CONFIGURATION UTILITES FOR THE M4-82 / PCS52E SYSTEMS

SETUP Utility

This utility is stored in the system ROM BIOS and is therefore part of the BIOS code.

At the end of the Power On Self Test (POST) phase the results of these system autodiagnostics are displayed along with the following message:

Press <F1> If you want to do SETUP

Pressing the F1 key displays the following menu:

```
--------------------------------------------------------------------------------------------------------------------------
                                                    --
                          OLIVETTI SETUP PROGRAM - BIOS SETUP UTILITIES
--------------------------------------------------------------------------------------------------------------------------
                                                    -

                                        STANDARD CMOS SETUP
                                        ADVANCED CMOS SETUP
                                    PERIPHERAL MANAGEMENT SETUP
                                    CONFIGURE WITH BIOS DEFAULT
                                  CONFIGURE WITH POWER- ON DEFAULT
                                        CHANGE PASSWORD
                                      WRITE TO CMOS AND EXIT
                                    DO NOT WRITE TO CMOS AND EXIT

--------------------------------------------------------------------------------------------------------------------------
                                                    --
                          Standard CMOS Setup for Changing Time, Date, Hard Disk Type, etc.
------------------------------Sel F2/F3: Color    F10:Save & Exit ------------------------------------------------------
                                                    -
```

Using the ↑↓ keys you can select any one of the above menu options. Press the Enter key to confirm the selection made.

1 - Standard CMOS SETUP

Selecting this menu option allows you to modify the values of the following parameters:

PARAMETER	POSSIBLE VALUES	DESCRIPTION
System Data	Day - Month - Year	Changes the system date.
System Time	Hours - Min. - Sec.	Adjusts the system clock.
Base Memory	Unchangeable	Indicates the system memory capacity that was detected during the POST.
Extended Memory	Unchangeable	Indicates the extended memory capacity that was detected during the POST.
Diskette drive A	- 1.44 MB 3.5" - 720 KB 3.5" - 1.2 MB 5.25" - 360 KB 5.25" - Not present - 2.88 MB 3.5"	Defines the type of floppy diskette drive installed as drive A.

PARAMETER	POSSIBLE VALUES	DESCRIPTION
Diskette drive B	- 1.44 MB 3.5" - 720 KB 3.5" - 1.2 MB 5.25" - 360 KB 5.25" - Not present - 2.88 MB 3.5"	Defines the type of floppy disk drive installed as drive B.
Hard disk C: Type	AUTO-CONFIG 1 to 45	Selecting AUTO-CONFIG., as indicated in the field associated to this parameter, configures the system to use the hard disk self-acknowledgement feature. The hard disk installed will provide the system with all of its data. As a result, all other parameters that are part of this menu are automatically configured. This type of configuration must always be used with the hard disks installed on these personal computers. The following parameters are automatically configured: - Cyln No. of cylinders - Head No. of heads - Sect No. of sectors per track - Size Hard disk capacity Used for hard disks that do not have the self-acknowledgement feature. Each number identifies a type of hard disk, as indicated in the table on the next page.
Hard disk D: Type	AUTO-CONFIG 1 to 45	As for hard disk C:
Hard disk E: Type	AUTO-CONFIG 1 to 45	As for hard disk C:
Hard disk F: Type	AUTO-CONFIG 1 to 45	As for hard disk C:
Drive C: Timeout Drive D: Timeout Drive E: Timeout Drive F: Timeout	0 Seconds 5 Seconds 15 Seconds 31 Seconds	Selects the time frame in seconds within which the hard disk has to reply to a command. An error message will be issued if the hard disk does not answer within this frame of time.
Keyboard	- Installed - Not installed	Select Not Installed when the keyboard is not connected to the system.

Use the PageUp and PageDOWN keys to change the values.

Hard Disks that do not have the Self-Acknowledgement Feature

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	RISERVATO						
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	CONNER CP3142	40 MB	635	4	-1	639	33
32	CONNER CP3022	20 MB	615	4	-1	614	17
33	CONNER CP3106	100 MB	776	8	-1	775	33
34	Miniscribe 8051A	40 MB	745	4	-1	744	28
35	Quantum P40 AT	40 MB	965	5	-1	964	17
36	CONNER CP346	40 MB	805	4	-1	804	26
37	Quantum LPS105 AT	100 MB	776	8	-1	775	33
37	Quantum LPD210 AT	200 MB	873	13	-1	872	36
39	CONNER CP30064	60 MB	762	4	-1	761	39
40	CONNER CP30124	120 MB	762	8	-1	761	39
41	CONNER CP3206	210 MB	683	16	-1	682	38
42	W.D. AC-140	40 MB	980	5	-1	980	17
43	W.D. AC -2120	116 MB	762	8	-1	762	39
44	Free						
45	Free						

Where:
CYL: No. of cylinders on the disk
T: No. of heads
WPC: Precompensation cylinder number
LZ: Landing zone cylinder number
SET: No. of sectors on the disk.

2 - Advanced CMOS SETUP

PARAMETER	POSSIBLE VALUES	DESCRIPTION
Typematic Rate Programming	- Enabled - Disabled	Enabling this parameter allows to program: 1 - How many times per second a key code is repeated when the corresponding key is held down 2 - The delay between the moment a key is pressed and the repetition of the corresponding code. These settings are made with the following two parameters.
Typematic Rate Delay (msec)	- 250 - 500 - 750 - 1000	Defines the delay between the moment a key is pressed and the beginning of the repetition of the corresponding key code.
Typematic Rate (Chars/Sec)	- 6 chars per sec. - 8 chars per sec. - 10 chars per sec. - 12 chars per sec. - 20 chars per sec. - 24 chars per sec. - 30 chars per sec.	Defines how many tines per second a key code is repeated when the corresponding key is held down.
Press <F1> Message Display	- Enabled - Disabled	When enabled, the following message is displayed at the end of the POST: Press <F1> if you want to do SETUP.
System Boot Up Numlock	- ON - OFF	Defines the status of the NumLock key after the operating system bootstrap..
System Boot Up Sequence	- A:, C: - C:, A: - C: only	Defines the order in which the BIOS routines access the magnetic peripherals to find the operating system and proceed with bootstrap.
System Boot CPU Speed	- High - Low	Defines the frequency of the CPU during operating system bootstrap procedures.
Cache Memory	- Enabled - Disabled	Enables or disables the system cache memory controller.
Network Pass-word Checking	- Enabled - Disabled	Enables or disables checks made on the the network password.
ISA Linear Frame Buffer	- Disabled - 1 MB - 2 MB - 4 MB	Disables the memory areas within the first 16 MB of system RAM. This allows expansion boards with on-board RAM to be installed within 16 MB of the AT bus address space. **NOTE :** When possible, it is suggested to install expansion boards above the 16 MB address space so that memory areas do not have to be disabled. The memory disabled by this parameter is, in fact, lost.
Set Linear Frame Address to	Unchangeable	Configured with different values depending on the setting of the "ISA Linear Frame Buffer" field.
Disable Shadow Memory Size	- Disabled - 64 KB - 48 KB - 32 KB - 16 KB	Defines how many bytes within the first megabyte of memory must ne shadowed. With Disabled the entire first megabyte is shadowed. The default value is 64 MB.

PARAMETER	POSSIBLE VALUES	DESCRIPTION
Disable Shadow Memory Base	- C0000 h - C4000 h - C8000 h - CC000 h - D0000 h - D4000 h - D8000 h - DC000 h	Defines the base address of the memory area within the first megabyte which must be shadowed. This parameters must be defined with the previous one. The default value is D000 (starting frm address D000, 64 KB of memory are shadowed).
Base Memory Size	- 512 KB - 640 KB	Defines the capacity of the system's base memory.
IDE DMA Transfer Mode	- Disabled - Type F - Type B - Standard	Must be used for hard disks which must operate in DMA mode. The default value is Disabled (the hard disks do not operate in DMA mode).
IDE Multiple Sector Mode	- Disabled - Enabled	With this parameter enabled the hard disk works in multisector mode, capable of reading more than one sector at a time. The default value is Disabled.
Enhanced ISA Timing	- Disabled - Enabled	With this option enabled the AT bus works in 10 MHz mode. The default value is Disabled (8 MHz AT bus).
ISA IRQ 9	- Free - Used	Used for ISA AT boards. Defines whether this interrupt is used by another expansion board installed on the bus.
ISA IRQ 10	- Free - Used	Used for ISA AT boards. Defines whether this interrupt is used by another expansion board installed on the bus.
ISA IRQ 11	- Free - Used	Used for ISA AT boards. Defines whether this interrupt is used by another expansion board installed on the bus.

Use the PageUp and PageDOWN keys to change these values.
F5 restores the original value.
F6 sets the SETUP default values.
F7 sets the values defined in CMOS.

3 - Peripheral Management SETUP

PARAMETER	POSSIBLE VALUES	DESCRIPTION
Programming Option	- AUTO - MANUAL	With AUTO, all other parameters are set automatically.
On-Board Floppy Drive	- Enabled - Disabled	Enables or disables the system floppy diskette drive.
On-Board IDE Drive	- Enabled - Disabled	Enables or disables the system hard disk drive.
First Serial Port Address	- Disabled - 2E8 h - 3E8 h - 2F8 h - 3F8 h	Motherboard first serial port address.
Parallel Porta Address	- 3BC h - 278 h - 378 h	Motherboard parallel port address.
IRQ Active State	- High - Low	Defines whether the interrupt signal must be active high or low.
Parallel Port Mode	- Normal - Extended	Sets the parallel port to bidirectional mode.

Use the PageUp and PageDOWN keys to change these values.
F5 restores the original value.
F6 sets the SETUP default values.
F7 sets the values defined in CMOS.

4 - Configure With BIOS Default

Configures the system with the default values stored in ROM BIOS.

5 - Configure With Power- On Default

Configures the system with the values stored in COMS RAM after the POST.

6 - Change Password

Sets and changes the system password.

CONFIGURATION UTILITIES FOR M6-750 / M6-750S / M6-760 / M6-760S M6-770 / M6-770S

To access the configuration utilities, press the F2 key when the following message is displayed after the *Power On Diagnostic* messages:

Press <F2> to enter SETUP

The system can be configured using the following parameters:

System Configuration

PARAMETER	OPTIONS	DESCRIPTION
System Time	Hour - Mins - Secs	Adjusts the system time.
System Date	Month /day/ year	Defines the system date
Language	Italian, English, French, German, Spanish	Defines the language in which the configuration program will be displayed in.
Diskette drive 0 Diskette drive 1	360 KB - 5.25" 1.2 MB - 5.25" 720 KB - 3.5" 1.44 MB 3.5" 2.88 MB 3.5" Not present	Selects the type of floppy disk installed in the system.
Hard Disk 0 Type Hard Disk 1 Type	Enters into the hard disk configuration field. Turn to the following table: **Hard Disk Configuration**	
Primary Dispaly	Monochrome EGA/VGA CGA 80x25	Defines the monitor operating mode at system power on.
Cache Memory	Enters into the cache memory configuration field. Turn to the following table: **Cache Memory**	
Shadow Memory	Enters into the shadow memory configuration field. Turn to the following table: **Shadow Memory**	
Boot Sequence	Enters into the boot sequence definition field. Turn to the following table: **Boot Sequence**	
NUMLOCK	Auto On Off	Defines NUMLOCK status at system power on.
System Memory	Unchangeable	Displays the system base memory capacity.
Extended Memory	Unchangeable	Displays the system extended memory capacity.

Hard Disk Configuration

PARAMETER	OPTIONS	DESCRIPTION
Automatic Hard Disk Acknow-ledgement	When selecting this option the system will automatically attempt to define the type of hard disk installed using the hard disk self-acknowledgement feature. If this definition phase ends successfully, all the fields of this parameter will be automatically defined.	
Type	1 to 45 User	1 to 45 allows you to select a type of hard disk which does not have the self-acknowledgement feature. The parameters for this hard disk drive have already been defined in the system BIOS. Hard disks that do not have the self-acknowledgement feature and which have already been defined in the BIOS are listed in the HARD DISKS table. The User option allows you to manually define the parameters of the hard disk being installed. The parameters to be defined are indicated after the table.
Cyliners	1 to 2048	Number of hard disk cylinders.
Heads	1 to 16	Number of hard disk read/write heads.
Sectors/Tracks	1 to 64	Number of sectors per track.
Landing Zone	1 to 2048	Number of the cylinder used as the head landing zone.
Write Precompensation	1 to 2048 None	Number of the write precompensation cylinder.
Disk Control in LBA Mode	Enabled Disabled	Enables or disables hard disk operation in LBA mode (used for high-capacity hard disk drives).

TYPES OF HARD DISK STORED IN THE SYSTEM BIOS					
TYPE	**CYLINDERS**	**HEADS**	**SECTORS**	**PRECOMP.**	**PARKING**
1	306	4	17	128	305
2	615	4	17	300	615
3	615	6	17	300	615
4	940	4	17	512	940
5	940	6	17	512	940
6	615	4	17	-1	615
7	462	8	17	256	511
8	733	5	17	-1	733
9	900	15	17	-1	901
10	820	3	17	-1	820
11	855	5	17	-1	855
12	855	7	17	-1	855
13	306	8	17	128	319
14	733	7	17	-1	733

TYPES OF HARD DISK STORED IN THE SYSTEM BIOS					
TYPE	**CYLINDERS**	**HEADS**	**SECTORS**	**PRECOMP.**	**PARKING**
15	RESERVED				
16	612	4	17	0	633
17	977	5	17	300	977
18	977	7	17	-1	977
19	1024	7	17	512	1023
20	733	5	17	300	732
21	733	7	17	300	732
22	733	5	17	300	733
23	306	4	17	0	336
24	612	4	17	305	663
25	612	2	17	300	612
26	614	4	17	-1	614
27	820	6	17	-1	820
28	977	5	17	-1	977
29	1218	15	36	-1	1218
30	1224	15	17	-1	1224
31	823	10	17	512	823
32	809	6	17	128	809
33	830	7	17	-1	830
34	830	10	17	-1	830
35	1024	5	17	-1	1024
36	1024	8	17	-1	1024
37	615	8	17	128	615
38	1024	8	26	-1	1024
39	925	9	17	-1	925
40	1024	9	17	-1	1023
41	918	15	17	-1	917
42	1024	15	17	-1	1023
43	823	10	34	-1	822
44	969	5	34	-1	968
45	969	7	34	-1	968

Advanced System Configuration

INTEGRATED PERIPHERALS		
PARAMETER	**OPTIONS**	**DESCRIPTION**
COM Port	Automatic Disabled 2F8, IRQ3 3F8, IRQ4	Defines the I/O address and interrupt for the first or second serial port.
LPT Port	Automatic Disabled 278, IRQ7 3BC, IRQ7 378, IRQ7	Defines the I/O address and interrupt for the selected parallel port.
Integrated Disk Drive	Enabled Disabled	Enables or disables the floppy disk controller.
Integrated IDE HDU	Enabled Disabled	Enables or disables the floppy disk controller.
ECP	Enabled Disabled	Enables or disables parallel port extended mode management.
CACHE MEMORY		
PARAMETER	**OPTIONS**	**DESCRIPTION**
External Cache	Enabled Disabled	Enables or disables external cache.
Cache Mode	Write Back Write Through	Selects the operating mode for the external cache: either write-back or write-through. Define the write-back mode for i486DX2 processors. Define the write-through mode for processors with write-back integrated cache management.
SHADOW MEMORY		
PARAMETER	**OPTIONS**	**DESCRIPTION**
System Shadow Memory	Enabled Disabled	Enables or disables system BIOS shadowing.
Video Shadow Memory	Enabled Disabled	Enables or disables video BIOS shadowing.

ADVANCED CHIPSET MANAGEMENT		
PARAMETER	**OPTIONS**	**DESCRIPTION**
Shadow Memory Areas	C800 - CBFF CC00 - CFFF D000 - D3FF D400 - D7FF D800 - DBFF DC00 - DFFF	Enables or disables the shadowing of specific memory areas so that the options ROMs can be shadowed.
Memory Between 512 KB and 640 KB Disable	Enabled Disabled	Enables or disables the memory area between 512 KB and 640 KB. Many applications, such as some network boards, can only recognize the first 512 KB of base memory so it is necessary to disable memory within the 512 KB and 640 KB range.
Memory Between 12 MB and 13 MB Disable	Enabled Disabled	Enables or disables the memory area between 12 MB and 13 MB.
IRQ 12	Enabled Disabled	Enables or disables mouse interrupt 12. Enabled: IRQ12 is used by the mouse. Disabled: IRQ12 is used by other devices.
Hidden Refresh Code Read Page Mode	These parameters directly configure the chipset so do not change their values. For more information press the F1 key to display this configuration file's Help facility.	
CPU to PCI Write Buffer		
PCI to DRAM Write Buffer		
CPU to DRAM Write Buffer		
Snoop Ahead		

H

Bootstrap Options

PARAMETER	**OPTIONS**	**DESCRIPTION**
System Boot Up Sequence	A: and then C: C: and then A: Only C:	Defines the system bootstrap sequence.
Configuration Display at Bootstrap	Enabled Disabled	Enables or disables the System Summary being displayed at the end of the POST. The System Summary lists all the system resources.
Bootstrap From Drive A:	Enabled Disabled	Enables or disables the operating system being loaded from drive A:. The **Supervisor Password** is required in order to modify these options.

PARAMETER	OPTIONS	DESCRIPTION
Bootstrap From Drive B	Enabled Disabled	Enables or disables the operating system being loaded from drive B:. The **Supervisor Password** is required in order to modify these options.
Bootstrap From the Serial Port	Enabled Disabled	Enables or disables the operating system being loaded from the serial port. The **Supervisor Password** is required in order to modify these options.

Extended Partitions

PARAMETER	OPTIONS	DESCRIPTION
Keyboard Speed Selection	2 / sec 6 / sec 10 / sec 13.3 / sec 21.8 / sec 26.7 / sec 30 / sec	Defines how many times per second a key code is repeated when the corresponding key is held down.
Keyboard Delay Selection	1/4 sec 1/2 sec 3/4 sec 1 sec	Defines the delay which elapses between the moment a key is pressed and when the relative key code begins to be repeated.

Security and Antivirus

PARAMETER	OPTIONS	DESCRIPTION
The Supervisor Password is:	Enabled Disabled	Defines the status of the Supervisor password.
The User Password is:	Enabled Disabled	Defines the status of the User password.
Set the Supervisor Password	Up to 7 alphanumeric characters	Sets the Supervisor password which grants access to all the configuration menus.
Set the User Password	Up to 7 alphanumeric characters	Sets the User password which grants access to an unlimited number of configuration menus.
Bootstrap Password	Enabled Disabled	When this parameter is enabled, the system will request a power on password. This works only if the Supervisor password has been previously set.
Access to Diskette Drives	Supervisor User	When Supervisor is set, only the Supervisor can access the floppy diskette drive.
Hard Disk Bootstrap Sector	Normal Write protect	Protects the hard disk bootstrap sector against viruses.

PARAMETER	OPTIONS	DESCRIPTION
Network server	Enabled Disabled	Enables or disables the system bootstrap protection to avoid failures during operation in a network.
System Backup	Disabled Daily Weekly Monthly	Enables the back up procedures.
Virus Check	Disabled Daily Weekly Monthly	Enables a check for viruses.

Personal Computer Ecological Features

PARAMETER	OPTIONS	DESCRIPTION
Hard Disk Timer	0 sec 10 to 20 sec	Defines how long the hard disk remains on during periods of inactivity.
Monitor Timer	0 sec da 5 a 60 sec	Defines how long the monitor remains on during periods of inactivity.

CONFIGURATION UTILITIES FOR THE M6-850/860/880 SYSTEMS

The utilities used configure these systems are incorporated into the following two programs:

- **Setup Utility** - Resident in the system BIOS EPROM, it can be activated via keyboard. These utilities are used to configure the basic system.
- **EISA Configuration Utility** - Contained in the User Diskette. The EISA Configuration Utility is used to configure the system's optional boards. An explanation of these utilities is given in the appropriate section in this Chapter.

SETUP UTILITY

The Setup utility is activated directly by the system BIOS after pressing the CTRL ALT ESC key sequence. The drawing of a key appears on the top left-hand side of the screen indicating that a password needs to be entered.

Enter the password. (A default factory-set password is defined: it consists of a space using the SPACE bar. To change this password, refer to the information in the appropriate section.)

The BIOS Utility screen is displayed, offering the following menu:

1 - System Configuration
2 - System Security

Press ESC if you wish to exit the configuration program.

1 - System Configuration

The menu consists of the following two options: - Basic System Configuration
- Advanced System Configuration

Basic System Configuration

Selecting the Basic System Configuration option displays the following two screens.

Basic System Configuration Page 1

Date ----------	[MM/DD/YY]					
Time ----------	[HH:MM:SS]					
Diskette Drive A ----------	[xx-MB xx-inch]					
Diskette Drive B ----------	[xx-MB xx-inch]					
	Cylinder	Head	Sector	Landing	Pre_Comp	
Fixed Disk 0 ----------[xx]	xx	xx	xx	xx	None	
Fixed Disk 1 ----------[xx]	xx	xx	xx	xx	None	
Base memory ----------	[xxx] KB					
Extended Memory ----------	[xxxx] KB					
Total Memory ----------	[xxxx] KB					
Math Coprocessor ----------	[Installed]					
Primary Display ----------	[VGA/EGA]					

↑↓= Move Highlight Bar, →← = Change Setting, PgDn/PgUp = Move Screen
F9 = Default Setting, F10 = Bootable Setting, F1 = Help, Esc = Exit

BIOS Setup Utility	Page 2
Communication Status	
Baud Rate	[110] BPS
Parity	[None]
Stop Bits	[1] Bits
Data Length	[7] Bits
Memory Test	[Auto]
↑↓= Move Highlight Bar, →← = Change Setting, PgDn/PgUp = Move Screen F9 = Default Setting, F10 = Bootable Setting, F1 = Help, Esc = Exit	

NOTE: Function key F9 is not enabled in the Basic System Configuration environment.

Date and Time
Display the current date and time. These values can be changed.

Diskette Drive
Configures the diskette drive. Drive A is always a 1.44 MB drive.

Fixed Disk
Selects the type of hard disk drive, primary or secondary, with an IDE/AT interface. Only SCSI hard disk drives are used in these systems and therefore the value None should be defined in the Fixed Disk fields. SCSI HDUs are automatically recognized by the SCSI firmware, and the configuration of the SCSI channel can always be viewed through the User Diskette's EISA Configuration Utility.

Base Memory
The Base, Extended and Total Memory fields display the system memory detected during the POD. These values are automatically updated when additional memory is installed.

Math Coprocessor
The processors used on these systems have an integrated math coprocessor and therefore the value Installed must always be defined in this field.

Primary Display
In this field you can select the video mode of the primary monitor connected to the system. The following choices can be made:
- Monochrome
- CGA 40 columns x 25 rows
- CGA 80 columns x 25 rows
- Special controller (VGA/EGA).

Definition of the Serial Port Transmission Modes
The following parameters can be defined:
- Baud rate: from 110 to 9600 bits per second
- Parity: Odd, Even o None
- Stop bits: 1 or 2 stop bits
- Data Length: 7 or 8 bits.

Following are the defaults: 9600 bps, parity None, 1 stop bit and 8-bit data length.

Memory Test
When enabled, the memory test is performed at power on. When disabled, the memory test is not performed at all.

Advanced System Configuration

Selecting Advanced System Configuration displayes the following two screens:

Advanced System Configuration	Page 1
Shadow RAM	
F0000H-FFFFFH (System BIOS)	[Enabled]
C0000H-C7FFFH (Video BIOS)	[Enabled]
C8000H-CFFFFH	[Disabled]
D0000H-D7FFFH	[Enabled]
D8000H-DFFFFH	[Enabled]
E0000H-E7FFFH	[Disabled]
Internal Cache (CPU Cache)	[Enabled]
System Cache (External Cache)	[Enabled]
Cache Scheme	[Write Back]
Cache Burst Read Wait-State	[2-2-2-2]
Cache Write Cycle Insert Wait	[Disabled]
F0000H-FFFFFH (System BIOS)	[Cacheable]
C0000H-C7FFFH (Video BIOS)	[Cacheable]
↑↓= Move Highlight Bar, →← = Change Setting, PgDn/PgUp = Move Screen F9 = Default Setting, F10 = Bootable Setting, F1 = Help, Esc = Exit	

Advanced System Configuration	Page 1
System Speed	[High]
Hidden Refresh	[Enabled]
CPU-DRAM Read Cycle Insert Wait	[Disabled]
CPU-DRAM Write Cycle Insert Wait	[Disabled]
SCSI I/O ROM Mapping	[0D0000H]
↑↓= Move Highlight Bar, →← = Change Setting, PgDn/PgUp = Move Screen F9 = Default Setting, F10 = Bootable Setting, F1 = Help, Esc = Exit	

Shadow RAM

384 KB of RAM addressed between 640 KB (A000h) and 1024 KB (FFFFFh) are reserved for the BIOS functions of the internal and optional devices (system BIOS, video BIOS, I/O ROM). This parameter offers six address ranges which can be either enabled or disabled. If an address range is enabled, the corresponding BIOS function is performed by the shadowed copy in RAM. If an address range is disabled, the corresponding BIOS function is performed normally by ROM.

- Address range F0000h-FFFFFh is reserved for the system BIOS
- Address range D0000h-D3FFFh is reserved for the SCSI BIOS
- Address range C0000h-C7FFFh is reserved for the video BIOS
- Address range E0000h-E7FFFh is reserved for the system extended BIOS
- The remaining space is free for optional devices (I/O ROMs).

NOTE: Always assign Disabled to all memory segments used for addressing the DPM of optional boards (for example LAN and WAN boards).

Internal Cache
Enables or disables the processor's internal cache. The default value is Enabled.

System Cache
Enables or disables secondary level cache. The default value is Enabled, while the following parameters concern secondary level cache:

- Cache Scheme: Sets the functional scheme of the cache to write-back or write-buffer. The default value is write-back.

For computers with i486 CPUs:
- Cache Burst Read Wait-State:
  Sets the wait states during a cache burst mode read cycle. The values that can be assigned are the following: 2-2-2-2 (most efficient), 2-1-1-1 (do not use), 3-2-2-2 (most secure), 3-1-1-1.
- Cache Write Cycle Insert Wait:
  Sets the wait states during a cache write cycle. The values that can be assigned are Enabled and Disabled; assign the system default value.

For computers with Pentium CPUs:
- Cache Read Cycle and Cache Write Cycle:
  Sets the wait states during cache read and write cycles. Different combinatins can be assigned: 4-3-3-3 is the default and most efficient combination. Assign the system default value.
- F0000H-FFFFFH (System BIOS):
  If the system BIOS is enabled in RAM shadow, this parameter also allows you to assign a Cacheable or Non-cacheable attribute to this address range, so as to enable or not the system BIOS to be activated directly by cache memory and therefore further quicken BIOS reads. If Non-cacheable is assigned, the BIOS is activated by RAM.
- C0000H-C7FFFH (Video BIOS):
  If the system BIOS is enabled in RAM shadow, this parameter also allows you to assign a Cacheable or Non-cacheable attribute to this address range, so as to enable or not the video BIOS to be activated directly by cache memory and therefore further quicken BIOS reads. If Non-cacheable is assigned, the BIOS is activated by RAM

System Speed
Set to High increases system speed, set to Low reduces system speed. The default value is High.

Hidden Refresh
This parameter helps in determining system speed and can be set to Enabled or Disabled. Selecting Enabled optimizes the refresh and therefore increases system speed.

CPU-DRAM Read Cycle Insert Wait
This parameter helps in determining system speed and can be set to Enabled or Disabled. Selecting Disabled prevents the insertion of wait states in the read cycles between CPU and memory, and as a result increases system speed.

CPU-DRAM Write Cycle Insert Wait
This parameter helps in determining system speed and can be set to Enabled or Disabled. Selecting Disabled prevents the insertion of wait states in the write cycles between CPU and memory, and as a result increases system speed.

SCSI I/O ROM Mapping
The BIOS of the SCSI controller can be copied (shadowed) into the reserved memory area between 640 KB and 1 MB to quicken I/O routine reads. The BIOS can be mapped in three different segments. The purpose for these alternatives is to avoid conflicts with other controllers which which have to be mapped exclusively in certain segments. Choose one of the three following decimal segments D0000h, C8000h, D8000h.

Memory Block Configuration
This parameter is only available for systems equipped with the Pentium CPU and defines the free memory areas into which optional boards can be mapped, such as AT line boards. Memory Block Configuration allows three parameters to be defined according to the memory area to be created:
- Block size: defines the size of the memory area
- Starting Address (A31 - A16): defines, in hex format, the start address of the memory area.
- Reserved for: defines whether the defined memory area must be cacheable or non-cacheable.

Configuration Limits for AT Line Boards

AT multiport and LAN/WAN boards can usually be mapped within the first megabyte and in megabyte F. System memory occupies most of the first megabyte, however two memory blocks of 32 KB (C8000h to CFFFFh) and 48 KB (D4000h to DFFFFh) for a total of 80 KB, are available for mapping AT LAN/WAN boards. Two boards can be installed with a 32 KB buffer, while up to five can be installed with a 16 KB buffer.

NOTE: The 16 KB memory space (D0000h to D3FFFh) reserved for the SCSI controller BIOS can also be mapped at C8000 and D8000. These alternatives avoid any chance of conflict with other controllers which have to be exclusively mapped in certain segments.

Some boards (such as the AT8 and AT16), if installed within the first megabyte, can only be mapped within the 128 KB memory segment included between 512 KB and 640 KB. Since on these systems it is not possible to disable the memory between 512 KB and 640 KB, and not even on systems equipped with a Pentium CPUs, these boards can only be mapped within megabyte F.

Consequently, a 384 memory area between FA0000h and FFFFFFh (megabyte F) is reserved for mapping optional boards which, as the AT8/16, cannot be mapped within the first megabyte. Pentium CPU systems can use an additional Setup Utility parameter called Memory Block Configuration, seen earlier, which defines additional memory area reserved for the installation of optional boards. It is still, however, not possible to disable the 128 KB memory segment between 512 KB and 640 KB.

There are no limitations when installing EISA boards since these boards can be mapped above the maximum memory installable in the system.

2 - System Security

For these protections to be enabled, motherboard jumper **JP6** must be installed on pins 1 and 2 (Security enable). Selecting System Security displays the following screen:

System Security	Page 1
Disk Drive Control	
Diskette Drive	[Normal]
Fixed Disk Drive	[Normal]
System Boot Drive	[Auto]
On Board Communication Ports	
Serial Port 1	[Serial 1 (3F8h)]
Serial Port 2	[Serial 2 (2F8h)]
Parallel Port	[Parallel 1 (3BCh)]
Setup Password	
Power On Password	[None]
Operation Mode	[Before Booting]
↑↓= Move Highlight Bar, →← = Change Setting, F1 = Help, Esc = Exit	

H

Disk Drive Control
This parameter partly or totally disables activities on the floppy disk or hard disk drives, in addition to defining from which drive the system must bootstrap at power on. The following parameters can be defined:

DRIVE	OPTIONS	FEATURES
Diskette Drive	Normal Disabled Write-protect (DOS only)	Normal operation Disables any activity on the drive Write protects the diskette drive
Fixed Disk Drive	Normal Disabled Write-protect (DOS only)	Normal operation Disables any activity on the drive Write protects the hard disk drive
System Boot Drive	Auto A: C:	The O.S. is searched for on A and then C The O.S. is only searched for on A The O.S. is firstly searched for on C

On Board Communication Ports
This parameter is used to disable the operation of the serial and parallel ports. The following parameters can be defines:

DRIVE	OPTIONS	FEATURE
Serial Port 1	Serial 1 (3F8h) Serial 3 (3E8h) Serial 2 (2F8h) Serial 4 (2E8h) Disabled	COM1, the I/O address is in parenthesis COM3, the I/O address is in parenthesis COM2, the I/O address is in parenthesis COM4, the I/O address is in parenthesis Disables board operation
Serial Port 2	Serial 2 (2F8h) Serial 4 (2E8h) Serial 1 (3F8h) Serial 3 (3E8h) Disabled	COM2, the I/O address is in parenthesis COM4, the I/O address is in parenthesis COM1, the I/O address is in parenthesis COM3, the I/O address is in parenthesis Disables board operation
Parallel Port	Parallel 1 (3BCh) Parallel 2 (378h) Parallel 3 (278h) Disabled	LPT1, the I/O address is in parenthesis LPT2, the I/O address is in parenthesis LPT3, the I/O address is in parenthesis Disables board operation

NOTE: If one of the serial ports has an address which is already assigned to another, the program will automatically modify the value of the latter.

System Password
The system password prevents unauthorized access to the system and to the Setup Utility. With this function the computer requests for the password to be entered either before granting access to the configuration program or after each power on, depending on the mode that has been set.

If the password has been set, a drawing of a key will be displayed during system bootstrap or during the Setup Utility activation phase and then the system will request for the password to be entered.
If the password entered is incorrect, an X is displayed. Three attempts are allowed for the correct password to be entered, afterwhich the following message is displayed:

Incorrect password specified. System disabled.

NOTE: A default password which prevents access to the configuration program is defined at the factory (Setup Password). This password consists of a space entered with the SPACE bar.

To cancel the password, select the corresponding option from the System Security menu and assign the None value by following the instructions displayed.

WARNING:
If none of the two passwords is set, access to the BIOS configuration program, Setup Utility, is denied. If both passwords have been cancelled, disable the security features through motherboard jumper **JP6** to enable access to the program.

A forgotten password, whichever it may be, can be cancelled by moving the motherboard jumper **JP6** from position 1-2 to position 2-3. This also disables all the software protections set with the System Security facility and allows the system to be bootstrapped normally.

CONFIGURATION UTILITIES FOR THE M6-620 SYSTEMS

The utilities to configure these systems are incorporated into the following two programs:

- **Setup Utility** - Resident in the system BIOS EPROM, it can be activated via keyboard. These utilities are used to configure the basic system.
- **EISA Configuration Utility** - Contained in the User Diskette. The EISA Configuration Utility is used to configure the system's optional boards. An explanation of these utilities is given in the appropriate section in this Chapter.

SETUP UTILITY

Proceed as follows to configure the system using the Setup Utility:

1) Press **F1** when the system stops during the POD phase and displays the following flashing message on the top right-hand side of the screen: <F1=SETUP>. You have four or five seconds to activate the Setup Utility.

2) The system will display the utility's first screen page. You can use the **up** or **down** arrow keys to move the cursor on each option listed, or the **PGUP** or **PGDN** keys to view one page at a time. The items with doubtful or undetermineable values are indicated with a red triangle facing upwards on the left-hand margin of the screen.

3) Move the cursor to the appropriate configuration parameter and press **ENTER** to display a pop-up window with the possible values. Press **ESC** at any time to cancel an operation without modifying its value. Press **F4** to recall the POS message screen so that you can view the messages needed to modify the configuration.

4) Press **F9** if you wish to restore the default values.

5) Press **F10** to store the modifications made into the battery backed-up CMOS RAM.

6) Press **ESC** to exit the Built-in Setup program.

The built-in ROM Setup program offers the following list of parameters which can be used to configure the system. These parameters consist of one or more options which are described in the next pages. Select one of these parameters or options using the highlighted cursor and press ENTER. The system will display a pop-up window listing the values which can be selected or a text field into which the new value can be entered.

Hour
Enter the hour, minutes and seconds in a 24-hour format, as shown in the text field. The pop-up window lists the active command keys for this options window.

Date
Enter the month, day and year in the format shown in the text field. The pop-up window lists the active command keys for this options window.

Floppy Disk Options
This parameter contains the following choices, each with its own set of values:

- **System Board Floppy Disk Controller:**
  Enables or disables the on-board floppy disk controller.
- **Floppy Drive A:**
  Sets the *type* of disk drive.
- **Floppy Drive B:**
  Same as drive B.
- **Floppy Boot Drive Assignments:**
  Determines which disk drive will be the initialization drive. Two values can be defined: **Drive A** or **Drive B**. When selecting Drive B, this drive will become the initialization drive by inverting the order of the primary and secondary disk drive. This feature is useful when the system is configured with disk drives of different formats (5.25" or 3.5"), and of a software which requires the installation of a specific drive.

Hard Disk Options
This parameter consists of the following options, each with its own set of values:

- **Hard Disk Drive 0**:
  Sets the primary hard disk drive *type*. The pop-up window lists the types of common AT-compatible hard disks and their capacity, the SCSI options for the different operating systems and the Not Present value.
- **Hard Disk Drive 1**:
  When a secondary hard disk is installed, this option sets the secondary hard disk drive *type*. The pop-up window lists the the types of common AT-compatible hard disks, the SCSI options for the different operating systems and the Not Present value.
- **Primary Operating System**:
  Sets the primary operating system.

Keyboard Operations
This parameter consists of the following options, each with its own set of values:

- **Keyboard Speed**:
  Determines the repeat speed of the keyboard keys when these are held down. One of two values can be defined: Normal and Fast.
- **NUM LOCK Status after POD**:
  Determines whether the NUM LOCK key is activated after the power on diagnostics by setting the numeric keypad in numeric mode.

Pointing/Auxiliary Device
Displays whether a mouse is connected to the system. During the POD, the system will detect the presence of a mouse (if installed) and assign IRQ12 as the mouse interrupt. When the mouse is detected, the message "Present, IRQ12" is displayed, otherwise the message "Not Present" is displayed.

System Speed
Determines the speed of the CPU used by the system. A pop-up window lists the following three values: **Fast**, **Autoslow** and **Slow**.

- **Fast** indicates that the CPU works at its fastest speed (this is the default value for normal operations and for top system performance).
- **Autoslow** indicates that the system is temporarily reducing its speed during floppy disk accesses by an 8 MHz IBM-AT PC. This slower operating speed only occurs during floppy disk accesses. As soon as the floppy disk LED goes off, the system returns to its normal, fast, operating speed.
- **Slow** indicates that the system constantly works at 8 MHz so as to adapt earlier programs with the limited speeds of the CPUs.

Memory Options
This parameter consists of the following options, each with its own set of values:

- **Base Memory**:
  Displays the amount of *base memory* installed and which has been detected during the POD phase. This number is only used as reference: it can be indirectly changed by physically changing the amount of memory installed in the system.
- **Extended Memory (Contiguous)**:
  Displays the amount of *extended memory* installed and which has been detected during the POD phase. This number is only used as reference: it can be indirectly changed by physically changing the amount of memory installed in the system.
- **Extended Memory (Non-Contiguous)**:
  Displays the amount of *non-contiguous extended memory* installed and which has been detected during the POD phase. This number is only used as reference.
- **Split Memory**:
  Recuperates part of unused memory between 640 KB and 1 MB. This pop-up window displays the following two values: Disabled and Enabled.

- **Power-On Memory Test:**
  The pop-up window lists the following values: Full, Medium, Small and Minimal.
- **Extended Memory 16 MB Limit**:
  Disables or enables the 16 MB limit for extended memory. The pop-up window displays the following two values: Disabled and Enabled.

Cache Options
This parameter consists of the following options:
- **CPU Cache**: Enables the optional cache and the Pentium, if installed
- **I/O Cache**
- **Secondary Cache**.

These options can be set to one of the following values: Enabled or Disabled.

Optional ROM Shadow
This parameter consists of the following options which can be enabled or disabled:
- **D800 Option ROM**
- **D000 Option ROM**
- **C800 Option ROM**
- **Video Shadowing**:
  This option can be enabled or disabled at addresses C000h:, E000h:, or E800h:.

Parallel Port Options
This parameter consists of the following options, each with its own set of values:

- **Parallel Port**:
  Sets the parallel port address, the interrupt request and the operating mode.
- **Parallel Port Extended Mode**:
  Determines whether the parallel port can work in extended mode. One of the following two values can be assigned: Enabled or Disabled.

Serial Port Options
These options set the serial port address, the interrupt request and the operating modes of the system's two serial ports.

System Configuration Display
Defines the connection of the device which serves as the system control console.

Front Panel Console Options
This parameter consists of the following options, each with its own set of values:

- **Console Serial Port**:
  Displays whether the console serial port is present or not.
  If the console serial port is present, the following options are available:
- **Speaker Volume Level**:
  Sets the volume of the system's internal speaker. There is no external speaker volume control on the system module. The pop-up window offers seven volume levels (0 to 6) where 6 is the maximum level.
- **Front Panel Reset Button**: Enables or disables the reset button on the front panel.

Audio Options
This parameter consists of the following options and values:

- **Audio Embedded Subsystem**:
  Disables the audio subsystem or enables this subsystem on data addresses
- **Interrupt Select**:
  Sets the IRQ which serves as audio controller
- **DMA Channel Select**:
  Selects the recording and playback DMA channels for the audio controller.

SCSI Controller Options
If a SCSI controller is installed in the system, this parameter consists of all the options needed to define the values for the ESC and EFP controller.

- **ESC Controller Options**

- **AT Compatibility/Access Mode**:
  Enables or disables the AT or SCSI access mode.
- **Interrupt Select**:
  Selects the IRQ used by the SCSI interface.
- **Synchronous Data Transfer**:
  Enables or disables synchronous data transfers.
- **Floppy Disk Controller**:
  Enables or disables the floppy disk controller on the ESC adapter board.

- **EFP Controller Options**

- **AT Compatibility/Access Mode**:
  Enables or disables the AT or SCSI access mode.
- **Interrupt Select**:
  Selects the IRQ used by the SCSI interface.

Ethernet Controller Options
This parameter consists of only one option, Interrupt Select, which selects the interrupt usede by the Ethernet port.

Integrated SCSI Controller Options
This parameter includes the following options and values:

- **Host Adapter Interface Options**:
  This option consists of the following suboptions:
- **Interrupt Select**:
  Selects the IRQ used by the SCSI interface.
- **Bus Release Time**:
  Defines the bus release time.
- **Data FIFO Threshold**:
  Defines the data FIFO threshold at 00%, 50%, 75% or 100%.

- **BIOS Configuration**:
  Enables or disables the following two suboptions:
- **Support More than Two Drives**:
  When this suboption is enabled, the BIOS is capable of supporting more than two physical hard disk drives. If disabled, the BIOS can support one or two hard disk drives. (With more than two hard disk drives, MS-DOS releases 3.3. and 4.0 do not work correctly, while MS-DOS 5.0 or later and other operating systems such as OS/2 and UNIX work perfectly with more than two drives.)
- **Support Removable Disk as Fixed Disk**:
  Sets the BIOS to support all removable disks as if they were normal fixed disk drives. The default value is Disabled. The BIOS can also be set to support only one removable disk if this is the initialization device by selecting the Boot Devices Only value.

- **SCSI Channel A Configuration and SCSI Channel B Configuration**:
  These two options consist of the following suboptions:
  - **Host Adapter SCSI ID**:
    Defines the Host adapter SCSI ID. For the majority of operating environments, the Host adapter SCSI ID is set to 7.
  - **SCSI Bus Parity Check**:
    Enables or disables parity checking on the SCSI bus.
  - **SCSI Bus Reset at Power-on**:
    Enables or disables SCSI bus reset at system power on.
  - **SCSI Selection Timeout**:
    Sets the timeout in milliseconds.
  - **Device Configuration**:
    Configures the following parameters for each device SCSI ID:

- **Enable Disconnection**:
  Enables the SCSI device or disables it so as to disconnect it from the SCSI bus if there is a delay in command completion. The default value is Yes.

- **Initiate Sync Negotiations**:
  Enables the SCSI adapter to negotiate with all the SCSI devices for synchronous data transfers at the maximum speed defined in the Maximum Sync Xfer Rate parameter.
  The default setting is Yes.

- **Maximum Synch Xfer Rate**:
  Defines the maximum synchronous transfer rate when the Initiate Sync Negotiations option is initialized. The default value is 10 MB per second.

- **Include in BIOS scan**:
  When enabled, the BIOS will support a hard disk found in the destination ID. The default setting is Yes.

- **Error If Device Not Found**:
  Enables or disables the POD to record an error if a SCSI device is not found at the destination ID. The default value is set to No.

- **Send Start Unit Command**:
  Enables or disables the BIOS to send the Stat Unit SCSI command to the SCSI device at the destination ID. The default value is NO.

Video Controller
This parameter displays the video controller installed in the system and contains the option that can be set. It is displayed for one of the following parameters:

- **Video controller (AVM2)**:
  This parameter consists of the following option:
- **Video Frame Buffer Select**:
  Sets the video frame buffer. For best performance, select D8000000h Write-Back (the default value), followed by write-through. Use the non-cache mode only when there is a problem with cache memory. If there is no other device to configured to use this area, select D8000000h or D0000000h since D8000000h is the first area reserved for the video frame buffer.
- **Video controller (WGA)**:
  This parameter consists of the following option:
- **Video Frame Buffer Select:** This parameter sets the video frame buffer. The values are: D8200000h and D0200000h.

CONFIGURATION UTILITY FOR M4-4xx (S), PCS42P, M6-640/DP, M6-6x0 (DP), M4/75/90/100/133 (S), PCS P/75/90 E/En/n, PCS P/100/133 En/n, PCS P/75 E/En Educator, M4-5x4 (/S), PCS D4/100 En/n, ENVISION 400/P75/P100, M4-Pxx, PCS 51xx, PCS 61xx SYSTEMS

SETUP Utility

Upon completion of the POST (Power ON System Test) the following message is displayed along with those informing on the outcome of system diagnostics:

Hit SPACE If you want to run SETUP

After having pressed the SPACE BAR, a screen consisting of three separate windows is displayed. Each window groups the different system configuration options as described in the following tables.

WARNING: The following table indicates the configuration parameters available for each personal computer product line.

Configuration Parameter	M4-4x4	M6-6x0	M4-75	M4-5x4	ENVISION	M4-Pxx
SETUP - Standard						
(System) Date/Time	☐	☐	☐	☐	☐	☐
Diskette drive A (Floppy A)	☐	☐	☐	☐	☐	☐
Diskette drive B (Floppy B)	☐	☐	☐	☐		☐
Hard disk PRIMARY MASTER (C:) (Master disk)	☐	☐	☐	☐	☐	
Hard disk PRIMARY SLAVE (D:) (Slave disk)	☐	☐	☐	☐	☐	
Primary/Secondary Master EIDE						☐
Primary/Secondary Slave EIDE						☐
SETUP - Advanced, Chipset/PCI						
8bit/16bit I/O Recovery Time						☐
Above 1MB Memory Test	☐	☐	☐	☐		
BootUp Sequence						☐
BootUp Num-Lock						☐
Cache Memory		☐			☐	
DRAM Parity Check		☐				
DRAM Speed						☐
Enable/Disable Speaker Sound			☐			
Extended BIOS RAM Area	☐	☐		☐		
External Cache	☐		☐	☐		☐

Configuration Parameter	M4-4x4	M6-6x0	M4-75	M4-5x4	ENVISION	M4-Pxx
FIFO on PCI Bridge				☐		
Floppy Drive Seek (at Boot)	☐	☐	☐	☐	☐	☐
Floppy Drive Swapping			☐			☐
HDU Pre-failure Check						☐
Hit SPACE Message Display	☐	☐		☐		☐
IDE 32 bit transfer mode	☐	☐				
IDE APIO programming mode				☐		
(Hard disk) IDE Block Mode	☐			☐	☐	
IDE LBA Mode	☐					
(Pri/Sec) IDE Master LBA Mode		☐		☐	☐	
IDE PIO Mode 3	☐	☐				
(Pri/Sec) IDE Slave LBA Mode		☐		☐		
Internal Cache	☐		☐	☐		☐
Memory Between 12 MB-13 MB		☐				
Memory Hole				☐		☐
Memory Test Tick Sound	☐	☐		☐		
Mouse Support	☐	☐	☐	☐	☐	☐
Non-Cache(able) Block 1/2 Base	☐			☐		
Non-Cache(able) Block 1/2 Size	☐			☐		
OS/2 Compatible Mode						☐
Pause on HDD Pre-failure Warning						☐
Parallel Port Mode						☐
Parity Error Check	☐	☐	☐	☐		
Password Checking	☐	☐	☐	☐		☐
PCI Burst Mode						☐
PCI IDE BusMaster						☐
PCI Latency Timer (PCI clocks)						☐

Configuration Parameter	M4-4x4	M6-6x0	M4-75	M4-5x4	ENVISION	M4-Pxx
PCI To ISA Posted Write Buffer			☐		☐	
Plug and Play Aware O/S						☐
Pri IDE 32-bit mode				☐		
Primary Display	☐	☐	☐	☐	☐	☐
Quick Boot						☐
Remote LAN Boot				☐		
Sec IDE 32-bit mode				☐		
Secondary Drives Installed				☐		
Shadow C000, 16K ...			☐			☐
Speaker Volume	☐	☐		☐		☐
System BIOS Cacheable						☐
System Boot Up CPU speed	☐	☐	☐			
System Boot Up Num Lock	☐	☐	☐	☐		
System Boot Up Sequence	☐	☐	☐	☐	☐	
System Keyboard	☐	☐	☐	☐	☐	☐
Typematic Rate (Chars/Sec)	☐	☐	☐	☐	☐	☐
(PCI/)VGA Palette Snooping		☐	☐	☐		☐
Video shadow (cache) C000, 32K			☐	☐		
Wait for <F1> if (Any) Error	☐	☐		☐	☐	☐
Write buffer					☐	
SETUP - Adv HDD						
IDE Prim Master 32Bit xfer			☐			
IDE Prim Master BlockMode xfer			☐			
IDE Prim Master HDD LBA Mode			☐			
IDE Prim Slave 32Bit xfer			☐			
IDE Prim Slave BlockMode xfer			☐			
IDE Prim Slave HDD LBA Mode			☐			

Configuration Parameter	M4-4x4	M6-6x0	M4-75	M4-5x4	ENVISION	M4-Pxx
IDE Sec Master 32Bit xfer			☐			
IDE Sec Master BlockMode xfer			☐			
IDE Sec Master HDD LBA Mode			☐			
IDE Sec Slave 32Bit xfer			☐			
IDE Sec Slave BlockMode xfer			☐			
IDE Sec Slave HDD LBA Mode			☐			
Number of HDDs in Sec controller			☐			
SETUP - Advanced Power Mgmt						
CPU Stop Clock Mode		☐		☐		
Display Activity						☐
Global Standby Power Down Mode					☐	
Green PC Monitor						☐
Green PC Monitor Power State						☐
Hard Disk Power Down Mode						☐
Hard Disk TimeOut (Min)						☐
IDE Power Down			☐			
IDE Standby Power Down Mode		☐		☐	☐	
IRQ 3/4/5/7/9/10/11/12/13/14/15						☐
Power Management(/APM)			☐			☐
Slow Clock Ratio						☐
Standby TimeOut (Min)						☐
Suspend TimeOut (Min)						☐
System Event Timer			☐			
Video (Standby) Power Down Mode		☐		☐	☐	☐
SETUP - Security/Peripheral						
Bootstrap from CD-ROM						☐
Bootstrap from Network						☐

Configuration Parameter	M4-4x4	M6-6x0	M4-75	M4-5x4	ENVISION	M4-Pxx
Bootstrap from Serial						☐
Drive A Bootstrap/Bootstrap from Floppy	☐	☐		☐		☐
Drive C Bootstrap/Bootstrap from Fixed Disk	☐	☐		☐		☐
Fixed disk	☐	☐		☐		
Floppy Drive	☐	☐		☐		
IRQ Active	☐	☐		☐		
Network Server Mode	☐	☐		☐		
OnBoard FDC (Floppy Drive)	☐	☐	☐	☐		☐
OnBoard (Primary/Secondary) IDE/EIDE	☐	☐	☐			☐
OnBoard Parallel Port						☐
OnBoard Serial Port 1/2						☐
Parallel Interface	☐	☐		☐		
Parallel Port	☐	☐	☐	☐		
Parallel Port Mode	☐	☐	☐	☐		
Primary IDE				☐		
Programming Mode	☐	☐	☐	☐		
(Keyboard) Quicklock	☐	☐		☐		☐
Secondary IDE				☐		
Serial Interface	☐	☐		☐		
Serial Port 1/2	☐	☐	☐	☐		
Supervisor Level Option	☐	☐				
UTILITY						
Color Set		☐	☐	☐	☐	☐
Detect Primary Master/Slave hard disk (C) (Master)	☐	☐	☐	☐	☐	
Detect Secondary Master/Slave hard disk (D) (Slave)	☐	☐	☐	☐	☐	
Language						☐

SETUP

Standard

PARAMETER	POSSIBLE VALUE	DESCRIPTION
(System) Date/Time	Wed, Mar. 01, 1995 14:38:55	Changes the system date and time. These two parameters are separate in some systems.
Diskette drive A(B)/ Floppy A(B)	- Not installed - 360 KB 5.25" - 1.2 MB 5.25" - 720 KB 3,5" - 1.44 MB 3.5" (- 2.88 MB 3.5")	Defines the type of diskette drive installed as drive A: (B:).
Hard disk PRIMARY MASTER (C:) (Master Disk)	Not installed 1 to 46 USER when the hard disks have the self-acknowledgement feature ESDI SCSI	On some systems, allows an IDE AT Fast local bus hard disk to be set as Master. 1 to 46: Used for hard disks that do not have the self-acknowledgement feature. Each number identifies a hard disk type for which the following parameters are defined: TYPE = Hard disk identification number (1 - 46) CYL = Number of hard disk cylinders Hd = Number of hard disk heads Wp = Precompensation cylinder number Lz = Head landing zone cylinder number SEC = Number of hard disk sectors SIZE = Hard disk capacity in MB This option is not required if the hard disk has the self-acknowledgement feature.
Hard disk PRIMARY SLAVE (D:) (Slave Disk)	1 to 46 USER	On some systems, allows an IDE AT Fast Local Bus hard disk to be set as Slave. As for the Primary Master hard disk.

PARAMETER	POSSIBLE VALUE	DESCRIPTION
Primary Master EIDE/ Primary Slave EIDE/ Secondary Master EIDE/ Secondary Slave EIDE	These options concern EIDE peripherals (hard disks and CD-ROMs). Up to four of these drives can be installed. Each drive has the following settings: *Type:* Allows to manually set the type of peripheral. Possible values are: Not installed, 1-46, User, Auto, CD-ROM. *LBA/large Mode:* Enables hard disk Logical Block Addressing transfers. This operation must be enabled when installing a 528 MB hard disk drive. In some cases this option must be disabled, such as when using operating systems other than MS-DOS, Windows for Workgroups and Windows 95. Refer to the documentation provided with the operating system in use. *Block Mode:* The hard disks for these personal computers allow the block transfers, therefore this option must only be disabled when replacing the hard disk with one that cannot work at this transfer rate. *32-bit Mode:* The hard disk controller allows 32-bit transfers and therefore this option must only be disabled when replacing the hard disk with one that cannot work at this transfer rate. *PIO Mode:* Determines the data transfer rate. For some personal computer models, this option is disabled when installing a peripheral that is unable to transfer data at high speeds.	

Advanced - Chipset/PCI

PARAMETER	POSSIBLE VALUES	DESCRIPTION
8 bit/16 bit I/O Recovery Time	Disabled, 1-8	Slows down the processing speeds of AT boards by inserting delays.
Above 1 MB Memory Test	Disabled, Enabled	Enables (*Enabled*) or disables (*Disabled*) the memory test above 1 MB of RAM.
BootUp Sequence	C:, A:, CD-ROM A:, C:, CD-ROM CD-ROM, C:, A:	Determines the order in which the operating system will be searched for.
BootUp Num-Lock	Disabled, Enabled	This parameter is related to the NUM LOCK key located on the keyboard numeric keypad. When *Enabled*, at system boot the keypad switches to the numeric mode and the related LED is on; when *Disabled* the keypad enables cursor control functions and the related LED is off.
Cache Memory	Disabled, Internal, Both	*Both* - Enables the function by which it is possible to copy the data and instructions most frequently used by the CPU into cache memory (both internal and external). *Internal* - Only enabled for the CPU internal cache. *Disabled* - The function is disabled.

PARAMETER	POSSIBLE VALUES	DESCRIPTION
DRAM Parity Check	On, Off	Must only be set to OFF when the RAM SIMMs that come standard on the system (and therefore equipped with parity checking) are replaced by others that do not have parity checking.
DRAM Speed	60 ns, 70 ns	Determines the data transfer rate (in nanoseconds) from DRAM.
Enable/Disable Speaker Sound	Disabled, Enabled	Disables the system speaker.
Extended BIOS RAM Area	0:300, DOS 1 K	Do not use this parameter.
External Cache	Enabled, Disabled, Write-through, Write-back	Usually set to *Write-through* so that the data and instructions most frequently used by the CPU are copied to the external cache. This function is disabled when the parameter is set to *Disabled.* **NOTE:** The values *Enabled* and *Disabled* are available for some PCs.
FIFO on PCI Bridge	Disabled, Enabled	Enables or disables the FIFO on the PCI bridge. Enabling this parameter enhances system performance.
Floppy Drive Seek (at Boot)	Disabled, Enabled	When enabled (*Enabled*), checks whether the diskette drive is present and operational.
Floppy Drive Swapping	Disabled, Enabled	When enabled (*Enabled*), swaps the logic identifier of the 1.2 MB drive (which becomes logic drive A) with that of the 1.44 MB drive (which becomes logic drive B).
HDU Pre-failure Check	Disabled, Enabled	Available for SMART HDU drives. When enabled, an autodiagnostic test is performed on the HDU and an error message is displayed if drive errors are detected. The HDU is rebooted if the "Pause on HDD Pre-Failure Warning" parameter is disabled. **NOTE:** If the "HDD Pre-failure Check" parameter is not enabled, the "Pause on HDD Pre-failure Warning" parameter cannot be set.
Hit SPACE Message Display	Disabled, Enabled	Displays the following message at the end of the POST: "Hit SPACE if you want to run setup".
IDE 32-bit transfer mode	Disabled, Enabled	Allows the selection of a 32-bit transfer rate for the hard disks that work on the local bus. Always use Enabled unless when installing hard disks that do not support 32-bit transfer rates.

PARAMETER	POSSIBLE VALUES	DESCRIPTION
IDE APIO Programming Mode	Mode 0, Mode1, Mode 2, Mode 3, Mode 4, AUTO	Used for Primary Master and Slave hard disks. It allows the definition of the data transfer modes between the CPU and hard disk by changing the data transfer cycle times. Mode 0 is the slowest, Mode 4 the fastest. Select the most appropriate mode depending on the hard disk. The data transfer times are listed below: Mode 0 Fixed at 600 ns Mode 1 Fixed at 383 ns Mode 2 Fixed at 240 ns Mode 3 and Mode 4 depend on the hard disk. When AUTO is selected the BIOS will interrogate the hard disk to see which mode to select.
(Hard disk) IDE Block Mode	Disabled, Enabled	Disables the multiblock mode of operation for local bus hard disks. Always use Enabled unless when installing hard disks that are unable to support this mode of operation.
IDE LBA Mode	Disabled, Enabled	Handles high capacity hard disks (above 1024 cylinders).
(Pri/Sec) IDE MASTER LBA Mode	Disabled, Enabled	Used for the Primary Master hard disk, enables the Logical Block Addressing transfer mode. Always use Enabled when installing a hard disk with a capacity greater than 528 MB.
IDE PIO Mode 3	Disabled, Enabled	Enables the hard disk controller Mode 3 transfer mode and must always be set to *Enabled*. Used *Disabled* when the hard disks installed are unable to support this transfer mode.
(Pri/Sec)IDE SLAVE LBA Mode	Disabled, Enabled	See the "IDE MASTER LBA Mode" parameter.
Internal Cache	Disabled, Write-through, Write-back	Usually set to Write-back so that the data and instructions most frequently used by the CPU are copied into the internal cache. *Disabled* disables this function.
Memory Between 12 MB - 13 MB	Disabled, Enabled	Enables/disables the memory used by the CPU with addresses included between the 12^{th} and 13^{th} MB. This is useful when installing boards with onboard dual port memory. Select Disabled to disable this portion of memory. This parameter must be set to Enabled during normal system operation.
Memory Hole	Disabled, Enabled	Enables/disables the memory used by the CPU with addresses included between the 12^{th} and 13^{th} MB. This is useful when installing boards with onboard dual port memory. Select Disabled to disable this portion of memory. This parameter must be set to Enabled during normal system operation.
Memory Test Tick Sound	Disabled, Enabled	Generates an acoustic signal during the memory test.

PARAMETER	POSSIBLE VALUES	DESCRIPTION
Mouse Support	Disabled, Enabled	Disables the mouse so as to free interrupt IRQ12 for any device which may need it.
Non-Cache(able) Block 1/2 Base	Defines the base address of the memory block which is not to be cached.	
Non-Cache(able) Block 1/2 Size	Disabled, 16K, 32K, 64K, 128 K, 256K, 512K, 1M, 2M, 4M	Defines the size of the first/second memory block which is not to be cached.
OS/2 Compatible Mode	Enabled, Disabled	Allows operating systems such as OS/2 and Windows NT to view extended memory beyond the first 64 MB.
Pause on HDD Pre-failure Warning	Disabled, Enabled	Available for SMART HDUs. When set to Enabled, all HDU activities are interrupted when the error message is displayed. Press F1 to continue. Make a backup copy of the contents of the hard disk within 24 hours from the moment the message is displayed.
Parallel Port Mode	Normal, Bi-dir, EPP, ECP	Defines the parallel port mode of operation which is extended for systems equipped with a Zippy interface (compliance with IEEE 1284). Operational errors may occur if the device attached to this port, such as a printer, is not compatible with the Bi-dir, EPP or ECP mode. In this case set this parameter to *Normal*.
Parity Error Check	Disabled, Enabled	Enables (*Enabled*) parity checking in RAM (parity checking is factory set to disabled since memory without parity bits is used).
Password Checking	Setup, Always	Defines the situations in which the system will request for a password to be entered. When set to Always the password will be requested each time the system is powered on and whenever an attempt is made to access the configuration program. **NOTE:** A password needs to be defined in order to be able to set this parameter.
PCI Burst Mode	Enabled, Disabled	Accelerates the transfer time over the PCI bus.
PCI IDE Bus Master	Enabled, Disabled	Must be enabled if PCI boards that need to work as bus masters are installed.
PCI Latency Timer (PCI clocks)	32, 64, 96, 128, 160, 192, 224, 248	Defines delays on the PCI boards.
PCI To ISA Posted Write Buffer	Disabled, Enabled	Set to *Enabled* to prevent compatibility problems related to the use of optional ISA boards equipped with DPM (Dual Port Memory).
Plug and Play Aware O/S	Yes, No	Defines whether the operating system in use supports the Plug and Play feature.

PARAMETER	POSSIBLE VALUES	DESCRIPTION
Pri IDE 32-bit mode	Disabled, Enabled	Selects a 32-bit transfer rate for PRIMARY fast local bus hard disks. Always use Enabled unless when installing hard disks that are unable to support 32-bit transfer rates.
Primary Display	Absent, VGA/EGA, CGA 40x25, CGA 80x25, Mono	Selects the video mode to be activated at power on when an optional video controller is installed on the bus.
Quick Boot	Enabled, Disabled	When Enabled, reduces the number of tests that are performed by the autodiagnostics thus quickening the boot phase. **NOTE:** Not available for all the models of the M4-Pxx product line.
Remote LAN boot	On, Off	Enables/disables LAN boot.
Sec IDE 32-bit mode	Disabled, Enabled	Selects a 32-bit transfer rate for SECONDARY fast local bus hard disks. Always use Enabled unless when installing hard disks that are unable to support 32-bit transfer rates.
Secondary Drives Installed	Disabled, Master, Master + Slave	When *Disabled* is selected, the interface controller for fast non-local bus hard disks is disabled. When *Master* or *Master + Slave* is selected, the secondary hard disk controller is enabled so master and slave hard disks can be connected. An IDE AT integrated CD-ROM can also be connected to this interface. In this case *Master* must be selected.
Shadow C000, 16K Shadow C400, 16K Shadow C800, 16K Shadow CC00, 16K Shadow D000, 16K Shadow D400, 16K Shadow D800, 16K Shadow DC00, 16K	Disabled, Shadow/Enabled, Cache	Enables the copying of an optional AT bus component (*Shadow/Enabled*) into the indicated BIOS RAM segment. When *Cache* is selected this function is also activated on the memory segment. **NOTE:** If the component has a RAM that already uses the indicated segment, this parameter must always be set to *Disabled*.
Speaker Volume	Disabled, Lowest, Low, Medium-Low, Medium, Medium-High, High, Highest	Sets the volume level of the system's incorporated speaker from Lowest to Highest. Select *Disabled* to deactivate the speaker.
System BIOS Cacheable	Enabled, Disabled	Enables/disables the storage of the system BIOS into cache.
System Boot Up CPU speed	Low, High	Defines the system speed when loading the operating system.
System Boot Up Num lock	Off, On	This parameter is related to the NUM LOCK key on the numeric keypad on the right-hand side of the keyboard. When *On* the keypad switches to the numeric mode and the related LED is on; when *Off* the keypad enables cursor control functions and the related LED is off.

PARAMETER	POSSIBLE VALUES	DESCRIPTION
System Boot Up Sequence	A: C:, C: A:	The operating system is searched for during system power on so that it can be loaded. When *A: C:* is selected the system first checks whether a diskette with the operating system is present in drive A; if this diskette is not found the search for the operating system will continue on hard disk C:. Vice versa happens when *C: A:* is selected.
System Keyboard	Absent, Present	Indicates that the keyboard is not present (*Absent*) without having the computer generate an error condition.
Typematic Rate (Chars/Sec)	Disabled, 15, 20, 30 (crt/sec.)	Determines how may times a key-code is repeated per second while a determined key is held down.
(PCI/) VGA Palette Snooping	Disabled, Enabled	Used for the video controllers which comply with the PCI specifications requiring that certain signals be issued over the ISA bus (related to the video color palette). This parameter is usually set to *Enabled*.
Video shadow (cache) C000, 32K	Disabled, Shadow, Cache	Allows to copy into the video BIOS RAM on the AT bus (*Shadow*). This function is also activated on the memory segment when *Cache* is selected. **NOTE:** If the component has a RAM which already uses the indicated segment, this parameter must always be set to *Disabled*.
Wait for <F1> if (Any) Error	Disabled, Enabled	In case an error is detected, the system will display a message requesting the user to press the F1 key to continue booting regardless of the error.
Write buffer (ENVISION P75 only)	Enabled, Disabled	Enables the system to work at its full potential since the time required to move the data from the CPU bus to the PCI bus is reduced. It is suggested to disable this parameter when operational problems occur.

Adv HDD

PARAMETER	POSSIBLE VALUE	DESCRIPTION
IDE Prim Master 32Bit xfer	Disabled, Enabled	The system hard disk controller allows 32-bit transfer modes and therefore this parameter must always be set to *Enabled*. Set this parameter to *Disabled* only when replacing the primary master disk with one that is unable to support this transfer mode.
IDE Prim Master BlockMode xfer	Disabled, Enabled	The system hard disk controller allows block transfer modes and therefore this parameter must always be set to *Enabled*. Set this parameter to *Disabled* only when replacing the primary master disk with one that is unable to support this transfer mode.

PARAMETER	POSSIBLE VALUE	DESCRIPTION
IDE Prim Master HDD LBA Mode	Disabled, Enabled	Enables the "Logical Block Addressing" transfer mode for the primary master hard disk. This parameter must be set to *Enabled* when installing a hard disk with a capacity greater than 528 MB and only when using the MS-Windows and OS/2 operating systems. When using Unix operating systems (Unix System V Release 4.0, UnixWare, NetWare, SCO Unix) and MS-Windows/NT, this parameter must always be set to *Disabled*.
IDE Prim Slave 32Bit xfer	Disabled, Enabled	The system hard disk controller allows 32-bit transfer modes and therefore this parameter must always be set to *Enabled* when connecting a slave disk compatible with this transfer mode to the primary IDE controller. Set this parameter to *Disabled* when connecting a slave disk that is not enabled for this transfer mode to the primary IDE controller.
IDE Prim Slave BlockMode xfer	Disabled, Enabled	The system hard disk controller allows block transfer modes and therefore this parameter must always be set to *Enabled* when connecting a slave disk compatible with this transfer mode to the primary IDE controller. Set this parameter to *Disabled* when connecting a slave disk that is not enabled for this transfer mode to the primary IDE controller.
IDE Prim Slave HDD LBA Mode	Disabled, Enabled	Enables the "Logical Block Addressing" transfer mode for the primary slave hard disk. This parameter must be set to *Enabled* when installing a hard disk with a capacity greater than 528 MB and only when using the MS-Windows and OS/2 operating systems. When using Unix operating systems (Unix System V Release 4.0, UnixWare, NetWare, SCO Unix) and MS-Windows/NT, this parameter must always be set to *Disabled*.
IDE Sec Master 32Bit xfer	Disabled, Enabled	The system hard disk controller allows 32-bit transfer modes and therefore this parameter must always be set to *Enabled*. Set this parameter to *Disabled* only when connecting to the secondary IDE controller is unable to support this transfer mode.
IDE Sec Master BlockMode xfer	Disabled, Enabled	The system hard disk controller allows block transfer modes and therefore this parameter must always be set to *Enabled*. Set this parameter to *Disabled* only when replacing the primary master disk with a disk that is unable to support this transfer mode.
IDE Sec Master HDD LBA Mode	Disabled, Enabled	Enables the "Logical Block Addressing" transfer mode for the primary master hard disk. This parameter must be set to *Enabled* when installing a hard disk with a capacity greater than 528 MB and only when using the MS-Windows and OS/2 operating systems. When using Unix operating systems (Unix System V Release 4.0, UnixWare, NetWare, SCO Unix) and MS-Windows/NT, this parameter must always be set to *Disabled*.

PARAMETER	POSSIBLE VALUE	DESCRIPTION
IDE Sec Slave 32Bit xfer	Disabled, Enabled	The system hard disk controller allows 32-bit transfer modes and therefore this parameter must always be set to *Enabled*. Set this parameter to *Disabled* when connecting a secondary IDE controller that is not enabled for this transfer mode to the primary IDE controller
IDE Sec Slave BlockMode xfer	Disabled, Enabled	The system hard disk controller allows block transfer modes and therefore this parameter must always be set to *Enabled*. Set this parameter to *Disabled* only when connecting to the secondary IDE controller a slave disk that is unable to support this transfer mode.
IDE Sec Slave HDD LBA Mode	Disabled, Enabled	Enables the "Logical Block Addressing" transfer mode for the secondary slave hard disk. This parameter must be set to *Enabled* when installing a hard disk with a capacity greater than 528 MB and only when using the MS-Windows and OS/2 operating systems. When using Unix operating systems (Unix System V Release 4.0, UnixWare, NetWare, SCO Unix) and MS-Windows/NT, this parameter must always be set to *Disabled*.
Number of HDDs in Sec controller	None, 1, 2	This option indicates whether there are hard disks (1 or 2) connected to the secondary IDE controller.

Advanced Power Mgmt

The more recent personal computers adopt the Advanced Power Management (APM) feature which automatically sets the video (if compatible with the Energy Star specifications), the hard disks, or both, to a Standby mode after a user-defined period of inactivity. In this way the personal computer power absorption drops to below 30 W.

APM can be enabled or disabled and the personal computer set directly to a Standby mode directly from the keyboard, without activating the configuration program. The following key sequences can be pressed to perform these operations:

CTRL ALT F3 — When APM is activated, the personal computer checks the user-set inactivity timeout in order to set the video and/or hard disks to a Standby mode. To switch APM from enable to disable and vice versa, simply press the CTRL ALT F3 key sequence. When APM switches from being disabled to being enabled, the personal computer will signal this change with an acoustic signal. Instead, when APM switches from enabled to disabled the personal computer will emit two acoustic signals.

CTRL ALT F4 — The user can also immediately switch into the Standby mode all the devices for which this function is available (video and hard disk). To do so simply press the CTRL ALT F4 key sequence.

To switch the devices from the Stadby mode into their normal mode of operation, press any key on the keyboard or move the mouse. However, if the Quicklock safety feature has been enabled by means of the configuration program, the computer will ask for the User Password before allowing the
devices to switch back into their normal operating mode.

PARAMETER	POSSIBLE VALUE	DESCRIPTION
CPU Stop Clock Mode	Disabled, Enabled	On the models for which this parameter is available, in addition to the video and hard disks also the CPU can be set to Standby, reducing furthermore energy consumption.
Display Activity	Ignore, Control	When set to Control, a check is made on video memory. If video memory is active the monitor will not switch to Standby.
Global Standby Power Down Mode	Disabled, 5, 10, 15, 20, 25, 30	Sets a maximum timeout after which the system switches to a low consumption mode (Standby). Select Disabled to disable this function.
Green PC Monitor	Yes, No	Set Yes only when using a monitor which complies with the Energy Star specifications. By selecting Yes it is also possible to see the "Green PC Monitor Power State" parameter.
Green PC Monitor Power State	Blank, Stand by, Suspend, OFF	Defines the monitor power down mode.
Hard Disk Power Down Mode	Disabled, Stand by, Suspend	Defines the HDU power down mode.
Hard Disk TimeOut (Min)	Disabled, 1-20	Defines the maximum HDU inactivity timeout after which the HDU switches to the Standby mode.
IDE Power Down	Enabled, Disabled	When Disabled is set, this parameter excludes the hard disks from the Energy Saving function: once the time frame selected with the System Event Timer parameter expires, only the monitor will switch to the wait state.
IDE Standby Power Down Mode	Disabled, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55	Defines the maximum system inactivity timeout after which the hard disk connected to the motherboard interface is set to Standby. Select Disabled to disable this function.
IRQ 3/4/5/7/9/ 10/11/12/13/14/15	Ignore, Control	When set to Control, a check is made on the single IRQs. If any IRQ is active, the personal computer will not switch to Standby.
Power Management (/APM)	Disabled, Enabled	This parameter enables or disables Power Management. When set to Disabled, all other menu items are disabled.
Slow Clock Ratio	1:1 - 1:128	Slows down the CPU clock.
Standby TimeOut (Min)	Disabled, 5-55	This parameter is disabled by setting a maximum timeout, selected among the ones proposed, after which the computer switches into Standby.
Suspend TimeOut (Min)	Disabled, 5-55	This option is enabled by setting a maximum timeout, selected among the ones proposed, after which the computer switches to Standby. **NOTE:** In some cases, for example when LAN boards are present, the computer does not switch to the Suspend mode.

PARAMETER	POSSIBLE VALUE	DESCRIPTION
System Event Timer	Disabled, 5, 10, 20, 30 minutes	Sets the system's maximum inactivity timeout after which the resources managed by the BIOS (hard disk and monitor) are set to Standby. Select Disabled to disable this function, otherwise set one of the available values.
Video (Standby) Power Down Mode	Disabled, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55	Defines the system's maximum inactivity timeout after which the monitor is set to Standby. Select Disabled to disable this function.

Security - Peripheral

PARAMETER	POSSIBLE VALUE	DESCRIPTION
Bootstrap from Serial	Disabled, Enabled	When disabled, prevents the operating system from being loaded from the serial interface. When enabled, to bootstrap the operating system press CTRL+D when the error message indicating that the operating system has not been detected is displayed during the autodiagnostics. **NOTE:** In order to bootstrap from the serial port the personal computer must not have any peripheral connected to it (no hard disk or CD-ROM connected, no system disk in the FDU, no network connection).
Drive A(C) Bootstrap/ Bootstrap from Floppy/ Bootstrap from Fixed Disk/ Bootstrap from CD-ROM/ Bootstrap from Network	Disabled, Enabled	When Enabled is selected, the operating system cannot be bootstrapped from drive A:, drive C:, from the CD-ROM nor from the network. Read and write operations work normally.
Fixed Disk	Disabled, Enabled	When Enabled is selected the system hard disk drives are disabled. Read and write operations are no longer allowed.
Floppy Drive	Disabled, Enabled	When Enabled is selected the system floppy disk drives are disabled. Read and write operations are no longer allowed.
IRQ Active	High, Low	Defines when the interrupt signal is active high or low.
Network Server Mode	Disabled, Enabled	This parameter provides the following protections: - Prevents the operating system from bootstrapping from floppy disk. - Disables the keyboard and mouse preventing access to the hard disk. - Bootstraps the operating system from hard disk.
OnBoard FDC (Floppy Drive) *	Disabled, Enabled	When set to Disabled, this parameter deactivates the interface that controls the diskette drives and 3.5" tape drive if present. The interface works normally when this parameter is set to Enabled.

PARAMETER	POSSIBLE VALUE	DESCRIPTION
OnBoard (Primary/Secondary) IDE/EIDE	Disabled, Enabled	This parameter concerns an optional hard disk interface installed on the bus. This interface works normally when the option is set to Enabled. The interface is disabled when this parameter is set to Disabled.
OnBoard Parallel Port	Disabled, Enabled	When set to Disabled, this parameter blocks all operations through the parallel port.
OnBoard Serial Port 1/2	Disabled, Enabled	When set to Disabled, this parameter blocks all operations through serial port 1/2.
Parallel Interface	Disabled, Enabled	Disables the system parallel port.
Parallel Port*	Disabled, 3BCH, 378H	Disables the system parallel port or allows an address to be assigned to it (hexadecimal).
Parallel Port Mode	Extended, Normal	When set to Extended, this parameter defines parallel port operation by enabling the Parallel Port Mode option.
	Bi-Dir, EPP, ECP, EPP&ECP	This parameter defines the most suitable communication mode for the peripheral connected to the parallel port. In the case of a printer with Centronics interface, the Bi-dir mode must be selected, while in the case of peripherals such as CD-ROM or Streaming Tape Units (STUs), consult the documentation to set the most suitable mode.
Primary IDE	Disabled, Enabled	Enables or disables the secondary hard disk controller.
Programming Mode	Auto, Manual	When set to Auto this parameter automatically recognizes the interface settings (indicated by a menu option). When set to Manual, the values for these interfaces can be entered manually.
(Keyboard) Quicklock	Disabled, Enabled	Locks the keyboard while the personal computer is still working within a specific application. When this parameter is set to Enabled, pressing the CTRL ALT ? key sequence locks the keyboard. The ? key is user-defined, and the password needs to be entered in order to unlock the keyboard.
Secondary IDE	Enabled, Disabled	Enables or disables the secondary hard disk controller.
Serial Interface	Disabled, Enabled	Enables or disables the system serial ports.
Serial Port 1*	Disabled, 2E8H, 3F8H	Disables serial port 1 or allows an address (in hexadecimal format) to be assigned to it. The address of one port must differ from that of another.
Serial Port 2*	Disabled, 2F8H, 2E8H, 3E8H	Disables serial port 2 or allows an address (in hexadecimal format) to be assigned to it. The address of one port must differ from that of another.

PARAMETER	POSSIBLE VALUE	DESCRIPTION
Supervisor Level Option	Grants access to the options by means of a password.	

UTILITY

PARAMETER	POSSIBLE VALUE	DESCRIPTION
Color Set	- LCD - army - pastel - sky	
Detect Primary Master / Slave hard disk	By selecting this parameter you inform the system that the hard disk self-acknowledgement feature must be used. The installed hard disk will provide all of its own data. Always use this type of configuration. The following parameters are automatically configured : - Cyln Number of cylinders - Head Number of heads - Sect Number of sectors per track - Size Hard disk capacity	
Detect Secondary Master / Slave hard disk	As the previous option.	
Language	Italian, English, French, Spanish, German	Allows the selection of the language in which the configuration program will be displayed.

PASSWORD

The parameters in this allow two different passwords to be defined in order to be able to access the different system functions.

User Password — Allows the definition of a system password that the system may ask for when an attempt is made to access the configuration program or after every system power on/reset. This mode can be defined with the Password Checking option.

Supervisor Password — Defines a password that the system will request when an attempt is made to access the Security options.

CONFIGURATION UTILITY FOR
M4-Pxx i/M6-950/M6-6200/Modulo PRO 180/Modulo PXXX L/T SYSTEMS

SETUP Utility

Upon completion of the POST (Power ON System Test), the following message is displayed along with those informing on the outcome of system diagnostics:

Press <F1> key if you want to run SETUP

Pressing the <F1> key gives access to the Setup program consisting of four menus as described in the following tables.

WARNING: The table indicates the configuration parameters available for each personal computer product line. The M6-950 line includes the following models: M6-6200 and Modulo PRO 180.

Configuration Parameter		**M4-P75 i**	**M6-950**	**Modulo PXXX L**	**Modulo PXXX T**
SETUP - Main	**Submenu**				
System Date/Time		☐	☐	☐	☐
Floppy Options	Floppy A (Floppy B)		☐		☐
	Floppy A (Floppy B): Type	☐	☐	☐	☐
	Floppy Access			☐	
Primary IDE Master (Primary IDE Slave) (Secondary IDE Master) (Secondary IDE Slave)/ Hard Disk C:, D:, E:, F:	IDE Device Configuration	☐	☐	☐	
	Hard Disk Type				☐
	Number of Cylinders	☐		☐	☐
	Number of Heads	☐		☐	☐
	Number of Sectors	☐		☐	☐
	Maximum Capacity	☐		☐	☐
	IDE Translation Mode	☐	☐	☐	☐
	Multiple Sector Setting	☐	☐	☐	☐
	Fast Programmed I/O Modes	☐	☐	☐	☐
Language		☐	☐	☐	☐

Configuration Parameter		M4-P75 i	M6-950	Modulo PXXX L	Modulo PXXX T
Boot Options	First (Second) (Third) (Fourth) Boot Device	☐	☐	☐	☐
	System Cache	☐	☐	☐	☐
	Boot Speed	☐	☐	☐	☐
	Num Lock	☐	☐	☐	☐
	Setup Prompt	☐	☐	☐	☐
	Hard Disk Pre-Delay	☐	☐	☐	☐
	Typematic Rate Programming	☐		☐	☐
	Typematic Rate Delay	☐			☐
	Typematic Rate	☐			☐
	Scan User Flash Area			☐	
Video Mode		☐		☐	☐
Mouse		☐		☐	☐
Base Memory		☐		☐	☐
Extended Memory		☐		☐	☐
BIOS Version				☐	
SETUP - Advanced					
Processor Type		☐		☐	☐
Processor Speed		☐		☐	☐
Cache Size		☐		☐	☐
Peripheral Configuration	Configuration Mode	☐	☐	☐	☐
	PCI IDE Interface	☐		☐	☐
	Secondary PCI IDE Interface			☐	
	Floppy Interface	☐		☐	☐
	Serial Port 1 (2) Address	☐		☐	☐
	Serial Port 2 IR Mode	☐		☐	☐
	Parallel Port Address	☐		☐	☐
	Parallel Port Mode	☐		☐	☐

Configuration Parameter		M4-P75 i	M6-950	Modulo PXXX L	Modulo PXXX T
Advanced Chipset Configuration	Base memory size	☐	☐	☐	☐
	ISA LFB Size	☐	☐	☐	☐
	ISA LFB Base Address	☐		☐	☐
	Video Palette Snoop	☐	☐	☐	☐
	Latency Timer (PCI clocks)	☐	☐	☐	☐
	Memory Error Correction			☐	
	Bank 0/1/(2) SIMM Detected			☐	☐
	PCI Burst	☐			
	SIMM Type Detection	☐			
	ECC Support	☐	☐		
Power Management Configuration	Advanced Power Management	☐		☐	☐
	IDE Drive Power Down	☐		☐	☐
	VESA Video Power Down	☐		☐	☐
	Inactivity Timer	☐		☐	☐
	Hot Key (CTRL-ALT-)	☐		☐	☐
Plug and Play Configuration	Configuration Mode	☐	☐	☐	☐
	ISA Shared Memory Size	☐	☐	☐	☐
	ISA Shared Memory Base Address	☐	☐	☐	☐
	Boot With PnP OS	☐	☐	☐	☐
	IRQ (3), (4), 5, (7), 9, 10, 11, (12), (14), (15)	☐	☐	☐	☐
SETUP - Security					
User Password is		☐	☐	☐	☐
Administrative Password is		☐	☐	☐	☐
Set User Password		☐		☐	☐
Set Administrative Password		☐		☐	☐
Unattended Start		☐	☐	☐	☐
Security Hot Key (CTRL-ALT-)		☐	☐	☐	☐

Configuration Parameter	M4-P75 i	M6-950	Modulo PXXX L	Modulo PXXX T
SETUP - Exit				
Exit Saving Changes	☐		☐	☐
Exit Discarding Changes	☐		☐	☐
Load Setup Defaults	☐		☐	☐
Discard Changes	☐		☐	☐

Main

PARAMETER	VALUE	DESCRIPTION
Base Memory	--	Indicates the base memory size. The indicated value reflects the option selected and stored in the advanced chip set configuration for base memory. There are no options available.
Boot Options	--	This option recalls the Boot Options submenu.
Boot Sequence: First Boot Device Second Boot Device Third Boot Device Fourth Boot Device	Disabled, Floppy, Hard Disk, CD-ROM, Network	Selecting one of these parameters recalls a dialog box through which it is possible to select among the proposed values. The default setting is Floppy, Hard Disk, CD-ROM and Disabled. **Note:** The CD-ROM option cannot be selected in "Second/Third/Fourth Boot Device".
System Cache	Enabled, Disabled	This parameter recalls a dialog box through which it is possible to enable or disable primary and secondary cache. The default setting is Enabled.

PARAMETER	VALUE	DESCRIPTION
Boot Option		
Boot Speed	Deturbo, Turbo	This option brings up a dialog box in which it is possible to define the system boot speed. The default setting is Turbo (system boot at maximum speed). By selecting Deturbo the board will work at a slower speed.
Hard Disk Pre-Delay	Disabled, 3, 6, 9, 12, 15, 21, 30 sec.	Selecting a value different than Disabled informs the BIOS that the system HDU requires a delay to be selected in order to be able to operate.
Num Lock	On, Off	Brings up a dialog box in which it is possible to set the initial state of the keyboard Num Lock function. The default setting is Off.
Scan User Flash Area	Enabled, Disabled	Enables or disables User Flash Area scan for option ROMs.
Setup Prompt	Enabled, Disabled	Brings up a dialog box in which it is possible to activate the display of the message “Press Key if you want to run Setup” during power on. The default setting is Enabled.
Typematic Rate Programming	Default, Override	Brings up a dialog box in which it is possible to set the typematic rate. The default setting is Default. Selecting Override enables the selection of a delay and typematic rate.
Typematic Rate Delay	250, 500, 750, 1000 milliseconds,	Brings up a dialog box in which it is possible to set the time required for starting the character repeat function when a keyboard key is held down. The default setting is 250. This parameter will not be displayed if Typematic Rate Programming is set to Disabled.
Typematic Rate	8, 10, 12, 15, 20, 24, 30 chars per sec	Brings up a dialog box in which it is possible to set the character repeat speed when a keyboard key is held down. Higher the number, faster the character repetition. The default setting is 6 characters per second. This parameter is not displayed if Typematic Rate Programming is set to Default.
Extended Memory	--	Indicates the amount of extended memory. There are no options here.
BIOS Version	--	This field is for information purposes only. It indicates the current BIOS version.

PARAMETER	VALUE	DESCRIPTION
Floppy Options:	--	Brings up the Floppy Options submenu.
Floppy A Floppy B	Installed, Not installed	This option indicates whether diskette drive A or B is present.
Floppy A: Type Floppy B: Type	Disabled, 360 KB, 5.25"; 1.2 MB, 5.25"; 720 KB, 3.5"; 1.44/1.25 MB, 3.5"; 2.88 MB, 3.5"	Brings up a dialog box in which it is possible to specify the diskette drive physical size and capacity. The default value for Floppy A is 1.44 MB/1.25 MB, 3.5" while it is Disabled for Floppy B.
Language	--	Brings up a dialog box in which it is possible to specify the language in which the text strings of the Setup program and in the BIOS will be displayed. The options available correspond to the languages installed.
Mouse	--	Indicates whether a PS/2 mouse is installed or not. There are no options here.

PARAMETER	VALUE	DESCRIPTION
Primary IDE Master Primary IDE Slave Secondary IDE Master Secondary IDE Slave/ Hard Disk C:, D:, E:, F:	--	These fields are only displayed if a hard disk drive is connected to the system. When selected, these options bring up the Primary/Secondary IDE submenu.
IDE Device Configuration/ Hard Disk Type	Auto Configured, User Definable, Disabled	Brings up a dialog box in which it is possible to manually configure a hard disk drive, have the system perform the configuration automatically or disable the hard disk. The default setting is Auto Configured. When selecting User Definable the following entries need to be changed: Number of Cylinders, Number of Heads and Number of Sectors.
Number of Cylinders Number of Heads Number of Sectors	User Definable, Auto Configured	If Hard Disk Type is set to User Definable, the correct number of hard disk cylinders/heads/sectors needed to be defined here. If Hard Disk Type is set to Auto Configured, this field indicates the hard disk number of cylinders/heads/sectors as detected by the system. These values cannot be changed.
Maximum Capacity	--	Indicates the maximum capacity of the hard disk drive, which is calculated according to the number of cylinders, heads and sectors. There are no options here.
IDE Translation Mode	Standard CHS (<1024 cylinders), Logical Block Addressing, Extended CHS (>1024 cylinders), Auto Detected	Brings up a dialog box in which it is possible to define the IDE translation mode. The default setting is Auto-detected (the BIOS will detect the media for IDE drives). Do not change the selected value during the formatting of the hard disk. Changing this value could corrupt the data or prevent access to the hard disk.
Multiple Sector Setting	Disabled, 4 Sectors/Block, 8 Sectors/Block, Auto Detected	Brings up a dialog box in which it is possible to set IDE I/O cycles that are programmed for the transfer of multiple sectors in a single block. The default setting is Auto Detected. Consult the hard disk manual to determine the setting for the best performance.
Fast Programmed I/O Modes	Disabled, Auto Detected	Brings up a dialog box in which it is possible to set transfer rates on the PCI IDE interface. The default setting is Auto Detected. When this parameter is set to Disabled, the transfers will occur at an unoptimized rate. If this parameter is set to Auto Detected, the transfers will occur at a rate which is optimized according to the disk and system.
System Date	--	Brings up a dialog box in which it is possible to define the current date. Select the month first by using the cursor movement keys.
System Time	--	Brings up a dialog box in which it is possible to define the current time.
Video Mode	--	Indicates the video mode. There are no options here.

Advanced

PARAMETER	VALUE	DESCRIPTION
Advanced Chipset Configuration	--	Brings up the Advanced Chipset Configuration submenu.
Base Memory Size	512 KB, 640 KB	Brings up a dialog box in which it is possible to define the base memory size. The default setting is 640 KB.
ISA LFB Size	Disabled, 1 MB	Brings up a dialog box in which it is possible to define the Linear Frame Buffer (LFB) size. The default setting is Disabled. If this parameter is not set to Disabled the ISA LFB Base Address field will be displayed.
ISA LFB Base Address	--	Indicates the LFB base address. There are no options here. When this parameter is set to Disabled the ISA LFB Size field is not displayed.
Video Palette Snoop	Enabled, Disabled	Brings up a dialog box in which it is possible to control the capability of a PCI graphics card to snoop write cycles on the color palette registers of a ISA graphics card. The default setting is Disabled. ***NOTE:*** *Some additional image capture boards and TV tuners may require for this option to be enabled. Depending on the hardware being used, this option may not be displayed.*

PARAMETER	VALUE	DESCRIPTION
Advanced Chipset Configuration		
Latency Timer (PCI Clocks)	Between 0 and 255	This field defines the frame of time during which a PCI bus agent can put the bus to hold when another agent requests the use of the bus. Valid values are within the 0 to 255 range. Use numeric keys to enter this value. The default setting is 66.
PCI Burst	Enabled, Disabled	Enables or disables the support for data transfers from the PCI bus to memory in burst mode. The default setting is Enabled.
SIMM Type Detection	--	Indicates the size and type of DRAM installed in each of the two memory banks. Fast Page Mode, Extended Data Out Mode or None DRAM types are available. There are no options here.
Memory Error Correction	--	This field is for information purposes only and cannot be changed. It indicates whether the DRAM data error correction function is enabled or not.
Bank 0/1/2 SIMM Detected	--	This field is for information purposes only and cannot be changed. It indicates the type of DRAM (Fast Page Mode or EDO) installed in the system memory banks.
Cache Size	--	Indicates the size of the secondary cache. There are no options here. This field is not displayed if secondary cache is not installed.

PARAMETER	VALUE	DESCRIPTION
Peripheral Configuration	--	Brings up the Peripheral Configuration submenu.
Configuration Mode	Auto, Manual	Brings up a dialog box in which it is possible to manually set the configuration of the peripherals or to automatically run system configuration. The default setting is Auto. When selecting Auto, the system peripherals are automatically configured during the power on routine. The options relating to the PCI/IDE interfaces, the floppy interface, the addresses of serial ports 1 and 2 and of the parallel port cannot be changed. The values displayed for these parameters depend on the current state of the hardware. When selecting Manual, the options relating to the PCI/IDE interfaces, the floppy interface, the addresses of serial ports 1 and 2 and of the parallel port cannot be changed.
PCI IDE Interface/ Floppy Interface	Enabled, Disabled	Brings up a dialog box in which it is possible to enable the interfaces for PCI IDE hard disks or for the floppy disk drive. The default setting is Enabled (this setting cannot be changed if Configuration Mode is set to Auto).
Secondary PCI IDE Interface	Enabled, Disabled	Brings up a dialog box in which it is possible to enable the interfaces for PCI IDE hard disks. The default setting is Enabled (this setting cannot be changed if Configuration Mode is set to Auto).
Serial Port 1 Address	Disabled, COM1 3F8h IRQ 4, COM2 2F8h IRQ 3, COM3 3E8h IRQ 4	Brings up a dialog box in which it is possible to select the serial port address. The values selected for serial port 2 do not appear in the selection list. The default setting is COM1, 3F8h, IRQ 4. If Configuration Mode is set to Auto, the Setup program will assign the first free COM port (usually COM1, 3F8h, IRQ 4) as the address of serial port 1 regardless of the setting made for the Serial Port 1 Address parameter (this option cannot be modified if Configuration Mode is set to Auto).

PARAMETER	VALUE	DESCRIPTION
Peripheral Configuration		
Serial Port 2 Address	Disabled, COM1 3F8h IRQ 4, COM2 2F8h IRQ 3, COM3 3E8h IRQ 4	Brings up a dialog box in which it is possible to select the serial port address. The values selected for serial port 1 do not appear in the selection list. The default setting is COM1, 3F8h, IRQ 4. If Configuration Mode is set to Auto, the Setup program will assign the first free COM port (usually COM2, 2F8h, IRQ 3) as the address of serial port 2 regardless of the setting made for the Serial Port 2 Address parameter (this option cannot be modified if Configuration Mode is set to Auto).
Serial Port 2 IR Mode	Enable, Disable	Dedicates serial port 2 to infrared applications. Serial port 2 can also be enabled via software by means of the application programs. This option is only available if Configuration Mode is set to Manual. The default setting is Disable.
Parallel Port Address	Disabled, LPT3 3BCh IRQ7, LPT1 378h IRQ7 , LPT2 278h IRQ7, LPT3 3BCh IRQ5, LPT1 378h IRQ5, LPT2 278h IRQ5	Brings up a dialog box in which it is possible to select the parallel port address. The default setting is LPT1, 378h, IRQ 7. If Configuration Mode is set to Auto, the Setup program will assign the first free COM port (usually LPT1, 378h, IRQ 7) as the address of the parallel port regardless of the setting made for the Parallel Port Address parameter (this option cannot be modified if Configuration Mode is set to Auto).
Parallel Port Mode	Compatible, Bi-directional, ECP, EPP	Brings up a dialog box in which it is possible to select the parallel port mode. The default setting is Compatible (AT-compatible mode). The value Bi-directional means that the parallel port will work in the PS/2-compatible bidirectional mode. ECP configures the port for ECP. This parameter is not affected by the setting made in the Configuration Mode field.

PARAMETER	VALUE	DESCRIPTION
Plug and Play Configuration	--	Brings up the Plug and Play Configuration submenu.
Configuration Mode	Use Setup Utility, Use ICU	Brings up a dialog box in which it is possible to define the way the BIOS obtains information on the non-Plug and Play ISA boards. The default setting is Use Setup Utility. When selecting Use ICU, the BIOS will use the run-time software to make sure that no conflicts occur between Plug and Play ISA boards and non-Plug and Play ISA boards. When selecting Use ICU only the Boot with PnP OS field will be displayed. By selecting the Use Setup Utility, the BIOS will use the following options to avoid conflicts.
ISA Shared Memory Size	Disabled, 16 KB, 32 KB, 48 KB, 64 KB, 80 KB, 96 KB	Brings up a dialog box in which it is possible to select a memory block for access to the ISA bus. The default setting is Disabled. When this parameter is set to Disabled, the ISA Shared Memory Base field will not be displayed.
ISA Shared Memory Base Address	C8000h, CC000h, D0000h, D4000h, D8000h, DC000h	Brings up a dialog box in which it is possible to define ISA Shared Memory Base Address. The default setting is C8000h. The options available depend on the ISA shared memory size selected in the previous field. The ISA shared memory area cannot extend in the E0000h address field. For example, when selecting 64K the D4000h, D8000h and DC000h options will not be available.
Boot With PnP OS	Enabled, Disabled	When selecting Enabled, the BIOS will only activate the additional Plug and Play boards needed to boot the system so that control can then be relinquished to the operating system for the configuration of the remaining Plug and Play boards. The default setting is Disabled, but this parameter must be set to Enabled when using Windows 95.

PARAMETER	VALUE	DESCRIPTION
Plug and Play Configuration		
IRQ 3, 4, 5, 7, 9, 10, 11, 12	Available, Used By ISA Card	Brings up a dialog box in which it is possible to define the state of the IRQ. The default setting is Available. The autoconfiguration code will analyse this parameter to check whether these interrupts are available. If an interrupt is available, it can be assigned by the autoconfiguration code to Plug and Play or PCI devices. If the system contains an ISA agent which uses one of these interrupts, select Use by ISA Card for this interrupt. Some of these interrupts may not be displayed if they have already been assigned to other peripherals, such as IRQ3 and IRQ4, which are generally used by the serial ports, and IRQ 7 which is generally assigned to the parallel port.
Power Management Configuration	--	When selected and enabled, this parameter brings up the Advanced Power Management (APM) submenu.
Advanced Power Management	Enabled, Disabled	Enables or disables APM (Advanced Power Management) support in the system BIOS. The control over the power supply can only work with operating systems equipped with the APM feature. If Advanced Power Management is set to Disabled, none of the Advanced Power Management submenus is displayed. The default setting is Enabled.
IDE Drive Power Down	Enabled, Disabled	Brings up a dialog box in which it is possible to enable or disable the IDE drive power down when the system switches into the energy saving mode. The default setting is Enabled.
VESA Video Power Down	Disabled, Standby, Suspend, Sleep	Brings up a dialog box in which it is possible to set the command which is transmitted to the graphics card when the system switches into the energy saving mode. The default setting is Sleep. Refer to the monitor documentation to check whether the monitor supports the energy saving mode. The Sleep mode ensures maximum energy savings.

PARAMETER	VALUE	DESCRIPTION
Power Management Configuration		
Inactivity Timer	Between 0 and 255 minutes	Defines the minutes in which the system must be inactive before entering the energy saving mode. The default setting is 10 minutes.
Hot Key (CTRL-ALT-)	--	Defines a key which, when pressed with <Ctrl> and <Alt>, switches the system into the energy saving mode. All alphanumeric keys are valid, along with punctuation mark keys and the spacebar.
Processor Speed	--	Indicates the CPU clock rate. There are no options here.
Processor Type	--	Indicates the type of CPU. There are no options here.

Security

The Security menu options restrict access to the Setup program through two types of password: administrative and user.

In general, an administrative password grants access to all configuration options while the user password restricts access to just a few options. By defining separate administrative and user passwords, the system administrator can restrict the number of people authorized to modify the more important configuration values. To restrict the possibility of booting the system, a user password will have to be set. If only the administrative password is defined, the system will boot without asking for any password. If both administrative and user passwords are defined, both will need to be entered in order to boot the system.

PARAMETER	VALUE	DESCRIPTION
Administrative Password is	--	Indicates whether an administrative password has beed enabled. There are no options here.
Security Hot Key (CTRL-ALT-)	--	Defines a key which, when pressed, will lock the keyboard until the user password is entered. This field is displayed only if a user password has been defined.
Set Administrative Password	--	Brings up a dialog box in which it is possible to define the administrative password.
Set User Password	--	Brings up a dialog box in which it is possible to define the user password.
Unattended Start	Enabled, Disabled	Brings up a dialog box in which it is possible to define when the system will ask for a password to be entered. The default setting is Disabled. The user password needs to be defined before this option can be enabled. When selecting Enabled, the system will boot but the keyboard will remain locked until the correct user password is entered. This field is displayed only if a user password is defined.
User Password is	--	Indicates whether a user password has been defined. There are no options here.

Exit

PARAMETER	VALUE	DESCRIPTION
Discard Changes	--	When selected, this parameter discards any changes made to the configuration of the system without exiting from Setup. The same is obtained by pressing the <F6> key at any time. This selection loads the CMOS values present the moment the system is booted.
Exit Discarding Changes	--	When selected, this parameter exits from the Setup program without saving the changes made. This means that any changes that have been made to the configuration of the system will be discarded and **not saved**. The same is obtained by pressing the <Esc> key in the four main menus.
Exit Saving Changes	--	When selected, this parameter saves the changes in CMOS and exits from the Setup program. Pressing the <F10> key exits from Setup at any time.
Load Setup Defaults	--	When selected, this parameter restores the default values of all configuration parameters. The same is obtained by pressing the <F5> key at any time. This selection loads the default configuration parameters from the ROM table.

(ECU) EISA CONFIGURATION UTILITY

This section explains the Configuration Utility for EISA systems (M6-850, M6-860, M6-880, M6-620)

The software utilities are contained in the User Disk and are used to test and configure the system with the boards or options installed. To test the system, you will need to use the System Test which differs from the User Diskette as it contains destructive tests which would be dangerous to use at user level.

The User Diskettes consist of three 3.5", 1.44 MB diskettes containing the:

- EISA Configuration Utility: Contains the EISA Configuration Utility (ECU), release 2.0, to be used to configure the system - *System Configuration Diskette*.
- ISA Configuration (CFG) file Library: Contains the configuration files for the more wide-spread EISA/ISA boards - *Options Configuration Diskette*.
- Diagnostics: Contains the system test utilities.

EISA Configuration Utility

This program guides the user through the system configuration process. For EISA Personal Computers, each optional board must be provided with a file containing configuration information (.CFG file). The ECU can read this information and therefore display all the data concerning the configuration of the computer, distribution of the resources and attribution of functions.

Before installing a board, the relative file needs to be inserted in the configuration so that the ECU can indicate the necessary jumper and DIP-switche settings (usually EISA boards do not have jumpers nor DIP-switches).

At the end of the configuration process, the information is stored in the motherboard CMOS RAM so that the system resources are checked each time the system is powered on. The information is also stored in the System Configuration Information file (SYSTEM.SCI) on the EISA Configuration Utility diskette. This file is update at each time the system is configured.

To display the main menu, insert the EISA Configuration Utility diskette in drive A then power on or reset the system. After a few introductory screen displays, the main menu is displayed. The following tables list the main menu items and their options. Also indicated are the Personal Computers for each option.

LEARN ABOUT CONFIGURING YOUR COMPUTER Displays information on the EISA configuration process. For **(M6-8xx M6-620)**
DISPLAY README FILE Displays a Readme file containing information on the ECU. For **(M6-620)**
SET DATE Sets the date For **(M6-8xx)**
SET TIME Sets the time For **(M6-8xx)**

CONFIGURE SYSTEM

The Configure System item activates the EISA Configuration Utility which recognizes the resources installed in the system and configures them directly by assigning the requested functions and appropriate resources.
For **(M6-8xx M6-620)**

OPTIONS	**FUNCTION**	**PERSONAL COMPUTER**
Standard Configuration	Configures the system. This option has a submenu of options called: **Steps In Configuring Your Computer**. These options are the following: - Step 1: Important EISA configuration information - Step 2: Add or remove boards - Step 3: View or Edit Details - Step 4: Examine required switches - Step 5: Save and exit	M6-620 This option is also available for M6-8xx Personal Computers.
Step 1: Important EISA configuration information	Gives information on the configuration of the system.	M6-8xx M6-620
Step 2: Add or remove boards	Describes the procedures which enable to add, move or remove an expansion board from the system configuration. This phase displays a list of the boards installed in the system and the slot they occupy. EISA boards are automatically added to this list if their .CFG file is present. ISA boards must be selected and added.	M6-8xx M6-620
Step 3: View or Edit Details	Allows to view and/or insert the functions and resources of each device in the system configuration. The information made available by activating this utility's submenu (Advanced Menu) can be displayed to solve possible configuraion conflicts. The Advanced Menu offers the following options: **Locking and unlocking configured boards:** Allows to lock and unlock the settings (functions and resources) of each board configured in the system. **View additional system information menu**: Displays other detailed information on the system boards and on the resources that are used and those that are free. The following information can be provided: - Board specifications - Information on the expansion boards - System specifications - Infrormation on the motherboard - Used resources - Information on the resources used by the PC. - Available resources - Information on the resources available for expansion boards. - Set verification menu mode - Determines whether a configuration conflict must be solved automatically or manually. - Maintain SCI files menu - Loads previously the stored System Configuration Information file (SCI) or to create a backup copy of this file.	M6-8xx M6-620

OPTIONS	FUNCTION	PERSONAL COMPUTER
Step 4: Examine required switches	Provides the exact jumper setting for the boards installed in the system. The boards indicated by an arrow, usually ISA boards, have jumpers and DIP-switches which must be set manually. EISA boards are usually configured automatically. In this phase it is also possible to print the configuration of the board jumpers or to store this configuration on diskette.	M6-8xx M6-620
Step 5: Save and exit	Stores or quits a newly created configuration and exits the utility.	M6-8xx M6-620
Automatic Configuration	Automatically configures the system.	M6-620
Return to main menu	Returns to the main menu	M6-620

MAINTAIN SYSTEM CONFIGURATION DISKETTE

Loads the previously stored System Configuration Information (SYSTEM.SCI) file or to create a backup copy of this file.

For **(M6-8xx M6-620)**

OPTIONS	FUNCTION	PERSONAL COMPUTER
Create a backup SCI file	At the end of the configuration process the information is stored in the motherboard CMOS RAM so that all the system resources are checked at each system power on. The information is also stored in the **System Configuration Information** file (SYSTEM.SCI) on the *System Configuration Diskette* which contains the Setup Utility. This file is updated each time the system is configured. This option also allows a backup copy of the file containing system configuration information to be made.	M6-8xx M6-620
Load a backup SCI file	With this option, the **System Configuration Information** file previously stored with the Create a Backup SCI File option can be copied onto the *System Configuration Diskette* containing the Setup Utility.	M6-8xx M6-620)
Copy/update CFG files	Updates the list of board configuration files (.CFG) on the system configuration diskette. The CFG files can be found on the ISA Configuration (CFG) File Library diskette or on the configuration diskette supplied with the EISA board.	M6-8xx M6-620)
Copy / update SCI files	Modifies the **System Configuration Information** (SYSTEM.SCI) file on the *System Configuration Diskette*. This operation is necessary when modifying the configuration of the system.	M6-8xx M6-620
Delete CFG files	Removes a configuration file from the file of board configuration files (.CFG files). This operation is to be performed only when removing the file's corresponding board from the system.	M6-8xx M6-620

OPTIONS	FUNCTION	PERSONAL COMPUTER
Delete SCI files	Cancels the **System Configuration Information** file (SYSTEM.SCI).	M6-8xx M6-620
Return to main menu	Return to the main menu.	M6-8xx M6-620

SET FEATURE

This program sets the date and time, defines different types of password, modifies console options and sets hard disk initialization delay. A utility which displays information on the ROM versions used on the subsystems is also available.

For **(M6-620)**

TEST SISTEM

This main menu option tests the system hardware modules. The format of the tests is similar to those on the System Test diskette. However, since the System Test diskette runs more detailed tests, it is suggested to use this diskette to test the hardware modules.

For **(M6-620)**

COPY A USER DISKETTE

Creates a backup copy of the *System Configuration Diskette*.

For **(M6-620)**

EXIT FROM THIS UTILITY

Returns to the operating system.

For **(M6-8xx M6-620)**

The pages which follow indicate the sequence of the more frequent operations which must be carried out.

ADDING AN EISA BOARD

You will need to reconfigure the system each time an EISA board is installed. To do so, proceed as follows:

1) Identify the configuration file (.CFG) corresponding the the EISA board to be installed. This file is located either on the ISA Configuration (CFG) FIle Library diskette (*Options Configuration Diskette*) or on the *Configuration Diskette* provided with the board.
2) Install the EISA board.
3) Insert the System Configuration Diskette into drive A and power on the computer. Follow the instructions displayed until the main menu is displayed.
4) Select the **Maintain System Configuration Diskette** option from the main menu. This option offers the following submenu:
   - Create a backup SCI file
   - Load a backup SCI file
   - Copy/ Update CFG files
   - Copy/update SCI files
   - Delete CFG files
   - Delete SCI files
   - Return to main menu

5) Select **Copy / Update CFG Files**. The Copy Configuration (CFG) screen is displayed along with the current files contained in the *System Configuration Diskette*.

6) If the CFG file for the board you are installing is not listed, select **Directory** by pressing F7. The Change Directory screen is displayed.

7) Specify the drive in which you are going to install the *Options Configuration Diskette*. Insert the diskette into the specified drive and press Enter. When the Copy Configuration (CFG) File screen is displayed, select the specific CFG file for the EISA board installed.

8) Press Enter. The CFG file is copied onto the *System Configuration Diskette*. The message Copy Complete is displayed..

9) Press Enter to return to the **Maintain System Configuration Diskette** screen.

10) Select **Return to the main menu** and press Enter.

11) Select **Configure system** and press Enter. The system will display the **Configure Computer** menu.

12) Select Standard Configuration and press Enter. The CFG files are loaded and the EISA board installed is automatically added to the configuration. The system will display the Steps in Configuring Your Computer screen:

- Step 1: Important EISA configuration information
- Step 2: Add or remove boards
- Step 3: View or edit details
- Step 4: Examine required switches
- Step 5: Save and exit

13) To start the configuration process, select **Step 4: Examine required switches** and press <F50B> ENTER.<F255D> The program will indicate which boards have jumpers and DIP-switches to be physically set and checked. After following these instructions, select Done. The Steps in Configuring Your Computer screen is redisplayed.

14) Select **Step 5: Save and exit** and press Enter. Follow the instructions displayed to save the configuration. The program will store this configuration in non-volatile memory or in a file on the System Configuration Diskette. Reactivate the computer.

ADDING AN ISA BOARD

You will need to reconfigure the system before physically installing an ISA board. To do so, proceed as follows:

1) Identify the manufacturer and name of the ISA board to be installed in the system.
2) Insert the *System Configuration Diskette* in drive A and power on the system. The main menu will be displayed.
3) Select **Configure system** and press Enter. The system will display the Configure Computer menu.
4) Select **Standard Configuration** and press Enter. The system will display the Steps in Configuring Your Computer screen.
5) Select **Step 2: Add or remove boards** and press Enter. The Add or Remove Boards screen is displayed.
6) Select **Add**. The Add screen is displayed indicating how to locate the diskette containing the CFG file for the board to be installed.
7) Press Enter. The Add Configuration (CFG) FIle screen is displayed. It is similar to the Copy Configuration (CFG) File used in the section entitled "Adding an EISA Board".
8) Perform one of the following operations to copy onto configuration diskette the CFG file associated to the ISA board to be installed:
   - If the specific CFG file is listed in the screen, this means that it is already loaded in the *System Configuration Diskette*. Select this file and press Enter.
   - If the CFG file is not listed but the *Configuration Diskette* supplied with the board is available, select **Directory** by pressing F7. The Change Directory screen is displayed. Define the drive into which the *Configuration Diskette* is to be inserted. Select the drive corresponding to the board and press Enter.
   - If the CFG file is not listed and the board's specific *Configuration Diskette* is not available, select **Directory** by pressing F7. Use the ISA Configuration (CFG) File Library diskette (*Options Configuration Diskette*) supplied with the system to find the appropriate CFG file.
   - If ISA board's corresponding CFG file still cannot be found, select the **Generic ISA Adapter** option which is a component of the Add Configuraion (CFG) File screen of the *System Configuration Diskette,* and press Enter. This file contains the resources needed for the ISA board being installed.
9) After copying the CFG file onto the *System Configuration Diskette*, the Add Confirmation screen is displayed. Press Enter and the Add screen is redisplayed.
10) Select the slot into which the board is to be installed and press Enter. The → arrow is displayed next to the number of the of the slot in which the board can be installed.

NOTE: If the board which has been added is causing a configuration conflict, the system will display a warning message, indicating the board in conflict with "Desctivated". Cancel the board from the configuration by following the instructions displayed.

11) Exit the Add or Remove Boards screen by pressing the F10 key. The Steps in Configuring Your Computer screen is displayed once again.
12) Select **Step 4: Examine required switches** and press Enter. Make note of the boards in this screen that are indicated by an arrow. The arrow indicates the boards installed which have jumpers and DIP-switches to be physically set.
13) After taking note of the board jumper settings, exit this environment abd return to the Steps in Configuring Your Computer screen.

14) Select **Step 5: Save and exit** and press Enter.

15) Select **Save the configuration and restart the computer**. Press Enter to store the configuration.

16) Compare the settings of the board(s) already installed and the ISA board you wish to install with those of step 13 and make the appropriate modifications.

17) Install the board into the system.

CONFIGURING THE SCSI CONTROLLER FOR NEW DRIVES

After physically installing a new peripheral you will need to check that the SCSI controller is configured correctly. The following four parameters must be considered:

Send Start Unit Command:
Defines the disk initialization mode. The HDUs are not automatically initialized when the computer is powered on, but only after having received the relative SCSI command from the controller. This avoids overloading the power supply. In this mode the SCSI controller progressively initializes all the HDUs and other devices.

Maximum Sync Xfer Rate:
Defines the data transfer rate between the peripheral and controller. The values which can be set for each peripheral are within the 3.6 MB/s to 10 MB/s range. If the device does not support the maximum 10 MB/s transfer rate, lower this value to the needs of the specific device.

Extended translation for device > 1 GByte:
Allows operating systems like MS-DOS to exceed to 1024 cylinder limit and therefore be able to handle HDUs with a capacity greater than 1 GB. This parameter must be set to Enabled for MS-DOS when installing hard disks of this capacity. The Digital DSP3105 HDU has the highest capacity. Set this parameter to Disabled for operating systems which do not have this limitation, such as UNIX and Novell.

Support More Than Two Drives:
Enables or disables the SCSI BIOS to support more than two HDUs. This parameter must therefore be set to Enabled for all operating systems (MS-DOS, from release 5.0) if more than two SCSI hard disk drives are installed in the system.

Proceed as follows to activate these parameters:

1) Go to **Step 3: View or edit details.**

2) Select logic slot 9, dedicated to the SCSI controller, and press Enter.

3) Select the **BIOS and Device Configuration** parameter and press Enter.

4) In the new window displayed, select **Device Configuration** and press Enter.

5) In the Configuration Setting for SCSI Devices window, select the parameter to be modified for the drive installed (each drive is identified by a progressive number from 0 to 6) and press Enter.

All other parameters available for the configuration of the SCSI controller must not be changed since they guarantee correct operation and top system performance with the preset default values.

PLUG AND PLAY TECHNOLOGY - ISA CONFIGURATION UTILITY (ICU)

The M6-750, M6-750S, M6-760, M6-760S, M6-770, M6-770S, M4-82, PCS52E, M6-640 and M6-640 DP Personal Computers comply with the Plug&Play specifications which have been designed to simplify the configuration procedures for these systems.

With this new technology new generation PCI or ISA boards are automatically recognized and configured by the system after being installed.
And with the **ICU (ISA Configuration Utility)**, this technology also simplifies the configuration of normal ISA boards (the earlier AT-compatible boards).

The ICU is a program which operates in both the MS-DOS and Windows environments. Users must run this program before installing an optional ISA (AT) board or whenever the system detects conflicts which can only be solved through operator intervention.

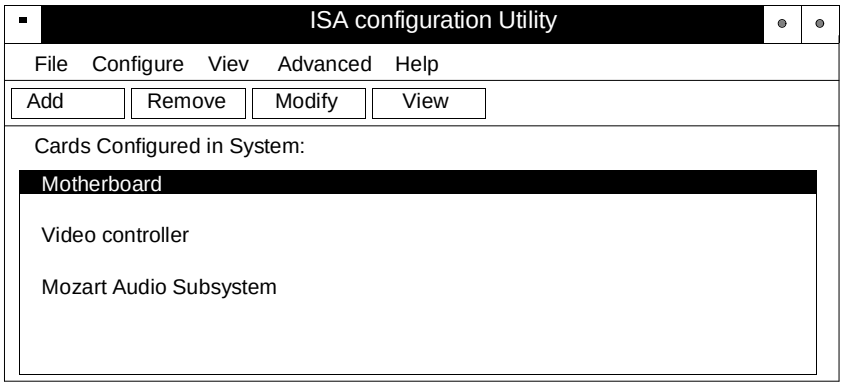
The program provides information on the current configuration and therefore on the resources already used. With this information the ISA board can be correctly configured and consequently installed in the computer.
The ICU also allows to modify the allocation of system resources, and is therefore capable of sloving any conflict which may occur when optional boards are installed.

The ISA Configuration Utility (ICU)

This utility can be launched in the following two ways:

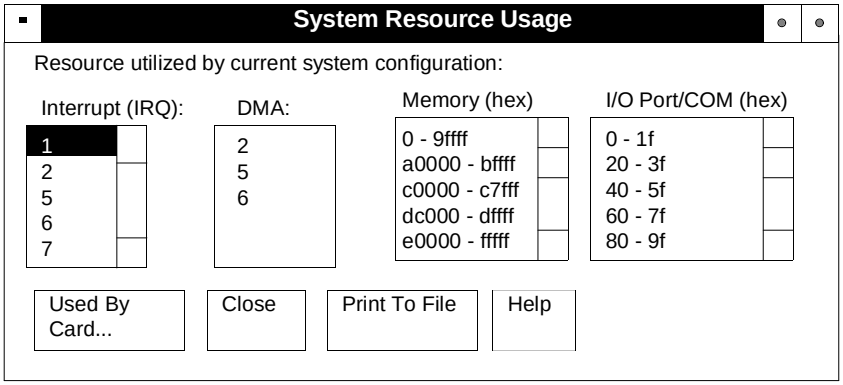
- In the case of MS-DOS, type the ICU command at the operating system prompt.
- In the case of Windows, click on the this utility's icon.

A screen similar to the following is displayed:



The above screen has four main options: View, Modify, Remove and Add.

View
This option displays which resources (Interrupts, DMA channels, memory addresses, I/O addresses) are using motherboard devices and any expansion board which may be installed on the bus. Following is a typical screen displayed:



H

Add
This option must be used when adding an optional non-Plug&Play ISA AT board in the system. Three cases may arise:

1) The board is listed with the boards whose configuration file (*.cfg) is already in the .CFG file database of the ICU. In this case simply select the board from the menu and the possible resources which can be assigned to this board are automatically displayed. The board will be configured according to what is defined in this phase. For example, if IRQ7 is defined in the interupt field of the ICU interface screen, the board will be jumpered or configured to have an IRQ7 interrupt.
2) The board has no configuration file in the ICU, but this file is stored in a specific diskette. In this case the .CFG file database of the ICU must be updated with the specific file for the board to be installed. Once this operation has been performed, proceed as explained in the previous case.
3) The board has no configuration file. In this case the user has to decide which resources to assign to the board by referring to the documentation provided with the board. If the resources assigned to the board cause conflict with other system resources, the ICU will issue an error message.

Modify
This option modifies the assignment of resources to the different system devices. This is useful when adding boards which must use resources already assigned to system boards or devices. Two different situations may occur:

1) Resources used by Plug and Play devices. In this case the system BIOS is capable of automatically changing the resources assigned to Plug and Play devices in the event a board is installed which must use a resource already assigned to another device.
2) Resources used by non-Plug and Play devices. In this case the allocation of resources must be made manually. When a changing the resource assigned to a board, the board will have to be consequently jumpered and configured.

Remove
Removes a board from the list of boards taken into consideration by the ICU.

To render the ICU concept more understandable, following are examples of the use of this utility in three different situations:

INSTALLING A PCI BOARD

The system is automatically configured in this case. The ICU is only used to display the resources assigned to the different system devices.

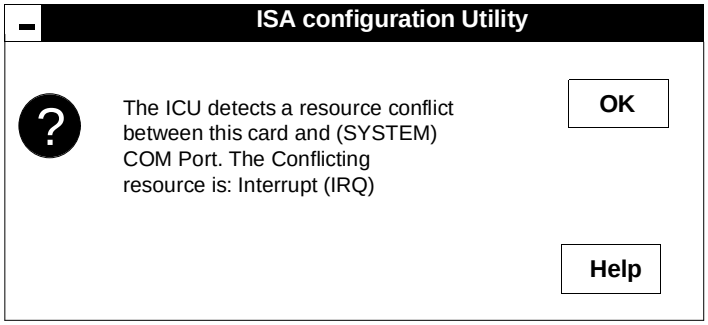
INSTALLING AN ISA AT BOARD SUPPORTING PLUG AND PLAY FEATURES

Also in this case the system is automatically configured. With respect to PCI boards, however, AT boards may have limitations in automatically reallocating the resources. If these limitations do exist, they will be indicated on a case per case basis. Currently ISA AT Plug and Play boards are not installed on this system.

INSTALLING AN OLD ISA AT BOARD WHICH DOES NOT SUPPORT PLUG AND PLAY FEATURES

Proceed as follows to install these kind of boards:

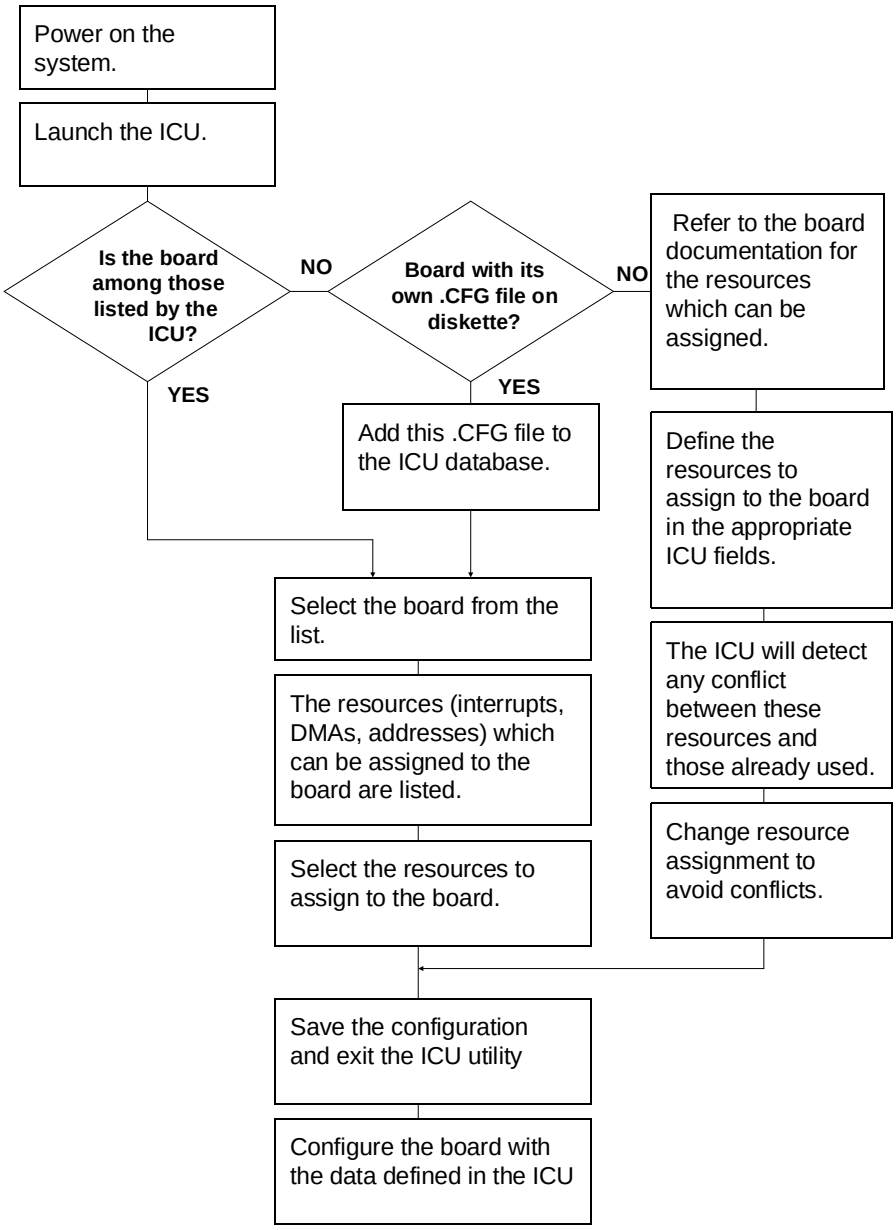
1) Power on the system and run the ICU.
2) Three different situations can occur as already explained in the section on the Add option of the ICU.
   - The board is listed with those whose configuration file (*.cfg) is already integrated in the . CFG file database of the ICU.
   - The board has no configuration file in the ICU, but this file is provided on diskette.
   - The board has no configuration file at all.
3) Whichever situation occurs, the resources to be used with this board (interrupts, DMAs, memory addresses and I/O addresses) must be defined in the different fields displayed in the operator interface screen.
4) If conflicts are detected between the resources assigned to the board and those used by the system, the ICU will warn the operator by displaying an error message similar to the following.



5) Make note of the resources assigned to the boards.
6) Save the configuration of the system resources and power off the system.
7) Configure the board jumpers according to the information of the ICU.
8) Install the board in the system.

NOTE: All information on the use of the ISA Configuration Utility are provided in an online manual. You can use this manual by clicking on the relative icon located in the same Windows group containing the ICU.

The following block diagram shows the operations which must be carried out when installing the boards in a Plug and Play system.



H

ADD NEW HARDWARE UTILITY

This configuration utility is integrated in Windows 95 and is therefore only used on personal computers running this operating system.

Like the ICU, it is used to optimize the allocation of system resources in order to avoid conflicts.

NOTE: Before activating the utility it is suggested that the device to be configured be already installed.

Proceed as follows to configure the additional hardware devices:

1) Click on the **Start** button.
2) Position the mouse cursor on **Setting** and select **Control Panel**.
3) Once the Control Panel is displayed, double click on the **Add New Hardware** program.
4) After activating the Add New Hardware program relating to the installation of additional hardware, follow the instructions displayed.

■