

## **A4000-060/040 XP Accelerator (Revs. 1 and 2)**

(Digitally reconstructed by Greg Donner for quality/clarity)

May 27, 1999

The new A4000-060/040 XP accelerator is a plugin board for the Amiga computer and is functionally compatible with the Amiga 4000T, Amiga 4000, and Amiga 3000 computers. New levels of performance and economy are achieved by integration of all programmable logic into one advanced "Complex Programmable Logic Device" (CPLD). Fewer components also means improved quality and reliability. Along with the performance and features offered on the original accelerator, the A4000-060/040 XP accelerator supports these additional enhancements.

Special technology makes it possible with EDO RAM to support zero "wait states" when in burst mode for both reads and writes to local memory. This improves memory access performance by over 40% when compared with standard RAM.

A new optional onboard SCSI-3 controller supporting Ultra/Wide SCSI-3 protocol provides synchronous data transfer rates of over 20 MB/sec. DMA access to CPU memory is over 80 MB/sec improving CPU overhead and SCSI latency. Included with the SCSI-3 controller is a new robust and optimized SCSI driver tested with a variety of SCSI-1, 2, and 3 devices.

Overall, the A4000-060/040 XP accelerator represents the most advanced accelerator for the Amiga to date while maintaining compatibility with existing software and a "price" the end-user can afford.

The A4000-060/040 XP accelerator is available for immediate delivery.

### Specifications:

- Support for either 3.3V 68060 or 5V 68040 processors.
- Asynchronous support for CPU speeds of 33 to 66 MHz.
- 68060/040 Burst Mode supports zero "wait state" access for reads and writes to onboard memory.
- Optional Ultra/Wide SCSI-3 controller provides synchronous data transfer rates of over 20 MB/sec. DMA access from SCSI controller to local memory is over 80 MB/sec.
- Four standard 72-pin SIMM sockets offering up to 128 MB of user-installable memory.
- Support for EDO (Extended Data Out) DRAMs for enhanced memory access.
- Support for 4 MB, 8 MB, 16 MB or 32 MB industry standard SIMMs with access time of 60 or 70ns.
- Optional Boot ROM socket for OS incompatibility fixes and/or SCSI driver.
- Support for Kickstart ROM mapping into Fast RAM for enhanced performance.
- IEEE floating-point library and instruction emulation software for support of the 68060 CPU and on-chip floating-point unit (FPU). This software includes fixes and enhancements for the 68060 CPU to insure optimum performance and compatibility with the Amiga's 3.1 Kickstart ROM (and later).
- Operating parameters: Ambient temperature = 0° C + 70° C, VCC = 5.0 volts 5% tolerance.

**(Jumper Definitions on next page)**

## Jumper Definitions

Jumper	Definition	Default
JP1	Reserved	OFF
JP2	Cache Burst to A4000 Motherboard  CLOSED (ON) = Cache Burst Enabled OPEN (OFF) = Cache Burst Disabled	OFF
JP3	Interrupt Pending, DMA Backoffs  CLOSED (ON) = DMA Backoffs for Interrupt OPEN (OFF) = DMA Ignores Interrupt	OFF
JP4	SCSI Option-1  CLOSED (ON) = No LUN Support OPEN (OFF) = Support LUNs	OFF
JP5	SCSI Option-2  CLOSED (ON) = Autoboot Disabled OPEN (OFF) = Autoboot Enabled	OFF
JP6	EPROM Type  1 and 2 = 27C256 2 and 3 = 27C512	1 and 2
JP7	CPU Power  1 and 2 (5V) = 68040 2 and 3 (3.3V) = 68060	
JP8	CPU Clock  1 and 2 = 68040 2 and 3 = 68060	
JR1	Fast Memory Write  OPEN (OFF) = Fast Writes Enabled	OFF
JR2	Memory Configured for Burst Mode  OPEN (OFF) = Burst Mode Support (Two SIMMs Minimum Required) CLOSED (ON) = Non-Burst Mode (Support for any number of SIMMs)	OFF

## Jumper Definitions (continued)

Jumper	Definition	Default															
JR3	<p>DRAM Speed vs. CPU Clock</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td style="padding: 0 10px;"><b>66MHz</b></td> <td style="padding: 0 10px;"> </td> <td style="padding: 0 10px;"><b>50MHz</b></td> <td style="padding: 0 10px;"> </td> <td style="padding: 0 10px;"><b>40MHz</b></td> </tr> <tr> <td>OPEN (OFF) = 50ns</td> <td></td> <td>60ns</td> <td></td> <td>60/70ns</td> </tr> <tr> <td>CLOSED (ON) = 60ns</td> <td></td> <td>60/70ns</td> <td></td> <td>60/70/80ns</td> </tr> </table>	<b>66MHz</b>		<b>50MHz</b>		<b>40MHz</b>	OPEN (OFF) = 50ns		60ns		60/70ns	CLOSED (ON) = 60ns		60/70ns		60/70/80ns	OFF
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OPEN (OFF) = 50ns		60ns		60/70ns													
CLOSED (ON) = 60ns		60/70ns		60/70/80ns													
JR4	<p>FCLK Option</p> <p>CLOSED (ON) =&gt; 58MHz</p>	OFF															
JR5	<p>EDO DRAM Support</p> <p>OPEN (OFF) = EDO Enabled</p>	OFF															
JR6	<p>Memory Size</p> <p>OPEN (OFF) = 4MB</p> <p>CLOSED (ON) = 16MB</p>	OFF															
JR7	<p>Single/Double-Sided SIMM</p> <p>OPEN (OFF) = Single-Sided SIMM</p> <p>CLOSED (ON) = Double-Sided SIMM</p>	OFF															
JR8	<p>On-Board SCSI Enable</p> <p>CLOSED (ON) = SCSI Enabled</p>	OFF															
CN5	<p>According to Michael at GVP-m, these pins have no useful meaning for anybody but the manufacturer. They are simply the connection to the two large Programmable Logic Controller Chips, Altera EPX880 (or in older versions, EPX780). Via this connector, the Programmable Logic Controller chips on the accelerator are programmed "in system" after the boards were manufactured.</p>																
CN6	5V Fan																
CN8	SCSI LED Indicator																