



# Themis USPIIe-USB Single-Board Computer



## Highest Performance UltraSPARC Single-Board Computers from Themis Computer

Themis Computer's new USPIIe-USB™ is a family of high performance 6U VMEbus computer boards based on the Sun® Microsystems 500-MHz and 650-MHz 64-bit UltraSPARC® processors. The USPIIe-USB provides users with 500-MHz and 650-MHz UltraSPARC® RISC processor options. Themis offers a down-clocked variant of the 650-MHz UltraSPARC processor, to 600-MHz, for users who can accept a reduction in peak processing capacity in exchange for increases in thermal management and design margins. Themis' USPIIe-USB supports 64-bit Solaris™ 8 and Solaris 9 operating environments, enabling embedded computing users to access thousands of off-the shelf Solaris™ software solutions.

Designed for the highest level of configuration flexibility and performance, the USPIIe-USB integrates the Sun 64-bit 650-MHz UltraSPARC® Ili processors with a local PCI bus (PMC) peripheral controller slot, and a high performance bridge. This high speed VME64 board is available in one-slot, two-slot and three-slot configurations that offer a wide range of I/O and performance options.

The cost-effective USPIIe-USB/1 is a single-slot configuration that has low power dissipation, and high flexibility for embedded computing applications. It features dual 80MB/sec Ultra2 LVD SCSI ports, one 10/100Base-T Ethernet port, and four RS-232 serial ports. Memory is expandable up to 4-Gbytes using memory mezzanine cards. This baseboard configuration provides a 64-bit PMC slot for local I/O or graphics expansion. Further I/O expansion is available via a 64-bit PCI riser to the second and third VME slots.

The USPIIe-USB/2P2 two-slot configuration offers significant I/O expansion options, including two additional PMC slots. This expanded I/O configuration provides AC97 audio, a second 10/100Base-T Ethernet port, two multiprotocol serial ports and a software readable front panel rotary switch. These features make it ideal for data and telecommunications applications.

The USPIIe-USB/2P3 is a doublewide configuration providing users three additional PMC slots without the expansion features of the USPIIe-USB/2P2 configuration. All versions may be configured with Themis' high performance TGA3D graphics co-processor. The TGA3D uses one additional VMEbus slot and provides one additional PMC slot.

### Features & Specifications

#### USPIIe-USB/1

Processors (64-bit) – 500-MHz UltraSPARC Ili or  
650-MHz UltraSPARC Ili  
Performance – 25/28 SPECint95/tp (650 MHz)  
VME Interface – VME 64X via Tundra Universe II  
A24/D16, A32/D32 modes  
VME Form Factor – 6U one (1) slot, expandable to  
three (3) slots with optional features  
Memory – 128-MB to 4-GB SDRAM  
On-chip L1 Cache – 16-KB Instr / 16KB Data  
On-chip L2 Cache – 256-KB 4-way associative  
(500-MHz processor)/512-KB (650-MHz)  
Flash Memory – 2-MB system, 8-MB user  
Error Detection/Correction – 8-bit ECC to main memory  
Timers – Three level 22-bit watchdog timers  
SCSI Interface – Two (2) 80-MB/sec Ultra2 LVD SCSI ports  
PMC Slot – One (1) 64-bit 33-MHz PMC slot  
Parallel Port – Three level 22-bit watchdog timers  
Ethernet Interface – One (1) 10/100MB with front panel RJ45  
Serial I/O – Four (4) serial RS232 ports (one port RS232/RS422)  
64-bit Solaris 8 and Solaris 9 Support

#### USPIIe-USB/1

Three (3) USB 1.0 ports (2 on front panel, 1 at rear of board)  
Injectors – both VME64 and traditional VME injectors available  
Power Requirements -  
+5V @ 6A, 12V @ 0.1A, -12V @ .04A (500MHz)  
+5V @ 7A, 12V @ 0.1A, -12V @ .04A (650MHz)  
Operating Temp Range: -5 to + 55°C  
Cooling – 300 LFM minimum  
Dimensions (HxD): 6U 6.299" (160mm) x 9.173" (233mm)  
Weight: approx. 1.32 lbs. (weights vary by board configuration)

#### USPIIe-USB/2P2

Audio – AC97 audio In/Out, sample rate - 48 kHz, 16 bits  
Ethernet Interface– One (1) additional 10/100 MB with front  
panel RJ45  
Serial I/O – Two (2) additional serial RS232/422 ports  
PMC Expansion – Two additional 64-bit PMC slots (3.3/5V)  
Rotary Switch – User selectable 16-position

#### USPIIe-USB/2P3

PMC Expansion – Three (3) additional 64-bit 33-MHz PMC  
slots (3.3/5V)

