

M4-4x4 / M4-4x4S / M4-4x2 / M4-4x2S / PCS42P

CHARACTERISTICS

This Personal Computer line is highly modular. The different models of this product line, in fact, are the result of the combination of two different board versions (ENTRY and ENHANCED), different CPUs (i486SX, i486SX2, i486DX2 and Intel DX4) and two different cases (TIN BOX and SLIM TIN BOX). The models of this product line are listed in the following table.

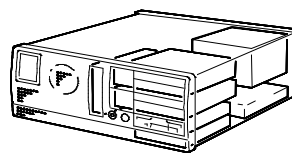
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CASE	MOTHER-BOARD	PROCESSOR	COMMERCIAL NAME	OLIVETTI PROJECT NAME
TIN BOX	ENTRY	i486SX @ 33 MHz	MODULO M4-422	KPT44 S33
		i486SX2 @ 50 MHz	MODULO M4-432	KPT44 S50
		i486DX2 @ 50 MHz	MODULO M4-452	KPT44 D50
		i486SX @ 25 MHz	PCS42P SX/25 E	XST41 S25
		i486SX @ 33 MHz	PCS42P SX/33 E	XST41 S33
		i486SX2 @ 50 MHz	PCS42P S2/50 E	XST41 S50
	ENHANCED	i486SX @ 33 MHz	MODULO M4-424	KPT45 S33
		i486SX2 @ 50 MHz	MODULO M4-434	KPT45 S50
		i486DX2 @ 50 MHz	MODULO M4-454	KPT45 D50
		i486DX2 @ 66 MHz	MODULO M4-464	KPT45 D66
		Intel DX4 @ 100 MHz	MODULO M4-484	KPT45 DX4
		i486DX2 @ 50 MHz	PCS42P D2/50 E	XST42 D250
		i486DX2 @ 66 MHz	PCS42P D2/66 E	XST42 D266
SLIM TIN BOX	ENTRY	i486SX @ 33 MHz	MODULO M4-422 S	KPS44 S33
		i486SX2 @ 50 MHz	MODULO M4-432 S	KPS44 S50
		i486DX2 @ 50 MHz	MODULO M4-452 S	KPS44 D50
		i486SX @ 25 MHz	PCS42P SX/25	XSS41 S25
		i486SX @ 33 MHz	PCS42P SX/33	XSS41 S33
		i486SX2 @ 50 MHz	PCS42P S2/50	XSS41 S50
	ENHANCED	i486SX @ 33 MHz	MODULO M4-424 S	KPS45 S33
		i486SX2 @ 50 MHz	MODULO M4-434 S	KPS45 S50
		i486DX2 @ 50 MHz	MODULO M4-454 S	KPS45 D50
		i486DX2 @ 66 MHz	MODULO M4-464 S	KPS45 D66
		Intel DX4 @ 100 MHz	MODULO M4-484 S	KPS45 DX4
		i486DX2 @ 50 MHz	PCS42P D2/50	XSS42 D250
		i486DX2 @ 66 MHz	PSC42P D2/66	XSS42 D266

Microprocessor	Processor	Internal Clk	System Clk
	i486 SX	25 MHz	25 MHz
	i486 SX	33 MHz	33 MHz
	i486 SX2	50 MHz	25 MHz
	i486 DX2	50 MHz	25 MHz
	i486 DX2	66 MHz	33 MHz
Intel DX4	100 MHz	33 MHz	
Architecture	ISA / VESA		
Memory	RAM: minimum 4 MB, maximum 64 MB The motherboard has two memory sockets arranged in two banks capable of accommodating the following SIMMs : EXM 28-004 N ^o 1 1MB x 36 (4 MB) SIMM EXM 28-008 N ^o 1 2MB x 36 (8 MB) SIMM EXM 28-016 N ^o 1 4MB x 36 (16 MB) SIMM EXM 28-032 N ^o 1 8MB x 36 (32 MB) SIMM EXM 40-004 * N ^o 1 1MB x 32 (4 MB) SIMM EXM 40-008 * N ^o 1 2 MB x 32 (8 MB) SIMM * SIMMs without parity 8 MB, 16 MB, 32 MB or 64 MB banks can be obtained. The system supports mixed configurations.		
Memory access	70 ns		
Cache	- 1 st level cache: 8 KB integrated in the processor - Secondary level cache: 128 KB or 256 KB capacity		
Floppy Disks	Panasonic JU 257 A Sony MP-F17 W Sony MPF420-1 Mitsubishi MF 355 EPSON SMD 1040-418 Mitsumi D359T3 TEAC FD235HF Y-E DATA YD-702B / Y-E DATA YD-702D Toshiba ND08 DE Panasonic JU 475-3 / JU 475-4 JU 475-5	1.44 MB 1.44 MB 1.44 MB 1.44 MB 1.44 MB 1.44 MB 1.44 MB 1.44 MB 1.44 MB 1.2 MB 1.2 MB	
Hard Disks	170 MB 170 MB 210 MB 210 MB 210 MB 340 MB 340 MB 340 MB 420 MB 420 MB 420 MB 540 MB 1 GB	CONNER CFA 170 A QUANTUM LPS 170 AT CONNER CFS 210 A W.D. AC1210F Seagate ST 3250 A QUANTUM LPS 340 AT W.D. AC 2340 CONNER CFA 340 A W.D. AC 2420 F Seagate ST 3491 A CONNER CFS 420 A CONNER CFA 540 A MICROPOLIS 4110A	
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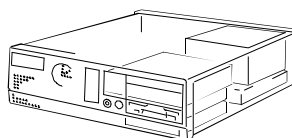
TIN BOX

CASE



EUR2A

SLIM BOX



EUT9A

MOTHERBOARD

ENTRY

BA2109
BA2148 (Italy)
BA2135 (derived)
BA2142 (derived)

ENHANCED

BA2110 (Italy)
BA2114 (Singapore)
BA2133 (Italy)
BA2132 (Singapore)

EXPANSION BUS

TIN BOX IN2024

SLIM BOX IN2025

POWER SUPPLY

TIN BOX Case

ASTEC SA201 3450
200 W, 120 - 240 V

SLIM BOX Case

ASTEC SA100 3430
100 W, 120 - 240 V

Streaming Tapes	Irwin 31250A 80/120 MB Floppy interface Wangtek 5159ES 150 MB SCSI interface Wangtek 5525ES - 5525ES-ACA 320 MB SCSI interface CONNER 2525 320 MB SCSI interface. STUs with SCSI interface require the ASC-2 or ASC-2F controller.
Slots on systems with TIN BOX case	<ul style="list-style-type: none"> - Expansion slots on the CARD RISER bus expansion board: <ul style="list-style-type: none"> - Two ISA AT / VESA Full Size slots - Two ISA AT Full Size slots - One ISA AT Half Size slot - Expansion slots on the motherboard: One AT slot in which the audio subsystem board is installed.
Slots on systems with SLIM TIN BOX case	<ul style="list-style-type: none"> - Expansion slots on the CARD RISER bus expansion board: <ul style="list-style-type: none"> - Two ISA AT / VESA Full Size slots - One ISA AT Half Size slot - Expansion slots on the motherboard: One AT slot in which the audio subsystem board is installed.
Video controller	ENTRY version motherboard CIRRUS 5424 integrated video controller with 512 KB of video RAM expandable to 1 MB. ENHANCED version motherboard CIRRUS 5428 integrated video controller with 1 MB of video RAM expandable to 2 MB.
Audio subsystem	The following boards can be installed in the motherboard's AT slot. <ul style="list-style-type: none"> - MOZART AUDIO BOARD - MPC MOZART AUDIO BOARD - MODEM/FAX/AUDIO (MI2047) BOARD
HDU and FDU controllers	ENTRY version motherboard SMC37C651 component Floppy controller and hard disk interface for AT IDE HDUs. ENHANCED version motherboard <ul style="list-style-type: none"> - SMC37C655 component Floppy controller and hard disk interface for AT IDE HDUs. - 82C611 component Hard disk interface for Local bus IDE VESA HDUs.
Mouse	PS/2- and AT-compatible
Keyboard	101/102-key ANK 27-101/N, ANK 27-102/N Compact keyboard 101/102-key ANK 28-101, ANK 28-102 Super compact keyboard

BIOS

The ROM BIOS is a Flash EPROM. The BIOS code is provided on diskettes and must be copied into Flash EPROM.

Last level:
Rev. 1.11

MOTHERBOARD

	LEVEL	D.R.S. CODE	ROM BIOS	NOTES
BA2109	Nasc.		The ROM BIOS is a Flash EPROM. The BIOS code is provided on diskettes and must be copied into Flash EPROM.	<p>ENTRY version motherboard. The following table lists the components on this board.</p> <p>This board has been replaced by the boards described in this section.</p>
	Lev. 01			
BA2148	Nasc.			<p>ENTRY version motherboard manufactured in Italy.</p> <p>Component 82C493 Ver. AH at location U104 has been replaced by 82C493 Ver. BH</p> <p>The 0 Ohm resistor at location R1121 has been removed. These modifications correct the fault with the DMA FIFO in the AH version of component 82C493.</p> <p>New printed circuit that implements the modifications made to the HARDWARE RESET and FLASH EPROM.</p> <p>Modification to the printed circuit which changes to LEVEL 01.</p> <p>This modification was necessary to incorporate the corrections to the problem concerning the SHUTDOWN 286.</p> <p>Feature connector installed on the ENTRY version motherboard.</p>
	Lev. 01			
	Lev. 02			
	Lev. 03			
BA2135		560327 E		This board derived from BA2148 and includes the same modifications.
BA2142		560327 E		This board derived from BA2148 and includes the same modifications.

	LEVEL	D.R.S. CODE	ROM BIOS	NOTES
BA2110	Nasc.			ENHANCED version motherboard manufactured in Italy.
	Lev. 01			To correct the problem with the video's vertical sync and to incorporate some of the cuts and wirings made, a new printed circuit is used which includes resistors to eliminate some jumpers.
	Lev. 02			Component 82C493 Ver. AH at location U104 has been replaced by 82C493 Ver. BH. The 0 Ohm resistor at location R1121 has been removed. These modifications correct the fault with the DMA FIFO in the AH version of component 82C493. Since this board is no longer being produced, this modification has effect at field level only.
	Lev. 03			To improve the parallel interface's functional margins, component 74ALS245 is added to delay the IOW signal connected to the SMC37C665 I/O controller.
BA2114	Nasc.			ENHANCED version motherboard manufactured in Singapore.
	Lev. 01			To correct the problem with the video's vertical sync and to incorporate some of the cuts and wirings made, a new printed circuit is used which includes resistors to eliminate some jumpers.
	Lev. 02			Component 82C493 Ver. AH at location U104 has been replaced by 82C493 Ver. BH. The 0 Ohm resistor at location R1121 has been removed. These modifications correct the fault with the DMA FIFO in the AH version of component 82C493. Since this board is no longer being produced, this modification has effect at field level only.
	Lev. 03			To improve the parallel interface's functional margins, component 74ALS245 is added to delay the IOW signal connected to the SMC37C665 I/O controller.

	LEVEL	D.R.S CODE	ROM BIOS	NOTES
BA2133	Nasc.	560360 T		ENTRY version motherboard manufactured in Italy.
	Lev. 01			Component 82C493 Ver. AH at location U104 has been replaced by 82C493 Ver. BH. The 0 Ohm resistor at location R1121 has been removed. These modifications correct the fault with the DMA FIFO in the AH version of component 82C493.
	Lev. 02			New printed circuit that implements the modifications made to the HARDWARE RESET and FLASH EPROM.
	Lev. 03			Modification to the printed circuit which changes to LEVEL 01. This modification was necessary to incorporate the corrections to the problem concerning the SHUTDOWN 286.
	Lev. 04			To improve the parallel interface's functional margins, component 74ALS245 is added to delay the IOW signal connected to the SMC37C665 I/O controller.
BA2132	Nasc.	560360 T		ENHANCED version motherboard manufactured in Singapore.
	Lev. 01			Component 82C493 Ver. AH at location U104 has been replaced by 82C493 Ver. BH. The 0 Ohm resistor at location R1121 has been removed. These modifications correct the fault with the DMA FIFO in the AH version of component 82C493.
	Lev. 02			New printed circuit which includes the following modifications made to BA2133: - HARDWARE RESET - FLASH EPROM - SHUTDOWN 286
	Lev. 03			To improve the parallel interface's functional margins, component 74ALS245 is added to delay the IOW signal connected to the SMC37C665 I/O controller.

MOTHERBOARD INTEGRATED CONTROLLERS

MOTHER-BOARD	INTEGRATED CONTROLLERS
ENTRY	<p>Intel OverDrive Ready Socket 3: This socket can host the following processors: i486 SX @ 25 / 33 MHz - i486 SX2 @ 50 MHz i486 DX2 @ 50 MHz - i486 DX2 @ 66 MHz INTEL DX4 @ 100 MHz</p> <p>82C491 Chip Set component integrating the following functions: - System processor support - VESA local bus control - AT bus control - Interface between the processor and coprocessor - Secondary level cache control - System memory refresh control - System memory control - Chip select the keyboard controller and Real Time Clock - DMA control - Interrupt control - Real Time Clock - CMOS RAM powered by a lithium battery</p> <p>82C493 Chip Set component integrating the following functions: - Support for the arbitration logic of the VESA local bus - Three 74F138 multiplexers - One 74F138 decoder - AND, OR, NAND, INVERTER gates</p> <p>Socket for the Secondary Level Cache Module The secondary level cache module can have a 128 KB or 256 KB capacity.</p> <p>28F001BX 1 MB BIOS Flash EPROM</p> <p>8042 Keyboard and mouse controller</p> <p>SMC 37C651 ENTRY version motherboard Super I/O controller. This controller has the following functions: - Floppy disk control - Interface for two serial ports - Interface for a parallel port - Interface for intelligent AT IDE hard disks</p> <p>ICD2023 Clock generator</p> <p>CL-GD5424 Video controller supporting from 512 KB to 1 MB of video RAM</p> <p>74HC393 Speaker controller</p>
ENHANCED	<p>The differences of this motherboard with respect to the ENTRY version are the following:</p> <p>SMC 37C655 I/O controller for the ENHANCED version motherboard - This controller has the following functions: - Floppy disk control - Interface for two serial ports - Interface for a multi-mode parallel port - Interface for intelligent AT IDE hard disks</p> <p>82C611 Hard disk controller for Fast Local BUS IDE VESA HDUs</p> <p>CL-GD5428 Video controller supporting from 1 MB to 2 MB of video RAM.</p>

AUDIO BOARD

BOARD	LEVEL	NOTES
Mozart Audio Board	Nasc.	Audio board.
MPC Mozart Audio Board	Nasc.	Audio board with joystick interface.
Audio / Modem / Fax Board (MI2047)	Nasc. Lev. 01	To avoid the chances of noise disturbance, the modem/fax connectors on the DAA board have been replaced.

USER DISKETTE

LEVEL	NOTES
Rev. 1.01	This version requires BIOS 1.09 at least.
Rev. 1.05 upd 1	This version requires BIOS 1.10 at least. In this update modifications were made to the following tests: <ul style="list-style-type: none">- CPU tests (PIC test and Cache test)- Memory test- Hard disk test so that hard disks with more than 2048 cylinders can be tested- Floppy disk test- Keyboard test- Parallel port test- Mouse test

SYSTEM TEST

LEVEL	NOTES
Rev. 1.03	This version requires BIOS 1.09 at least.
Rev. 1.07 upd 1	This version requires BIOS 1.10 at least. In this update modifications were made to the following tests: <ul style="list-style-type: none">- CPU tests (PIC test and Cache test)- Memory test- Hard disk test so that hard disks with more than 2048 cylinders can be tested- Floppy disk test- Keyboard test- Parallel port test- Mouse test- CPU operation in Protected Mode test- The serial port RTS to RI test is added

POWER SUPPLY

POWER SUPPLY	LEVEL	DESCRIPTION
ASTEC SA201 - 3450 D.R.S. CODE: 588068 F	Nasc	200 W power supply for TIN BOX cases.
	Lev. 01	To reduce EMI noise, the BEAD PN 35052B ferrite is installed on the center pin of mosfet Q1, and diode D2 is removed.
	Lev. 02	To : - comply with ENERGY STAR (EPA) requirements, and - ensure that power supply powers off correctly the modifications were made: - Components D8 - Q4 - R46 - C9 were added to the already preset printed circuit. - A 33 K 1/6 W resistor was added to the primary of the primary of the power supply. A new supplier for the 2.200 uF-16V C23 capacitor is used. Besides NCC, also RUBICON will now supply this component.
	Lev. 03	- The layout of the Power Good board is optimized so that capacitors C125 and C126, previously volatile, can now be installed on the printed circuit. - Renewed motherboard printed circuit so that the R62 and Z5 components can be added. - New alternative suppliers for the following components: C1 - C2 (ISKRA and RIFA) - C12 (EVOX and ARCOTRONICS) - T1 (EDT39).
	Lev. 04	Some power supply components were removed to cut production costs.
ASTEC SA100 - 3430 D.R.S. CODE: 560361 Q	Nasc.	100 W power supply for SLIM BOX cases.
	Lev. 01	Modification made to the fan regulation circuit. From a High Speed model, the fan now becomes a Medium Speed model. This modification was implemented to correct the problems with the systems supplied to MERCEDES.
	Lev. 02	To correct: - Excessive ripple on the +12 V - Low power supply yield - Power Good problems the following modifications were made: - The SGS THOMSON alternative for the IC3 regulator was eliminated - Zener Z102 was changed from HZ11C2 to HZ11C3 - Capacitor C64 was changed from 470 pF to 2,200 pF This level does not include the modifications made in level 01 (specific for MERCEDES).
	Lev. 03	Modified fan circuitry to include the level 01 modifications on all the power supplies.

DRIVER	NOTES
EVD Driver Ver. 1.01	
EVD Driver Ver. 1.02	

BIOS

LEVEL	NOTES
Rev. 1.09	
Rev. 1.10	This BIOS version includes the following modifications: <ul style="list-style-type: none"> - New multilingual Setup Utilities - LAN board failures are corrected - 32-bit transfer rate failures are corrected
Rev. 1.11	This BIOS version corrects the problems with the SEAGATE hard disk failures.

BUS EXPANSION BOARD

NAME	LEVEL	D.R.S. Code	NOTES
IN2024	Nasc	588758 P	For TIN BOX cases
IN2025	Nasc Lev. 01	588759 Q	For SLIM TIN BOX cases New printed circuit which allows the correct routing of cables to the magnetic peripherals.

SOFTWARE COMPATIBILITY

OPERATING SYSTEMS	
DR-DOS, Version 7.00 **1 IBM PC-DOS 5.0 IBM PC-DOS, Version 6.1 IBM OS/2 EXTENDED EDITION, Version 1.30 **2 IBM OS/2, Version 2.0 **3 MS-DOS, Version 5.0 MS-DOS, Version 6.00	**1 The IDE Block mode in the BIOS Setup program must be disabled before using the Fdisk command. **2 Systems using the DX4 and DX2/66 processor may crash at bootstrap **3 The EVD Cirrus 5428 drivers ver. 1.02 are installed on the M4-4x4 / M4-4x4S / PCS42P Enhanced models. Non-blitter 16-color drives are not installed.
WINDOWING APPLICATION	
ALDUS PAGEMAKER, Version 5.0 AMI PRO for WINDOWS, Version 2.0 COREL DRAW for Windows, Version 4.0 DESQVIEW /386, Version 2.62 LOTUS 1-2-3 for WINDOWS, Version 4.01 LOTUS FREELANCE for Windows, Version 2.0 MS EXCEL, Version 5.0	MS WINDOWS, Version 3.0 MS WORD FOR WINDOWS, Version 2.0 MS WORD FOR WINDOWS Version 6.0 MS WORKS for WINDOWS, Version 3.0 MS POWERPOINT, Version 3.00 WORDPERFECT for WINDOWS, Version 5.1

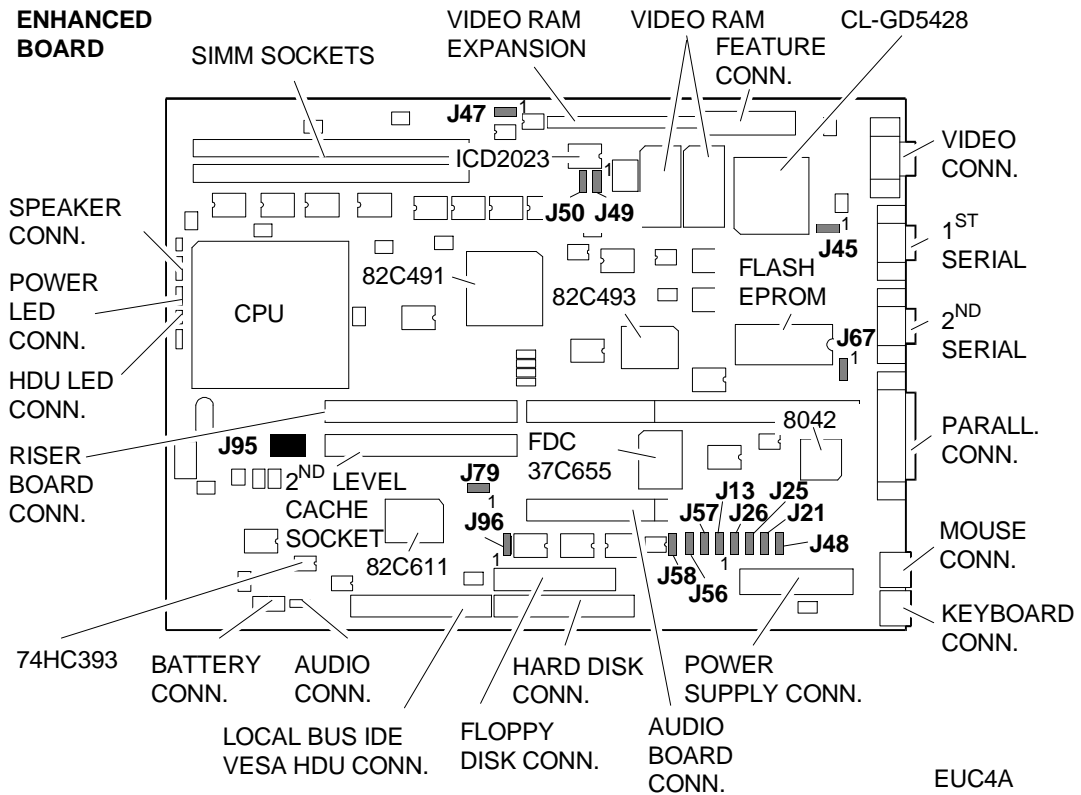
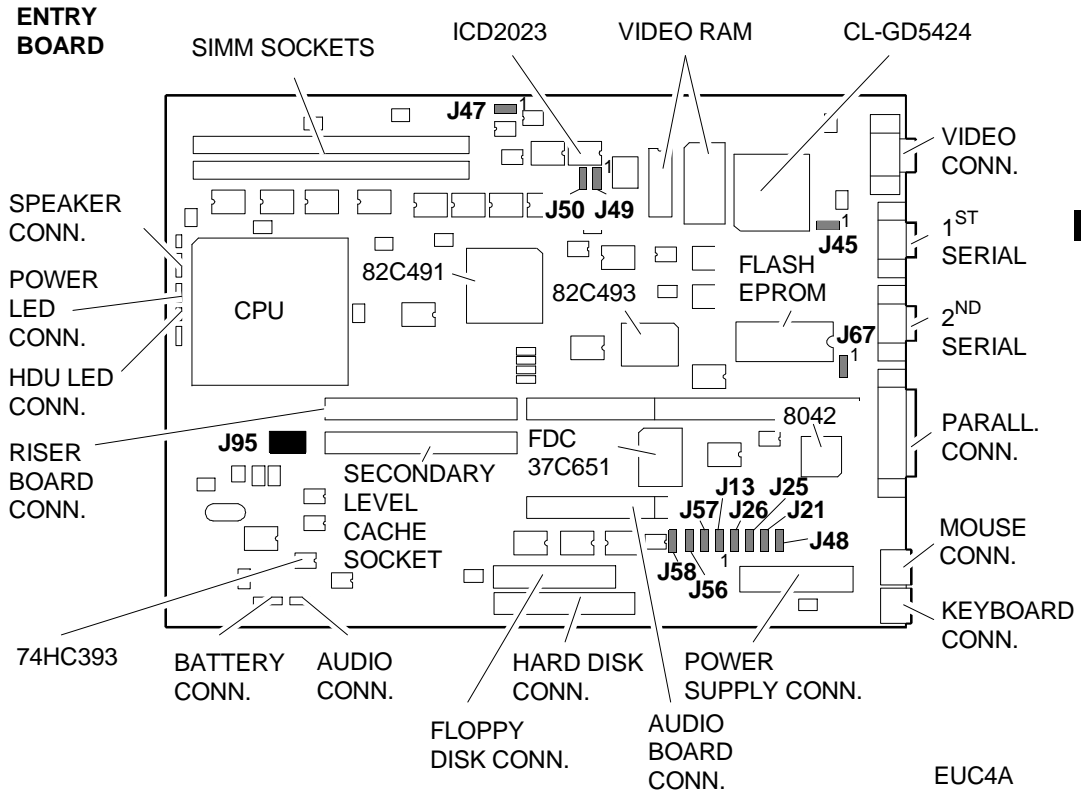
WORD PROCESSING PRODUCTS	DPT PRODUCTS
LOTUS AMI PRO for OS/2, Version 3.0 ARTS & LETTERS, Version 3.1 DISPLAYWRITE 4 for DOS, Version 1.5 DISPLAYWRITE 5/2 for OS/2, Version 1.0 MS-WORD for DOS, Version 6.0 MS-WORD for OS/2, Version 5.5 WORD PERFECT for DOS, Version 6.0a WORD PERFECT for OS/2, Version 5.1 WORDSTAR, Version 7.0	ALDUS PAGEMAKER, Version 4.0 ALDUS PAGEMAKER for OS/2, Version 3.0 GEM/3 DESKTOP PUBLISHER, Version 2.0 VENTURA PUBLISHER DOS/GEM Edition, Version 3.0
GRAPHICS PRODUCTS	
AUTOCAD, Version 11 AUTOCAD for DOS, Version 12.0 AUTOCAD for WINDOWS, Version 12.0 AUTODESK 3D STUDIO, Version 3.0 CHARISMA, Version 2.1 DR. HALO IV, Version 1.0 HARVARD GRAPHICS, Version 3.0 LOTUS FREELANCE for OS/2, Version 2.0	LOTUS FREELANCE PLUS, Version 4.0 MICROGRAFX DESIGNER Version 3.1 MS CHART, Version 3.00 ** PC PAINTBRUSH V PLUS, Version 1.0 ** The EVD Cirrus 5428 drivers ver. 1.02 are installed on the M4-4x4 / M4-4x4S / PCS42P Enhanced models. Non-blitter 16-color drives are not installed.

HARDWARE COMPATIBILITY

MODEMS PRODUCTS	GRAPHICS PRODUCTS
HAYES SMARTMODEM, 2400 B INTEL SatiFAXtion Modem/200 INTEL SatiFAXtion Modem/400 DIGICOM MODEM FAX Mod. SNM41PC ROBOTICS World Port 1200	INFOTRONIC XGC NUMBER NINE GXi MATROX HIPER VGA CAD MATROX MGA IMPRESSION 3Z/A
INTELLIGENT MULTIPORT PRODUCTS	DISPLAY PRODUCTS
CHASE AT 16+ Serial I/O Controller DIGIBOARD MULTIPORT PC/8 SPECIALIX SI/8	IBM PS/2 COLOR DISPLAY 8518 SONY CPD-1730 SONY GDM-2038
MOUSE PRODUCTS	CONTROLLER DEVICES
IBM PS/2 MOUSE LOGITECH MOUSEMAN BUS MOUSE LOGITECH MOUSEMAN RADIO MOUSE MS BALL POINTER MOUSE MS BUS MOUSE MS PS2 SERIAL MOUSE	ADAPTEC 1540C SCSI HOST ADAPTER ADAPTEC 1540CF SCSI HOST ADAPTER ADAPTEC 1542B SCSI HOST ADAPTER HORNET VL-BUS IDE CACHING & MULTI I/O VL-230 SONY COR-334 KIT SONY OPA-474 KIT MINISCSI PLUS-HIGH PERFORMANCE PARALLEL TO SCSI ADAPTER
MPC BOARDS	CD-ROM
LOGITECH AUDIOMAN PRO AUDIO SPECTRUM 16-SDLC PRO AUDIO SPECTRUM PAS2 PRO AUDIO SPECTRUM 16 PLUS CARD SOUND BLASTER PRO SOUND BLASTER 16 APS	SONY CD ROM DRIVER, CDU 33A SONY CD ROM DRIVER, CDU 541 SONY CD ROM DRIVER, CDU 561 SONY CD ROM DRIVER, CDU 7305

NETWORK and LAN PRODUCT SOFTWARE	
BANYAN VINES Version 5.53 DEC PATHWORKS FOR OS/2, Version 2.0 IBM PC LAN PROGRAM, Version 1.30	IBM PC LAN SUPPORT PROGRAM, Ver. 1.2 IBM OS/2 LAN SERVER, Version 3.0 MICROSOFT LAN MAN for OS/2, Ver. 2.1
NETWORK and LAN PRODUCT HARDWARE ISA	
COM ETHERLINK 16 ADAPTER (3C507) COM ETHERLINK II ADAPTER (3C503) COM ETHERLINK PLUS ADAPTER (3C505) COM ETHERLINK ADAPTER (3C501) COM ETHERLINK III ADAPTER (3C509) COM TOKENLINK PLUS ADAPTER (3C603) COM TOKENLINK III 16/4 (3C619) DEC ETHERWORKS TURBO TP ADAPTER DC ETHERWORKS TURBO ADAPTER DE200 D-LINK DT-220 ADAPTER NOVELL NE2000 ETHERNET ADAPTER	ETHERNET SCHNEIDER & - KOCH SK-net g16 TP IBM TOKEN RING 16/4 ADAPTER IBM TOKEN RING 16/4 ADAPTER II IBM TOKEN RING PC ADAPTER II INTEL ETHER EXPRESS 16 ETHERNET ADAPTER (EPCLA8120) INTEL TOKEN EXPRESS ISA 16S TOKEN RING ADAPTER MADGE AT RING NODE ADAPTER NOVELL NE1000 LAN ADAPTER
NETWORK and LAN PRODUCT HARDWARE VESA	
ACCTON 32-BIT ETHERCOMBO ADAPTER	
MULTIMEDIA ENVIRONMENT SOFTWARE	
MULTIMEDIA TOOLBOOK, Version 1.53 AUTHOWARE STAR, Version 1.0A IM-AGE Version 3.0 MPC SAMPLER	MS VIDEO for Windows, Version 1.0 MS WINDOWS SOUND SYSTEM, Version 1.0 MS WINDOWS SOUND SYSTEM, Version 2.0 POTO STYLER, Version 1.1
MULTIMEDIA ENVIRONMENT HARDWARE	
ACTIONMEDIA II CAPTURE MODULE **1 INTEL SMART VIDEO RECORDER SCREEN MACHINE (ISA) Mod 1 SUPER VIDEO Windows & Super Motion - Compression CM Ver. 1.3B (ISA) **2 VIDEO BLASTER **2 VIDEOLOGIC DVA 4000/ISA **2 WIN/TV **2	**1 In order to work properly the board requires the feature connector which is not present on Entry M4-4x2 / M4-4x2S / PCS42P systems. It is present on all other models. If the EMM386 driver is installed with the NOEMS option as requested by the bundled software program, the ActionMedia board will not work correctly. Remove the EMM386 driver. **2 In order to work properly the board requires the feature connector which is not present on Entry M4-4x2 / M4-4x2S / PCS42P systems. It is present on all other models.
ACOUSTIC DEVICE	VIDEO DEVICE
SRS 170 ACTIVE SPEAKER SYSTEM SONY SRS 77G ACTIVE SPEAKERS SYSTEM	PIONEER LASER DISC CLD-V2300D PIONEER LASER DISC V4300D SONY LASER DISC PLAYER LDP3600

MOTHERBOARD COMPONENTS AND JUMPERS



MOTHERBOARD JUMPERS

Jumper J13 - Mouse interrupt

Position 1-2 Disables mouse interrupt 12
Position 2-3 Enables mouse interrupt 12 (Default)

Jumper J21 & J25 - Enable/disable bootstrap from the serial ports

Position 1-2 Disables bootstrap from the serial ports
Position 2-3 Enables bootstrap from the serial ports (Default)

Jumper J26 - Enable/disable floppy disk write protect

Position 1-2 Enables floppy disk write protection
Position 2-3 Disables floppy disk write protection (Default)

Jumper J45 - Enable/disable on-board video controller

Position 1-2 Disables the on-board video controller
Position 2-3 Enables the on-board video controller (Default)

Jumper J47 - Type of processor installed in the system

Position IN DX, DX2 or DX4 processor
Position OUT SX or SX2 processor

Jumper J48 - Enable/disable access to configuration utilities via keyboard

Position 1-2 Disables access to configuration utilities via keyboard
Position 2-3 Enables access to configuration utilities via keyboard (Default)

Jumper J56 - Select parallel port DMA channel

Position 1-2 DMA channel DRQ1 is used
Position 2-3 DMA channel DRQ3 is used (Default)

Jumper J57 - Select parallel port DMA acknowledge channel

Jumper J58 - Select parallel port interrupt channel
Position 1-2 DMA channel DACK1 is used
Position 2-3 DMA channel DACK3 is used (Default)

Position 1-2 Interrupt channel IRQ5 is used
Position 2-3 Interrupt channel IRQ7 is used (Default)

Jumper J67 - Flash EPROM write enable

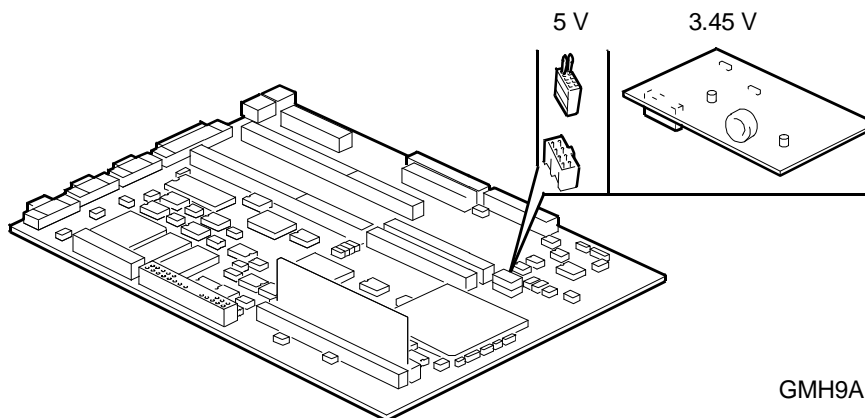
Position 1-2 Enables flash EPROM writes
Position 2-3 Disables flash EPROM writes (Default)

NOTE: Always in position 2-3 in case of an EPROM

Connector J95 - Select CPU voltage (3.45 V / 5 V)

The following figure shows the location of this connector.

To select a voltage of 3.45 V, install an adapter board in place of the 5 V jumpered connector. See the following figure.



**Jumper J96 - Enable/disable IDE AT / ISA interface
(for SOLE ENHANCED boards only)**

Position 1-2 Enables the IDE AT ISA interface

Position 2-3 Disables the IDE AT ISA interface - The VESA interface is available for local bus hard disk drives.

Jumpers J50 & J49 - System processor clock

JUMPER J50	JUMPER J49	PROCESSOR CLOCK
IN	IN	25 MHz
OUT	IN	33 MHz
IN	OUT	40 MHz

4

Jumper J79 - VL BUS (VESA local bus) clock

JUMPER J79	CPU CLOCK (ID3)	VL BUS CLOCK
Position 1-2	Greater than 33 MHz	50 MHz
Position 2-3	Greater than 33 MHz	40 MHz
Position 1-2	Less than or equal to 33 MHz	33 MHz
Position 2-3	Less than or equal to 33 MHz	25 MHz

Never change the position of this jumper.

INTERRUPT LEVELS

LEVEL	NAME	CONTROLLER	FUNCTION
1	IRQ0	1	Channel 0 timer OUT
2	IRQ1	1	Keyboard
3 to 10 *	IRQ2	1	Interrupt issued from controller 2 to controller 1
3	IRQ8	2	Real time clock
4	IRQ9	2	Free
5	IRQ10	2	Free
6	IRQ11	2	Free
7	IRQ12	2	Mouse
8	IRQ13	2	Coprocessor
9	IRQ14	2	Hard disk controller
10	IRQ15	2	Free
11	IRQ3	1	Serial port 1
12	IRQ4	1	Serial port 2
13	IRQ5	1	Parallel port 2
14	IRQ6	1	Floppy disk controller
15	IRQ7	1	Parallel port 1

* The priority level depends on the interrupt selected. For example, if interrupt IRQ11 is selected the priority level is 6, or if interrupt IRQ15 is selected the priority level is 10.

DMA CHANNELS

CHANNEL	NUMBER OF BITS	FUNCTION
0	8 or 16	Reserved for the audio subsystem (if present)
1	8 or 16	Reserved for the audio subsystem (if present)
2	8 or 16	Floppy disk transfers
3	8 or 16	IDE hard disks (if DMA mode is selected)
4	16	Used for the cascade connection of DMA1
5	16	Free
6	16	Free
7	16	Local bus VESA IDE hard disk controller

I/O ADDRESS MAP

ADDRESS	FUNCTION	ADDRESS	FUNCTION
0000 - 000F h	DMA controller	00F0 h	Reset for numeric error
0020 - 0021 h	Interrupt controller	0170 - 0177 h	Secondary IDE channel
0040 - 0043 h	Timer 1	01F0 - 01F7 h	Primary IDE channel
0048 - 004B h	Timer 2	0278 - 027B h	Parallel port 2
0060 h	Keyboard data controller	02F8 - 02FF h	Motherboard serial port 2
0061 h	NMI, speaker controller	0376 h	Secondary IDE channel commands port
0064 h	Keyboard commands controller	0377 h	Secondary IDE channel status port
0070 h (bit 7)	NMI enable	0378 - 037F h	Parallel port 1
0070 h (bit 6:0)	RTC addresses	03BC - 03BF h	Parallel port 3
0071 h	RTC data	03E8 - 03EF h	Serial port 3
0073 h	Reserved - board configuration	03F0 - 03F5 h	Floppy channel 1
0075 h	Reserved - board configuration	03F6 h	Primary IDE channel commands port
0078 h	BIOS timer	03F7 h (scrittura)	Floppy channel 1 commands
0080 - 008F h	DMA page register	03F7 h (bit 7)	Floppy channel 1 exchange
00A0 - 00A1 h	Interrupt controller 2	03F7 h (bit 6:0)	Primary IDE channel status port
00C0 - 00DE h	DMA controller 2	03F8 - 03FF h	Motherboard serial port 1

SYSTEM MEMORY MAP

000000 h	BIOS INTERRUPT VECTOR TABLE	768 Bytes	
0002FF h 000300 h	BIOS STACK AREA	256 Bytes	
0003FF h 000400 h	BIOS DATA AREA	256 Bytes	
0004FF h 000500 h	MEMORY AREA USED BY THE OPERATING SYSTEM, DRIVERS, ETC.	640 Bytes	
09FFFF h 0A0000 h	← EGA AND VGA VIDEO BUFFER	64 Bytes	128 Bytes
0B0000 h 0B7FFF h 0B8000 h	MONOCHROME MONITOR BUFFER	32 Bytes	
0BFFFF h 0C0000 h 0C7FFF h 0C8000 h	COLOR VIDEO BUFFER	32 Bytes	
0CFFFF h 0D0000 h	← VIDEO BIOS	32 Bytes	
0CFFFF h 0D0000 h	RESERVED FOR OPTION ROMs	32 Bytes	
0DFFFF h 0E0000 h	USED BY OPTION ROMs (HDU AND LAN CONTROLLERS, ETC.)	64 Bytes	
0DFFFF h 0E0000 h	USED BY THE OPTION ROMs THAT ALLOW THE OPERATING SYSTEM TO BE LOADED	64 Bytes	
0EFFFF h 0F0000 h	SYSTEM BIOS	64 Bytes	
0FFFFFF h			