

# P750

## CHARACTERISTICS

Microprocessor	Intel 486™
Clock	25 MHz
Architecture	MICROCHANNEL
Memory	<p>System board can support 8 MB installed on 2 banks: Two configurations are possible:</p> <ul style="list-style-type: none"> <li>- <b>2 MB on system board</b> (8 SIMM 256 Kb x 9). Expandable only by replacing these SIMMs with those of 1 Mb x 9 <b>EXM 26-807</b></li> <li>- <b>4 MB on system board</b> (4 SIMM 1 Mb x 9). Expandable by installing 4 more SIMMs 1 Mb x 9 <b>EXM 26-807</b></li> </ul> <p>System memory can be furtherly expanded via a 4 MB memory expansion board MEM 26-806. This board can be expanded to 8 MB via 4 SIMM 1 Mb x 9 <b>EXM 26-807</b>.</p>
Memory access	80 ns
Coprocessor	Weitek WTL 4167
Floppy Disk	1.44 MB 3.5" Panasonic J-257 1.44 MB 3.5" Sony MP-F17 1.44 MB Mitsubishi MF355C
Hard Disk	100 MB CONNER 30109 MCA 3.5" 120 MB CONNER 30109 MCA 3.5" 200 MB CONNER 3209 MCA 3.5"
Streaming Tape	80, 120 MB IRVIN 285
Expansion slots	Five available, one 16-bit; one 16-bit with video board extension; three 32-bit.
Video adapter	Integrated on System Board Super VGA 82C452
Floppy Disk controller	Integrated on System Board Floppy Disk controller: WD57C65
Hard Disk controller	Uses intelligent hard disk drives that do not need controllers because BUS is directly interfaced via adapter board for MIS49 signals
Mouse	PS/2- and AT-compatible GRD 25-025
Keyboard	101/102-key ANK27-101 ANK27-102

### SYSTEM BOARD

BA849 - P1.5 - 4 MB  
BA858 - P1.5 - 2 MB

BA880 - P2.1 - Base Assembly  
BA865 - P2.1 - 4 MB  
BA875 - P2.1 - 2 MB

### BIOS

BA 849 & BA 858  
Rev. 1.06

BA 865 & BA875  
Rev. 1.06

### POWER SUPPLY

PS14 220 V  
Level: 04 MI

PS14 110 V  
Level: 04 MI

### CONSOLE

IF 638  
Level: 0.1

### HDU INTERFACE

MI 549

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**MOTHERBOARD**

	LEVEL	D.R.S. CODE	ROM BIOS	INTEGRATED CONTROLLER AND MODIFICATIONS
<b>BA849</b>	Nasc.	412935 G	PPUS U118 PPUT U119 Rev. 1.02	See table below. 4 MB boards. There are only 42 boards of this level
	Lev. 0.1		Rev. 1.02	Factory version which corrects floppy disk write problems.
	Lev. 02		Rev. 1.02	Change on timer circuit
	Lev. 03		Rev. 1.06	New BIOS to solve the problem of the 120 MB hard disk during system configuration
<b>BA558</b>	Nasc.	412934 F	PPUS U118 PPUT U119 Rev. 1.02	See table below. 2 MB boards. There are only 42 boards of this level
	Lev. 0.1		Rev. 1.02	This board includes the same modifications made to the previous.
	Lev. 02		Rev. 1.02	
	Lev. 03		Rev. 1.06	
<b>BA880</b>	Printed circuit P2.1 - Base Assembly - Code BA880 identifies the printed circuit P2.1 on which SIMM modules are to be mounted according to memory size. The printed circuit with SIMM modules installed takes the name of the BA boards described below.			
<b>New BA865</b>	Nasc.		PPUS U118 PPUT U119 Rev. 1.02	New printed circuit (BA880) with 4 MB. This board has the same components as BA849.
	Lev. 02		PPJJ U118 PPJK U119 Rev. 1.04	Solves "Parallel Port Test Error" problem at POD, supports the new video modalities and improves 15H interrupt features in CBIOS.
	Lev. 03		Rev. 1.05	Allows the step D0 version of the Intel 80486 processor to be used. New BIOS to solve the problems of: CBIOS    POD, Floppy, INT10 ABIOS    Parallel and serial
	Lev. 04		Rev. 1.05	C&T component F82C452A introduced to replace the F82C452 component. This also involves replacement of the 74F244 component in position U32 with the 74FCT244CT component.
	Lev. 05		Rev. 1.05	
	Lev. 06		Rev. 1.06	New BIOS to solve the problem of the 120 MB hard disk during system configuration.

	LEVEL	D.R.S. CODE	ROM BIOS	INTEGRATED CONTROLLER AND MODIFICATIONS
<b>BA875</b>	Lev. Nasc.		PPUS U118 PPUT U119 Lev. 1.02	New printed circuit (BA880) with 4 MB. This board has the same components as BA849.
	Lev. 02		PPJJ U118 PPJK U119 Lev. 1.04	Solves "Parallel Port Test Error" problem at POD, supports the new video modalities and improves 15H interrupt features in CBIOS.
	Lev. 03		Lev. 1.05	Allows the step D0 version of the Intel 80486 processor to be used New BIOS to solve problems of: CBIOS     POD, Floppy, INT10 ABIOS     Parallel and serial
	Lev. 04		Lev. 1.05	C&T component F82C452A introduced to replace the F82C452 component. This also involves replacement of the 74F244 component in position U32 with the 74FCT244CT component.
	Lev. 05		Rev. 1.05	
	Lev. 06		Rev. 1.06	New BIOS to solve the problem of the 120 MB hard disk during system configuration.

**BOARDS**

FUNCTION	DESCRIPTION	D.R.S. CODE	CHARACTERISTICS
CPU system board	BA858	412934 F	P1.5 - 2 MB
CPU system board	BA849	412935 G	P1.5 - 4 MB
CPU system board	BA865		P2.1 - 4 MB
CPU system board	BA875		P2.1 - 2 MB
Power supply 220 V	PS14	412908 W	
Power supply 110 V	PS14	412909 X	
Console board	IF638	497314 P	
Intelligent HDU interface board	MI549	497272 V	
			120 MB hard disk can replace 100 MB hard disk without any problem

INTEGRATED CONTROLLERS	INTEGRATED CONTROLLERS
<p><b>82C322 Memory Controller</b>                      Supports 256 K - 1M DRAM                      Shadow RAM                      Supports up to 16 MB                      Programming of Wait states</p> <p><b>82C223 DMA Controller</b>                      Performs DMA operations                      8 independent DMA channels                      Extended mode operations                      16 MB memory addressing capacity                      DMA serial operations                      Supplies a virtual DMA on channels 0 and 4</p> <p><b>8042</b> Keyboard and mouse controller  <b>82C452</b> Super VGA Video adapter  <b>NS16550</b> A Serial port controller  <b>WD57C65</b> Floppy disk controller</p>	<p><b>82C325 Data Buffer Controller</b>                      Bus Conversion and Bus Swapping function                      Generation and checking of parity errors in DRAM                      Contains POS registers in MCA architecture</p> <p><b>82C226</b> Non-volatile RAM                      Real Time Clock                      DMA controller                      Interrupt controller</p> <p><b>82C226</b> Two interrupt controllers 8259                      An 8254 compatible timer                      Watchdog timer                      A real time clock compatible with MC146818                      114 bytes of CMOS RAM                      Parallel port controller</p> <p><b>82C231 MCA controller</b>                      MCA Compatibility                      Memory timing                      Bus Converter 32 - 16 bit</p>

**USER DISKETTE/SYSTEM TEST/DRIVER**

LEVEL	COMPATIBILITY
User Diskette Version 1.00	-
User Diskette Version 1.01	Compatible with BIOS 1.02
EVD Driver Version 3.0 Rev. 1.2	-
EVD Driver Version 4.0 Rev. 1.3	Supports Rel. 10 and 11 of ACAD386
EVD Driver Version 5.0 Rev. 5.0	Solves the problem in OS/2 PM 1.2 DAM driver
	This version supports DAM modes (1024 x 768 x 256)
	for Windows 3.0, AutoCAD 386 Ver. 10.0 and
	AutoCAD 386 Ver. 11.0
EVC Driver for ACAD10 and ACAD11	To be used only when requested
D.A.M. Driver for OS/2 P.M.	To be used only when requested

**CONSOLE**

	LEVEL	D.R.S. CODE	COMPATIBILITY
IF638	Lev. Nasc.	497314 P	
	Lev. 01		Change to conform with EMI rules

**PS14/PS14H POWER SUPPLY UNIT**

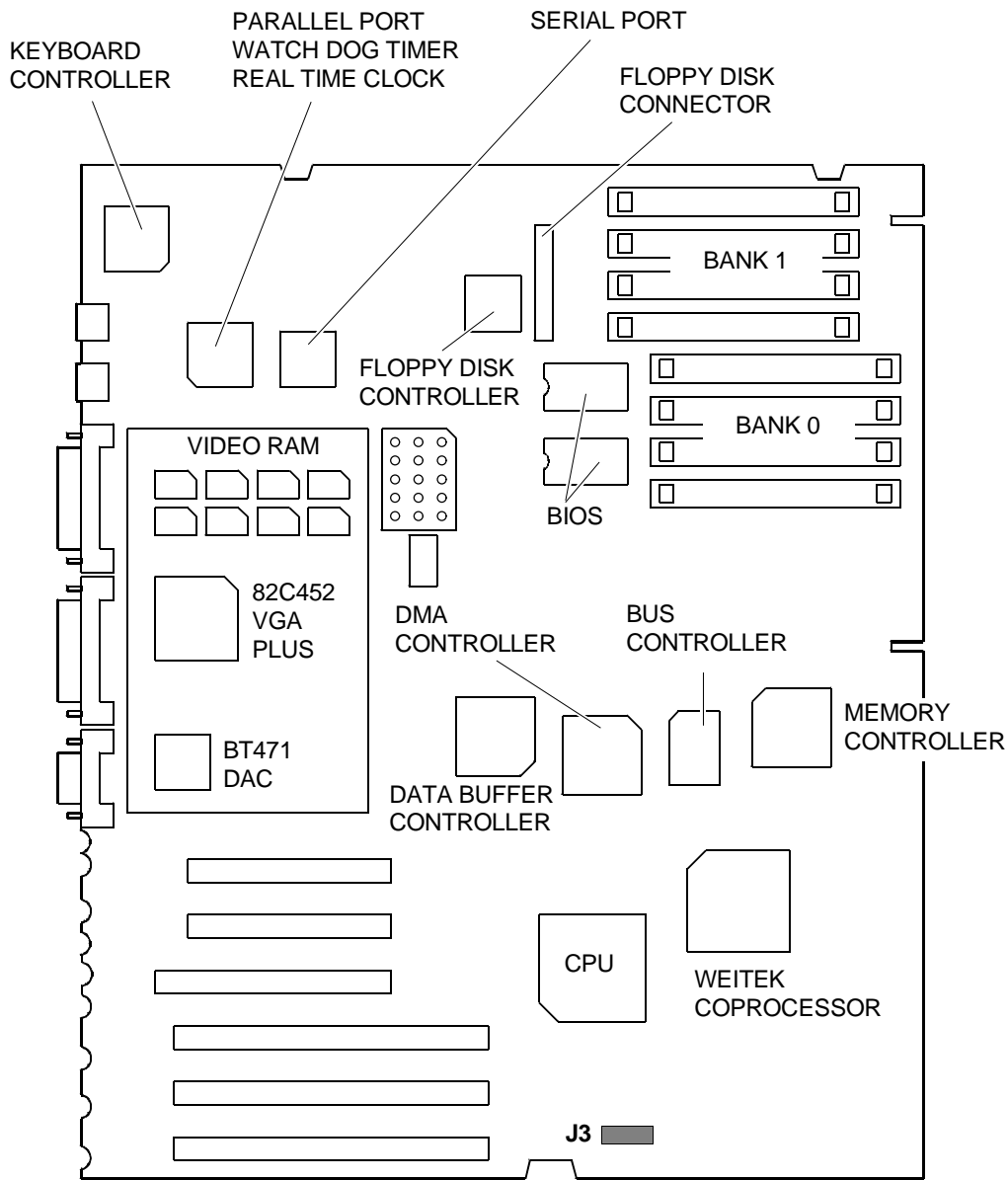
POWER SUPPLY	LEVEL	NOTES
PS14 Ver. 220 V HANTAREX	Lev. Nasc. Lev. 01	Improved ventilation and electrical noise susceptibility.
	Lev. 02	Introduced a mylar protection between L101 inductance and support for power supply unit compliance with safety rules.
	Lev. 03	Removed mylar protection. A new type of inductor is used to comply with safety norms.
	Lev. 04	Conforms with the new rules concerning reinforced insulation and reliability improvement. Modified TL7705 (IC351) component.
PS14 Ver. 115 V HANTAREX	Lev. Nasc. Lev. 01 Lev. 02 Lev. 03 Lev. 04	This version has undergone the same modifications as the 220 V version.
	Lev. Nasc.	New type of power supply unit.
	Lev. 01	A capacitor has been replaced to solve the problems with the IR-MA3 board.
	Lev. Nasc. Lev. 01	New type of power supply unit. Same modifications as made to the 220 V version.
PS14 H Ver. 220 V ALITEC	Lev. Nasc.	New supplier for this type of power supply unit.
	Lev. 01	A capacitor has been replaced to solve the problems with the IR-MA3 board.
PS14 H Ver. 220 V ALITEC	Lev. Nasc. Lev. 01	New supplier for this type of power supply. Same modifications as made to the 220 V version.

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**MI549 HARD DISK INTERFACE**

LEVEL	NOTES
Lev. Nasc.	Specific for the P750

**SYSTEM BOARD COMPONENTS, JUMPERS**



BUEOA

**JUMPER J3**

- OUT:** Normal setting
- IN:** Disables password  
Cancels the system configuration and restores the default settings

**SOFTWARE COMPATIBILITY**

<b>OPERATING SYSTEMS</b>	<b>NOTES</b>
IBM DISK Operating System, Ver. 4.01  IBM Operating System/2, Ver. 1.10 IBM Operating System/2 Extended Edition, Ver. 1.1 and Ver. 1.10 Olivetti's Microsoft OS/2, Ver. 1.10	During installation on hard disk, a formatted DSDD disk is required.

**HARDWARE COMPATIBILITY**

<b>MODEMS</b>	<b>I/O INTERFACE PRODUCTS</b>
Hayes Smartmodem 1200P Hayes Smartmodem 2400P IBM PS/2 300/1200 Internal Modem/A (6450349)	FUTURE DOMAIN HOST ADAPTER (MCS-350) IBM PS/2 Dual Async Adapter/A (6450347)
<b>EXPANSION MEMORIES</b>	<b>MOUSE</b>
IBM PS/2 80386 2-6 MB Exp. Memory Option IBM PS/2 80386 2-8 MB Exp. Memory Option Olivetti Memory Expansion board MEM 26-503 Profit System Elite 16/2	IBM PS/2 Mouse (6450350) Microsoft Serial Mouse MSC PC Mouse PS/2 Olivetti New Advanced Mouse (GRD 25-025)
<b>DISPLAY UNITS</b>	<b>NETWORKS &amp; LAN PRODUCTS</b>
IBM PS/2 Monochrome Display 8503 IBM PS/2 Color Display 8512 IBM PS/2 Color Display 8513 IBM PS/2 Color Display 8514	IBM PC Network IBM PC Network (Baseband Adapter) IBM Token Ring Network Novell Advanced network Ver. 2.12 3COM Network (Ethernet) 10NET Network
<b>GRAPHICS PRODUCTS</b>	<b>OTHER PRODUCTS</b>
IBM PS/2 Display Adapter 8514/A MATROX PG2 - 1281 HI-RES Graphics Controller	SOFTWARE SECURITY Parallel Port Block

**SYSTEM MEMORY MAP**

ADDRESS	SIZE	FUNCTION	CACHE
00000000 - 0007FFFF	512 K	System DRAM	YES
00080000 - 0009FFFF	128 K	I/O RAM	YES
000A0000 - 000BFFFF	128 K	Video adapter RAM	NO
000C0000 - 000DFFFF	128 K	I/O ROM	NO
000E0000 - 000FFFFFF	128 K	BIOS (SHADOW RAM)	YES
00100000 - 007FFFFFF		System RAM	YES
00800000 - 00FFFFFF		System RAM	YES
01000000 - BFFFFFF		System RAM	YES
C0000000 - C1FFFFFF		Weitek Coprocessor	NO
C2000000 - DFFFFFF		System RAM	YES
E0000000 - FFFDFFFF		System RAM	YES
FFFE0000 - FFFFFFF	128 K	ROM BIOS	NO

**DMA CHANNELS**

CHANNEL	FUNCTION	CHANNEL	FUNCTION	CHANNEL	FUNCTION
0	Reserved	3	Usable	6	Usable
1	Usable	4	Reserved	7	Usable
2	Floppy disk	5	Usable		

**I/O ADDRESS MAP**

ADDRESS	FUNCTION	ADDRESS	FUNCTION
000 - 01F	DMA controller (channels 0-3)	096 - 097	POS, Connector select
020-021	First interrupt controller 8259A	0A0 - 0A1	Second interrupt controller 8259A
022	System Setup Indexing registers	0C0 - 0DF	DMA controller (4 - 7)
023	System Setup Data registers	0E0	Split address register
040-047	System Timer	0E1	Memory map register
060	Auxiliary device	0E2	Cache control register
061	System Port B controller	0E3 - 0E7	Channel restore registers
064	Auxiliary device	0F0 - 0FF	Coprocessor
070 - 071	RT/CMOS and NMI mask	100 - 107	Programmable option select
074 - 076	8 KB CMOS RAM expansion	1F0 - 1F8	Hard disk adapter
	Registers for configuring registers 68B50	278 - 27B	Parallel port 3
081 - 087	DMA registers pages 0 - 3	2F8 - 2FF	Serial port 2 (RS-232-C)
089 - 08F	DMA registers pages 4 - 7	378 - 37B	Parallel port 2
090	Central arbitration control port	3BC - 3BF	Parallel port 1
091	Response from selected board	3B4 - 3C5	Video subsystem
092	System Port A controller	3CE - 3DA	Video subsystem
093	Reserved	3C6 - 3C9	Video DAC, Bt471
094	Boards enable	3F0 - 3F7	Floppy disk controller
		3F8 - 3FF	Serial port 1 (RS- 232-C)

**INTERRUPT LEVELS**

LEVEL	FUNCTION	LEVEL	FUNCTION
IRQ0	Channel 0 of timer output	RQ8	Real Time Clock
IRQ1	Keyboard interface	IRQ9	Redirected via software to IRQ2
IRQ2	Interrupt from PIC2	IRQ10	Available
IRQ3	Optional serial port	IRQ11	Available
IRQ4	Primary serial port	IRQ12	Mouse
IRQ5	Available	IRQ13	Coprocessor
IRQ6	Floppy disk controller	IRQ14	Hard disk controller
IRQ7	Parallel port	IRQ15	Available



## COMPATIBLE HARD DISKS

TYPE	MODEL	CAPACITY	CYL	T	WPC	LZ	SET
1	N.C.	10 MB	306	4	128	305	17
2	Seagate ST225 half size	20 MB	615	4	256	700	17
3	WREN 2 full size	38 MB	925	5	128	924	17
4	CDC WREN 1	28 MB	697	5	128	696	17
5	ST4096	76 MB	1024	9	-1	1023	17
6	OPE XM5340	40 MB	820	6	256	819	17
7	NEC D5146H	40 MB	615	8	128	664	17
8	TM755 slim size	40 MB	981	5	-1	980	17
9	CDC WREN II slim size	40 MB	981	5	128	980	17
10	Micropolis 1324 full size	51 MB	1024	6	128	980	17
11	CDC WREN II full size	53 MB	925	7	128	924	17
12	Micropolis 1325 full size	68 MB	1024	8	-1	1023	17
13	CDC WREN II full size	69 MB	925	9	128	924	17
14	Micropolis 1323-A full size	42 MB	1024	5	-1	1023	17
15	RESERVED						
16	OPE XM5220 85 ms	20 MB	612	4	128	656	17
17	TANDON TM 362 85 ms	20 MB	612	4	-1	663	17
18	Seagate ST251 40 ms	40 MB	820	6	-1	819	17
19	Rodime RO3055 40 ms	43 MB	872	6	0	871	17
20	Miniscribe M8425 68 ms	20 MB	612	4	0	663	17
21	Seagate ST277TR	62 MB	820	6	-1	819	26
22	OPE XM5340/60	62 MB	820	6	128	819	26
23	NEC D5147H	62 MB	615	8	384	664	26
24	NEC D5652	136 MB	820	10	-1	822	34
25	Micropolis 1355 ESDI	135 MB	1021	8	-1	1023	34
26	Micropolis 1353 ESDI	67 MB	1021	4	-1	1023	34
27	NEC D5452	68 MB	823	10	512	822	17
28	Fujitsu M2227D	40 MB	615	8	512	614	17
29	Fujitsu M2227D RLL	60 MB	615	8	512	614	26
30	CDC 94205-77	62 MB	981	5	-1	980	26
31	Formatted, ESDI full size	304 MB	814	15	-1	1	-
32	Formatted, ESDI half size	81 MB	977	5	-1	1	-
33	N.A.	136 MB	820	10	-1	1	-
34	CDC 94196-766	600 MB	1623	15	-1	1	-
35 - 45	RESERVED						

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**Where:** CYL: No. of disk cylinders  
T: No. of disk heads  
WPC: Precompensation cylinder number  
LZ: Head parking cylinder number  
SET: No. of disk sectors