU Pro Compiler & GDB Debugger
Wind River—VisionICE II Emulator with Debugger
YDC (Yokogawa) AdvicePlus Emulator with Debugger
Macraigor TX49 Emulator

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