

UP1000 Motherboard

Technical Reference Manual

Document UP1000-TR — Alpha Processor, Inc.

Scope

This reference expands on the UP1000 User's Manual with register-level and platform detail for OEMs, system integrators and driver/BIOS developers.

Processor Subsystem

- Alpha 21264 (EV6) Slot B module, 600MHz/2MB L2 or 700MHz/4MB L2
- Out-of-order, 4-wide superscalar execution core; separate integer and floating-point clusters
- 3.2GB/s sustained backside L2 cache bandwidth

Chipset Architecture

- AMD-751 System Controller: CPU-to-memory and CPU-to-AGP bridge, 100MHz 64-bit SDRAM interface
- ALi M1543C South Bridge: PCI-to-ISA bridge, IDE, USB, keyboard/mouse, RTC
- Peak main-memory bandwidth: 800MB/s

Memory Map & Expansion

- Three PC100 168-pin unbuffered DIMM sockets, 64MB–768MB SDRAM, non-ECC
- Four 32-bit/33MHz PCI slots (33MHz, 5V signaling), two ISA slots
- AGP 2x graphics slot

I/O & Firmware

- Two bus-mastering Ultra DMA IDE channels, one floppy controller
- Two 16550-compatible UARTs, one ECP/EPP parallel port, dual USB 1.1
- 2MB flash ROM: AlphaBIOS v5.70 and SRM Console (beta) firmware images

Operating System Support

Linux for Alpha (all major distributions, booted directly from SRM) and Windows NT 4.0 (Alpha edition, via AlphaBIOS).