

**AMD-K6™ E Processor Family
CompactPCI CPU Board
User's Manual**

Order #22650A



AMD-K6™ Processor Family CompactPCI CPU Board User's Manual

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About the AMD-K6™E Processor Family CompactPCI CPU Board

The AMD-K6™E Processor Family CompactPCI CPU Board (referred to throughout as AMD CompactPCI Board) is designed for developing and testing Windows® CE. This hardware reference platform includes a standardized set of hardware that ensures reliability and compatibility with hardware and software used with Windows CE.

The board is a 6U form factor (233.35 mm x 160 mm—approximately nine inches by six inches). The local PCI interface has a capacity for five PCI devices. The CPU subsystem contains an AMD-K6™E family processor, SDRAM, 2-Mbit boot ROM, and Flash memory.

Features

The AMD-K6™E Processor Family CompactPCI CPU Board provides the following features:

- AMD-K6™E family processor
- Acer Labs, Inc. Aladdin V Northbridge and Southbridge chipset
- 2-Mbit Boot ROM (Flash ROM chip, Am29F002B)
- 64-Mbyte SDRAM
- 32-Mbyte Flash expandable to 64 Mbyte (Am29F032B)
- RS-232 serial port
- 10/100BaseT Ethernet port (Am79C972 and Am79C873)
- CompactPCI Interface
- One Mbyte L2 cache (pipeline-burst SRAM at 100 MHz)

Documentation

The AMD-K6TME Processor Family CompactPCI CPU Board User's Manual, order #22650A, provides information about the system, board features, functions and interfaces. Additional information can be found in "Suggested Reference Material" on page xi.

About This Manual

Chapter 1, "Getting Started" helps you to set up and start using the AMD CompactPCI Board.

Chapter 2, "Features and Functions" describes the various sub-systems, the data transfer between these sub-systems, and the functions of the components.

Appendix A, "Jumper, Switch, and Interrupt Settings" lists all of the settings for the jumpers and switches contained on the AMD CompactPCI Board.

Appendix B, "Bill of Materials" lists the parts and components contained in the AMD CompactPCI Board.

A standard index is also included.

Suggested Reference Material

The following AMD documentation may be of interest to the AMD CompactPCI Board user.

- *AMD-K6TME Embedded Processor Data Sheet Supplement*, order #22459
- *AMD-K6TM Processor Data Sheet*, order #20695
- *AMD-K6TM-2E Processor Data Sheet*, order #22529
- *AMD-K6[®] Processor Family Thermal Solutions Application Note*, order #21085
- *AMD-K6[®] Processor Power Supply Design Application Note*, order #21103
- *AMD-K6[®] Processor Bios Design Application Note*, order #21329
- *Am79C873 NetPHYTM-1 Ethernet Transceiver Data Sheet*, order #22164
- *Am79C792 PCnetTM-FAST+ Ethernet Controller Data Sheet*, order #21485
- *Am79C973/Am79C975 PCnet-FAST III Single-Chip 10/100 Mbps PCI Ethernet Controller with OnNow Support*, order #21510
- *Am29F002B/Am29F002NB 2 Megabit (256 K x 8-Bit) CMOS 5.0 Volt-only Boot Sector Flash Memory*, order #21527
- *Am29F032B 32 Megabit (4 M x 8-Bit) CMOS 5.0 Volt-only, Uniform Sector Flash Memory*, order #21610
- *E86TM Family Products Development Tools CD*, order #21058

For current application notes and technical bulletins, see our World Wide Web page at www.amd.com.

The following non-AMD documentation may also be of interest to the AMD-K6^{TME} Processor Family CompactPCI CPU Board user.

- MACH® 4 CPLD Family data sheet, order #17466G, Vantis Corporation. For more information, refer to the Vantis Corporation web site at **www.vantis.com**.
- For information about the CompactPCI environment, refer to the PCI Industrial Computer Manufacturers Group web site at **www.picmg.com**.
- For information about the Alladin V chipset, refer to the Acer Laboratories, Inc. web site at **www.acerlabs.com**.
- For information about Microsoft Windows CE, refer to the Microsoft, Inc. web site at **www.microsoft.com/windowsce/Embedded/resources**.

Documentation Conventions

The *AMD-K6™ Processor Family CompactPCI CPU Board User's Manual* uses the notational conventions shown in Table 0-1 (unless otherwise noted).

Table 0-1. Notational Conventions

Symbol	Usage
Boldface	Indicates that characters must be entered exactly as shown, except that the alphabetic case is only significant when indicated.
<i>Italic</i>	Indicates a descriptive term to be replaced with a user-specified term.
Typewriter face	Indicates computer text input or output in an example or listing.
EXE	Indicates a DOS executable file.
HEX	Indicates an Intel extended hex file.
<>	Encloses a required parameter. To include the information described within the angle brackets, type only the parameters, not the angle brackets themselves.
[]	Encloses an optional parameter. To include the information described within the brackets, type only the parameter, not the brackets themselves.
	Separates alternate choices in a list. Only one of the choices can be entered.

Chapter 1



Getting Started

This chapter provides information to enable you to connect to and use the AMD-K6^{TME} Processor Family CompactPCI CPU Board (referred to throughout as AMD CompactPCI board). The following sections describe the connections, board power, and related information required to start using the board.

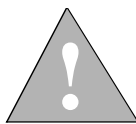
Connecting and Powering Up

Getting started with the operations of the AMD CompactPCI board is easy. Follow the steps below to connect and power-up the AMD CompactPCI board.



CAUTION: Make sure that the power to the CompactPCI chassis is off before inserting and connecting the AMD CompactPCI board. The AMD CompactPCI board can be damaged if the power is on when the board is first connected.

1. Insert the AMD CompactPCI board into the CompactPCI chassis until it is firmly seated.



CAUTION: Make sure that the AMD CompactPCI board is firmly seated before turning on the power to the CompactPCI chassis. Turning on the power to the chassis before the board is seated can damage the board.

2. Turn on the power to the CompactPCI chassis. Power enters the AMD CompactPCI board when the CompactPCI chassis power is turned on.

Connecting the CompactPCI Connector

Table 1-1 shows the pinouts for the CompactPCI connector.

Table 1-1. CompactPCI Connector Pinouts

22	GND	GA4	GA3	GA2	GA1	GA0	GND	P2 / J2	
21	GND	CLK6	GND	RSV	RSV	RSV	GND		
20	GND	CLK5	GND	RSV	GND	RSV	GND		
19	GND	GRD	GRD	RSV	RSV	RSV	GND		
18	GND	BRSVP2A18	BRSVP2A18	BRSVP2A18	GND	BRSVP2A18	GND		
17	GND	BRSVP2A17	GND	PRST#	REQ6#	GNT6#	GND		
16	GND	BRSVP2A16	BRSVP2B16	DEG#	GND	BRSVP2E16	GND		
15	GND	BRSVP2A15	GND	FAL#	REQ5#	GNT5#	GND		
14	GND	AD[35]	AD[34]	AD[33]	GND	AD[32]	GND		
13	GND	AD[38]	GND	V(I/O)	AD[37]	AD[36]	GND		
12	GND	AD[42]	AD[41]	AD[40]	GND	AD[39]	GND		
11	GND	AD[45]	GND	V(I/O)	AD[44]	AD[43]	GND		
10	GND	AD[49]	AD[48]	AD[47]	GND	AD[46]	GND		
9	GND	AD[52]	GND	V(I/O)	AD[51]	AD[50]	GND		
8	GND	AD[56]	AD[55]	AD[54]	GND	AD[53]	GND		
7	GND	AD[59]	GND	V(I/O)	AD[58]	AD[57]	GND		
6	GND	AD[63]	AD[62]	AD[61]	GND	AD[60]	GND		
5	GND	C/BE[5]#	GND	V(I/O)	C/BE[4]#	PAR64	GND		
4	GND	V(I/O)	BRSVP2B4	C/BE[7]#	GND	C/BE[6]#	GND		
3	GND	CLK4	GND	GNT3#	REQ4#	GNT4#	GND		
2	GND	CLK2	CLK3	SYSEN#	GNT2#	REQ3#	GND		
1	GND	CLK1	GND	REQ1#	GNT1#	REQ2#	GND		
25	GND	5V	REQ64#	ENUM#	3.3V	5V	GND		P1 / J1
24	GND	AD[1]	5V	V(I/O)	AD[0]	ACK64#	GND		
23	GND	3.3V	AD[4]	AD[3]	5V	AD[2]	GND		
22	GND	AD[7]	GND	3.3V	AD[6]	AD[5]	GND		
21	GND	3.3V	AD[9]	AD[8]	M66EN	C/BE[0]#	GND		
20	GND	AD[12]	GND	V(I/O)	AD[11]	AD[10]	GND		
19	GND	3.3V	AD[15]	AD[14]	GND	AD[13]	GND		
18	GND	SERR#	GND	E.EV	PAR	C/BE[1]#	GND		
17	GND	3.3V	SDONE	SBO#	GND	PERR#	GND		
16	GND	DEVSEL#	GND	V(I/O)	STOP#	LOCK#	GND		
15	GND	3.3V	FRAME#	IRDY#	GND	TRDY#	GND		
12-14	Key Area								
11	GND	AD[18]	AD[17]	AD[16]	GND	C/BE[2]#	GND		
10	GND	AD[21]	GND	3.3V	AD[20]	AD[19]	GND		
9	GND	C/BE[3]#	IDSEL	AD[23]	GND	AD[22]	GND		
8	GND	AD[26]	GND	V(I/O)	AD[25]	AD[24]	GND		
7	GND	AD[30]	AD[29]	AD[28]	GND	AD[27]	GND		
6	GND	REQ#	GND	3.3V	CLK	AD[31]	GND		
5	GND	BRSVP1A5	BRSVP1B5	RST#	GND	GNT#	GND		
4	GND	BRSVP1A4	GND	V(I/O)	INTP	INTS	GND		
3	GND	INTA#	INTB#	INTC#	5V	INTD#	GND		
2	GND	TCK	5V	TMS	TDO	TDI	GND		
1	GND	5V	-12V	TRST#	+12V	5V	GND		
Pin	Z	A	B	C	D	E	F		

Chapter 2



Features and Functions

NOTE: This board contains the AMD-K6™E processor. However, any processor from the AMD-K6™E processor family can and might be used in future versions of this board.

The AMD-K6™E Processor Family CompactPCI CPU Board (referred to throughout as the AMD CompactPCI board) is a single two-sided circuit board consisting of the following components:

- AMD-K6™E processor family, page 2-4
- Northbridge and Southbridge Acer Labs, Inc. Aladdin V chipset, page 2-4
- 64-Mbyte SDRAM, page 2-5
- One Mbyte L2 cache (pipeline-burst SRAM at 100 MHz), page 2-5
- 32-Mbyte Flash, expandable to 64 Mbytes (Am29F032B), page 2-6
- 2-Mbit boot ROM (Am29F002B), page 2-6
- 10/100BaseT Ethernet Port (Am79C972 and Am79C873), page 2-11
- CompactPCI interface, page 2-12

Block Diagram and Component Locations

Figure 2-1 shows a block diagram of the AMD CompactPCI board. For an illustration of the board layout, refer to Figure 2-2 on page 2-3.

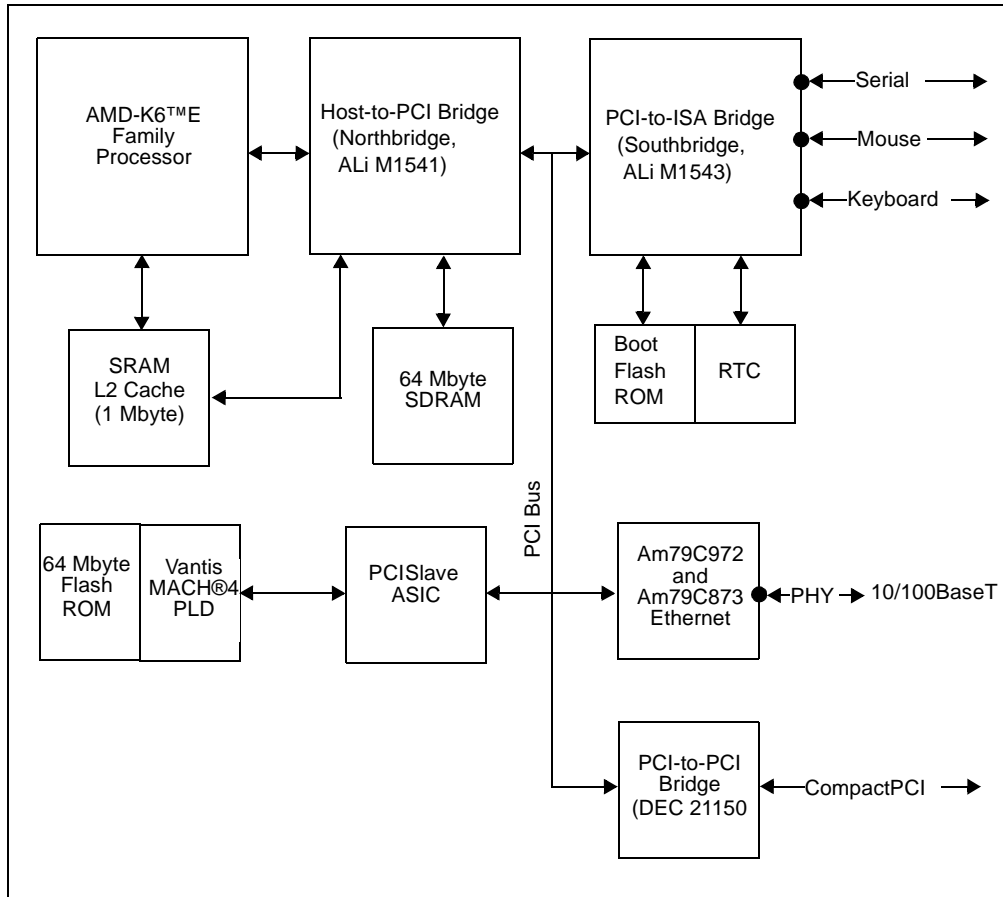


Figure 2-1. AMD-K6™E Processor Family CompactPCI CPU Board Block Diagram

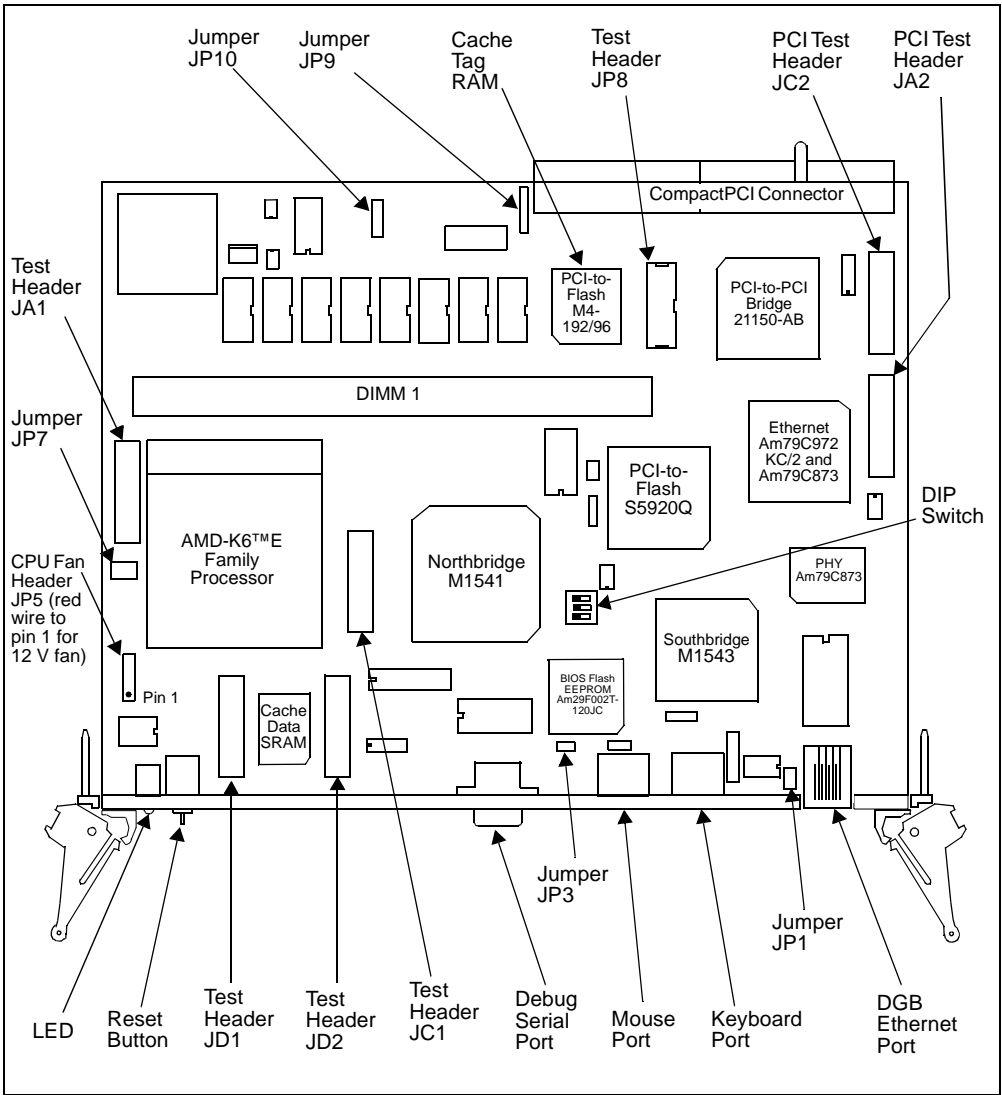


Figure 2-2. AMD-K6™E Processor Family CompactPCI CPU Board Layout

Feature Descriptions

The AMD CompactPCI board consists of the following features.

CPU Subsystem

The CPU subsystem consists of an AMD-K6E family processor, SDRAM, Northbridge, and L2 cache. The AMD-K6E family processor can access the boot Flash ROM indirectly through the chipset. The chipset automatically provides the conversions necessary for the CPU to boot from the boot ROM after a reset. The CPU DRAM and the related control circuitry is integrated onto the Northbridge chip.

Flash support is provided through a PCI slave interface (AMCC S5920) and the Vantis MACH® device. The software always boots off the boot PROM first. Then, based on the switch settings, the PROM generates the monitor code or jumps to the Flash to continue code execution.

Northbridge Chip

The Northbridge chip (Acer Labs, Inc., M1541) is a Socket 7 host-to-PCI bridge. This enables the CPU to transmit data to Flash memory and all PCI devices, including the Ethernet controller, PCI slave ASIC, and the PCI-to-PCI bridge chip. The chip also integrates a DRAM controller function.

Southbridge Chip

The Southbridge chip (Acer Labs, Inc., M1543) contains a PCI-to-ISA bridge. It also contains an integrated serial port that is generally used as a debug port. The chip contains an expansion bus that supports the boot ROM for the processor. Eight programmable timers are integrated on the chip. The chip also contains an interface for an RTC. The Southbridge chip also contains serial ports, mouse and keyboard, and BIOS/boot ROM.

Ethernet Chip

Ethernet support is provided by the AMD PCnet™-FAST+ chip (Am79C972 and Am79C873). This chip is a full duplex Ethernet controller that can support 10BaseT and 100BaseTX physical transport using the correct AUI circuitry. For more information about the Am79C972 and the Am79C873 controllers, refer to the data sheets, *Am79C972 PCnet™-FAST+ Enhanced 10/100 Mbps PCI Ethernet Controller* and the *Am79C873 NetPHY™-1 10/100 Mbps Ethernet Physical Layer Single-Chip Transceiver*.

PCI-to-PCI Bridge Chip

The PCI-to-PCI bridge chip (DEC 21150-AB) provides an interface between the local on-board PCI bus and the CompactPCI bus. The chip can support up to 10 PCI devices on the secondary PCI bus. The PCI chassis has eight slots, and the AMD CompactPCI board occupies one of these slots. This allows seven more PCI devices to occupy the PCI chassis.

The chip has a primary PCI bus and a secondary PCI bus. The primary PCI bus is directly connected to the local PCI bus on the AMD CompactPCI board. The secondary PCI bus is connected to the CompactPCI bus. The subsystems contained in the secondary PCI bus are the clock drivers, bus arbiter, and interrupt controller for the devices or for the CompactPCI bus.

RAM

The AMD CompactPCI board provides 64 Mbytes of RAM (8 M x 64 bit) using industry standard SDRAM DIMMs. This PC-100 SDRAM runs at 100 MHz and is socketed in a JEDEC-standard 168-pin unbuffered DIMM socket.

SRAM

The 1-Mbyte L2 cache is made of SRAM (pipeline-burst at 100 MHz). Two types of chips comprise the SRAM: tag and data.

System Flash

The AMD CompactPCI board contains 32 Mbytes of linear Flash and can be expanded to 64 Mbytes of Flash. The standard size of installed Flash is 32 Mbytes and it logically resides on the PCI bus. The system Flash is not executed at the boot location.

The processor can block-erase and block-protect the Flash at less than one Mbyte per block. The processor can write to Flash memory.

A software-controlled, global write-protect register bit prevents the hardware from asserting the write-enable signal, thereby disabling all of the writes to Flash memory.

Boot Flash PROM

During normal operation, code is executed from the system Flash. However, when the system Flash is blank or is corrupt, a mechanism is required to reprogram the system Flash. The boot Flash PROM contains monitor code and uses the serial debug port at the rate of 38.4 Kbaud (8 data, 1 stop, no parity). The boot Flash ROM can be replaced with a small socketed EPROM.

After the system is out of reset and the switch settings indicate use of the boot Flash PROM, the AMD CompactPCI board identifies itself over the debug serial port with the same information in the markings section. Then, a prompt (>) is provided.

The processor always boots from the board initialization code in ROM. Depending on the software settings, the processor may execute from the Flash ROM array or run monitor programs from the boot ROM.

The monitor responds to the following set of commands (case insensitive) and provides the functions described as follows:

- **L:** Runs the S-record loader. Subsequent serial data is interpreted in the standard S-record format and written to Flash.
- **E:** Completely erases all of system Flash and returns to prompt when complete.
- **D address (in Hexadecimal):** Reads and displays eight D-words starting from address. The boot PROM clearly indicates address and data being read and returns to prompt when complete.

- **T:** Runs self test. The self-test is extensive and returns a final pass or fail status, returning to the prompt when complete. All installed RAM and Flash is verified to ensure that 64 Mbytes of RAM and 32 Mbytes of Flash exist on the board. The self-test result is independent of external connections and requires no test jigs.
- **I:** Identifies the device with the following information:
 - Advanced Micro Devices
 - Lloyd.gauthier@amd.com (512) 602-5962
 - Board Revision, (1.0, 2.0, etc.)
 - Date of boot code revision (MM/DD/YYYY)
 - The exact processor part number, processor company, and processor revision is visible on a label attached to the front of the faceplate.
 - Instructions for upgrading RAM and Flash (for example, specific slots that can hold specific versions of memory modules).
 - Documentation for any jumpers, switches, or any hardware items.
 - Size of installed (tested) RAM and Flash in Mbytes.
 - Part number and revision of processor.
 - Revision of PCB.

LED

The faceplate of the AMD CompactPCI board contains a single green LED. The LED is under software control during normal operation.

After power-on, the LED is forced on by a reset. Typically, as soon as the CPU comes out of reset, the LED is changed to off by the software, indicating successful fetch of the first instructions. When Windows CE is running, the kernel periodically toggles the LED, indicating normal operation. The LED is useful for triggering and status.

Reset Button and External Reset

The faceplate of the AMD CompactPCI board contains a reset button. Pushing the reset button has the same effect as asserting the $\overline{\text{PRST}}$ signal. Whenever the reset button is pushed or $\overline{\text{PRST}}$ is asserted, the system is forced into a hard reset state. Releasing the reset button and $\overline{\text{PRST}}$ causes the system to come out of reset, and then perform a cold reboot.

Software Reset

The AMD CompactPCI board contains a software reset mechanism to cold reset and reboot the system from software. The software reset is implemented as a register bit that causes a complete cold reset (reboot) to occur when a register bit is written to it.

DIP Switch

The AMD CompactPCI board contains a single three-circuit, slide-actuated DIP switch. The switch locations are shown in Figure 2-3. A description of the DIP switch settings and functions are shown in Table 2-1.

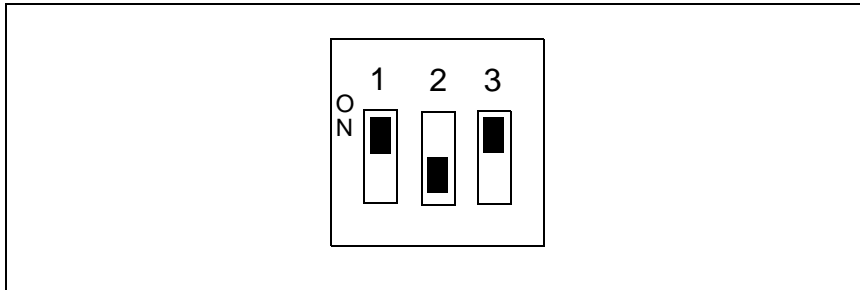


Figure 2-3. Dip Switch Settings

Table 2-1. DIP Switch Settings and Functions

Switch 1	Switch 2	Switch 3	Function
ON	X	X	Code executes from the boot PROM following a reset; communication is through the debug serial port.
OFF	ON	X	Board boots from bootloader code from the bottom-half of the boot Flash ROM, after a reset. The debug serial port is used for debug communication.
OFF	OFF	X	Code starts executing from system Flash after a reset. The debug Ethernet port is used for debug communication.
X	X	ON	The block write-protection for the system Flash is enabled. Protected blocks <i>cannot</i> be written.
X	X	OFF	The block write-protection for system Flash is disabled. Protected blocks <i>can</i> be written.

Debug Serial Port

The AMD CompactPCI board contains a debug serial port with a default baud rate of 38.4 Kbaud. The port uses a male DB9 connector, identical to the pinout of a standard PC serial port. The serial port (DBG_RX, DBG_TX) supports a serial data format of 8 data bits, 1 stop bit, and no parity.

The output signals DBG_DTR and DBG_RTS are directly controlled via the register bits. The input signals DBG_CD, DBG_DSR, DBG_RI, and DBG_CTS are visible as register bits.

The AMD CompactPCI board debug serial port is used exclusively for debug and is not shared with other functions. Other logic gates are not shared with the debug serial port.

Figure 2-4 shows the pinout locations of the debug serial port. The debug serial port pinout description is shown in Table 2-2.

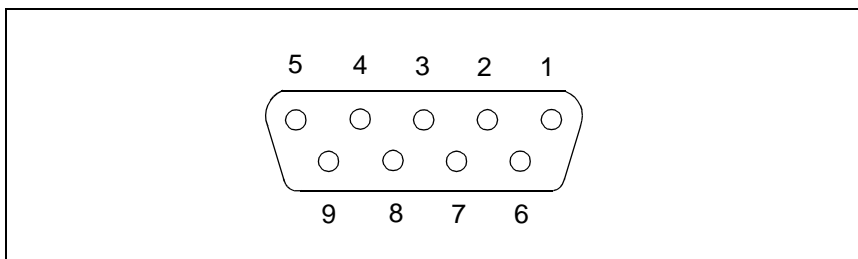


Figure 2-4. Nine-Pin Debug Serial Connector

Table 2-2. Debug Serial Port Pinout

Pin	Name	Pin	Name
1	CD	6	DSR
2	RX	7	RTS
3	TX	8	CTS
4	DTR	9	RI
5	GND		

Debug Ethernet Port

The AMD CompactPCI board contains one Ethernet port dedicated for debugging tasks. The Ethernet port supports both 10BaseT and 100BaseT physical transport. The debug Ethernet port is used exclusively for debugging and is not shared with other functions. The Ethernet driver is supported by the Windows CE software.

Timers and Real-Time Clock

The Southbridge chipset contains three 8254-compatible timers. The timers are capable of periodically interrupting the CPU. The timers can be programmed to generate periods of one millisecond (ms) to 100 ms in 1 ms increments. The current value (count) of a timer is readable during the interval between interrupts. The timers have a resolution of 1ms.

The period of the timer is changed through the software. The software can set a different interrupt period for each interrupt event. The length of time taken to modify and re-arm a timer should be short and as defined as possible. This is achieved using short-looped code that is used consistently throughout; for example, using a short x86 assembly language subroutine whenever modifying and re-arming a timer is required.

The real-time clock (RTC) is capable of an elapsed time of more than a day. The RTC can generate an interrupt to the processor any time of the day within one second of its programmed time.

PCI Interface

Description

The AMD CompactPCI board has an interface to the CompactPCI back-plane using the connectors J1 and J2. The PCI interface supports clock generation, arbitration, timing requirements for 33 MHz operation, and 5 V signaling requirements. A test mode jumper is provided to slow the bus from 33 MHz to 25 MHz.

The PCI interface supports the following types of PCI bus cycles:

- I/O Read and Write as initiator ($C/\overline{BE} = 0010, 0011$)
- Memory Read and Write as initiator and as target ($C/\overline{BE} = 0110, 0111$)
- Configuration Read and Write as initiator ($C/\overline{BE} = 1010, 1011$)

I/O Accesses as Initiator

Windows CE wraps all I/O accesses with code so that an I/O access may be modified to fit a specific processor. The PCI interface supports byte- and word-wide I/O access, in addition to other sizes (I/O performance is not limited to the standard I/O accesses listed). The window of I/O space is a minimum of 256 Kbytes. Accesses to the first byte in the window are translated into address 0x00000000 of PCI I/O space.

Memory Accesses as Initiator

PCI memory appears as a single contiguous linear window of physical address space at a minimum of 64 Mbytes. Accesses to the first byte in the window are translated into the identical address in the PCI memory space.

From the CPU, the size of a memory-write operation is equal to the size of the datum being written. For example, writing only a volatile unsigned character produces a single-byte memory-write operation on the PCI bus.

Memory Accesses as Target

RAM accesses from the devices that reside on the PCI bus are supported as a target. The PCI device can read and write the same RAM as the processor.

Configuration Space Accesses as Initiator

The host bridge on the CompactPCI CPU board implements the Configuration Mechanism #1 as specified in the PCI Local Bus Specification (PCI Special Interest Group, www.pcisig.com). A processor can place the CONFIG_ADDRESS and CONFIG_DATA registers outside of the usual I/O address space range and write the CONFIG_ADDRESS registers with words or bytes. For more information about how systems connect IDSEL and PCI interrupts, refer to the PCI Local Bus Specification.

Table 2-3. IDSEL Pin Addresses for Configuration Space Accesses

IDSEL Pin	PCI Device Number	Chip Name
AD31	15	Am79C972
AD29	13	PCI-to-PCI bridge
AD27	11	Flash memory interface (PCI slave)

Additional PCI Interface Information

CompactPCI Extensions

Signals $\overline{\text{ENUM}}$, CLK5, and CLK6 are supported for hot-swapping of peripherals. An interrupt is generated when $\overline{\text{ENUM}}$ is asserted. The power-supply signal $\overline{\text{FAL}}$ is used to place the CompactPCI CPU board into a reset condition. The power supply signal $\overline{\text{DEG}}$ is used to interrupt the CPU to prepare for loss of power.

Interrupts and Error Handling

The host interface on the CompactPCI CPU board provides a mechanism to report errors on the PCI. As a minimum, error bits in a register (Primary Status, offset 06h) are asserted and an interrupt is generated whenever the bus times out or has parity or system errors. When possible, the error is reported to the CPU so that the processor can determine the code path that caused the error.

Software

At the time of development, the software version shipped with the CompactPCI board is current. However, the software is subject to change and can be updated with future versions. For information about the current version of software, access to the AMD Web page at www.amd.com, select Embedded Processor, and then select Codekit Software.

The following is the software shipped with the AMD CompactPCI board:

- General Software Embedded BIOS
- Windows CE OAL

Boot Code

The boot PROM contains monitor code and uses the serial debug port at the rate of 38.4 Kbaud (8 data bits, 1 stop bits, no parity). The boot Flash PROM can use a small socketed EPROM. For more information related to the boot code, refer to “Boot Flash PROM” on page 2-6.

Self-Test

The self-test consist of the following items:

- RAM Word Test: All 64 Mbytes of RAM are tested by an AAs and 55s test. First, all of the memory is written; then, memory is read. Pass is indicated by “RAM word test Passed.” Failure is indicated by “RAM word test failed at <location>.” The test terminates on failure.
- RAM Address Test: The address is written to all of RAM. Then, the address is read back and verified. Pass is indicated by “RAM address test passed.” Failure is indicated by RAM address failed at <location>.”
- Flash Word Test: Same as RAM Word Test, but used for Flash.
- Flash Address Test: Same as RAM Address Test, but used for Flash.
- Real-Time Clock Test: This test determines whether the real-time clock generates an interrupt to the CPU.
- Ethernet Loopback Test: When the Ethernet chip detects a periodic pulse from a host controller, the link LED comes on.

Appendix A



Jumper, Switch, and Interrupt Settings

Each section provides information about settings, pinouts, and descriptions for the respective components.

Jumper Settings

The following information provides the jumper settings and pin locations for the various jumpers. For locations of the various jumpers, refer to Figure 2-2 on page 2-3.

NOTE: In the jumper tables on page A-2 and page A-6, a "0" indicates a jumper is installed, and a "1" indicates a jumper is not installed.

CPU Jumper JP1

Figure 2-5 shows the pinout for the CPU jumper JP1. For the settings and core/bus values of BF0, BF1, and BF2, refer to Table A-1.

NOTE: Future versions of the AMD-K6™ CompactPCI CPU Board may contain processors with higher speeds. The processor speed determines the default setting. Refer to the specifications stamped on the processor for the processor speed.

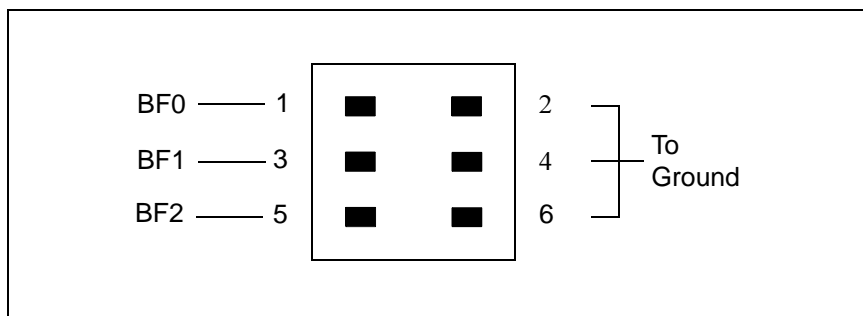


Figure 2-5. JP1 Jumper Settings

Table A-1. Core/Bus Ratios for Jumper JP1

State of BF[2:] Inputs			Processor-Clock to Bus-Clock Ratio
BF0	BF1	BF2	
1	1	0	2.0x
1	0	0	2.5x
1	0	1	3.0x
1	1	1	3.5x
0	1	0	4.0x
0	0	0	4.5x
0	0	1	5.0x
0	1	1	5.5x

EEPROM Jumper JP3

Figure 2-6 shows the pinout and setting for jumper JP3. The following setting indicates the possible operating states.

- To write to Flash, jumper pins 1 and 2 (shown in diagram below).
- To prevent writing to Flash, do not jumper pins 1 and 2.

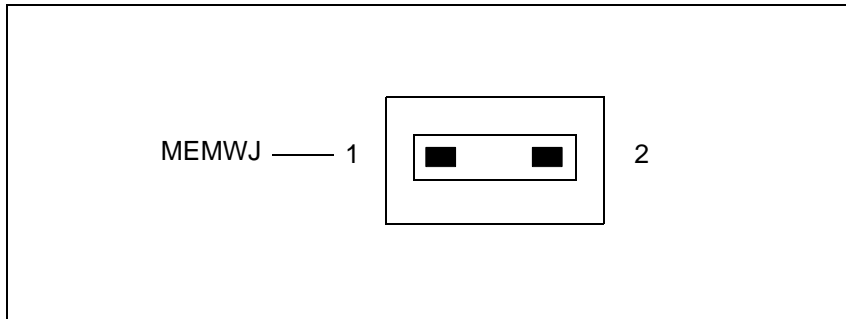


Figure 2-6. JP3 Jumper Settings

EEPROM Jumper JP7

Figure 2-7 shows the pinout and settings for jumper JP7. The following settings indicate the possible operating states.

- Because 12 V Flash is not used, do not jumper pins 1 and 2. Jumpering pins 1 and 2 requires the BIOS ROM to put 12 V on pin 1.
- For normal operation, jumper pins 3 and 4.
- Do not jumper pins 5 and 6.

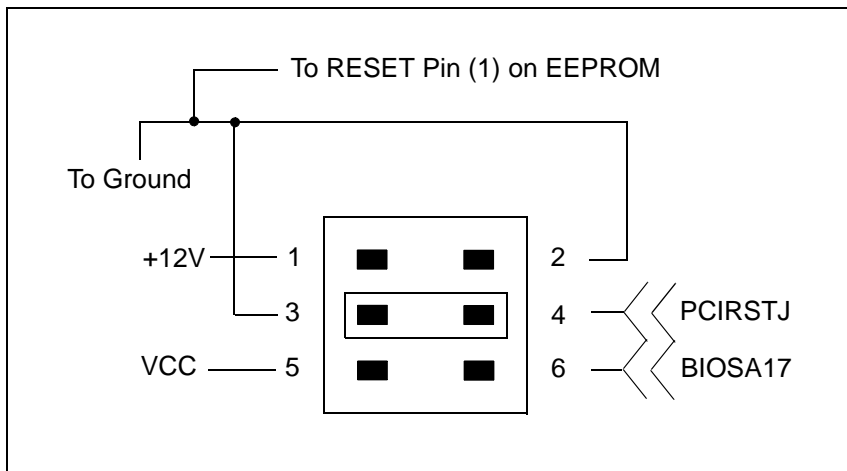


Figure 2-7. JP7 Jumper Settings

Real-Time Clock Jumper JP9

Figure 2-8 shows the pinout and setting for jumper JP9. The following setting indicates the possible operating states.

- To set the default setting, jumper pins 1 and 2.
- To clear CMOS, jumper pins 2 and 3. Jumpering pins 2 and 3 disconnects and grounds the battery.

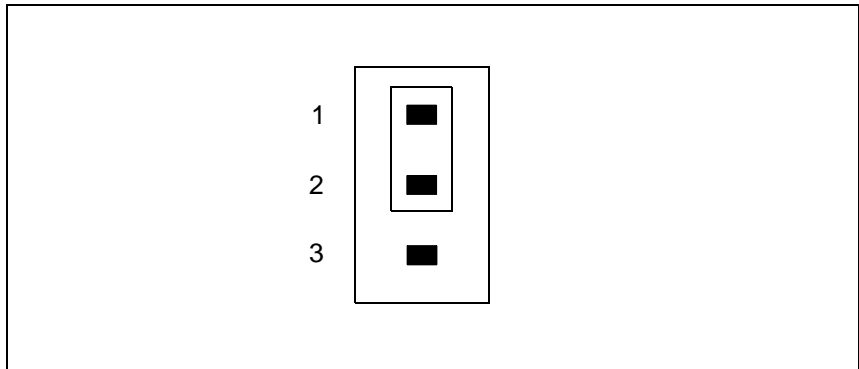


Figure 2-8. JP9 Jumper Settings

Switching Regulator Jumper JP10

Figure 2-9 shows the pinout and setting for the switching regulator jumper JP10. The following setting indicates the possible operating states.

NOTE: Future versions of the AMD-K6™ CompactPCI CPU Board may contain processors with higher speeds. The processor speed determines the default setting. Refer to the specifications stamped on the processor for the processor speed.

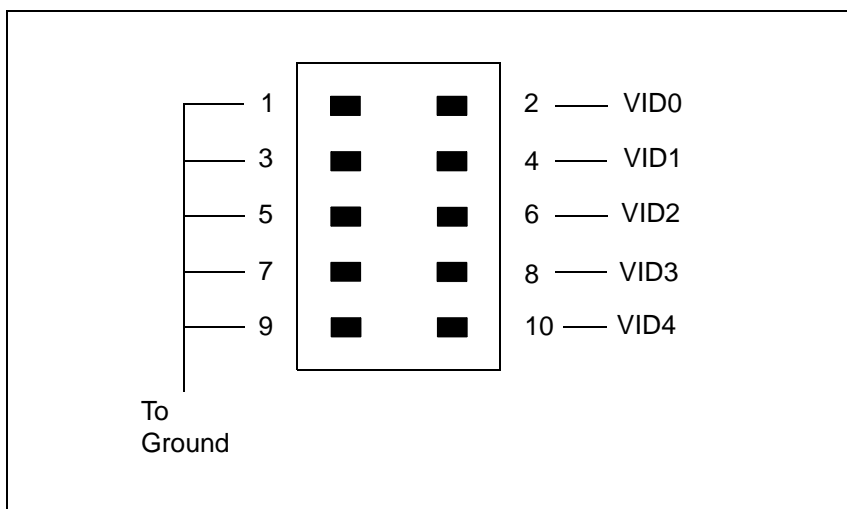


Figure 2-9. JP10 Jumper Settings

Table A-2. VID and VCORE Values for Jumper JP10

VID [4:0]	VCORE
01111	1.30V
01110	1.35V
01101	1.40V
01100	1.45V
01011	1.50V
01010	1.55V

Table A-2. VID and VCORE Values for Jumper JP10 (Continued)

VID [4:0]	VCORE
01001	1.60V
01000	1.65V
00111	1.70V
00110	1.75V
00101	1.80V
00100	1.85V
00011	1.90V
00010	1.95V
00001	2.00V
00000	2.05V
11111	NO CPU
11110	2.10V
11101	2.20V
11100	2.30V
11011	2.40V
11010	2.50V
11001	2.60V
11000	2.70V
10111	2.80V
10110	2.90V
10101	3.00V
10100	3.10V
10011	3.20V
10010	3.30V
10001	3.40V
10000	3.50V

Switch Settings

The following information provides the switch settings and pinout information for the various switches.

DIP Switch

For information about the DIP switch settings, refer to “DIP Switch” on page 2-9.

Reset Switch

Figure 2-10 shows the reset switch.

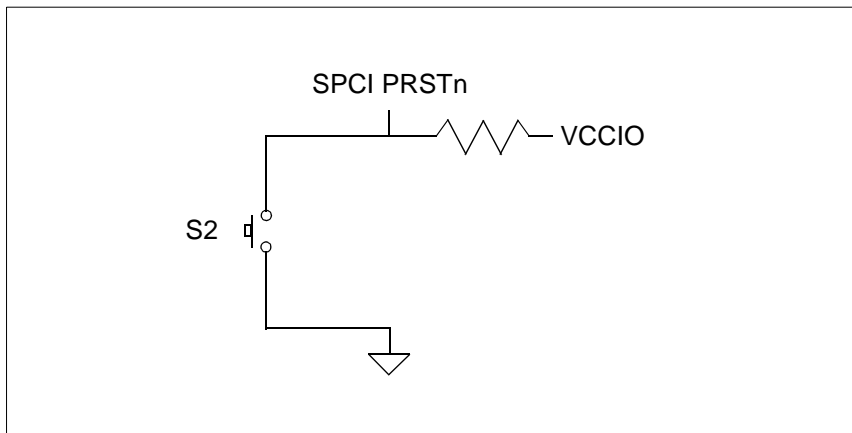


Figure 2-10. Reset Switch

Interrupt Settings

Table A-3 shows the names and descriptions for the interrupts.

Table A-3. Interrupt Settings

Interrupt	Description
IRQ0	System timers
IRQ1	KB INH
IRQ2	Program interrupt control
IRQ3	COM2
IRQ4	COM1
IRQ5	CPCI enumerate
IRQ6	Floppy disk control
IRQ7	LPT1
IRQ8	RTC INT
IRQ9	General-purpose
IRQ10	KB data
IRQ11	PCI interrupt
IRQ12	Mouse data
IRQ13	FP error
IRQ14	AGP INTA
IRQ15	AGP INTB
SIRQI	IDE primary
SIRQII	IDE secondary

Appendix B



Bill of Materials

This appendix contains the AMD-K6[™]E CompactPCI CPU Board bill of materials.

Table B-1. AMD-K6™ CompactPCI CPU Board Bill of Materials

Item	Qty	Reference	Value	Mfr.	MPN	Distribtr.	Distributor PN	Description	Package
1	1	BT1	3V	Panasonic	BR1225-1VC	Digi-Key	P192-ND	BAT, 3V, 48mA, Coin, 12 mm	BR1225
2	27	C1, C2, C4, C8, C12, C20, C21, C23, C26, C36, C37, C38, C42, C47, C56, C59, C60, C61, C62, C63, C64, C68, C79, C95, C97, C98, C99	10uF	Panasonic	ECS- T1CX106R	Digi-Key	PCS3106CT-ND	CAP, 10uF, 16V, Tantalum, EIA-B	EIA-B
3	198	C3, C5, C11, C32, C50, C55, C70, C71, C72, C73, C74, C75, C76, C77, C81, C86, C87, C88, C89, C90, C91, C113, C114, C115, C116, C123, C125, C126, C128, C130, C131, C132, C135, C136, C138, C139, C140, C141, C142, C143, C145, C146, C147, C148, C149, C150, C151, C152, C153, C154, C156, C157, C158, C159, C162, C163, C164, C165, C166, C167, C168, C169, C170, C171, C172, C173, C174, C175, C176, C177, C178, C179, C180, C181, C182, C183, C184, C185, C186, C187, C188, C189, C190, C191, C192, C193, C194, C195, C196, C197, C198, C199, C200, C201, C202, C203, C204, C206, C207, C208, C210, C211, C212, C213, C214, C215, C216, C217, C218, C219, C220, C221, C222, C223, C224, C225, C226, C227, C228, C229, C230, C231, C232, C235, C236, C237, C238, C239, C240, C241, C242, C243, C244, C245, C246, C248, C249, C250, C251, C252, C253, C254, C255, C256, C257, C258, C259, C260, C261, C262, C263, C264, C265,	.01uF		ECU- V1H103KBV	Digi-Key	PCC103BVCT- ND	CAP, 0.01uF, 10%, 50V, X7R Ceramic, 0603	603

Table B-1. AMD-K6™ CompactPCI CPU Board Bill of Materials (Continued)

Item	Qty	Reference	Value	Mfr.	MPN	Distribtr.	Distributor PN	Description	Package
3 (Cont.)	198	C266, C267, C268, C269, C270, C271, C272, C273, C274, C275, C276, C277, C278, C279, C280, C281, C282, C283, C284, C285, C286, C287, C288, C289, C290, C291, C292, C293, C294, C295, C297, C298, C299, C301, C302, C303, C304, C305, C306, C307, C308, C309, C310, C311, C312	.01uF		ECU-V1H103KBV	Digi-Key	PCC103BVCT-ND	CAP, 0.01uF, 10%, 50V, X7R Ceramic, 0603	603
4	4	C6, C10, C13, C14	0.1uF	Panasonic	ECS-T1VY104R	Digi-Key	PCS6104CT-ND	CAP, 0.1uF, 35V, Tantalum, EIA-A	EIA-A
5	1	C7	0.1uF	Arco Electronics	MC1210N102KN202			CAP, 0.1uF, 10% 2KV, NPO 1210	1210
6	16	C9, C92, C106, C155, C247, C296, C300, C313, C314, C315, C316, C317, C318, C319, C320, C321	.1uF	AVX	0603YC104MAT2A			CAP, .1uF, 20%, 16V, X7R Ceramic, 0603	603
7	4	C15, C31, C65, C80	100uF	AVX	TAJD107M010			CAP, Tantalum, 100uF, 20%, 10V, EIA-D	EIA-D
8	20	C16, C17, C22, C25, C29, C30, C33, C34, C35, C39, C40, C43, C45, C46, C48, C49, C51, C52, C53, C54	1uF	Panasonic	ECS-T1CY105R	Digi-Key	PCS3105CT-ND	CAP, 1uF, 16V, Tantalum, EIA-B	EIA-A
9	10	C18, C19, C27, C100, C101, C105, C107, C122, C137, C144	.1uF	Panasonic	ECU-V1H104KBW	Digi-Key	PCC104BCT-ND	CAP, .1uF, 50V, 10%, X7R Ceramic, 1206	1206
10	3	C24, C28, C93	10uF	Panasonic	ECS-T1VD106R	Digi-Key	PCS6106CT-ND	CAP, 10uF, 35V, Tantalum, EIA-D	EIA-D

Table B-1. AMD-K6™ CompactPCI CPU Board Bill of Materials (Continued)

Item	Qty	Reference	Value	Mfr.	MPN	Distribtr.	Distributor PN	Description	Package
11	10	C41, C44, C58, C66, C67, C69, C78, C94, C96, C102	4.7uF	Panasonic	ECS-T1CY475R	Digi-Key	PCS3475CT-ND	CAP, 4.7uF, 16V, Tantalum, EIA-A	EIA-A
12	1	C57	10pF		ECU-V1H100FCV	Digi-Key	PCC100CVCT-ND	CAP, 10pF, 10%, 50V, NP0 Ceramic, 0603	603
13	4	C82, C83, C84, C85	470uF	AVX	TAJE477M010			CAP, Tantalum, 470uF, 20%, 10V, EIA-E	EIA-E
14	2	C103, C104	220pF		ECU-V1H221JCV	Digi-Key	PCC221ACVCT-ND	CAP, 220pF, 10%, 50V, NP0 Ceramic, 0603	603
15	5	C108, C109, C110, C111, C112	220uF	AVX	TPSE227K016R0100			CAP, Tantalum, 220uF, 20%, 16V 100mOhm ESR, EIA-E	EIA-E
16	6	C117, C118, C119, C120, C121, C124	47pF		ECU-V1H470JCV	Digi-Key	PCC470ACVCT-ND	CAP, 47pF, 10%, 50V, NP0, Ceramic, 0603	603
17	4	C127, C129, C133, C134	12pF		ECU-V1H120JCV	Digi-Key	PCC120ACVCT-ND	CAP, 12pF, 10%, 50V, NP0 Ceramic, 0603	603
18	2	C161, C160	18pF		ECU-V1H180JCV	Digi-Key	PCC180ACVCT-ND	CAP, 18pF, 10%, 50V NP0 Ceramic, 0603	603
19	2	C205, C209	.047uF	Panasonic	ECJ-1VB1C473K	Digi-Key	PCC1758CT-ND	CAP, 0.047uF, 10%, 16V, X7R Ceramic, 0603	603

Table B-1. AMD-K6™ CompactPCI CPU Board Bill of Materials (Continued)

Item	Qty	Reference	Value	Mfr.	MPN	Distribtr.	Distributor PN	Description	Package
20	2	C233, C234	15pF		ECU-V1H150JCV	Digi-Key	PCC150ACVCT-ND	CAP, 15pF, 10%, 50V, NP0 Ceramic, 0603	603
21	1	DIMMX1	390104-6	AMP	390104-6	Marshall		DIMM, 168 pins, Through Hole	MO-161
22	1	DIMM1	64 Mbytes	Toshiba	DIMM168			DIMM, 64 Mbytes PC-100, 3V, Unbuffered	MO-161
23	1	D1	GRN	Lumex	SSF-LXH100GD	Digi-Key	LU20055-ND	LED, Green, 15mA, 2.1V, PC Mount, Right Angle	LEDRA
24	4	D2, D4, D5, D6	LL4148	Vishay	LL4148	Digi-Key	LL4148DICT-ND	DIODE, 10mA, Vf=aV, Vr=75V, DL-35	DL-35
25	1	D3	10BQ015	International Rectifier	10BQ015			DIODE, 1A, Vf=0.3V, Vr=15V, SMB	SMB
26	1	D7	RED	Lumex	SML-LX1206IC-TR	Digi-Key	LU60351CT-ND	LED, Red, 20mA, 2.1V 10mcd, SM	1206
27	1	D8	GRN	Lumex	SML-LX1206GC-TR	Digi-Key	LU60355CT-ND	LED, Green, 20mA, 2.1V, 10mcd, SM	1206
28	1	D9	BAV99DI	Diodes, Inc.	BAV99DI	Digi-Key	BAV99DICT-ND	DIODE, If=300mA, Vf=V@50mA, Vr=70V, SOT-23;	SOT-23
29	1	D10	32CTQ030	International Rectifier	32CTQ030	Digi-Key	32CTQ030-ND	DIODE, Schottky, 900a, vF=0.4v@15A	TO-220AB

Table B-1. AMD-K6™ CompactPCI CPU Board Bill of Materials (Continued)

Item	Qty	Reference	Value	Mfr.	MPN	Distribr.	Distributor PN	Description	Package
30	1	F1	0.75A	Little Fuse	R251.750	Digi-Key	F825-ND	FUSE, 0.75A, 125V, 1 sec, Axial	FUSE3.5
31	1	HS16	Heat Sink	Aavid	Socket7Sink			HEAT SINK, Socket 7 Heat Sink & Fan Combo	
32	6	JD1, JC1, JA1, JD2, JC2, JA2	2-767004-2	AMP	MICTOR			HDR, Mictor, 38 pins	MICTOR
33	2	JP4, JP1	HDR3/2 mm	Norcomp	2163S-03-ND	Digi-Key	2163S-03-ND	HDR, 3-pin, 2 mm, Straight	SIP3/2mm
34	2	JP9, JP2	HDR5	Sullins	S1012-05-ND	Digi-Key	S1012-05-ND	HDR, 5 pin, 100 mil Spacing, Straight	SIP5
35	1	JP3	HDR2	Sullins	S1012-02-ND	Digi-Key	S1012-02-ND	HDR, 2 pin, 100 mil Spacing, Straight	SIP2
36	1	JP5	HDR4	Sullins	S1012-04-ND	Digi-Key	S1012-04-ND	HDR, 4 pin, 100 mil Spacing, Straight	SIP4
37	2	JP6, JP7	HDR3x2	Sullins	SM2MD03S01-01	Digi-Key	SM2MD03S02-01	HDR, 3x2, 2 mm SMT, Straight, Tin	HDR6/2mm/SM
38	1	JP8	HDR5x2KEY	3M	2510-6002UB	Digi-Key	MHB10K-ND	HDR, 5x2, 100 mil, Straight, Shrouded, Tin	CONA10UK
39	1	JP10	HDR5x2	Sullins	SM2MD05S01-01	Digi-Key	SM2MD05S02-01	HDR, 5x2, 2 mm SMT, Straight, Tin	HDR6/2mm/SM
40	1	J1	352068-1		CompactPCI_J1				352068-1

Table B-1. AMD-K6™ CompactPCI CPU Board Bill of Materials (Continued)

Item	Qty	Reference	Value	Mfr.	MPN	Distribtr.	Distributor PN	Description	Package
41	1	J2	352152-1		CompactPCI_J2				352152-1
42	2	J4, J5	PS/2	CUI Stack	MD-60SM	Digi-Key	CP-2260-ND	CON, Mini-DIN, Shielded Right Angle Receptacle	MD-60SM
43	1	J6	555153-1	AMP	555153-1	Digi-Key	A9026-ND	CON, RJ-45, 8 pos, shielded	555153
44	5	L1, L5, L6, L7, L8	BEAD	Panasonic	EXC-ML20A390U	Digi-Key	P10191CT-ND	BEAD, 4A, Rdc=8m, 0805	805
45	2	L3, L2	1uH	Panasonic	ELJ-FC1R0KF	Digi-Key	PCD1061CT-ND	IND, 1uH 10%, 195 mA, Q=25@8MHzRdc=0.65, 1008	1008
46	1	L4	5.2uH	MicroMetals	PE-53700			IND, 5.2uH, 15.4A, HCI-68	HCI-68
47	1	L13	1.5uH	MicroMetals	T30-26			IND, 1.5uH, 7 Turns of 20 AWG	T60-52
48	1	P1	MALE	AMP	747250-4	Digi-Key	A2096-ND	CON, DB-9 Male, Right Angle,.318 PC Mount	747250
49	1	P2	HDR4	Sullins	S1012-04-ND	Digi-Key	S1012-04-ND	HDR, 4 pin, 100 mil Spacing, Straight	MOLEX4Z
50	2	Q2, Q1	Si4410DY	Temic	Si4410DY			MOSFET, N-Channel 30-V Rated MOSFET 10A, 30V, SO-8	SO-8
51	4	Q3, Q4, Q5, Q6	2N3904	Vishay	MMBT3904DICT	Digi-Key	MMBT3904DICT-ND	XSTR, NPN, 350 mW, 40 V, 0.3, hFfe=100, SOT-23	SOT-23

Table B-1. AMD-K6™ CompactPCI CPU Board Bill of Materials (Continued)

Item	Qty	Reference	Value	Mfr.	MPN	Distribtr.	Distributor PN	Description	Package
52	1	RN1	15K	CTS	742083153J	Digi-Key	742-083-R153CT-ND	RNET, 105K, 5%, .063W, 8 Pin Isolated	RN4
53	5	RN2, RN5, RN42, RN69, RN70	2.2K	CTS	742083222J	Digi-Key	742-083-R222CT-ND	RNET, 2.2K, 5%, .063W, 8 Pin Isolated	RN4
54	26	RN3, RN7, RN39, RN40, RN41, RN43, RN44, RN45, RN46, RN47, RN48, RN49, RN50, RN51, RN52, RN53, RN55, RN56, RN57, RN58, RN62, RN63, RN64, RN65, RN66, RN67	10K	CTS	742083103J	Digi-Key	742-083-R103CT-ND	RNET, 10K, 5%, .063W, 8 Pin Isolated	RN4
55	2	RN4, RN54	1K	CTS	742083102J	Digi-Key	742-083-R102CT-ND	RNET, 1K, 5%, .063W, 8 Pin Isolated	RN4
56	3	RN6, RN37, RN38	4.7K	CTS	742083472J	Digi-Key	742-083-R472CT-ND	RNET, 4.7K, 5%, .063W, 8 Pin Isolated	RN4
57	10	RN8, RN10, RN17, RN18, RN19, RN20, RN21, RN22, RN23, RN59	33	CTS	742083330J	Digi-Key	742-083-R330CT-ND	RNET, 33, 5%, .063W, 8 Pin Isolated	RN4
58	7	RN9, RN11, RN12, RN13, RN14, RN15, RN16	10	CTS	742083100J	Digi-Key	742-083-R100CT-ND	RNET, 10, 5%, .063W, 8 Pin Isolated	RN4
59	13	RN24, RN25, RN26, RN27, RN28, RN29, RN30, RN31, RN32, RN33, RN34, RN35, RN36	10	CTS	742083100J_	Digi-Key	742-083-R100CT-ND	RNET, 10, 5%, .063W, 8 Pin Isolated	RN4
60	2	RN60, RN61	470	CTS	742083471J	Digi-Key	742-083-R471CT-ND	RNET, 470, 5%, .063W, 8 Pin Isolated	RN4

Table B-1. AMD-K6™ CompactPCI CPU Board Bill of Materials (Continued)

Item	Qty	Reference	Value	Mfr.	MPN	Distribtr.	Distributor PN	Description	Package
61	1	RN68	5.1K	CTS	742083512J	Digi-Key	742-083-R512CT-ND	RNET, 5.1K, 5%, .063W, 8 Pin Isolated	RN4
62	7	R1, R4, R53, R55, R57, R78, R152	0	Panasonic	ERJ-3GSYJ0R0	Mouser		RES, 0, 5%, 1/16W, 0603	603
63	1	R2	3.3K	Panasonic	ERJ-3GSYJ332	Digi-Key	P332GTR-ND	RES, 3.3K, 5%, 1/16W, 0603	603
64	22	R3, R5, R8, R14, R17, R21, R25, R26, R30, R52, R79, R84, R85, R89, R91, R92, R93, R94, R106, R111, R112, R130	1K	Panasonic	ERJ-3GSYJ102	Digi-Key	P102GTR-ND	RES, 1K, 5%, 1/16W, 0603	603
65	4	R6, R71, R72, R99	330	Panasonic	ERJ-3GSYJ331	Digi-Key	P331GTR-ND	RES, 330, 5%, 1/16W, 0603	603
66	1	R7	20K	Panasonic	ERJ-3GSY203	Digi-Key	P203GTR-ND	RES, 20K, 5%, 1/16W, 0603	603
67	7	R9, R20, R67, R95, R129, R142, R166	10	Panasonic	ERJ-3GSYJ100	Digi-Key	P100GTR-ND	RES, 10, 5%, 1/16W, 0603	603
68	4	R10, R12, R36, R38	0		3R				
69	15	R11, R15, R24, R43, R44, R45, R73, R80, R83, R86, R88, R120, R122, R136, R139	4.7K	Panasonic	ERJ-3GSY472	Digi-Key	P472GTR-ND	RES, 4.7K, 5%, 1/16W, 0603	603
70	2	R13, R19	10M	Yageo	10MEBK-ND	Digi-Key	10MEBK-ND	RES, 10M, 5%, 1/8W, Carbon Film, Axial	Axial

Table B-1. AMD-K6™ CompactPCI CPU Board Bill of Materials (Continued)

Item	Qty	Reference	Value	Mfr.	MPN	Distribtr.	Distributor PN	Description	Package
71	53	R16, R28, R37, R39, R40, R41, R48, R49, R50, R59, R61, R62, R63, R64, R65, R66, R74, R81, R87, R90, R96, R97, R98, R100, R101, R102, R109, R110, R113, R114, R115, R116, R118, R121, R125, R127, R128, R137, R138, R140, R141, R143, R144, R145, R149, R150, R153, R154, R157, R159, R160, R161, R165	10K	Panasonic	ERJ-3GSY103	Digi-Key	P103GTR-ND	RES, 10K, 5%, 1/16W, 0603	603
72	1	R18	40.2K	Panasonic	ERJ-3EKF4022	Digi-Key	P40.2KHCT-ND	RES, 40.2K, 1%, 1/16W, 0603	603
73	4	R22, R23, R76, R77	75	Panasonic	ERJ-3EKF75R0	Digi-Key	P75.0HCT-ND	RES, 75.0, 1%, 1/16W, 0603	603
74	2	R29, R27	8.2K	Panasonic	ERJ-3GSY822	Digi-Key	P822GTR-ND	RES, 8.2K, 5%, 1/16W, 0603	603
75	4	R31, R32, R34, R35	49.9	Panasonic	ERJ-3EKF49R9	Digi-Key	P49.9HCT-ND	RES, 49.9, 1%, 1/16W, 0603	603
76	2	R33, R104	15K	Panasonic	ERJ-3GSY153	Digi-Key	P153GTR-ND	RES, 15K, 5%, 1/16W, 0603	603
77	5	R42, R58, R155, R156, R164	DNS	Panasonic	ERJ-3GSYJDNS			RES, DNS, 0603	603
78	2	R46, R47	2.2	Panasonic	ERJ-6RQJ2R2	Digi-Key	P2.2BCT-ND	RES, 2.2, 5%, 1/10W, 0805	805
79	2	R51, R132	22	Panasonic	ERJ-3GSYJ220	Digi-Key	P220GTR-ND	RES, 22, 5%, 1/16W, 0603	603
80	9	R54, R56, R60, R108, R135, R147, R148, R151, R158	33	Panasonic	ERJ-3GSYJ330	Digi-Key	P330GTR-ND	RES, 33, 5%, 1/16W, 0603	603

Table B-1. AMD-K6™ CompactPCI CPU Board Bill of Materials (Continued)

Item	Qty	Reference	Value	Mfr.	MPN	Distribtr.	Distributor PN	Description	Package
81	1	R68	10	Yageo	10EBK-ND	Digi-Key	10EBK-ND	RES, 10, 5%, 1/8W, Carbon Film, R1/8W	Axial
82	2	R69, R70	15m	Panasonic	WSL-2512-0.015-1%			RES, 15 mOhm, 1%, 1W, 2512	2512
83	7	R75, R163, R169, R170, R171, R172, R173	2K	Panasonic	ERJ-3GSY202	Digi-Key	P202GTR-ND	RES, 2K, 5%, 1/16W, 0603	603
84	2	R82, R167	100K	Panasonic	ERJ-3GSY104	Digi-Key	P104GTR-ND	RES, 100K, 5%, 1/16W, 0603	603
85	2	R103, R105	2.2K	Panasonic	ERJ-3GSYJ222	Digi-Key	P222GTR-ND	RES, 2.2K, 5%, 1/16W, 0603	603
86	1	R107	470K	Panasonic	ERJ-3GSY474	Digi-Key	P474GTR-ND	RES, 470K, 5%, 1/16W, 0603	603
87	1	R117	6.04K	Panasonic	ERJ-3EKF6041	Digi-Key	P6.04KHCT-ND	RES, 6.04K, 1%, 1/16W, 0603	603
88	2	R119, R146	2.2K	Panasonic	ERJ-3GSY222	Digi-Key	P222GCT-ND	RES, 2.2K, 5%, 1/16W, 0603	603
89	2	R124, R123	5.6K	Panasonic	ERJ-3GSY562	Digi-Key	P562GTR-ND	RES, 5.6K, 5%, 1/16W, 0603	603
90	2	R126, R133	150	Panasonic	ERJ-3GSYJ151	Digi-Key	P151GTR-ND	RES, 150, 5%, 1/16W, 0603	603
91	1	R131	267	Panasonic	ERJ-3EKF2670	Digi-Key	P267HCT-ND	RES, 267, 1%, 1/16W, 0603	603
92	1	R134	178	Panasonic	ERJ-3EKF1780	Digi-Key	P1780HCT-ND	RES, 178, 1%, 1/16W, 0603	603
93	2	R162, R168	5.1K	Panasonic	ERJ-3GSY512	Digi-Key	P512GTR-ND	RES, 5.1K, 5%, 1/16W, 0603	603

Table B-1. AMD-K6™ CompactPCI CPU Board Bill of Materials (Continued)

Item	Qty	Reference	Value	Mfr.	MPN	Distribtr.	Distributor PN	Description	Package
94	4	SX1, SX2, SX4, SX5	2JM-G	Specialty Electronics	2JM-G	Digi-Key	SPE1302-ND	SHUNT, 2mm, Standard Profile, Gold	
95	1	SX3	SHUNT	Sullins	STC02SYAN	Digi-Key	S9000-ND	SHUNT, 100 mil, Tin	
96	1	S1	206-3	CTS C K	206-3	Digi-Key	CT2063-ND	SW, SPST, 3-Bit DIP Switch, DIP6	DIP6
97	1	S2	TP11SH8	Components	TP11SH8ABE	Digi-Key	CKN4002-ND	SWITCH, SPST, momentary, push-button right angle PCB mount	TP11SH8
98	1	T1	PE68515	Pulse Engineering	PE68515			XFMR, SMD	PE68515
99	1	UX8	822273-1	AMP	822273-1	Digi-Key	A2146-ND	SOCKET, PLCC32, Rectangle, Low Insertion Force, Low Profile	PLCC32
100	1	UX16	916716-2	AMP	916716-2	Marshall		SOCKET, Socket 7, 90 mil Leads, ZIF, CPGA321	CPAG321
101	1	U1	M5819P		M5819P				SOP24
102	1	U2	74F14SC	Fairchild	74F14SC	Avnet		IC, hex Inverter Schmitt Trigger, SOI14	SOI14
103	1	U3	IS61S6464-100PQ	ISSI	IS61SP6464-100PQ			IC, 4-Mbit Sync SRAM, 64Kx64, PQFP128	PQFP128

Table B-1. AMD-K6™ CompactPCI CPU Board Bill of Materials (Continued)

Item	Qty	Reference	Value	Mfr.	MPN	Distribr.	Distributor PN	Description	Package
104	1	U4	DS1232 S	Dallas Semiconductor	DS1232S	Avnet		IC, MicroMonitor Chip, SOI16	SOI16
105	1	U5	LT1137 ACSW AM29F002T-120JC	Linear Technology	LT1137ACSW	Digi-Key	LT1137ACSW-ND	IC, 5 V RS-232 3 Drivers 5 Receivers w/Shutdown, SW	SOL28
106	1	U6	120JC	AMD	AM29F002T-120JC	Arrow, Avnet, Future, Marshall		IC, Flash, 2 Mbit (256Kx8), 5 V only, Boot Sector Flash Memory, PLCC32	PLCC32
107	1	U7	IS61C256-8J	ISSI	IS61C256AH-8J			IC, SRAM, 32Kx8, 8 ns, SOJ28	SOJ28
108	1	U8	M1543C	Acer Labs, Inc.	M1543C			IC, Aladdin V Southbridge, BGA328	BGA328
109	1	U9	AM79C873	AMD	AM79C873	Arrow, Avnet, Future, Marshall			BGA328 QFP100
110	1	U10	24LC16BSN	Microchip	24LC16BSN	Arrow		IC, 16K 12C Serial EEPROM, SOI8	SOI8
111	1	U11	M1541 AMD-K6		M1541			Northbridge	BGA356
112	1	U12	AMD-K6-2/300AFR	AMD	AMD-K6-2 family processor/300AFR	Arrow, Avnet, Future, Marshall		IC, AMD K6-2 Processor, 300 MHz, 2.2 V Vcore, CPGA321	CPGA321

Table B-1. AMD-K6™ CompactPCI CPU Board Bill of Materials (Continued)

Item	Qty	Reference	Value	Mfr.	MPN	Distribr.	Distributor PN	Description	Package
113	1	U13	93LC46 BSN	Microchip	93LC46BSN	Digi-Key	93LC46B/SN-ND	IC, Serial EEPROM, 64x16, 1K 2.5 V MicroW- ire Serial EEPROM, SOI8	SOI8
114	1	U14	S5920Q	AMCC	S5920Q	Harper & Two		IC, S5920 PCI Tar- get Interface, PQFP160	QFP160
115	1	U15	AM79C 972KC\ W	AMD	AM79C972	Arrow, Avnet, Future, Marshall		IC, PCnet FAST+ 10/100 Ethernet Controller w/ OnNow Support, QFP160	QFP160
116	1	U16	ICS914 8F-36	ICS Tech- nologies	ICS9148F-36			IC, 100MHz Clock Synthesizer/Driver, SSOP48	SSOP48
117	1	U17	21150- AB	Intel	21150-AB	Hamilton Hallmark		IC, PCI-to-PCI bridge, 32-bit, QFP208	QFP208
118	8	U18, U19, U20, U21, U22, U23, U24, U25	AM29F 032B- 75EC	AMD	AM29F032B- 75EC	Hamilton Hallmark		IC, Flash, 32 Mbit (4Mx8), 5 V only, Sector Erase Flash, TS040	TS0P40
119	1	U26	M4- 192/96- 15VC	AMD	M4-192/96- 10VC	Arrow, Avnet, Future, Marshall		IC, Mach 4 CPLD, 15 ns, 192 Macro- Cells, 96 IO, QFP144	PQL144
120	1	U27	PI74LP T245A Q	Pericom	PI74LPT245A Q	Digi-Key	PI74LPT245AQ- ND	IC, Octal Bidirec- tional Transceiver, QSOP20	QSOP20

Table B-1. AMD-K6™ CompactPCI CPU Board Bill of Materials (Continued)

Item	Qty	Reference	Value	Mfr.	MPN	Distribtr.	Distributor PN	Description	Package
121	1	U28	EL7571 C	Elantec	EL7571C			IC, Programmable DC/DC Converter, SOI20	SIO20
122	8	U29, U30, U31, U32, U33, U34, U35, U36	AM29F 032B- 75FC	AMD	AM29F032B- 75FC	Hamilton Hallmark		IC, Flash, 32 Mbit (4Mx8), 5 V Sector Erase Flash, TSR040	TS0P40
123	2	Y1, Y2	32.768 KHz	Epson	C- 002RX32.768K -A	Digi-Key	SE3202-ND	XTAL, 32.768KHz, 20 ppm, 12pF, -10C to 60C, Cylinder	C-002RX
124	1	Y3	25MHz	Epson	CA- 301_25.000M- C	Digi-Key	SE3441-ND	XTAL, 25.000KHz, 30 ppm, 18pF, -20C to 70C, Cylinder	CA-301
125	1	Y4	14.318 MHz	Epson	CA- 301_14.31818 M-C	Digi-Key	SE3429-ND	XTAL, 14.31818 KHz, 30ppm, Cyl- inder Type Quartz	CA-301



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