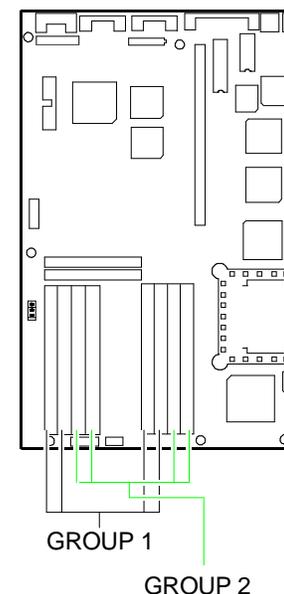


M6-620

CHARACTERISTICS

Microprocessor	60 MHz Intel Pentium CISC (Complex Instruction Set Computer) processor.		
Architecture	ISA AT / EISA		
Memory	<p>Minimum 16 MB, maximum 256 MB</p> <p>The motherboard has a total of eight sockets in which SIMMs can be installed. These sockets are arranged in two groups of four sockets each:</p> <ul style="list-style-type: none"> - Group 1 = 0, 1, 2, 3 - Group 2 = 4, 5, 6, 7 <p>The figure on the side shows the location of the sockets and groups. -----></p> <p>The following SIMMs can be installed:</p> <p>EXM 28-004 - One 1MBx36 SIMM - 4 MB</p> <p>EXM 28-008 - One 2MBx36 SIMM - 8 MB</p> <p>EXM 28-016 - One 4MBx36 SIMM - 16 MB</p> <p>EXM 29-032 - One 8MBx36 SIMM - 32 MB</p> <p>The SIMMs must be installed in groups of four, and all the SIMMs of a group must be of the same kind.</p>		
Memory access	70 ns		
Cache	<ul style="list-style-type: none"> - Cache inside the Pentium processor - Expansion board with 512 KB of secondary level cache 		
Floppy Disk	Toshiba ND08 DE	1.2 MB	
	Panasonic JU 475-3	1.2 MB	
	Panasonic JU 475-4	1.2 MB	
	Panasonic JU 475-5	1.2 MB	
	Sony MP-F40W	2.88 MB	
Hard Disk	210 MB	CONNER CP3200F	SCSI
	210 MB	CONNER CP30200	SCSI
	210 MB	SEAGATE ST3283N	SCSI
	510 MB	CONNER CP3500	SCSI
	525 MB	SEAGATE ST1581N	SCSI
	525 MB	CONNER CP3540	SCSI
	525 MB	CONNER CP30540	SCSI
	1050 MB	DIGITAL DSP3105.	SCSI
Streaming Tape	<p>Wangtek 5159ES 150 MB SCSI interface</p> <p>Wangtek 5525ES - 5525ES-ACA 320 MB SCSI interface - Requires the ASC-2 board.</p>		
Slots	Three 32-bit ISA/EISA expansion slots.		
	Continues		

MOTHERBOARD BA979



10

POWER SUPPLY PS11 / ARS 130 W (120 - 240 V)

BIOS

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

Last level:
Rev.

Video controller	<p>The video subsystem consists of:</p> <ul style="list-style-type: none"> - A VGA video controller (AVGA1) integrated on the motherboard with 256 KB of video DRAM (2 256Kx4 chips) - Video subsystem interface board which can be installed in the appropriate slots on the motherboard. <p>There are two types of board:</p> <ul style="list-style-type: none"> - AVM-FB (Advanced Video Module Frame Buffer) - GAM-001 (Graphic Accelerator Module).
Floppy disk controller	Integrated on the motherboard by means of component 82077SL1C
SCSI peripheral controller	Integrated on the motherboard by means of component AIC-7770 and capable of managing two SCSI channels. Internal or external SCSI peripherals can be connected to the system through two SCSI interface connectors.
ETHERNET subsystem	<p>The Ethernet subsystem is based on:</p> <ul style="list-style-type: none"> - 82596DX controller - Six PALs - 82C501 serial interface controller <p>This subsystem interfaces the EISA bus through a 32-bit bus, and interfaces the external environment through a 15-pin connector on the rear of the system.</p>
Audio subsystem	<p>The audio subsystem consists of:</p> <ul style="list-style-type: none"> - An on-board AD1848 controller - An interface board which is connected to the motherboard by means of an appropriate cable.
Mouse	Ps/2- and AT-Compatible
Keyboard	<p>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</p>

VIDEO SUBSYSTEM INTERFACE BOARDS

AVM-FB (Advanced Video Module Frame Buffer) - This board has only been used on pre-production models.

GAM-001 (Graphic Accelerator Module).

AUDIO SUBSYSTEM INTERFACE BOARD

IF659

BUS EXPANSION BOARD

IF656

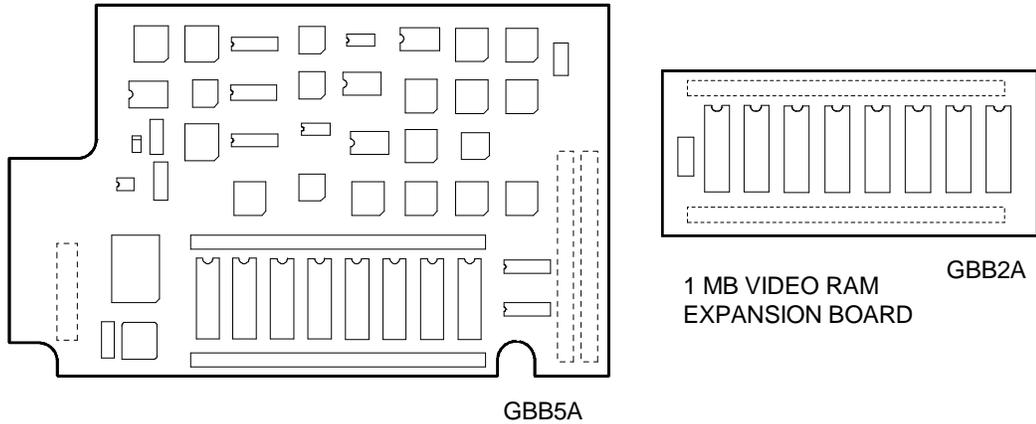
MOTHERBOARD

	LEVEL	D.R.S. CODE	ROM BIOS	NOTES
BA979	Nasc.	589591 J	The ROM BIOS is a Flash EPROM. The BIOS code is supplied on diskettes and must be copied into the Flash EPROM.	
	Lev. 01			New printed circuit with the wirings made and improving the flow of production.
	Lev. 02			The Pentium Step B1 processor is replaced by the Pentium Step C1 component.
	Lev. 03			The GKY4 PAL at location U60 is replaced by the GKL6 PAL. This corrects the problem of Windows for Workgroups 3.11 making the system crash.

MOTHERBOARD INTEGRATED CONTROLLERS

MOTHERBOARD	INTEGRATED CONTROLLERS
BA979	<p>60 MHz Pentium microprocessor. PAL 20L8-5 CPU controller and clock generator Connector J22 Interface for the optional board implementing 512 KB of secondary level cache. MCU Memory Control Unit VGA AVGA1 Video controller EISA 82357 ISP (Integrated System Peripheral) - This chip set component controls the system peripherals EISA 82358DT This chip set component controls the EISA bus EISA ASIC This chip set component controls the EISA bus addresses EISA (Low) This chip set component is a data controller EISA (High) This chip set component is a data controller AIC-7770 SCSI peripheral controller AD1848 Audio controller 82596DX-25 Ethernet LAN controller Connector J9 Ethernet LAN interface XC3195 I/O controller 8742A Keyboard and mouse controller 20F020-200 BIOS Flash EEPROM 28C64 Configuration EEPROM DS1287 Real Time Clock WD16C552D Serial and parallel port controller 82077SL1C Floppy disk controller</p>

AVM-FB VIDEO SUBSYSTEM INTERFACE BOARD

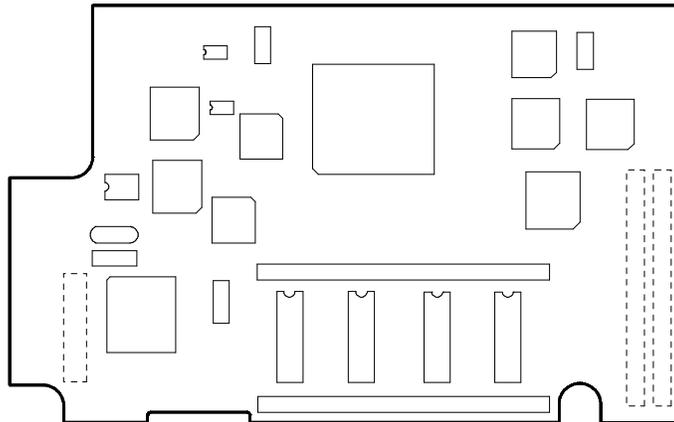


The AVM-FB (Advanced Video Module-Frame Buffer) video subsystem interface board enhances the performance offered by the system video controller. It is installed in the appropriate motherboard slot and is equipped with 1 MB of video RAM expandable to 2 MB by means of a 1 MB video RAM expansion board. The main component on the AVM-FB board is the IMSG335 controller which allows the management of a palette of 16 million colors. With this board the system is capable of handling the following resolutions:

- 1024 x 768 60/78 Hz 256/65536 colors
- 1280 x 1024 60/72 Hz 256 colors.

10

This board has only been used in pre-production models.



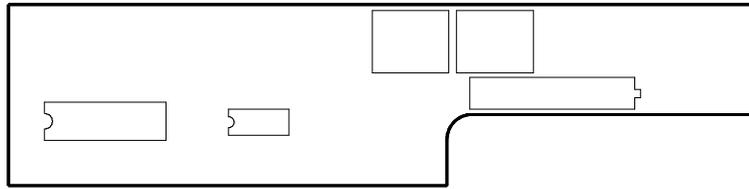
GBB5X

GAM-001 VIDEO SUBSYSTEM INTERFACE BOARD

The GAM-001 (Graphic Accelerator Module) video subsystem interface board gives this system the potential of a graphics workstation as it allows the support for advanced graphics packages. With this board the system can handle the following resolutions:

- 1024 x 768 x 8 colors 60/78 Hz
- 1024 x 768 x 16 colors 60/78 Hz
- 1280 x 1024 x 8 colors 60/72 Hz.

IF659 AUDIO SUBSYSTEM INTERFACE BOARD



GBB3A

This board is connected to the system motherboard by means of an appropriate cable, and works on parallel with the AD1848 audio controller integrated on the motherboard. It includes:

- An IC amplifier
- A circuitry which excludes the speaker when the headphones are being used.

The audio subsystem acts as a digital analog converter between the bus signals and the following I/O devices:

- Internal speaker
- Optional CD-ROM drive
- Headphones and microphone.

The audio subsystem interfaces with external devices by means of the following four jacks on the system rear panel:

- Microphone in
- Headphones out
- Audio in
- Audio out.

USER DISKETTE

LEVEL	NOTES
Rev. 1.00	This version requires BIOS 1.06, at least.

SYSTEM TEST

LEVEL	NOTES
Rev. 1.01	This version requires BIOS 1.06, at least.

POWER SUPPLY

POWER SUPPLY	LEVEL	DESCRIPTION
PS11 / ARS D.R.S. code: 589593 L	Nasc.	130 W (110 - 120 V) power supply.
	Lev. 01	
	Lev. 02	A Mylar sheet is placed on the inside of the power supply cover to guarantee the safety distance between the line voltage and ground.
	Lev. 03	New printed circuit which includes two wirings and a cut. Resistor R36 changes from 1 KOhm to 470 Ohm
PS11 / ARS D.R.S. code: 589594 M	Nasc.	130 W (210 - 220 V) power supply.
	Lev. 01	This power supply includes the same modifications made to the 110 V version.
	Lev. 02	
	Lev. 03	

SOFTWARE DRIVERS

DRIVER	NOTES

10**BIOS**

LEVEL	NOTES

BUS EXPANSION BOARD

NAME	LEVEL	NOTES

SOFTWARE COMPATIBILITY

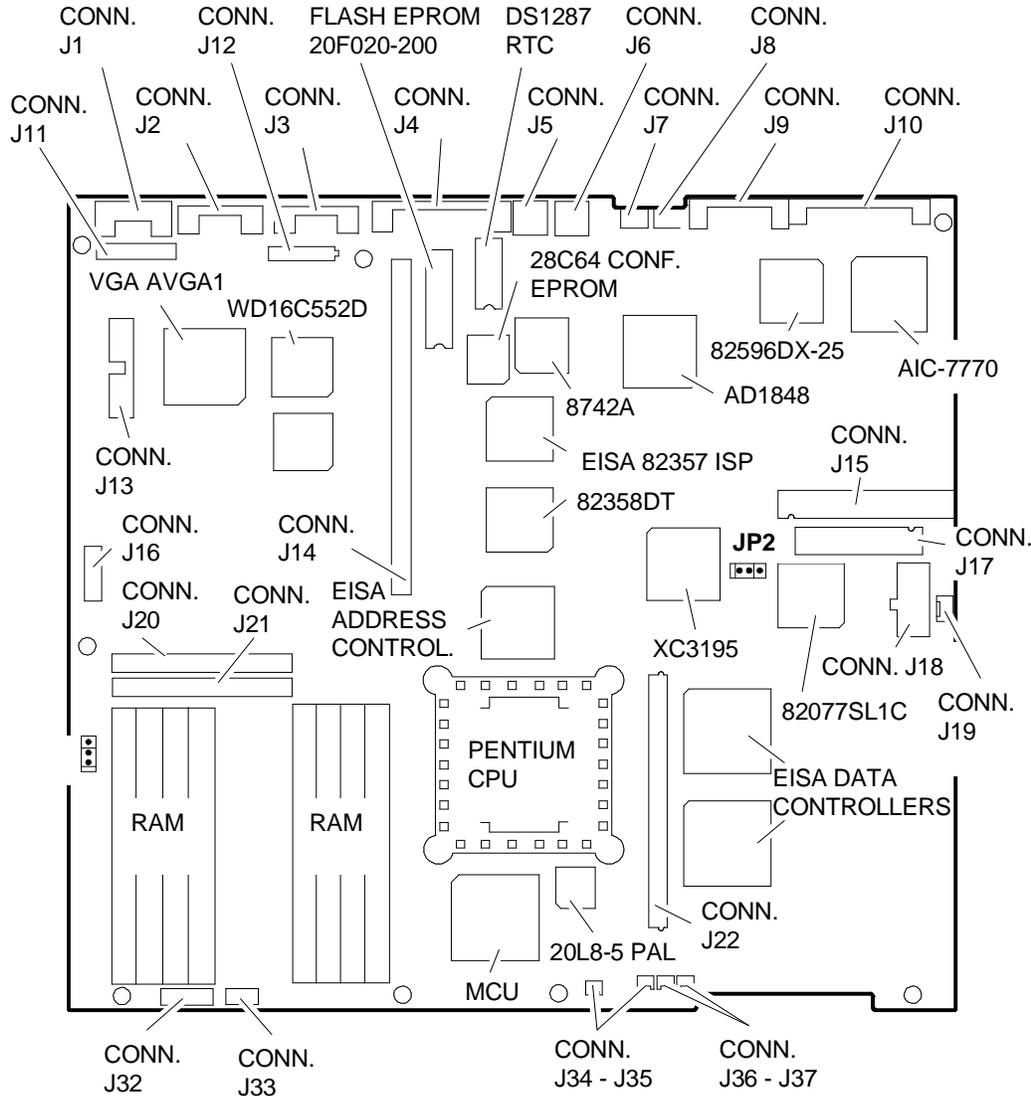
OPERATING SYSTEMS	WINDOWING APPLICATIONS
IBM DISK Operating System, Ver. 3.30 MS-DOS (Compaq) IBM DISK Operating System, Ver. 4.01 MS-DOS Release 5.0	GEM /3 DESKTOP, Version 2.0 DESQVIEW 386, Version 2.3 MS-WINDOWS, Version 3.0
WORD PROCESSING PRODUCTS	GRAPHICS PRODUCTS
AMI PROFESSIONAL, Version 2.0 DISPLAYWRITE 4, Version 1.5 DISPLAYWRITE 5/2 for OS/2 , Version 1.0 MS-WORD for WINDOWS, Version 2.0 MS-WORD for DOS, Version 5.5 MS-WORD for OS/2, Version 5.5 WORD PERFECT, Version 5.1 WORDSTAR 2000, Release 3.5 WORDSTAR PROFESSIONAL, Version 6.0	ADOBE ILLUSTRATOR, Version 1.1 AUTODESK ANIMATOR PRO, Version 1.03 AUTOCAD, Version 11 CHARISMA for WINDOWS Version 2.1 CORELDRAW for WINDOWS Version 2.0 DR HALO IV, version 1.0 HARVARD GRAPHICS Version 3.0 LOTUS FREELANCE PLUS Version 4.0 MICROGRAFX DESIGNER Version 3.1 PC PAINTBRUSH IV PLUS Version 1.0 POWERPOINT, Version 2.0 E
DTP PRODUCTS	
ALDUS PAGEMAKER, Version 4.0 ALDUS PAGEMAKER for OS/2, Version 3.01 XEROX VENTURA PUBLISHER, Version 3.0 VENTURA PUBLISHER for WINDOWS 3.0 and 3.1, Ver. 3.0 XEROX VENTURA PUBLISHER, Version 3.0 for GEM	

HARDWARE COMPATIBILITY

MODEM PRODUCTS	MOUSE PRODUCTS
HAYES SMART MODEM, 2400 B INTEL SAFISFAXCTION BOARD DIGICOM MODEM FAX Mod. SNM28SR AT&T 2224 CEO MODEM ROBOTICS World Port 1200	IBM PS/2 MOUSE LOGITECH BUS MOUSE LOGITECH 3 BUTTON MOUSE RADIO MS-BUS MOUSE MS SERIAL MOUSE (PS/2) MS BALL POINTER
GRAPHICS PRODUCTS	DISPLAY PRODUCTS
GXi GRAPHICS COPROCESSOR MATROX M3GD-Ultra EISA	NEC MULTISYNC 4 FG NEC MULTISYNC 5 FG
INTELLIGENT MULTIPOINT PRODUCTS	MPC BOARDS
CHASE AT 16 + CHASE AT 8+ CHASE EISA 16 Serial I/O Controller COMPUTONE 16 multipoint serial i/o controller Computone 8 multipoint serial i/o controller COMPUTONE 16 PORT EISA ALC DIGIBOARD DIGICHANNEL C/X EISA Specialix si-EISA /8+ Version 2.0	PRO AUDIO SPECTRUM 1 PRO AUDIO SPECTRUM 2 PRO AUDIO SPECTRUM 16 PLUS CARD SOUND BLASTER PRO

LAN PRODUCTS SOFTWARE	
<p>3COM 3+SHARE, Version 1.6 3COM 3+OPEN ADVANCED SYSTEM, V. 1.1 10NET PLUS, Version 5.0 IBM PC LAN PROGRAM, Version 1.30 IBM PC LAN SUPPORT PROGRAM, V. 1.2 MS OS/2 LAN MANAGER, Version 2.1 NOVELL NETWARE 386, Version 3.11 OLIVETTI LAN MANAGER, Version 2.1 ** OLIVETTI OLINET LAN , Version 1.24 **1</p>	<p>** The PC has only been tested as a DOS workstation since MS-OS/2 Ver. 1.3 and earlier releases cannot be installed on this system. **1 MS-Windows Ver. 3.1 cannot be installed since the system will issue the following message when executing the setup/n command from a DOS client: "Error loading GDI.EXE".</p>
LAN PRODUCTS HARDWARE ISA	
<p>DEC ETHERWORKS TURBO TP DEC ETHERWORKS TURBO ADAPTER DE200 3COM ETHERLINK ADAPTER (3C501) 3COM ETHERLINK II ADAPTER (3C503)</p>	<p>3COM ETHERLINK III ADAPTER (3C509) 3COM ETHERLINK PLUS ADAPTER (3C505) 3COM TOKENLINK ADAPTER (3C603) IBM TOKEN RING 16/4 ADAPTER IBM TOKEN RING PC ADAPTER II MADGE AT RING NODE ADAPTER</p>
LAN PRODUCTS HARDWARE (EISA)	
<p>MYLEX LNE/390 ETHERNET ADAPTER NOVELL ETHERNET ADAPTER NE3200</p>	
MULTIMEDIA SOFTWARE	
<p>ASYMETRIX MULTIMEDIA TOOLBOOK V. 1.53 AUTHOWARE STAR WINDOWS 3.0 V. 1.0 AUTHOWARE STAR WINDOWS 3.1 V. 1.0A CD SPEED Version 1.0 IM-AGE Version 3.0</p>	<p>MPC SAMPLER MS WINDOWS, V. 3.0 + Multimedia Ex V. 1.0 MS WINDOWS VER. 3.1 + Multimedia Ex MS VIDEO FOR WINDOWS PHOTO STYLER VER. 1.1</p>
MULTIMEDIA HARDWARE	
<p>ACTIONMEDIA II CAPTURE MODULE SCREEN MACHINE FAST (ISA) Mod. 1 ** SCREEN MACHINE FAST (ISA) Mod. 2 ** SUPER VIDEO WINDOWS (N.M.G.) CM ver. 1.3B (ISA) **2 VIDEOLOGIC DVA 4000/ISA **3 VIDEO BLASTER</p> <p>** The Screen Machine must not be connected to the feature connector. **2 Different problems arise when running tests on the Super Video Windows board using the original software. These problems are by-passed by using a copy of the original software. **3 The board does not work properly and internal cache is disabled.</p>	
DEVICE	
<p>INTELLITOUCH PC Mod. 271 PANASONIC VTR AG-5700 PHILIPS CD-RECORDER CDD 521/10 PIONEER LASER DISC CLD-V2300D PIONEER LASER DISC V4300D SCANMAKER II MRS - 600ZS Color/Grey</p>	<p>SONY CD ROM DRIVER CDU 541 SONY LASER DISC PLAYER LDP3600 SRS 170 ACTIVE SPEAKER SYSTEM SONY SRS 77G ACTIVE SPEAKERS SYSTEM MICROTOUCH MOUSE EMULATOR</p>

MOTHERBOARD COMPONENTS AND JUMPERS

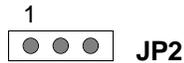


GBB7A

CONNECTOR	FUNCTION	CONNECTOR	FUNCTION
J1	Video interface	J14	EISA bus interface
J2	Serial port 1 interface	J15	Internal SCSI interface
J3	Serial port 2 interface	J16	Intelligent console interface
J4	Parallel port interface	J17	Floppy disk interface
J5	Mouse interface	J18	Power supply
J6	Keyboard interface	J19	CD-ROM audio
J7	Audio interface	J20	Video subsystem interface
J8	Audio interface	J21	Video subsystem interface
J9	Ethernet LAN interface	J22	Secondary cache interface
J10	External SCSI interface	J32	Console interface
J11	Video subsystem interface	J33	Console interface
J12	Audio board interface	J34 - J35	CPU fan power supply
J13	Feature connector	J36 - J37	Cache memory fan interface

MOTHERBOARD JUMPERS

Jumper JP2 - CMOS RAM cancellation



To cancel the CMOS RAM, install this jumper on pins 1 and 2. This jumper is usually in position 2-3.

Jumper JP1 - Bootstrap from external ROM

Jumper JP1 is only used for R&D purposes. It is usually in position 2-3. When installed in position 1-2, system bootstrap from an external ROM is enabled.

INTERRUPT LEVELS

SIGNAL	CONTROLLER	PRIORITY	FUNCTION
IRQ0	1	1	Counter 0 timer 1 output
IRQ1	1	2	Keyboard controller
IRQ2	1	3-10	Interrupt issued from controller 2
IRQ3	1	11	Software configurable as serial port 1 or 2
IRQ4	1	12	Software configurable as serial port 1 or 2
IRQ5	1	13	Software configurable as parallel port 3, console, SCSI, audio or LAN subsystem
IRQ6	1	14	Floppy disk controller
IRQ7	1	15	Software-configurable as parallel port 1 or 2
IRQ8	2	3	Real time clock
IRQ9	2	4	Video
IRQ10	2	5	Software-configurable as console, SCSI, audio or LAN subsystem
IRQ11	2	6	Software-configurable as console, SCSI, audio or LAN subsystem
IRQ12	2	7	Mouse
IRQ13	2	8	Floating point coprocessor error
IRQ14	2	9	Reserved
IRQ15	2	10	Software-configurable as console, SCSI, audio or LAN subsystem

10

DMA CHANNELS

CHANNEL	NUMBER OF BITS	FUNCTION
0	8	Audio
1	8	Audio or available for a general EISA application
2	8	Floppy disk transfers (programmed for 8-bit devices)
3	8	Audio or available for a general EISA application
4	16	Used for the cascade connection of DMA1; corresponds to the page address register and is used by the refresh logics
5	16	Available for a general EISA application
6	16	Available for a general EISA application
7	16	Available for a general EISA application

I/O ADDRESS MAP

I/O AREA FOR EISA SLOT 15	64 KB	ALIAS OF 100-3FF	FD00
		I/O SLOT 15	FC00
		ALIAS DI 100-3FF	F900
		I/O SLOT 15	F800
		ALIAS OF 100-3FF	F500
		I/O SLOT 15	F400
		ALIAS OF 100-3FF	F100
		I/O SLOT 15	F000
I/O AREA FOR EISA SLOT 1	60 KB		
	8 KB	ALIAS OF 100-3FF	2000
		I/O SLOT 1	1D00
		ALIAS OF 100-3FF	1C00
		I/O SLOT 1	1900
		ALIAS DI 100-3FF	1800
		I/O SLOT 1	1500
		ALIAS OF 100-3FF	1400
		I/O SLOT 1	1100
	4 KB	I/O SLOT 1	1000
		ALIAS OF 100-3FF	0D00
		EISA SYSTEM I/O BOARD	0C00
ISA ADDRESS AREA AND EISA SYSTEM BOARDS		ALIAS OF 100-3FF	0900
		EISA SYSTEM I/O BOARD	0800
		ALIAS OF 100-3FF	0500
		EISA SYSTEM CONTROLLER BOARD	0400
		ISA EXPANSION BOARDS	0100
	0 KB	ISA SYSTEM I/O BOARD	0000

SYSTEM MEMORY MAP

