SYSTEM SOFTWARE CONFIGURATION
(SETUP UTILITY)

The software configuration utilities allow certain Personal Computer operating parameters to be set.

These utilities are supplied with the individual systems, and in the following different forms:

- In the SYSTEM TEST diskette
- In the CUSTOMER TEST diskette
- In the BUILT-IN SETUP resident program
- In programs resident in the System Regions of the hard disk drives
- In BIOS-integrated programs.

This chapter deals with the following configuration programs:

SETUP Utility for AT Systems Stored on System Test and Customer Test Diskettes

The following tabel lists in alphabetical order all the parameters that can be defined using these utilities, in addition to the possible options which vary according to the Personal Computer model.

NOTE: The SETUP utilities for the M300-28 Personal Computer are not found on the User Diskette nor on the System Test diskette. The utilities for this system are stored in the system BIOS and can be recalled by pressing the CTRL, ALT and ESC keys simultaneously when the SETUP prompt is displayed during the Power On Diagnostics. This Personal Computer model will be described in the following table since it is similar to other systems of the Olivetti line of Personal Computers.

PARAMETER	DESCRIPTION	P.C.	OPTIONS
ADDITIONAL SETUP	Allows you to define the content of each single allocation in CMOS RAM	M290 M250 M250 E M300 M380 XP1/3/5 XP4/7/9	See the EXTENDED SETUP FOR CMOS RAM section in this chapter.
		M380 XP1/3/5 XP4/7/9	See the EXTENDED SETUP FOR NV RAM section in this chapter.

PARAMETER	DESCRIPTION	P.C.	OPTIONS
BASE MEMORY SIZE	Indicates the size of the system's base memory	M290 M380 XP1/3/5 XP4/7/9	640 KB default - 512 KB - 384 KB - 256 KB
		M250 M250 E M300-05 M300-10 M300-01 XP/9 *	640 KB default - 512 KB
		M300	640 KB
		M386/25 M380-40	640 KB default - 512 KB ☞ **see EXTENDED CMOS DATA BASE MEMORY** If 512 KB is selected and there is no memory expansion installed, the EXTENDED CMOS DATA BASE MEMORY must be set to "Above 512 KB Disabled".
BASE MEMORY SIZE	Indicates the size of the system's base memory	M400-10 M400-40 M400-60 M300-08 M300-15 M300-30	640 KB - Base memory cannot be changed on these systems.
		M480-10 M480-20	640 KB - Base memory cannot be changed on these systems.
		M300-28	512 KB - 640 KB default.
EXTENDED CMOS DATA BASE MEMORY	Allows you to enable or disable memory between 512 KB and 640 KB	M386/25 M380-40 M380 XP/1/3/5 XP4/7/9 XP9 *	All Base Memory Enabled. Above 512 KB Disabled - This second option can be used: 1 For applications that recognize only 512 KB of base memory (e.g. networks). 2 When boards with on-board memory have to be installed between the 512 KB and 1 MB addresses so base memory between the 512 KB and 640 KB addresses has to be disabled. ☞ **see BASE MEMORY** In the first case the BASE MEMORY option must be set at 512 KB. In the second case it must be set at 640 KB. ☞ More recent M480-10 and M480-20 models

BIOS CACHEABILITY	Allows you to enable or disable the cache of the system or video BIOS.	M300-28	- System and BIOS
			   The entire BIOS is cached.
			- System
			   Only system BIOS is cached.
			- Video
			   Only video BIOS is cached.
			- Disable
			   The BIOS is not cached.

BUSINESS AUDIO SETUP	Allows you to define the audio board's base address	M6-4xx	- Base address 534h - Base address 608h - Audio board not installed

PARAMETER	DESCRIPTION	P.C.	OPTIONS
CACHE 12 - 16 MB	Allows you to enable or disable the cache on memory segment 12 MB to 16 MB.	M480-10 M480-20 XP9 * M6-4xx	Enabled Disabled ☞ More recent M480-10 and M480-20 models
CACHE CONTROLLER	Allows you to enable or disable the motherboard cache controller.	M386/25 M380-40 M400-10 M400-40 M400-60 M480-10 M480-20 M300-30 M4-34	Enabled Disabled ☞ More recent and earlier M480-10 and M480-20 models
		M300-10 M6-4xx M4-XX PCS YY	Enabled Disabled ☞ **see CACHING SEGMENT and DISABLING CACHE ON SEGMENT**
CACHE MEMORY	Allows you to enable or disable cache memory on each system memory segment.	M386/25 M380-40 M400-10 M400-40 M400-60	Cache 0 - 2 MB Enabled/Diasbled Cache 2 - 4 MB Enabled/Diasbled Cache 4 - 6 MB Enabled/Diasbled Cache 6 - 8 MB Enabled/Diasbled Cache 8 - 10 MB Enabled/Diasbled Cache 10 - 12 MB Enabled/Diasbled Cache 12 - 14 MB Enabled/Diasbled Cache 14 - 16 MB Enabled/Diasbled
CACHE MEMORY	Allows you to enable or disable cache memory.	XP4/7/9 XP9 *	Enabled Cache enabled Disabled Cache disabled

CACHING SEGMENT	Allows you to select, within the first MB of memory, the specified memory blocks that can be cached,	M300-10	Caching seg. 080000h - 09FFFFh
			           512 KB 640 KB (128 KB)
			Caching seg. 0A0000h - 0BFFFFh
			           640 KB 768 KB (128 KB)
			Caching seg. 0C0000h - 0DFFFFh
			           768 KB 869 KB (128 KB)
			Caching seg. 0E0000h - 0EFFFFh
			           869 KB 960 KB (64 KB)
			☞ **see CACHE CONTROLLER**
			This option can be used if enabled by the cache controller.

CACHING SEGMENT C000	Allows you to enable or disable caching on the 32 KB memory segment starting at C000.	M386/25 M380-40 M400-10 M400-40 M400-60	Enabled Disabled - In the case of boards with dual port memory that have to be mapped at this segment (for example intelligent multiport boards).

PARAMETER	DESCRIPTION	P.C.	OPTIONS
CACHING SEGMENT C800	Allows you to enable or disable caching on the 64 KB memory segment starting at C800.	M300-30	- Enabled Cache enabled on the segment starting at C800. - Disabled Caching on this segment is disabled. This option is used when boards with dual port memory have to be installed at this address.
CURRENT IDLE TIME	This option is part of the *Power Management Utility* for PCs complying with EPA standards	M6-400	From 1 to 60 minutes. Indicates the time lapse before the Personal Computer switches into STANDBY mode when not being used.
DATE	Indicates the current date in the following format: month, day and year	M290 M250 M250 E M300 M300-28 M380 XP/1/3/5 XP4/7/9	mm - gg - aaaa where: mm = month from 01 to 12 gg = day from 01 to 31 aaaa = year
DISABLE CACHE SEGMENT	Allows you to disable the cache on operator defined memory segments.	M300-30	The operator must define the size of the memory area that must not be cached as follows: "X - Y" where X is the lower limit and Y is the upper limit of the memory area in which caching is disabled.
DISABLING CACHE ON SEGMENT	Allows you to disable cache on a 1 MB memory block within the 1 MB to 16 MB address range (100000h-FFFFFF h)	M300-10	A maximum of 5 MB can be taken away from the cache controller. By pressing the F5 and F6 keys you can select the 1 MB memory blocks that are not to be cached. ☞ **see CACHE CONTROLLER** This option can only be used if the cache controller is enabled.
ENABLE DISABLE SERIAL	Allows you to enable, disable and define the addresses of the system's two serial ports.	M300-30	9-pin-Disable 25-pin-disabled 9-pin-Disable 25-pin-COM1 .... 9-pin-COM1 25-pin- COM3 .... 9-pin-COM4 25-pin-COM3
EXTENDED CMOS DATA or EXTENDED SET UP	Gives access to a new configuration parameter screen.	M386/25 M300-05 M300-10 M300-01 M380-40 M300-28	In this new sceen you can define other system configuration parameters.

PARAMETER	DESCRIPTION	P.C.	OPTION
EXTENDED MEMORY SIZE	Indicates the size of extended memory.	M290 M300	Memory can be expanded at 128 KB steps until reaching a maximum of 8576 KB for a total of 9 MB installed (1024x9 = 9216). 640 KB base memory 8576 KB maxiimum extended memory 9216 KB total system memory
		M250 M250 E	Memory can be expanded at 128 KB steps until reaching a maximum of 16348 KB for a total of 17 MB installed. (1024 x 17 = 17408 - 1024 = 16384 KB 17408 KB total memory
		M386/25	Memory can be expanded at 128 KB steps until reaching a maximum of 18432 KB for a total of 19 MB installed (1024 x 19 = 19456 - 1024 = 18432) 19456 KB total memory. ☞ **see SHADOW MEMORY**
		M300-05 M300-10 M300-01	Memory can be expanded at 32 KB or 1 MB steps until reaching a maximum of 16672 KB for a total of 17 MB installed. (1024 x 17 = 17408 - 640 - 96 = 16672 KB). This system can consider all the memory installed as normal read/write memory, dedicating only 96 KB to the BIOS code. Therefore the 384 KB that range from 640 KB to 1 MB, excluding the 96 KB of dedicated memory, are entirely recovered. For example: total system memory = 4096 KB Base memory = 640 KB System and video BIOS memory = 96 KB Extended memory = 4096 - 640 - 96 = 3360
		M380-40	Memory can be expanded at 128 KB or 1 MB steps until reaching a maximum of 64766 KB for a total of 64 MB installed (1024 x 64 = 65536 - 640 - 128 = 64768 KB) 65536 KB total memory. This system has the possibility of considering all the memory installed as norma read/write memory, dedicating only 128 KB the the BIOS code. Therefore the 384 KB ranging from 640 KB to 1 MB, excluding the 128 KB of dedicated memory, are all recovered. For example: Total system memory = 4096 KB Base memory= 640 KB System and video BIOS memory = 128 KB Extended memory: 4096 - 640 - 128 = 3328

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PARAMETER	DESCRIPTION	P.C.	OPTION
EXTENDED MEMORY SIZE	Indicates the size of extended memory.	M400-10 M400-40 M400-60 M300-08 M300-15 M480-10 M480-20 M300-30	On these systems, the chip automatically calculates the size of extended memory by taking base memory, shadow memory and the bytes that are recovered after remapping the entire memory, into consideration. ☞ For the M480-10 and M480-20, this is only valid for the more recent models.
		M380 XP/1/3/5 XP4/7/9	Memory is expanded at 128 KB steps until reaching a maximum of 64896 KB for a total of 64 MB installed. (1024 x 64 = 65536 - 1024 = 64896 KB). 640 KB Base memory 64896 KB Maximum extended memory 65536 KB Total system memory
		XP9 *	Memory is expanded at 128 KB steps until reaching a maximum of 17408 KB for a total of 18 MB installed. (1024 x 64 = 18432 - 1024 = 17408 KB). 640 KB Base memory 17408 KB Maximum extended memory 18432KB Total system memory
EXTENSION MEMORY COMPATIBLE	Allows you to enable or disable memory after the 16th MB of system memory.	M386/25 M380-40 M400-10 M400-40 M400-60 M480-10 M480-20 M300-30 M6-4xx M4-XX PCS YY	Enabled Disabled ☞ More recent M480-10 and M480-20 models
FEATURE CONNECTOR CONFIGURA-TION	Allows you to disable the system board's DAC. This is necessary whenever a video controller that uses its own DAC is installed on the system bus.	M4-XX PCS YY	Enabled Disabled
FLASH BIOS PROGRAM ENABLE	Allows you to write to the ROM BIOS so that the BIOS code can be updated.	M300-28	The ROM BIOS must be write enabled so that the stored BIOS can be updated. After updating the BIOS, disable the possibility of writing to ROM.
FLOPPY DISK ACCESS SPEED	Allows you to change the hard disk access times.	M386/25 XP4/7/9 XP9 *	Fast - Normal floppy access time Slow - AT-compatible access time (8 MHz)

PARAMETER	DESCRIPTION	P.C.	OPTIONS
FLOPPY DISK AUTOFLOW	Allows you to change the floppy disk access times.	M380-40	Disabled - Normal floppy access time Enabled - AT-compatible access time (8 MHz)
FLOPPY DRIVE #1	Indicates the storage capacity of floppy disk drive A.	M290 M300 M386/25 300-05 M300-10 M300-01 M380-40	"Not present" - 360 KB - 1.2 MB - 1.44 MB
		M250 M250 E	"Not present" - 720 KB - 1.44 MB
		M400-10 M400-40 M400-60 M300-30 M6-xx	"Not present" - 1.2 MB - 1.44 MB - 2.88 MB as 1.44 MB - 2.88 MB The 2.88 MB as 1.44 MB option is used when the operating system does not recognize the 2.88 MB drive installed (e.g. UNIX)
		M300-08 M300-15 M380 XP1/3/5 XP4/7/9	"Not present" - 360 KB - 720 KB - 1.2 MB - 1.44 MB
		M480-10 M480-20	☞ For the more recent models only. "Not present" - 1.2 MB - 1.44 MB
		M300-28	"Not present" - 720 KB - 360 KB - 1.44 MB - 1.2 MB
		XP9 * M4-34 M4-XX PCS YY M6-400	"Not present" - 1.44 MB - 1.2 MB
		M290 M300 M386/25 M300-05 M300-10 M300-01 M380-40	"Not present" - 360 KB - 1.2 MB - 1.44 MB
		M250 M250 E	"Not present" - 720 KB - 1.44 MB
		M400-10 M400-40 M400-60 M300-30 M6-4xx	"Not present" - 720 KB - 360 KB - 1.44 MB - 2.88 MB - 2.88 MB as 1.44 MB

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PARAMETER	DESCRIPTION	P.C.	OPTIONS
FLOPPY DRIVE #2	Indicates the storage capacity of floppy disk drive B.	M300-08 M300-15 M380 XP1/3/5 XP4/7/9	"Not present" - 360 KB - 720 KB - 1.2 MB - 1.44 MB
		XP9 *	"Not present" - 360 KB - 1.2 MB - 1.44 MB
		M4-34 M4-XX PCS YY M6-400	"Not present" - 1.2 MB - 1.44 MB
		M480-10 M480-20	"Not present" - 1.2 MB - 1.44 MB - 360 KB - 720 KB
		M300-28	"Not present" - 720 KB - 360 KB - 1.44 MB - 1.2 MB
HARD DISK #1	Indicates the first hard disk drive installed	M290 M250 M250 E M300 M386/25 M300-05 M300-10 M380-40 M480-10 M480-20 M380 XP1/3/5 XP4/7/9 XP9 *	"Not present" - Number indentifying the type of hard disk installed. The hard disks that can be installed in each Personal Computer are listed in the computer's specific chapter. ☞ Earlier M480-10, M480-20 models.

PARAMETER	DESCRIPTION	P.C.	OPTIONS
HARD DISK #1	Indicates the type of hard disk installed as first drive.	M400-10 M400-40 M400-60 M300-08 M300-15 M480-10 M480-20 M300-30 M6-4xx M4-34 M4-XX PCS YY M6-400	These systems use the hard disk self-acknowledge feature. ☞ The earlier M400-10 models do not have this feature, therefore the type of hard disk installed must be defined. (See the HDU table in the M400-10 chapter). ☞ More recent M480-10 and M480-20 models. The following options are available for the other systems: **Not Present** If no hard disk is installed. **Standard** The system automatically recognizes the type and capacity of the HDU installed. Must be used for HDUs over 528 MB. **High Capacity** The system automatically recognizes the type and capacity of the HDU installed. Must be used for HDUs over 528 MB using the Olivetti OS/2, IBM OS/2 and MS-DOS operating systems. **Compatible** Must be used for the HDUs that are compatible with the system but do not have the self-acknowledge feature, or on those HDUs that have this feature but have been used previously on other systems. By selecting this option a list of HDUs with predefined parameters will be displayed. **Not Standard** Allows you to define the parameters of an HDU that does not have the self-acknowledge feature and that is not listed among compatible HDUs. The tables that list the HDUs that are compatible with these systems can be found in the computer's specific chapter.

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PARAMETER	DESCRIPTION	P.C.	OPTIONS
HARD DISK #1	Indicates the type of hard disk installed as first drive	M300-28	**Auto-configurable (Y/N)** **Y** - HDUs with the selg-acknowledge feature. The system automatically recognizes the type of hard disk installed and its capacity. **N** - Compatible HDUs. These HDUs do not have the self-acknowledge feature but their parameters are stored in the system BIOS. You only have to indicate the number identifying the type of HDU (from 1 to 47). - Non-standard and non-compatible HDUs. These HDUs are not self-configurable and theirt parameters are not stored in the system BIOS. You therefore need provide the operating parameters for theseHDUs by selecting type 48. The table listing the HDUs supported by the system is provided in the system's specific chapter.
HARD DISK #2	Indicates the type of hard disk installed as second drive.	M386/25 M300-05 M300-10 M300-01 M380-40 M480-10 M480-20 M380 XP1/3/5 XP4/7/9 XP9 *	"Not present" - Number indicating the type of hard disk installed. Depending on the Personal Computer, see the HDU table listed in the computer's specific chapter. ☞ Earlier M480-10, M480-20 models
		M400-10 M400-40 M400-60 M300-08 M300-15 M480-10 M480-20 M300-30 M6-4xx M4-34 M4-XX PCS YY M6-400	The second hard disk is configured in the same way as the first hard disk. ☞ More recent M480-10, M480-20 models.
HDU OPERATING MODE	Allows you to increase the speed at which the hard disk controller accesses the system data bus.	M386/25 M300-05 M300-10 M300-01 M380-40	Fast - Fast access to the data bus. This option is only valid for CONNER hard disks. Standard - Standard speed of AT systems.
		M400-10 M400-40 M400-60	Fast - Fast access to the data bus. Standard - Standard speed of AT systems. ☞ More recent M480-10, M480-20 models.

PARAMETER	DESCRIPTION	P.C.	OPTIONS	
I/O DELAY	Allows you to delay access to the I/O ports.	M380 XP1/3/5	No delay 500 ns 1000 ns 1500 ns	
IRQ 12	Allows you to assign interrupt level 12 to the mouse	M386/25 XP9 *	Enabled	Interrupt 12 is assigned to the mouse.
			Disabled	Interrupt 12 is available for other peripherals.
ISA MEMORY CACHING	Allows you to enable or disable the cache on the first 16 MB of memory.	M300-28	- All enable All 16 MB can be cached. - 16 MB disable None of the 16 MB can be cached. - 15-16 M, 14-16 M, 13-16 M disable Either one or all three areas cannot be cached.	
INT15 MEMORY REPORT	Allows you to enable or disable memory after the 16th MB of system memory.	M300-28	All enable	The system acknowledges the entire memory installed.
			16 MB	The system acknowledges only the first 16 MB of memory.
32K SEGMENT SHADOW BLOCKS	Different attributes can be assigned to memory segments C800, D000, D800, E000 and E800, which can be remapped and cached.	M300-28	- Disabled Does not allow the selected segment to be remapped in a different memory address area (normal AT operation). - Shadow The selected segment can be remapped in a different memory address area. - Shadow and cache The selected segment can be remapped and cached.	

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PARAMETER	DESCRIPTION	P.C.	OPTIONS
80287 - 80387 - i487 MATH COPROCESSOR	Indicates whether the coprocessor is present or not.	M290 M250 M250 E M300 M386/25 M300-05 M300-10 M300-01 M380-40 M400-10 M400-40 M400-60 M300-08 M300-15 M480-10 M480-20 M300-30 M380 XP1/3/5 XP4/7/9 XP9 *	"Not Present" - "Present" ☞ For the M480-10 and M480-20, this is valid for the more recent models only.
MATHEMATIC COPROCESSOR TYPE	Allows you to select the type of coprocessor installed in the system.	M386/25	Not Present Intel 80387 Weitek 3167
MEMORY BETWEEN 512 AND 640 KB	Allows you to enable or disable memory between 512 KB and 640 KB.	M400-10 M400-40 M400-60 M480-10 M480-20 M300-30 M6-4xx M4-XX PCS YY M6-400	Enabled Disabled - This second option is used for the same reasons explained in the previous section: "BASE MEMORY EXTENDED CMOS DATA" ☞ More recent M480-10 and M480-20 models.
MEMORY DELAY	Allows you to delay memory access.	M380 XP1/3/5	No delay 2000 ns 250 ns 2250 ns 500 ns 2500 ns 750 ns 2750 ns 1000 ns 3000 ns 1250 ns 3250 ns 1500 ns 3500 ns 1750 ns 3750 ns
MEMORY 15 - 16 MB	Allows you to enable or disable memory between the 15th and 16th MB.	M4-XX PCS YY M6-400	- Enabled - Disabled This option must be used wheneverboards with on-board dual port memory are installed are addressed at E00000 h.
MONITOR RESOLUTION	Allows you to select the video resolution.	M480-10 M480-20	☞ More recent M480-10 and M480-20 models. Standard Hight - For high resolution monitors.

PARAMETER	DESCRIPTION	P.C.	OPTIONS
MONITOR UTILITY	Allows you to define the type of monitor connected to the system and its vertical refresh rate	M4-XX PCS YY M6-400	- Monitor Type - Allows you to select the type of monitor connected to the system. - Refresh Rate - Allows you to select the monitor's vertical refresh rate. The refresh rate depends on the type of monitor.
MOUSE PORT	Enables the mouse port.	M300-28	This port must be enabled when the mouse is installed.
ON BOARD PARALLEL PORT	Allows you to configure the I/O address of the system board's parallel port.	M6-4xx M4-XX PCS YY M6-400	- Self-configuration - 3BC h - 378 h - 278 h
PASSWORD ACCESS	Enables or disables the system password.	XP4/7/9	Password enabled. Password disabled.
POWER ON KEYBOARD TEST	Allows to ignore keyboard errors.	M300-28	On - The system acknowledges keyboard errors. Off - The system ignores keyboard errors.
POWER ON MEMORY TEST	Allows you to set the memory size on which the test will be run.	M386/25 M380-40 M400-10 M400-40 M400-60 M480-10 M480-20 M300-30 M380 XP1/3/5 XP4/7/9 XP9 * M6-4xx M4-34 M4-XX PCSYY M6-400	None Large Medium Small ☞ More recent M480-10 and M480-20 models.
PRIMARY CACHE CONTROLLER	Allows you to enable the CPU cache controlle	M300-28	Enabled Disabled

PARAMETER	DESCRIPTION	P.C.	OPTIONS
PRIMARY CRT ADAPTER or VIDEO	When the system is powered on, indicates the type of controller and the resolution of the monitor connected.	M290 M250 M250 E M300 M380 XP1/3/5 XP4/7/9	- Enhanced Graphics - Color, 40 columns - Color, 80 columns - Black and white, 80 columns.
		M386/25 M300-05 M300-10 M300-01 M380-40 M400-10 M400-40 M400-60 M300-08 M300-15 M480-10 M480-20 M300-28 M300-30 XP9 * M6-4xx M4-34 M4-XX PCS YY M6-400	☞ More recent M480-10 and M480-20. - Enhanced Graphics - For any monitor connected to the motherboard VGA video controller. - Ext. CGA color, 40 columns - For an external CGA video controller connected to a color monitor. - Ext. CGA color, 80 columns - For an external CGA video controller connected to a color monitor.i - Ext. MDA - For an external video controller connected to a monochrome monitor. ☞ **See VIDEO CONTROLLER**
PRIMARY MONITOR TYPE	Allows you to define the type of monitor connected to the system.	M380 XP1/3/5 XP4/7/9 XP9 *	Monochrome Color
PRIMARY UNIT 3.5" OR 5.25"	Allows you to switch the floppy disk drive identifiers: A becomes B and vice versa.	M4-34	- Primary Drive A. - Primary Drive B
PS/2 MOUSE COMPATIBILITY	Allows you to free interrupt 12 that is usually occupied by the mouse to guarantee PS/2 compatibility.	M300-05 M300-10 M300-01 M380-40 M400-10 M400-40 M400-60 M480-10 M480-20 M300-30 M6-4xx M4-34 M4-XX PCS YY M6-400	- PS/2 compatibility disabled PS/2 compatibility disabled and interrupt 12 assigned to the mouse. - PS/2 compatibility enabled PS/2 compatibility enabled and interrupt 12 available for other peripherals.

PARAMETER	DESCRIPTION	P.C.	OPTIONS
PS/2 PARALLEL PORT COMPATIBILITY	Allows you to select the operating mode of the parallel port.	M300-05 M300-10 M300-01 M380-40 M400-10 M400-40 M400-60 M300-08 M300-15 M480-10 M480-20	Disabled - The parallel port will operate in unidirectionally and therefore without PS/2 compatibility. Enabled - The parallel port will operate in bidirectionally and therefore with PS/2 compatibility. ☞ More recent and earlier M480-10 and M480-20 models.
SCROLLING TYPE	Allows you to change the speed at which the text scrolls on the screen.	M380 XP1/3/5 XP4/7/9 XP9 *	Fast Slow Flicker Dual Port
SECOND ON BOARD SERIAL PORT	Allows you to enable or disable the system board's second serial port.	M6-4xx M4-XX PCS YY M6-400	- Enabled - Disabled On systems with two serial ports on the motherboard, these ports are automatically configured by the system depending on: 1) the presence of other ports on the bus 2) the setting of this parameters. This option is not available for systems whose second serial port has been replaced by a game port.
SELECT IDLE TIME	This option is part of the *Power Management Utility* for PCs complying with EPA standards	M6-400	From 1 to 60 minutes. Indicates the time lapse before the personal computer switches into STANDBY mode when not being used.
SET DATE AND TIME	In the more recent systems, the date and time can be changed with an appropriate utility.	M386/25 M300-05 M300-10 M300-01 M380-40 M400-10 M400-40 M400-60 M300-08 M300-15 M300-30 XP9 *	This utility is found on the Customer Test or System Test diskettes. On new systems the date and time can no longer be changed with the Setup utility.
		M480-10 M480-20	☞ Earlier M480-10 and M480-20 models were configured through BUILT IN SETUP and EXTENDED SETUP. Only the more recent systems can be configured through the SETUP utility found on the User and System Test diskettes.

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PARAMETER	DESCRIPTION	P.C.	OPTIONS
SHADOW MEMORY	The ROM BIOS is copied into system RAM at the same logic addresses.	M250 M250 E M300	- Enabled for system BIOS only. - Enabled for system and video BIOS. - Disabled. 128 KB of extended memory are lost when shadowing is enabled for the system and video BIOS.
		M386/25	- Enabled for system BIOS only. - Enabled for system and video BIOS. - Olivetti mode (The 1st MB of memory is copied at the addresses starting at 2 GB. This option can be used by operating systems like UNIX or memory managers like OEMM 386) ☞ **See EXTENDED MEMORY SIZE** If Olivetti mode is selected 256 KB must be removed from extended memory size. - Disabled. 128 KB of extended memory are lost when shadowing is enabled for system and video BIOS.
		M300-05 M300-10 M300-01	- Enabled for system BIOS only. - Enabled for system and video BIOS. - Disabled. The system looses 96 KB of memory.
		M380-40	- Enabled for system BIOS only. - Enabled for system and video BIOS. - Disabled. The system looses 128 KB of memory. ☞ **See VIDEO OPTION ROM SEGMENT**
		M400-10 M400-40 M400-60	- Enabled for system BIOS only. - Enabled for system and video BIOS at the E000:0000 h segment. - Enabled for system and video BIOS at the E800:0000 h segment. - Disabled.
		M300-08 M300-15	- Enabled for system BIOS only. - Enabled for system and video BIOS at the E800:0000 h segment. - Disabled.
		M480-10 M480-20	- Disabled. - Enabled for system BIOS. ☞ More recent M480-10 and M480-20.
		M300-30	- Enabled for system BIOs only. - Enabled for system and video BIOS at the C000:0000 h segment. - Enabled for system and video BIOS at the E000:0000 h segment. - Enabled for system and video BIOS at the E800:0000 h segment. - Disabled.

PARAMETER	DESCRIPTION	P.C.	OPTIONS
SHADOW MEMORY	ROM BIOS is copied into system RAM at the same logic addresses.	M6-4xx M4-34	- Enabled for the system BIOS only. - Enabled for the system and video BIOS. - Disabled.
		M300-28	- Enabled for system BIOS only. 64 KB of system BIOS starting at address F000:0000 h 64 KB of video BIOS starting at address C000:0000 h - 64 KB of system BIOS starting at address F000:0000 h is enabled as system BIOS. - 64 KB of video BIOS starting at address C000:0000 h is enabled as video BIOS. - Disabled.
		M4-XX PCS YY M6-400	- Enabled for the system and video BIOS. - Enabled for the system BIOS, disabled for the video BIOS. This mode is used only if the video BIOS code is not the same as the one stored in the system board EPROM, but is stored in an optional video card to be installed on the system bus.
SPEAKER VOLUME	Allows you to select the speaker volume.	M300-05 M300-10 M300-01	00 is the lowest volume. 15 is the highest volume.
		M300-28	1/7 is the lowest volume. 7/7 is the highest volume.
SYSTEM BOARD PARALLEL PORT	Allows you to define the name and address of the motherboard parallel port.	M386/25 M380 XP1/3/5 XP4/7/9 XP9 *	Enabled - LPT 1 Enabled - LPT 2 Disabled
SYSTEM BOARD SERIAL PORT	Allows you to define the name and address of the motherboard serial port.	M386/25 M380 XP1/3/5 XP4/7/9 XP9 *	Enabled - COM 1 Enabled - COM 2 Disabled
SYSTEM SPEED or PROCESSOR SPEED	Allows you to change the speed of the operating system.	M386/25 M380-40 M300-28 XP4/7/9 XP9 *	Fast - Normal 25 MHz operating frequency. Slow - Slows the system down so that it simulates an 8 MHz AT system.
TIME	Indicates the current time in the hour, minutes and seconds format.	M290 M250 - M250 E M300 M300-28 M380 XP/1/3/5 XP4/7/9	oo - mm - ss where: 00 = hour from 00 to 23 mm = minutes from 00 to 59 ss = seconds from 00 to 59

H

PARAMETER	DESCRIPTION	P.C.	OPTIONS
VOLUME ADJUSTMENT UTILITY	In more recent systems the volume can be adjusted through an appropriate utility	M400-10 M400-40 M400-60 M300-08 M300-15	This utility is found on the Customer Test or System Test diskettes. On newer systems the volume can no longer be adjusted using the Setup utility.
VGA (VIDEO) OPERATING MODE	Gives the video controller quick access to the system's data bus.	M386/25 M300-05 M300-10 M300-01 M380-40 M400-10 M400-40 M400-60	Fast - Fast access to the data bus. Standard - Standard speed of AT systems.
VIDEO CONTROLLER or VIDEO STARTUP MODE	Allows you to configure the operating mode of the motherboard VGA video controller. (Video resolution when the system is powered on.)	M386/25	- OVC 80 x 25 on board - OVC Mono on board - OVC 40 x 25 on board ☞ **See PRIMARY CRT** This option has no effect if an external video controller has been defined in the PRIMARY CRT field.
		M300-05 M300-10 M300-01 M380-40 M400-10 M400-40 M400-60 M300-08 M300-15 M480-10 M480-20 M300-30 M6-4xx M4-34 M4-XX PCS YY M6-400	- Standard - OVC 80 x 25 on board - OVC Mono on board - OVC 40 x 25 on board ☞ **See PRIMARY CRT** This option has no effect if an external video controller has been defined in the PRIMARY CRT field. + More recent M480-10 and M480-20 models.
VIDEO CONTROLLER	Allows you to define the video controller installed in the system.	M380 XP1/3/5 XP4/7/9 XP9 *	OEC or other OGC PGC

PARAMETER	DESCRIPTION	P.C.	OPTIONS
VIDEO OPTION ROM SEGMENT	Allows you to copy the video ROM BIOS into system RAM at selected addresses.	M380-40 XP9 *	☞ **See SHADOW MEMORY** - ROM Video BIOS shadowing is disabled. In this case, the shadow memory parameter must be set to "disabled" or "System BIOS only". - E800:0000 Video BIOS copied to RAM address E800:000h. In this case the shadow memory parameter must be set to "System and Video BIOS". - E000:0000 Video BIOS copied to RAM address E000:0000 h. In this case the shadow memory parameter must be set to "System and Video BIOS".
VIDEO REFRESH RATE	Allows you to select the video vertical refresh rate.	M400-10 M400-40 M400-60 M300-08 M300-15 M300-28	60 Hz. For greater part of the video. 72 HZ. For ergonomic videos supporting a 640x480 video mode and with a 72 Hz vertical refresh rate. (Video modes 11 - 12 - 79)
		M300-30 M6-4xx M4-34	60 Hz. For greater part of the video 72 HZ. For ergonomic videos supporting 640x480 (11 - 12 - 79) and 768x1024 (5F and 60) video modes with a 72 Hz vertical refresh rate.

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NOTE:

M380	=	M380 - M380 C - M380 T
XP1/3/5	=	M380/XP1 - M380/XP3 - M380/XP5
XP4/7/9	=	M380/XP4 - M380/XP7 - M380/XP9
XP9*	=	M380/XP9 with BIOS releases 2.01 and later.
M6-4xx	=	M6-420, M6-440, M6-450, M6-460
M4-XX	=	M4-40, M4-42, M4-60, M4-62, M4-64, M4-65, M4-66
PCS YY	=	PCS 44/C, PCS 66/C

EXTENDED SETUP

This option allows you to define the contents of each single CMOS RAM location. Extended Setup is available on the following Personal Computers:

M290 - M250 - M250 E - M300 - M380 - M380/XP1 - M380/XP3 M380/XP5 - M380/XP4 - M380/XP7 - M380/XP9

When this function is activated the following screen is displayed:

CMOS RAM EDITOR								
	<------- Real Time Clock ------->		Stat Reg. A	Stat Reg. B		Stat Reg.C		
Addrss	00 01 02 03 04 05 06 07 08 09		0A	0B		0C		
Value	40 00 13 00 06 00 06 07 07 90		0 010 0110	00000010		0100 0000		
	Stat Reg. D	Diag Stat	Shutdown	Diskette	RS	Hard disk	RS	Equipment
Addrss	0D	0E	0F	10	11	12	13	14
Value	1 0000000	00000000	00000000	0010 0000	00	0111 0000	00	00 00 0001
	Base Mem	Ext Mem	Ex HD	<----------------------- Reserved -------------------->				
Addrss	15 16	17 18	19 1A	1B 1C 1D 1E 1F 20 21 22 23 24 25 26 27 28 29				
Value	80 02	00 01	1B 00	2A				
				00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00				
	<-- Rsvd ---.>	Checksum	Ext Mem	Cent	Info	<----------- Reserved ----------->		
Addrss	2B 2C 2D	2E 2F	30 31	32	33	34 35 36 37 38 39 3A 3B 3C 3F		
Value	00 00 00	01 2E	00 01	19	00	B1 B5 8C 81 F5 89 23 C6 21 11		

This screen enables you to alter most of the byte in CMOS RAM.
Addresses are hexadecimal. Clock values are BCD.
2-digit values are hexadecimal. 8-digit values are binary
Use <SPACE BAR> to move the cursor. Enter a digit to change the value at the cursor.
Press <ESC> to return to the previous menu

This screen indicates the address in hex format and the current contents in both binary and hex formats for each location. You can move the cursor from one location to another until reaching the one to be modified by pressing the space bar and backspace key.

The meaning of each CMOS RAM location is given in the following table.

BLOCK	P.C.	ADD.	DESCRIPTION
Real time clock	M290 M250 M250 E M300 M380 XP/1/3/5 XP4/7/9	00 01 02 03 04 05 06 07 08 09	Seconds Alarm on seconds. Minutes Alarm on minutes Hours Alarm on hours Day of the week Day of the month Month Year

BLOCK	P.C.	ADD.	DESCRIPTION
Stat Reg. A	M290 M250 M250 E M300 M380 XP/1/3/5 XP4/7/9	0A	**bit 7** 1 = Updates the Real Time Clock cycle. 0 = End of Real Time Clock update cycle. The hour, minutes, seconds, date and year are correct and available. **From bit 6 to bit 4** Selects the clock and calendar time base frequency. Must always be set at 010 = 32.768 KHz. **From bit 3 to bit 0** Selects the time base frequency dividing factor. Always set at 0110 = 1.024 KHz with a periodic interrupt every 976.562 us.

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BLOCK	P.C.	ADD.	DESCRIPTION

Stat Reg. B	M290
	M250
	M250 E
	M300
	M380
	XP/1/3/5
	XP4/7/9
		0B	**bit 7** 0 = Updates the RTC cycle with regular pulse.
			            1 = Interrupts the RTC update cycle so the settings
			                  can be changed.
			bit 6 0 = Disables periodic interruption of the RTC.
			            1 = Enables periodic interruption of the RTC (default 0)
			bit 5 0 = Disables alarm interruption.
			            1= Enables alarm interruption (default 0)
			bit 4 0 = Enables interruption at the end of the RTC
			                  update cycle.
			            1 = Disables interruption at the end of the RTC
			                  update cycle (default 0)
			bit 3 Not used.
			bit 2 0 = Sets the date and time in BCD format.
			            1 = Sets the date and time in binary format.
			bit 1 0 = The hours are expressed in the 12-hour format.
			            1 = The hours are expressed in the 24-hour format.
			bit 0 0 = Disables the special hour count that takes
			                  summer time into consideration.
			            1 = Enables the special hour count that takes
			                  summer time into consideration (default 0)

Stat Reg. C
(read only)
	M290
	M250
	M250 E
	M300
	M380
	XP/1/3/5
	XP4/7/9
		0C	**bit 7** Interrupt request bit when a periodic interrupt or alarm
			        interrupt is generated or at the end of the RTC
			        update cycle (always set to 1).
			bit 6 Periodic interrupt bit. Goes to a high logic level when the
			        periodic interrupt selected by register A bits 3-0
			        is selected.
			bit 5 Alarm interrupt bit. Goes to a high logic level when alarm
			        interruption is detected in the RTC.
			bit 4 Interrupt bit at the end of the RTC update. Goes to a
			        high logic level at the end of the update cycle.
			bits 3 to 0 Reserved.

Stat Reg. D (read only)	M290 M250 M250 E M300 M380 XP/1/3/5	0D	**bit 7** 0 = Invalid CMOS contents due to a power failure. 1 = Correct CMOS contents. **bits 6 to 0** Reserved.

BLOCK	P.C.	ADD.	DESCRIPTION

Diag Stat	M290
	M250
	M250 E
	M300
	M380
	XP/1/3/5
	XP4/7/9
		0E	**bit 7** 1 = Invalid CMOS contents due to a power failure.
			   0 = Correct CMOS contents.
			bit 6 0 = Correct CMOS checksum.
			   1 = Incorrect CMOS checksum.
			bit 5 0 = Correct system configuration data stored in CMOS.
			   1 = Incorrect system configuration data stored in CMOS.
			bit 4 0 = The memory size detected by the POD
			    corresponds to the size configured in CMOS.
			   1 = The memory size detected by the POD does not
			    correspond to the size configured in CMOS.
			bit 3 0 = The hard disk or controller works correctly.
			   1 = The hard disk or controller does not work correctly.
			bit 2 0 = Correct date and time.
			   1 = Incorrect date and time.
			bits 1 to 0 Reserved.

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BLOCK	P.C.	ADD.	DESCRIPTION
Shutdown	M290 M250 M250 E M300 M380 XP/1/3/5 XP4/7/9	0F	**bits 0 to 7** Shutdown code.
Diskette	M290 M300	10	**bits 7 to 4** First floppy disk drive type. - 0000 = drive not present - 0001 = 360 KB drive - 0010 = 1.2 MB drive - 0011 = reserved - 0100 = 1.44 MB drive - da 0101 a 1111 = reserved **bits 3 to bit 0** Second floppy disk drive type - 0000 = drive not present - 0001 = 360 KB drive - 0010 = 1.2 MB drive - 0011 = reserved - 0100 = 1.44 MB drive - da 0101 a 1111 = reserved
	M250 M250 E M380 XP/1/3/5 XP4/7/9	10	As for the M290 Personal Computer with only one difference: - 0011 = 720 KB drive
Rs	M290 M250 M250 E M300 M380 XP/1/3/5 XP4/7/9	11	Reserved

Hard disk	M290
	M250
	M250 E
	M300
	M380
	XP/1/3/5
	XP4/7/9
		12	**bits 7 to 4** First hard disk drive installed
			                              (from type 1 to 14)
			- 0000 = No hard disk drive installed
			- 0001 to 1110 =hard disk drive type.
			bits 3 to 0 Second hard disk drive installed
			                              (from type 1to 14)
			- 0000 = No hard disk drive installed
			- 0001 to 1110 = hard disk drive type.
			Depending on the Personal Computer, see the specific hard disk table in the relative chapter.
			The type of hard disk is expressed in binary format. In the hard disk tables, this value is expressed in decimal format. You must therefore decode the value from decimal to binary.
			For hard disk types from 16 onward see CMOS address 19.

BLOCK	P.C.	ADD.	DESCRIPTION
Rs	M290 M250 M250 E M300 M380 XP/1/3/5 XP4/7/9	13	Reserved.

Equipment	M290
	M250
	M250 E
	M300
	M380
	XP/1/3/5
	XP4/7/9
		14	**bit 7 and bit 6** Number of floppy disk drives.
			  - 00 = 1 drive
			  - 01 = 2 drives
			  - 10 and 11 = reserved
			bit 4 and bit 5 Video resolution at power on
			  - 00 = enhanced graphics
			  - 01 = color, 40 columns
			  - 10 = color, 80 columns
			  - 11 = black and white, 80 columns
			bit 3 and bit 2 Not used
			bit 1 0 = 80287 numeric coprocessor not present
			         1 = 80287 numeric coprocessor present
			bit 0 0 = Floppy disk drive not present
			         1 = At least one floppy disk drive present

Base Memory	M290
	M250
	M250 E
	M300
	M380
	XP/1/3/5
	XP4/7/9
		15 -
		16
			Up to 640 KB
			Address 16 15 HEX values
			             02 80 0280 640 KB
			Values 02 00 0200 512 KB Base
			             01 80 0180 384 KB memory
			             01 00 0100 256 KB size

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BLOCK	P.C.	ADD.	DESCRIPTION

Extended Memory	M290 M300	17 - 18	Above the first 1024 KB
			
			Address 18 17 HEX values
			           00 00 0000 0 KB
			           00 80 0080 128 KB
			           01 00 0100 256 KB Extended
			Values 01 80 0180 384 KB memory
			           02 00 0200 512 KB size
			           02 80 0280 640 KB
			           03 00 0300 768 KB
			           03 80 0380 896 KB
			           04 00 0400 1024 KB
			and so on at 128 KB steps up to a maximum of 8576 KB

	M250 M250 E	17 - 18	As for the M290 Personal Computer but with a maximum of 16384 KB.
	M380 XP/1/3/5 XP4/7/9	17 - 18	As for the M290 Personal Computer but with a maximum of 64512 KB.
Extended hard disk	M290 M250 M250 E M300	19	For hard disk drive types 16 onwards. - FIRST HDU Depending on the Personal Computer, see the hard disk table in the computer's corresponding chapter. The hard disk type is expressed in 2 digit hex format. In the hard disk tables, this number is expressed in decimal format. You must therefore decode the value from decimal to hexadecimal.
	M380 XP/1/3/5 XP4/7/9	1A	For hard disk drive types 16 onwards. - SECOND HDU
Reserved	M290 M250 M250 E M300 M380 XP/1/3/5 XP4/7/9	1B - 2D	Reserved
Checksum (read only	M290 M250 M250 E M300 M380 XP/1/3/5 XP4/7/9	2E - 2F	Results of the checksum performed in CMOS locations at addresses 10 to 1D.
Extended Memory	M290 M250 M250 E M300 M380 XP/1/3/5 XP4/7/9	30 - 31	Memory size above the 1024 KB detected by the POD. The contents of these locations must be equivalent to the contents of the locations at addresses 17 and 18.

BLOCK	P.C.	ADD.	DESCRIPTION
Cent	M290 M250 M250 E M300 M380 XP/1/3/5 XP4/7/9	32	Indicates the century.
Info	M290 M250 M250 E M380 XP/1/3/5 XP4/7/9	33	Not used.
Reserved	M290 M250 M250 E M300 M380 XP/1/3/5 XP4/7/9	34 - 3F	Reserved.

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NOTE:

M380	=	M380 - M380 C - M380 T
XP1/3/5	=	M380/XP1 - M380/XP3 - M380/XP5
XP4/7/9	=	M380/XP4 - M380/XP7 - M380/XP9
XP9 *	=	M380/XP9 with BIOS release 2.01 and later

EXTENDED SET UP FOR NV RAM

This option allows you to define the contents of each single NV RAM location.
It is available on the following Personal Computers:

M380 - M380/XP1 - M380/XP3 - M380/XP5 - M380/XP4 - M380/XP7 M380/XP9

When this function is activated on the M380 - M380/XP1 - M380/XP3 - M380/XP5 Personal
Computers, the following screen is displayed.

NV RAM EDITOR					
	Communication	Video 1	Video 2	Reserved	Memory	Reserved
Addrss	00	01	02	03	04	05
Value	00 00 00 00	1111 00 00	000000 00	11111111	000 0 01 00	FF
	Secnd Conf	HDU1	HDU2	<----------------- Reserved ----------------->		
Addrss	06	07	08	09 0A 0B 0C 0D 0E 0F 10 11 12 13 14 15		
Value	00000 0 00	07	00	FF FF FF FF FF FF FF FF FF FF FF FF FF		
	<-- Reserved ---.>	Checksum	Status			
Addrss	19 1A 1B 1C 1D	1E	1F			
Value	FF FF FF FF FF	E5	00000000			

This screen enables you to alter most of the byte in NV RAM.
Addresses are hexadecimal. 2-digit values are hexadecimal.
8-digit values are binary.
Use <SPACE BAR> to move the cursor. Enter a digit to change the value at the cursor.
Press <ESC> to return to the previous menu

When this function is activated on the M380/XP4 - M380/XP7 - M380/XP9 Personal Computers, the following screen is displayed.

NV RAM EDITOR

	Communication	Video 1	Video 2	Reserved		Memory	Reserved
Addrss	40	41	42	43		44	
Value	00 00 00 00	1111 00 00	000000 00	11111111		000 0 01 00	45
							FF

	Conf	HDU Parameter Table		Con	Ext	Me
Addrss	46	47 48 49 4A 4B 4C 4D 4E 4F 50 51 52 53 54 55 56		57	58	59
Value	00	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00		00	00	00

	<---------------------- Rserved ------------------.>		Ext Mem	Reserved	CR1
Addrss	5A 5B 5C 5D 5E 5F 60 61 62 63 64 65		66 67 68	69	6A
Value	00 00 00 00 00 00 00 00 00 00 00 56		00 00 00	00	01

	Checksum		Status		<------------------------ Password -------------------------->
Addrss	6C	6D	6E	6F	70 71 72 73 74 75 76 77 78 79 7A 7B 7C 7D 7F
Value	00	58	00	00	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

This screen enables you to alter most of the byte in NV RAM.
Addresses are hexadecimal. 2-digit values are hexadecimal.
8-digit values are binary.
Use <SPACE BAR> to move the cursor. Enter a digit to change the value at the cursor.
Press <ESC> to return to the previous menu.

This screen indicates the address (in hex format) and current contents (in binary and hexadecimal formats) of each location. You can move the cursor from one one location to another until reaching the one that has to be modified by pressing the Space Bar or the Backspace key.

The following table gives the meaning of each CMOS RAM location.

H

BLOCK	P.C.	ADD.	DESCRIPTION

COMMS	M380 XP/1/3/5	00	**bits 2, 3, 6, 7** Reserved
			bit 0 Enables/disables the motherboard parallel port
			            address 1 = Disabled
			                                 0 = Enabled
			bit 1 Motherboard parallel port address
			            1 = 278 h 0 = 378 h
			bit 4 Enables/disables the motherboard serial port
			            address 1 = Disabled
			                                 0 = Enabled
			bit 5 Motherboard serial port address
			            1 = 2F8 h 0 = 3F8 h

	XP/4/7/9	40	As for the M380 and XP/1/3/5

VIDEO 1	M380 XP/1/3/5	01	**bits 2 and 3** Reserved
			bits 0 and 1 Video controller:
			            - 00 = OEC or other
			            - 01 = OGC
			            - 10 = Reserved
			            - 11 = PGC
			bit 4 Type of video
			            0 = Monochrome 1 = Color
			bits 5, 6, 7 Reserved

	XP/4/7/9	41	As for the M380 and XP/1/3/5

VIDEO 2	M380 XP/1/3/5	02	**bits 2, 3, 4, 5, 6, 7** Reserved
			bits 0 and 1 Type of video scrolling
			            - 00 = Fast
			            - 01 = Slow
			            - 10 = Flicker
			            - 11 = Dual port

	XP/4/7/9	42	As for the M380 and XP/1/3/5
	M380 XP/1/3/5	03	Reserved
	XP/4/7/9	43	

MEMORY CONTROL	M380 XP/1/3/5	04	**bits 4, 5, 6, 7** Reserved
			bits 0 and 1 Enables/disables on-board memory
			            - 00 = Entire memory enabled
			            - 01 = Memory disabled
			bits 2 and 3 Duration of the test on memory
			            - 00 =Complete test
			            - 01 = Average test
			            - 10 = Minimum test
			            - 11 = No testt

	XP/4/7/9	44	As for the M380 and XP/1/3/5
	M380 XP/1/3/5	05	Reserved
	XP/4/7/9	45	

BLOCK	P.C.	ADD.	DESCRIPTION
SECOND CONFIG. PORT CONTROL	M380 XP/1/3/5	06	**bits 0, 1, 2, 3** Check on memory access delays - 0000 = No delay - 1000 = 2000 ns - 0001 = 250 ns - 1001 = 2250 ns - 0010 = 500 ns - 1010 = 2500 ns - 0011 = 750 ns - 1011 = 2750 ns - 0100 = 1000 ns - 1100 = 3000 ns - 0101 = 1250 ns - 1101 = 3250 ns - 0110 = 1500 ns - 1110 = 3500 ns - 0111 = 1750 ns - 1111 = 3750 ns **bits 4 and 5** Check on I/O port access delays - 00 = No delay - 10 = 1000 ns - 01 = 500 ns - 11 = 1500 ns
	XP/4/7/9	46	-
HARD DISK 1	M380 XP/1/3/5	07	Number identifying the system's first HDU. The hard disk table lists the hard disks that can be installed in these systems. The hard disk type is expressed in 2-digit hexadecimal format. In the hard disk tables, this value is expressed in decimal format. You must therefore decode the value from decimal to hexadecimal format.
HARD DISK 2	M380 XP/1/3/5	08	Number identifying the system's second HDU. The hard disk table lists the hard disks that can be installed in these systems. The hard disk type is expressed in 2-digit hexadecimal format. In the hard disk tables, this value is expressed in decimal format. You must therefore decode the value from decimal to hexadecimal format.
HDU PARAMETER TABLE	XP/4/7/9	47 to 56	The parameters of the hard disk drives installed in the system are defined.
CON EXT ME	XP/4/7/9	57 to 59	-
	M380 XP/1/3/5	09 to 29	Reserved
	XP/4/7/9	5A to 65	
EXT MEM	XP/4/7/9	From 66, 67 and 68	-
	XP/4/7/9	69	Reserved
CR1 CR2	XP/4/7/9	6A and 6B	-

BLOCK	P.C.	ADD.	DESCRIPTION
CHECKSUM	M380 XP/1/3/5	30	Parity checksum. The values of the preceding 30 bytes are summed and 1 is added to the total. Sum of values + 1 = Value written of the first 30 bytes in this location
	XP/4/7/9	6C & 6D	As for the M380 and XP/1/3/5.
NV RAM STATUS BYTE	M380 XP/1/3/5	33	**bits 0 and 1** Reserved **bit 2** Video configuration error **bit 3** Extended memory configuration error **bit 4** Main memory configuration error **bit 5** Serial port configuration error **bit 6** Parallel port configuration error **bit 7** NV RAM checksum error
	XP/4/7/9	6E and 6F	As for the M380 and XP/1/3/5

NOTE:

M380   =   M380 - M380 C - M380 T
XP1/3/5   =   M380/XP1 - M380/XP3 - M380/XP5
XP4/7/9   =   M380/XP4 - M380/XP7 - M380/XP9
XP9 *   =   M380/XP9 with BIOS release 2.01 and later

BUILT IN SETUP UTILITY FOR AT SYSTEMS

This feature is available on the following systems:

M300 - M386/25 - M300-05 - M300-10 - M300-01 - M380-40 - M290-30 - M400-10 - M400-40 - M400-60 - M300-08 - M300-15 - M290-25 - M300-04 - M480-10 - M480-20

The BUILT IN SETUP is a program resident in ROM BIOS that is activated each time the Personal Computer is powered on. This program carries out the following operations:

- Checks the configuration data stored in CMOS RAM to ensure that they are valid and checks that the power supply battery is not low.

- Checks that system configuration has not been changed (for example, that memory, new peripherals or a numeric coprocessor have not been added).

- If the contents of the CMOS RAM are no longer valid or system configuration has been changed, the BUILT IN SETUP program allows the user to update CMOS RAM contents.

As previously mentioned, two cases can arise:

First case: If the information contained in CMOS RAM is no longer valid or the power supply battery ▉ **H** ▉ is low, the BUILT IN SETUP screen is displayed. The user has the possibility of selecting the language to work in. There are 6 languages available.

Second case: If the system's configuration only has been changed, an icon representing the device that has to be added to, or changed in, CMOS RAM will be displayed.
An example can be when you install a second floppy disk drive, only the floppy disk icon will be displayed.

In both cases the BUILT IN SETUP is automatically displayed without operator intervention.
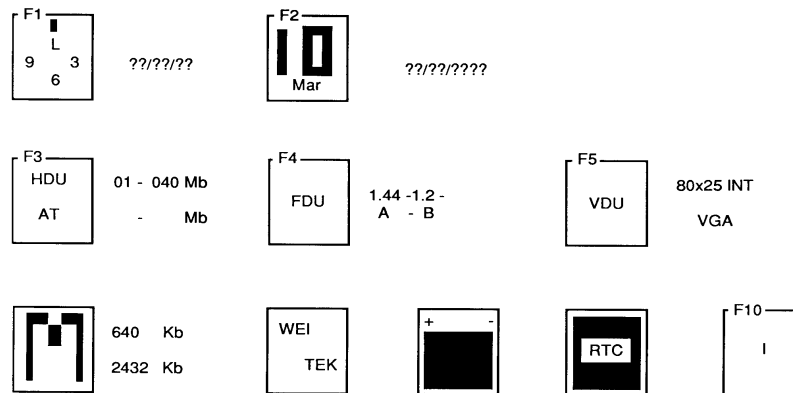
F1 Pressing this key allows you to change: hour, minutes and seconds.

F2 Pressing this key allows you to change: day, month and year

F3 Pressing this key allows you to select the type and capacity of the hard disk drive installed. Press the space bar until the correct value is displayed.

F4 Pressing this key allows you to select the capacity of the floppy disk drive installed. Fields corresponding to the number of drives installed (1, 2 or 3) are displayed along side the floppy disk icon. In these fields you will have to define the capacity of the floppy disk drive installed.

F5 Pressing this key allows you to select the video format when the system is powered on.

Memory   This field cannot be modified. It only informs the user of memory size. The system's memory size can be changed using the System Test or Customer Test diskette.

Numeric Coprocessor	This icon is only displayed when the numeric coprocessor is installed.
WEITEK numeric Coprocessor	This icon is only displayed when the WEITEK numeric coprocessor is installed and is intended to inform the user.
Batteries	This icon is only displayed when the system is powered on for the very first time or when the system batteries are low.
Real time clock	This icon blinks when a fault is detected in the system's *Real Time Clock* .
Language	Allows you to select the language in which the BUILT IN SETUP messages will be displayed. One of six languages can be selected.

EXTENDED SETUP PROGRAM

This extension to the ROM-resident program is available on the following systems:

M290-30 - M290-25 - M300-04 - M480-10 - M480-20 - M300-02.

The EXTENDED SETUP program menu includes all the functions of the BUILT IN SETUP program, in addition to certain icons identifying the advanced functions. To modify the parameters, select the function and press the space bar.

This program can be invoked at any time by pressing the SHIFT, CTRL, ALT and DEL keys simultaneously.

EXTENDED SETUP

The following parameters can be changed:

F1   Pressing this key allows you to change the hour, minutes and seconds.

F2   Pressing this key allows you to change the day, month and year.

F3   Pressing this key allows you to change the hard disk type number and to park the hard disk heads in the landing zone.
To move from one field to another, press the TAB key.

F4   Pressing this key allows you to modify the floppy disk type. If two floppy disk drives are installed, two fields will be present. Press the TAB key to move from one field to another.

F5   Pressing this key allows you to video format when the system is powered on.

F6 Memory - Three fields are available, indicating respectively:
- The amount of memory dedicated to the shadow RAM feature.
- The duration of the test on memory during the POD.
- Extended and expanded memory sizes.

Press the TAB key to move from one field to another.

F7 System speed. One field allows you to define the speed at which data is exchanged between memory and the CPU, the other allows you to select the speed at which data is exchanged between memory and peripherals, Press the TAB key to move from one field to another.

F8 By pressing this key you can change the following three parameters:
- Character repeat speed
- Buzzer volume
- Parallel port mode of operation (the parallel port is not bidirectional so it can alternate between input and output).

F9 Pressing this key allows you to store a system or network password.

F10 Pressing this key allows you to select the natinal language version.

More detailed information on the BUILT IN SETUP and EXTENDED BUILT IN SETUP utilities are provided in the chapters dealing with the Personal Computers that use these programs.

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SETUP UTILITY FOR MCA SYSTEMS

Personal Computers based on the MicroChannel architecture are capable of reconfiguring themselves automatically when an optional device is either installed or removed.
The System Test and Customer Test diskettes contain a *Configuration Program* and *Descriptor Files* containing all the information concerning system configuration.

The device that allows these systems to be configured is called *POS Programmable Option Selection* and can be used either automatically or interactively.

POS Programmable Option Selection

Each system peripheral (serial interface, parallel interface, hard disk and floppy disk controller, motherboard, optional boards, etc.) has six specific registers called *POS Registers* which are found at the following I/O addresses.

REGISTER	ADDRESS	FUNTION	READ/WRITE
POS 0	100 h	ID CODE (identification codes of the optional peripheral or device)	Read only
POS 1	101 h	ID CODE (identification codes of the optional peripheral or device)	Read only
POS 2	102 h	Enables or disables the MicroChannel connector	Read - Write
POS 3	103 h	Contains configuration data	Read - Write
POS 4	104 h	Contains configuration data	Read - Write
POS 5	105 h	Contains configuration data	Read - Write
POS 6	106 h	Contains memory configuration data	Read - Write
POS 7	107 h	Contains memory configuration data	Read - Write

The manufacturer records in the POS 0 and POS 1 registers the code (ID CODE) that identifies the peripheral or device. Each system, optional board, peripheral or optional device has its own identification code. The codes range from @0000h to @FFFFh.

When the system is powered on, a BIOS routine compares the ID codes of the different peripherals installed with the ID codes stored in the system's CMOS RAM. With this operation the system checks whether its configuration has been changed or not.
If the configuration has been changed (for example an optional board has been installed), with the following message the operator is asked to reconfigure the system:

Adapter configuration: Error

Insert the System Test or Customer Test diskette in system drive A. This diskette contains:

- The **System Configuration Program** that controls system configuration.

- Descriptor files called **Adapter Descriptor Files** containing the configuration data of the different system peripherals. Each optional board or system peripheral has its own adaptor descriptor file. These files are invoked using the same ID code of their corresponding peripheral or device, and all have the **.ADF** extension.

For example:
The hard disk controller (ID CODE @0DDFFh) will have an adapter descriptor file called @0DDFFh.ADF. The following figure shows the structure of an adapter descriptor file.

```
Adapter ID 0DDFF h
Adapter name          "ESDI Fixed Disk Controller"
NumByte 2
Fixedresources
  POS [1] = 00XXXXXXb
  POS [2] = XXXXXX0Xb
  io 3510h - 3571h
Nameditem
  prompt       Adapter Memory Location"
  Choice       "Segment C800"
  POS [1] = XXXX0010b
  MEM 0c8000h - 0cbfffh
  Choice       "Segment CC00"
  POS [1] = XXXX0011b
  MEM 0cc000h - 0cffffh
  Choice       "Segment D000"
  POS [1] = XXXX0100b
  MEM 0d0000h - 0d3fffh
  Choice       "Segment D400"
  POS [1] = XXXX0101b
  MEM 0d4000h - 0d7fffh
  Choice       "Segment D800"
  POS [1] = XXXX0110b
  MEM 0d8000h - 0dbfffh
Choice         "Segment DC00"
  POS [1] = XXXX0111b
  MEM 0dc000h - 0dffffh
Choice           "ROM Disabled"
  POS [1] = XXXX1XXb
Help
"To configure this adapter you must.........
```

When a new option is installed in the system, the adapter descriptor file supplied with the option has to be copied on the User Diskette or System Test diskette. This copy operation must be performed using the "**Copy Option Diskette**" utility.

If the configuration of the system has been changed, the user will be asked to insert either the User diskette or the System Test diskette into drive A. The System Configuration Program is launched automatically which will ask for the ID codes of the different peripherals and devices installed in the system so as to be able to identify the corresponding adapter descriptor files stored on diskette.

The data stored in these adapter descriptor files are copied into CMOS RAM where they will be stored even when the system is powered off.

When the system is powered on again, the data stored in CMOS RAM are copied into the POS registers of the different boards and devices installed in the system. These registers acts in the same way as the jumpers and DIP-Switches of AT systems; they allow you to configure all of the system's operating parameters.

Even though MicroChannel systems are configured automatically, there are some parameters that must be selected by the operator. The following table lists all these parameters in alphabetical order and gives all possible options according to the specific Personal Computer .

PARAMETER	DESCRIPTION	P.C.	OPTIONS
ARBITRATION LEVEL	Allows you to define the arbitration level on the hard disk controller's MicroChannel bus.	P500 P800 P750 M480-30 M300-25	3 is the default value. 1 - 2 - 3 - 4 - 5 - 6 - 7
BASE MEMORY	Indicates the size of the system's base memory.	P500 P800 P750 M480-30 M300-25	640 MB - Base memory size cannot be changed on these systems.
BURST PACING INTERVAL	Allows you to modify the intervals between DMA transfers. During these intervals the HDU controller relinquishes the MicroChannel bus to the system processor.	M300-25	The following intervals are allowed between two DMA transfers: 24 ms - 31 ms - 16 ms
CACHE MEMORY	Allows you to enable or disable the cache controller of the system processor.	P750 M480-30	Disabled Enabled
DATA AND TIME	Allows you to change the system date and time.	P750 M480-30 M300-25	This utility is found on the System Test or Customer Test diskette.
EXTENDED MEORY SIZE	Indicates the size of extended memory.	P500 P800 P750 M480-30 M300-25	On these systems the chip set automatically calculates the size of extended memory.
FAIRNESS ON/OFF	Allows you to define whether the HDU controller relinquishes the control of the MicroChannel bus at the end of its operations or remain in control.	M300-25	ON The HDU controller relinquishes control after its operations. OFF The HDU controller does not relinquish the control of the MicroChannel bus.
FLOPPY DRIVE A	Indicates the capacity of floppy disk drive A.	P500 P800	"Not present" - 360 KB - 720 KB - 1.2 MB - 1.44 MB
		P750 M480-30 M300-25	"Not present" - 1.44 MB
FLOPPY DRIVE B	Indicates the capacity of floppy disk drive B.	P500 P800	"Not present" - 360 KB - 720 KB - 1.2 MB - 1.44 MB
		P750 M480-30	"Not present" - 1.44 MB
		M300-25	"Not present" - 360 KB - 720 KB - 1.2 MB - 1.44 MB

PARAMETER	DESCRIPTION	P.C.	OPTIONS
HARD DISK #1	Allows you to define the type of hard disk installed as first drive.	P500 P800 P750 M480-30	From 0 (hard disk not installed) to 43 depending on the type of hard disk. (See the hard disk table in the Personal Computer's corresponding chapter).
HARD DISK #2	Allows you to define the type of hard disk installed as second drive.	P500 P800 M480-30	From 0 (hard disk not installed) to 43 depending on the type of hard disk. (See the hard disk table in the Personal Computer's corresponding chapter).
KEYBOARD SPEED	Allows you to change the speed of the keyboard.	M480-30 M300-25	Slow Fast
MATH COPROCESSOR	IIndicates whether the coprocessor is present or not.	P500 P800	Not present Present
		P750 M480-30 M300-25	Cannot be selected by the user but signals whether the coprocessor is present or not.
OS/2 16 MB LIMIT	Allows you to enable or disable memory after the 16th Mbyte of system memory.	P750 M480-30	Enabled Disabled - Memory above the 16 MB is no longer recognized by the system.
PARALLEL PORT	Allows you to assign a name and address to the motherboard parallel port.	P500 P800	Parallel 1 LPT1 Parallel 2 LPT2 Disabled
		M300-25	Parallel 1 LPT1 Parallel 2 LPT2 Parallel 3 LPT3 Disabled
POWER ON MEM-ORY TEST	Allows you to define the duration of the POD test on memory.	P750 M480-30	None Large Medium Small
PREEMPT	Allows you to enable or disable the preempt signal.	P750 M480-30	Disabled Enabled
SERIAL PORT	Allows you to assign a name and address to the motherboard serial port.	P500 P800 P750 M480-30 M300-25	Serial 1 COM1 Serial 2 COM2 Disabled
SLOT 1 SLOT 2 SLOT 3 SLOT 4 SLOT 5 SLOT 6	Allow you to define the configuration parameters of the boards installed in these six slots on the MicroChannel bus.	P500 P800	Depends on the board installed in the MicroChannel slot. If there are no boards installed in these slots, the message Empty is displayed.

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PARAMETER	DESCRIPTION	P.C.	OPTIONS
SLOT 1 SLOT 2 SLOT 3	Allow you to define the configuration parameters of the boards installed in these three slots on the MicroChannel bus.	M300-25	Depends on the board installed in the MicroChannel slot. If there are no boards installed in these slots, the message Empty is displayed.

SLOT 4	Allows you to change the hard disk parameters.	M300-25	☞ **See:**
			    ARBITRATION LEVEL
			    BURST PACING INTERVAL
			    FAIRNESS ON/OFF

SLOT 1
HARD DISK
	This parameter allows you to define the type of hard disks installed as drive #1 and #2, and their arbitration level on the MicroChannel bus.	P500
		P800
		P750
		M480-30
			☞ **See HARD DISK #1,**
			    HARD DISK #2 and ARBITRATION
			    LEVEL

WEITEK COPROCESSOR	indicates whether the coprocessor is present or not.	P750 M480-30	Cannot be selected by the userbut indicates whether the WEITEK coprocessor is present or not.

SETUP UTILITY FOR CP486 / M486 ESDI/ M486 SCSI SYSTEMS

The CP486, M486 and M486 ESDI Personal Computers are supplied with a number of configuration and system test diskettes:

System Configuration Diskette
This diskette allows you to configure the system and has the following functions:

- Provides configuration data for Extended Industry Standard Architecture (EISA) boards.
- Works with the ISA Configuration Library diskette in order to provide DIP-Switch and jumper settings for Industry Standard Architecture (ISA) boards.
- Allows certain system characteristics to be set, such as:
  Keyboard autorepeat speed, passwords and system date and time.
- Allows the Diagnostics diskette to be used in the desired language.

The System Configuration diskette has to be used:

- The first time the system is being installed.
- Each time the configuration of the system changes, such as when boards and devices are either installed or removed.
- When configuration data is no longer valid.
- To solve conflicts between system resources. Possible sources of conflict can be: DMA channels, interrupts, I/O addresses and memory addressing.

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Diagnostic Diskette
The diagnostic diskette provides a series of tests to be run on the system's hardware modules.

ISA Configuration (CFG) Library Diskette
This diskette contains the *.CFG files for the different expansion boards that can be installed in the Personal Computer.

SYSTEM CONFIGURATION DISKETTE

This diskette can be used in three ways:
1) If the Personal Computer is powered off:
   - Insert this diskette in drive A and power on the system.
2) If the Personal Computer is on:
   - IInsert the diskette into drive A.".
   - Press the RESET button or the CTRL, ALT, DEL keys simultaneously.
3) With the "SD" command
   - Insert this diskette in drive A.
   - Type SD at the DOS prompt.

The SD command allows you to perform the following operations:
SD [/H] [/M] [/K] [/B] [/N]

/H   43-line video mode (EGA monitors) or
        50-line video mode (VGA monitors). Default: 25-line video mode
/M   Monochrome monitor. Default: color monitor
/K   Disables mouse support even though the mouse driver is installed. Default: mouse
        support enabled.
/B   For non-standard monitors. All video modes use BIOS INT 10h.
        Default: standard monitor
/N   Non target mode - Gives the possibility of using the System Configurationc diskette to
        configure more than one system. This command disables the possibility of reading the
        system configuration stored on the diskette.

Main Menu of the System Configuration Diskette

- Configure computer
- Set features
- Test computer
- Copy User Diskette
- Exit from this utility.

These entries are explained in the following tables.

CONFIGURE COMPUTER	
SUBMENU	**DESCRIPTION**
Copy files from an option configuration diskette	Each EISA expansion board is supplied with a diskette containing a .CFG file which stores the board's configuration parameters. By selecting this entry you can copy this EISA board configuration file on to the *System Configuration* diskette. **NOTE:** The CFG files for the Olivetti CP486 system board, Olivetti EISA video controller (EVC-1) and Olivetti EISA SCSI controller (ESC-1) are already available on the *System Configuration* diskette.
Copy files from the configuration file library	This entry is used to copy the configuration data of an ISA board from the *ISA Configuration (CFG) File Library* diskette to the *System Configuration* diskette. When this entry is selected, the system will display a screen asking you to insert the *ISA Configuration (CFG) File Library* diskette into drive A. - Insert the diskette into the drive and press ENTER. - The system will now display the "Copy Configuration (CFG) Files" screen along with the message "No matching files were found". - To access and display the ISA CFG files, press the TAB key until "Path" is highlighted. Then set the following: A:\US*.CFG for a list of non-video and non-memory files A:\US\VIDEO*.CFG for a list of video adapter files A:\US\MEMORY*.CFG for a list of memory files. - Once the list of files is displayed, use the $\downarrow\uparrow$ keys to select the files requested and then press ENTER. - The system will ask for the *System Configuration* diskette. - Remove the *ISA Configuration File Library* diskette and insert the *System Configuration* diskette. - The system will copy the selected .CFG files to the *System Configuration* diskette*.*

CONFIGURE COMPUTER	
SUBMENU	**DESCRIPTION**

Configure Computer - basic method	Use this entry to add or remove EISA or ISA boards from the configuration of the system.
	When selecting "Configure Computer - Basic Method", a graph is displayed indicating the current EISA bus configuration.
	Use the ↓↑ keys to display the configuration of the different connectors.
	To add a board on the EISA bus:
	- Move the cursor on the line below the graphic, select **ADD** and press ENTER.
	- A list of configuration files available on the *System Configuration* diskette is displayed.
	- Using the ↓↑ keys, select the file corresponding to the board that has to be installed and press ENTER.
	- When a board is added the system can automatically decide in which connector it must be installed, or list all the connectors available.
	- Once the connector is selected, the system will display the "Save Configuration and Exit" screen.
	- You can now:
	  1) Press F4 to dispay the new board's DIP-Switches, jumpers and software options.
	  2) Select "Exit" and press ENTER to save the new configuration.
	To remove an expansion board:
	- Highlight the board on the screen which indicates the current system configuration.
	- Move the cursor on the line beneath the graphic, select **DEL** and press ENTER.

Configure Computer - advanced method	This entry allows you to edit the EISA and ISA board settings. It is also used when a floppy disk drive, hard disk drive or additional on-board memory is installed. Advanced configuration mode is composed of an additional submenu with five entries: System - Edit - View - Settings - Help These can be selected using the keyboard or mouse. **System** This entry has the following options: Open A System Configuration Information (SCI) file is opened so that you can change parameters (for non-target mode only). Print (CTRL-P) Allows you to print DIP-Switch and jumper settings, in addition to other board information. Save As (CTRL-A) The current configuration can be stored with a file name different from the default SYSTEM.SDI name proposed (for non-target mode only). Verify (CTRL-V) Checks that current configuration does not generate conflicts between the system resources. To be used only if "auto-verify" under "settings" is not enabled. Exit (CTRL-X) - Returns to the main menu.

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CONFIGURE COMPUTER	
SUBMENU	**DESCRIPTION**
Configure Computer - advanced method	**Edit** This entry has the following options: Add (INS) To add a new board to the system configuration. Move To move a board from one EISA connector to another. Remove (DEL) To remove a board from the current configuration. The following option is available only if the option "Detailed" is selected from the "View" menu: Change Function (CTRL + F) Allows different settings to be made for each selected function. The last five options are available only if the option "Manual" is selected from the "Settings" menu: Change Resource (CTRL +R) Changes the system resources if the board to be installed requires a system setting different from the default one. Revert to Saved Gives all the current settings of the latest configuration saved. Reset to Default Restores the manufacturer's original settings. Lock (CTRL-L)Locks the settings to their current values. Unlock (CTRL-U) Allows the current settings to be changed. **View** This entry has the following options: Overview (CTRL-O) Displays board descriptions according to type or function. Detailed (CTRL-D) The boards are displayed with a complete description of the options available. By Slot Displays the system boards by locating the slot in which they are installed. By Type Displayes the system boards according to their functions. Switch and Jumper Settings Displays the jumper, DIP-Switch and software settings of the board selected. Software Parameters Displays the software settings of the board selected. Connections (CTRL-C) Displays the hardware connections on the board selected. Board Specifications The following board specifications are given: location of connectors, manufacturer, ID, type and physical characteristics. The last option is available only if "Advanced Features" is selected from the "Settings" menu: Resources Provides a map of the current resources (for example Interrupts) used by the different boards installed in the system.

CONFIGURE COMPUTER	
SUBMENU	**DESCRIPTION**
Configure Computer - advanced method	**Settings** This entry has the following options: Auto verify — Automatically informs the user when a certain setting can cause conflicts between the system resources. Manual verify — Check another system which does not have any internal conflicts between resourses by using the "Verify" option of the"System" menu. **Help** This entry has the following options: Help Topics — (SHIFT-F1) A list of Help topics is displayed. Help — Help messages are displayed for each topic selected. How to use Keys — Certain keyboard keys are assigned to recall specific functions. How to use Help — A guide line is provided on the use of the Help facility. **Copyright Information** **Exit**
Return to the main menu	Returns to the main menu

Suggested Configuration

Slot	Location on CP486	Location on M486
0	EISA Motherboard	EISA Motherboard
1	SCSI Controller	not available
2	EVC-1 or OVC-1 Video	not available
3	User Defined	SCSI Controller
4	User Defined	EVC-1 or OVC-1 Video
5	User Defined	User Defined
6	User Defined	User Defined
7	User Defined	User Defined
8	User Defined	User Defined

SET FEATURES	
SUBMENU	**DESCRIPTION**
Set Keyboard Speed	Allows you to set keyboard speed to one of the following values: Normal or Fast
Set Passwords	Allows you to set the power on (system), keyboard and network server passwords.

Set Date and Time	Allows you to change the system date and time. The date and time must be specified in the following format:
	mm-dd-yyyy hh:mm:ss
	where: mm = month
	          gg = day
	          aaaa = year
	          oo = hours (24 hour clock)
	          mm = minutes
	          ss = seconds
	NOTE: If the system is using DOS 3.20 or a previous version, the date and time set using these DOS versions will be lost when the system is reset or powered off. The values used are those that have been set with the Set Date and Time utility, explained previously. This problem was solved with DOS 3.30 and later releases.

Console Board Options	This utility is available on the CP 486 and allows you to control some parameters such as: volume control, reset and programmable On/Off.
Return to main menu	Returns to the main menu.

Test Computer
Allows you to test the system's internal hardware modules.

Copy User Diskette.

Exit from this Utility

CONFIGURATION UTILITY FOR THE PCS 30 - PCS 40 / PCS42 SYSTEMS

These systems can host different system boards as indicated in the following table:

PERSONAL COMPUTER	PROCESSOR	CLOCK	MEMORY	SYSTEM BOARD
PCS30 SX/40 Desktop slim case	80386 SX	40 MHz	2 MB to 16 MB	WH 386 SX
PCS30 DX/40 Desktop slim case	80386 DX	40 MHz	4 MB to 32 MB	4386-VC-HD
PCS40 SX/25 Desktop slim case	80486 SX	25 MHz	4 MB to 32 MB	486-VC
PCS40 SX/33 Minitower case	80486 SX	33 MHz	4 MB to 32 MB	486-VC
PCS40 DX/33 Minitower case	80486 DX	33 MHz	4 MB to 32 MB	486-VC
PCS40 D2/50 Minitower case	80486 DX2	50 MHz	4 MB to 32 MB	486-VC
PCS40 D2/66 Minitower case	80486 DX2	66 MHz	4 MB to 32 MB	486-VC

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A specific system configuration is associated to each system board.
The configuration utilities are stored in the system BIOS.

Configuring 40 MHz 80386 SX (WH 386 SX) and i486 SX PCS 42 Systems

HOW TO LAUNCH THE CONFIGURATION UTILITIES

You can run the configuration utilities in different ways:

1 - At system power-on.

When you power on the system or perform a hardware reset by pressing the appropriate button, the BIOS will run the Power On Diagnostics to check that all the components in the system are working correctly. At the end of the POD, the BIOS will display the following message:

<div align="center">

XXX KB OK
HIT <DEL> key, if you want to run Setup

</div>

On the left-hand side of the screen you will also see a count of the number of tests performed by the BIOS on the different system board components.

If you wish to enter the configuration utility before this message is displayed, simplp press the **DEL** key.

2 - After a software reset.

Pressing the CTRL ALT DEL simultaneously will perform a system software reset and the operating system will begin its normal bootstrapping routine. But before this routine is attempted from the diskette or hard disk drive, the following message is displayed:

<div align="center">

Press <DEL> key, if you want to run Setup

</div>

If you wish to enter the configuration utility, you will need to press the **DEL** key before this message disappears.

3 - Automatically during the Power On Diagnostics

If the BIOS Power On Diagnostics detect a configuration error (the CMOS RAM contents do not correspond to the actual system configuration), the following message is displayed:

<div align="center">

Run SETUP UTILITY Press <F1> to RESUME

</div>

Press the F1 key to have the system run the configuration utilities.

SYSTEM CONFIGURATION UTILITIES

When launching the configuration utilities as explained above, the following main menu is displayed:

The following pages give a description of the different options of this menu.

<div align="center">

BIOS SET UP PROGRAM - AMI BIOS SETUP UTILITIES
(C) 1991 American Megatrends Inc. All Rights Reserved

STANDARD CMOS SETUP
ADVANCED CMOS SETUP
ADVANCED CHIP SET SETUP
AUTO CONFIGURATION WHIT BIOS DEFAULTS
CHANGE PASSWORD
WRITE TO CMOS AND EXIT
DO NOT WRITE TO CMOS AND EXIT

Strandard CMOS Setup for Changing Time, date, Hard Disk Type, etc.

ESC: EXIT ↓ → ↑ ←: Sel F2/F3: Color F10: Save & Exit

</div>

STANDARD CMOS SETUP

Selecting this option will display the following screen:

```
                    BIOS SETUP PROGRAM - advanced cmos setup
                    (C) 1990 American Megatrends Inc., All Rights Reserved
```

Date (mm/date/year) : Sun, Apr 18, 1993   Base memory: 640 KB
Time (hour/min/sec): 12 : 30 : 01   Ext. memory: 256 KB

	Cyln	Head	Wpcom	LZone	SecSize
	981	10	0	0	1781

Hard disk C: type: 47 = user type
Hard disk D: type: Not Installed
Floppy drive A   :   1.44 MB, 3.5"
Floppy drive B: Not Installed
Primary display: VGA
Keyboard: Installed

Month: Jan, Feb, ...Dec
Date : 01, 02, 03........31
Year : 1901, 1902.....2099

Sun	Mon	Tue	Wed	Thu	Fri	Sat
30	31	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19

ESC: EXIT ↓ → ↑ ←: Sel F2/F3: Color PU/PD: Modify

H

Date: Allows you to change the system date through the electronic calendar.

Time: Allows you to change the hour, minutes and seconds.

Hard disk C: Define the parameters of the first hard disk installed in the system.
The following parameters can be defined:
- Number of cylinders
- Number of heads
- Write precompensation cylinder
- Landing zone cylinder
- Number of sectors per track
- Drive capacity

The BIOS can recognize 46 types of drives with these pre-defined parameters. You can select these drives using the PAGE UP and PAGE DOWN keys.

For the hard disks certified by Olivetti, you will need to select type 47 or 48, and use the → and ← keys to manually define the hard disk's parameters. The following table shows the parameters of these hard disk drives.

TYPE	CYL	HEAD	WPCOM	LZONE	SEC	SIZE	MODEL
47 or 48	980	10	0	980	17	85 MB	W.D. Caviar 280
47 or 48	903	4	0	903	46	85 MB	CONNER Jaguar CP 30084E
47 or 48	977	10	0	977	17	85 MB	QUANTUM Pioneer ELS85 AT
47 or 48	903	8	0	903	46	170 MB	CONNER Jaguar CP30174 E
47 or 48	1011	15	0	1011	22	170 MB	QUANTUM Pioneer ELS170 AT
47 or 48	895	10	0	895	55	210 MB	CONNER CP30256
47 or 48	723	13	0	723	51	240 MB	QUANTUM LPS 240 AT

Hard disk D:	Define the parameters of the second hard disk drive installed in the system. The information given for the Hard Disk C field is also valid for drive D.

Floppy disk A: Define the capacity of the first diskette drive.
The following values are valid:
- 360 KB - 5.25"
- 1.2 KB - 5.25"
- 730 KB - 3.5"
- 1.44 MB - 3.5" (default setting)
- Not installed

Floppy disk B: Define the capacity of the second diskette drive.
The information given for the Floppy Disk A field is also valid for disk B.

Primary Display Define the type of video controller installed in the system.
The following options are valid:
- VGA (default)
- PGA
- EGA.

Keyboard: Define whether a keyboard is connected or not.

ADVANCED CMOS SETUP

Selecting this option will display the following screen:

```
BIOS SETUP PROGRAM - advanced cmos setup
(C) 1990 American Megatrends Inc., All Rights Reserved


Above 1 MB Memory Test          : Disabled
Hard disk Type 47 RAM Area      : 0:300
System Boot Up Num Lock         : On
Numeric Processor               : Present
External Cache Memory           : Present
Fast Gate A20 Option            : Enabled
Password Checking Option        : Disabled
Video ROM Shadow                : Enabled
System ROM Shadow F000,64 K     : Enabled
Local Refresh Period            : 15 µs
Memory Relocation               : Disabled
C000 Shadow RAM Cacheable       : Disabled
F000 Shadow RAM Cacheable       : Disabled


        ESC: EXIT ↓ → ↑ ←: Sel (Ctrl) PU/PD: Modify F1:Help F2/F3: Color
        F5: Old Values F6: BIOS Setup Defaults F7:Power-On Defaults
```

Typematic Rate Programming (for the PCS42 only)
The operator must select Enable or Disable. Selecting Enable the operator will be able to select the typematic rate according to the following parameters:
- Typematic Rate Delay - Sets the delay between the pressing of the key and the beginning of the repetition of this key.
- Typematic Rate - Sets the character repeat speed.

Above 1 MB Memory Test (for the PCS 30 / PCS 40 only)
Disabled - The memory above 1 MB is not tested.
Enabled - All the memory installed in the system is tested.

Hard disk Type 47 RAM Area (for all systems)

Define the address of the memory area that the system BIOS uses to store "Extended Information" such as, for example, the user-defined hard disk parameters. The following options are available:

- 0:300 - To move the Stack Area at memory address 30h
- DOS 1 KB - To free the first 640 KB of system base memory for the MS-DOS operating system
  In this case the system's base memory is reduced to 1 KB.

System Boot Up Num Lock (for all systems)

Activates or deactivates the Num Lock feature at power on:
- On = Num Lock activated at system power on
- Off = Num Lock not activated during system power on.

Floppy Drive Seek At Boot (for the PCS42 only)

Selectable values are Enabled or Disabled. Disabled is the default setting which provides a fast bootstrap so as to reduce the risk of damaging the heads.

System Boot Up Sequence (for the PCS42 only)

The BIOS first tries to bootstrap from drive A, then from drive C: if unsuccessful. This bootstrap sequence can be reversed.

Numeric Processor (for the PCS 30/ PCS 40 only)

The following options can be defined: - Present = 80387 SX coprocessor installed
                                        - Absent = Coprocessor not installed

External Cache Memory (for all systems)

The following options can be defined: - Present = Cache memory is present (16 KB)
                                        - Absent = Cache memory is not present

Internal Cache Memory (for PCS 42)

Enables or disables the i486 CPU internal cache.

Fast Gate A20 Option (for the PCS 30 / PCS 40 only)

Enable this port in order to use the software that requires the CPU to work in "Protected Mode", such as OS/2, UNIX etc..
When accessing extended memory, these operating systems must issue a command that enables this signal that sets the CPU in "Protected Mode" and gives free access to the system's extended memory. The following options can be defined in this field:
- Enabled = Address A20 is accessible
- Disabled = Address A20 is not accessible

Password Checking Option (for all systems)

The following options can be defined in this field:
- Always = The password is requested each time the system is powered on
- Setup = The password is requested each time an attempt is made to use the configuration utilities
- Disabled = The password is disabled.

Video ROM Shadow (for the PCS 30 / PCS 40 only)

When Enabled, this option allows the video ROM BIOS to be copied into system RAM starting from C000. RAM has faster access times than ROM and therefore improves video performance.

System ROM Shadow F000, 64 K (for the PCS 30 / PCS 40 only)

When enabled, this option allows the system BIOS to be copied into RAM within the F000h to FFFFh address range (64 KB).
Since RAM has faster access times than ROM, the overall performance of the system is improved.

Local Refresh Period (for the PCS 30/ PCS 40 only)

With this option you can program the memory's refresh rate according to the type of DRAM being used.
The following values can be defined: 15 µs - 30 µs, 60 µs, 120 µs
The default value used is 15 µs.

Memory Relocation (for the PCS 30 / PCS 40 only)
This option allows you to relocate 384 KB of reserved memory at the end of the system's memory area. The following cases can arise:
- Shadow RAM completely disabled: all the 384 KB of memory within the A0000h and FFFFFh address range can be relocated.
- Shadowing of the memory within the C0000h and DFFFFh address range: only 128 KB of memory within the A0000h and BFFFFh address range can be relocated.

C000 Shadow RAM Cacheable (for the PCS 30 / PCS 40 only)
If the video ROM BIOS is shadowed, this option allows you to enable cache performance on this memory segment.

F000 Shadow RAM Cacheable (for the PCS 30 / PCS 40 only)
If the system ROM BIOS is shadowed, this option allows you to enable cache performace on this memory segment.

Adaptor ROM Shadow (for the PCS42 only)
ROM shadow copies the BIOS code from ROM into RAM.

Shadow RAM Option (for the PCS42 only)
Selectable values are Both, Video and Main. With this option you can enable the system BIOS in RAM shadow (Main), or the VGA BIOS and system BIOS (Both), or disable all shadowing functions.

Boot Sector Virus Protection (for the PCS42 only)
Enables or disables boot sector virus protection.

IDE Block Mode Transfer (for the PCS42 only)
If the HDU is in IDE block mode, enable this option for faster transfers.

ADVANCED CHIPSET SETUP

This option allows you to program the chipset registers. Programming the chipset registers is highly unadvised, but if it has to be done it must be carried out with extreme care.

AUTO CONFIGURATION WITH BIOS DEFAULTS

This option allows you to automatically configure all the Advanced CMOS Setup and Advanced Chipset Setup options with the default values of the system and video BIOS.

WRITE TO CMOS AND EXIT

Select this option to store the new system configuration in CMOS RAM.
When all the data are updated in the CMOS, the system will reset itself and begin the normal bootstrapping routine.

DO NOT WRITE TO CMOS AND EXIT

Use this option to exit the configuration utilities without changing the CMOS contents.

CONFIGURING 40 MHZ 80386 DX (438-VC-HD) SYSTEMS

HOW TO LAUNCH THE CONFIGURATION UTILITIES

After Power On Diagnostics run the memory tests, the following message is displayed:

TO ENTER SETUP BEFORE BOOT PRESS CTRL-ALT-ESC

Press the CTRL ALT ESC keys to enter into the Configuration Utility environment. If you do not wish to use this program, do not press any key and let the system continue with its bootstrapping procedure.

If you press the CTRL ALT ESC keys, the following screen is displayed:

```
Date          : 18 Apr 1993
Time          : 12:30:23                   ROM ISA
                                           Award Software, Inc.
                                           Base Memory        : 640 K
Drive A:      : 1,44 MB, 3 in              Extended Memory    : 3072 K
Drive B       : 1,2 MB, 5 in               Expanded Memory    : 0 K
                                           Other Memory       : 384 KDate
Video         : EGA/VGA
                                           Total Memory       : 4096 K
Halt On       : All Errors

Cache         : External & Internal        Boot Sequence      : A, C
Shadow        : System & video             Virus Warning      : Enable
Security      : Disable


                               CYL  Head  Sec  Preco  Landzone
Drive C       : 48 (170 MB)    903   8     46    0      903
Drive D       : None (**** MB)  0    0      0     0       0


Alt-F1 for Menu Help                                   F10 exits
Page 01: Status Page PgDn = Options Page               F2 Change colors
```

The configuration utilities are menu-driven. You will need to press the ←, ↑, → and ↓ keys to select the different options available. Press the + and - keys to change the values of the options, and press F10 to exit.

Pressing the PgDn key selects the **Option Page Setup** utility menu. When selecting this option, the following screen is displayed:

```
─────────────────────────── Bus Control ───────────────────────────

            ISA Command Delay              : Normal
            ISA Wait state                 : Normal
            I/O Recovery Time              : Disable
            Extended ALE                   : Disable
            Decuple Refresh                : Disable


─────────────────────── Cache / DRAM Control ───────────────────────

            256 K / 384 K Relocation       : Disable
            Cache Timing                   : Turbo
            Cideo Cacheable                : Enable
            System Cacheable               : Enable


    Alt-F1 for Menu Help       PgUp = Staus Page           F10 exits
    Page 02: Options Page                                  F2 Change colors
```

Usually these settings do not need to be changed.

Table of Installabile Hard Disks

For all the hard disks certified by Olivetti, select hard disk type 48 or 49 from the Status Page Setup menu. Then manually define the parametiers of the hard disk installed using the $\rightarrow$ and $\leftarrow$ keys. In the following table you will find the values that can be assigned to the parameters of these hard disks.

TYPE	CYL	HEAD	WPCOM	LZONE	SEC	SIZE	MODEL
47 or 48	980	10	0	980	17	85 MB	W.D. Caviar 280
47 or 48	903	4	0	903	46	85 MB	CONNER Jaguar CP 30084E
47 or 48	977	10	0	977	17	85 MB	QUANTUM Pioneer ELS85 AT
47 or 48	903	8	0	903	46	170 MB	CONNER Jaguar CP 30174 E
47 or 48	1011	15	0	1011	22	170 MB	QUANTUM Pioneer ELS170 AT
47 or 48	895	10	0	895	55	210 MB	CONNER CP 30256
47 or 48	723	13	0	723	51	240 MB	QUANTUM LPS240 AT

Configuring 25 or 33 MHz 80486 SX, 33 MHz 80486 DX, and 50 or 66 MHz 80486 DX2 Systems (486-VC)

These configuration utilities are identical to those used on 40 MHz 80386 DX systems.

CONFIGURATION UTILITIES FOR THE M6-520, M6-540 AND M6-560 SYSTEMS

These utilities are contained in the User Disk or System Test.

The utilities with which you can configure the video are not available on the User Disk but are being distributed on EVD (Enhanced Video Drivers) diskettes and are explained in the relative section of this chapter.

To activate the User Disk utilities, insert the diskette in drive A and press the CRTL, ALT and DEL keys simultaneously (software reset).

When running the User Disk for the very first time, a menu is displayed after the logotype allowing you to select a language to work in. After selecting the language, the User Disk will display all the messages in the language selected, and will continue to do so each time it is used.

You can change the language selected in one of two ways:
- Run the User Disk and press the CTRL and F8 keys after the logotype is displayed. The language selection menu is consequently displayed.
- Cancel the MSG.LNG file from the User Disk so the next time the User Disk is launched, it will act as if it were being used for the very first time. The language selection menu will appear after the logotype.

The configuration utility is used to check and modify the system's configuration data. This utility can also be used to activate the automatic configuration program, also available from the main menu, and the SCSI device configuration program.

The system will automatically run a configuration program when the **Run Automatic Configuration** option is selected. If a configuration conflict message is received, follow the instructions displayed.

Configuration data are then stored in CMOS RAM where they are kept active until the system is powered off.
Whenever an option is removed, installed or modified, run this utility so that the system can update its configuration data.

By activating **Set configuration** you have access to four overlapping windows. You can move from one window to another using the TAB key. The following windows are displayed:

- Main Setup
- Memory Layout
- Extra Feature
- Slot setup.

Each window has a series of commands that can be used to scroll through the items of each single window, change window, save new configuration data, activate the automatic configuration utility without having to return to the main menu and activate the **SCSI Configuration** utility to display the configuration of SCSI devices.

MAIN SETUP
In this window you can:
- Display or change the system's date and time.
- Display the base memory capacity (always 640 KB)
- Display extended memory capacity
- Indicate whether the math coprocessor is present or not
- Display or change the type of floppy disk interface drive installed as drive A or B.
  In case an STU with floppy disk interface is installed as drive B, select **Not Installed**.

MEMORY LAYOUT
This window allows you to view how the system assigns part of its memory.

EXTRA FEATURES
This window displays extended memory according to the parameter that disables 1, 2 or 4 MB of memory under the 16th MB. This option frees memory areas that are not used by the system board and that are not cached, in which to relocate optional boards that can use this memory.

Also, this window can be used to set the keyboard feedback rate, whether it being normal or fast, and gives the possibility of enabling or not the keyboard's Num Lock feature at power on.

SLOT SETUP
This window displays and modifies the configuration of the system board and of all the boards installed in the MCA slot. And as far as the system board is concerned, through this window it is also possible to configure the IRQ of the COM1 and COM2 serial ports, as well as that of the parallel port. Also, the cache can be either enabled or disabled after system startup. If configuration conflicts arise, an error message is displayed and an asterisk appears alongside the settings that were the cause of the conflict.

SCSI CONFIGURATION
This option can be activated directly from the command line. It provides the configuration of the SCSI devices installed inside the system or connected externally to it. This option actually gives the configuration of the jumpers on the drive.

Utility

RUN AUTOMATIC CONFIGURATION
This option is used to automatically check and update the configuration data stored in the system's non-volatile memory. The program sets the system configuration with the default values.

Run Automatic Configuration recognizes the resources installed in the system and configures them directly by assigning to them the requested functions and appropriate resources on the basis of the ADF configuration files of each board installed in the system. Thus when boards are installed there is no need to set hardware jumpers, but only copy the ADF files of the boards to install onto the User Disk with the **Copy an Option Diskette** utility, and therefore activate the Run Automatic Configuration utility

At the end of this configuration process, all the data are stored in the system board's CMOS RAM so that the system resources are checked each time the system is powered on. It is suggested that you also update the configuration files on the back-up copy of the User Disk each time the configuration of the system changes, using the **Save Configuration to Diskette** option.

SAVE CONFIGURATION TO DISKETTE
This option is used to copy the configuration data stored in CMOS on a back-up copy of the User Disk. The program is used after changes have been made to the configuration of the system so that if the system board is changed or an incorrect configuration is made, the original settings can be restored using the **Restore Configuration From Diskette** option.

COPY AN OPTION DISKETTE
This utility is used before an option (usually an expansion board) is physically installed in the system. It includes an additional diskette which is contained in the kit. With this utility you can copy the contents of the option diskette into the back-up copy of the User Disk.

The options diskette contains the test programs and the data needed to configure the option (ADF file).
To launch this utility, select **Copy an option diskette** and follow the instructions displayed.