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TABLE OF CONTENTS

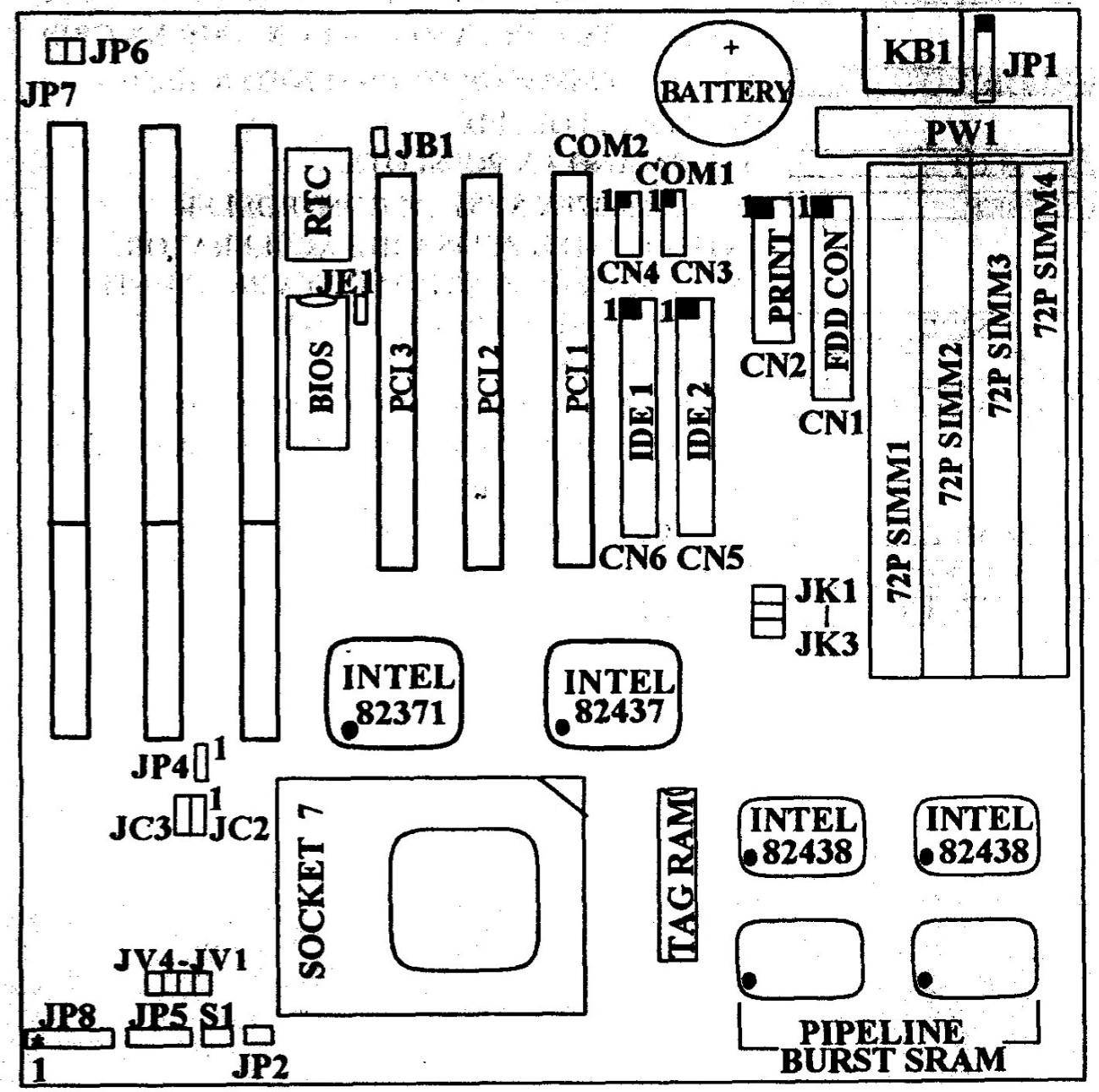
CHAPTER 1. FEATURES

1-1 SPECIFICATIONS .

CPU	: INTEL 75 - 166 MHz..... CPUs **(FOR INTEL CPUs ONLY , NOT FOR CYRIX M1 OR AMD K5 CPU)**
MEMORY	: 4 X 72-PIN SIMM UP TO 128M BYTES, EDO DRAM SUPPORTED.
EXP. SLOT	: 3 X ISA AND 3 X PCI SLOTS.
CHIPSET	: INTEL 82437FX SYSTEM CONTROLLER INTEL 82371FB PCI ISA IDE XCELERATOR. INTEL 82438FX PENTIUM DATA PATH UNIT.
CACHE SIZE	: **BURST/PIPELINED SRAM 256K.**
BIOS	: AWARD BIOS.
I/O FUNCTION	: ON BOARD 2 x PCI IDE DEVICES , 1 x FDC , 2 x SERIAL PORTS(16550 FAST COM),1x PARALLEL PORT DEVICE /EPP/ECP.
BOARD SIZE	: 22 CM x 24.5 CM.
GREEN FUNCTION	: YES
I.R. FUNCTION	: OPTIONAL

CHAPTER 2. INSTALLATION

2-1 LAYOUT REFERENCE



JP2 : HDD LED
JP5 : SPEAKER
JP8 : KEYLOCK
S1 : RESET

2-2 PENTIUM PI JUMPER SETTINGS

1. JK1-JK3,JC2,JC3,JP4 : CPU CLOCK SELECTOR

(RED/ YELLOW JUMPER CAP)

CPU SPEED	CLOCK SPEED	RATIO	JK1	JK2	JK3	JC2	JC3	JP4
75MHZ	(50MHZ)	1.5	ON	ON	OFF	1-2	1-2	1-2
90MHZ	(60MHZ)	1.5	ON	OFF	ON	1-2	1-2	2-3
100MHZ	(66MHZ)	1.5	ON	ON	ON	1-2	1-2	2-3
120MHZ	(60MHZ)	2	ON	OFF	ON	1-2	2-3	2-3
133MHZ	(66MHZ)	2	ON	ON	ON	1-2	2-3	2-3
150MHZ	(60MHZ)	2.5	ON	OFF	ON	2-3	2-3	2-3
166MHZ	(66MHZ)	2.5	ON	ON	ON	2-3	2-3	2-3

NOTE : 1. PCI CLOCK = SYSTEM CLOCK / 2
2. JP4 IS SET AS " 1-2 " ONLY WHEN CPU IS 75MHZ .

2. JV1,JV2,JV3,JV4 : CPU VOLTAGE SELECTOR (BLACK JUMPER CAP)

	P54C 3.3V **(DEFAULT)**	P55CT
JV1	ON	OFF
JV2	ON	OFF
JV3	ON	OFF
JV4	ON	OFF

☞ **THIS MAIN BOARD IS DESIGNED FOR INTEL PENTIUM CPU ONLY.**

3. JP7 : MONITOR TYPE SELECTOR (BLACK JUMPER CAP)

	COLOR	MONOCHROME
JP7	OFF **(DEFAULT)**	ON

4. JB1 : BATTERY SELECTOR (BLACK JUMPER CAP)

	NORMAL	CLEAR CMOS
JB1	OFF (DEFAULT)	ON

☞ **IF YOU FORGET PASSWORD, YOU MUST CLEAR CMOS RAM AND RECONFIGURE THE SYSTEM.**

5. PS/2 MOUSE SELECTOR (BLACK JUMPER CAP)

	ENABLED	DISABLED
JP6	ON	OFF

☞ **PS/2 MOUSE CABLE IS OPTIONAL. THE PIN #1 IS YELLOW COLOR.**

6. OTHER JUMPER SETTINGS AND CONNECTORS :

JP1 : PS/2 MOUSE CONNECTOR.
JP2 : ONBOARD HDD LED CONNECTOR.
JP5 : SPEAKER CONNECTOR.
JP8 : KEYLOCK CONNECTOR.
S1 : RESET CONNECTOR
CN1 : FLOPPY DISK CONNECTOR .
CN2 : PARALLEL PORT CONNECTOR.
CN3 : SERIAL PORT 1 CONNECTOR.
CN4 : SERIAL PORT 2 CONNECTOR.
CN5 : SECONDARY IDE CONNECTOR
CN6 : PRIMARY IDE CONNECTOR.

2-3 MEMORY CONFIGURATION

There are no jumpers for the DRAM configuration. The BIOS will test the DRAM type and size automatically. There are two banks(*) from SIMM1 to SIMM4 on main board. Please follow SIMM1, then 2,3,4 to install memory(**). DRAM speed must be 70ns or faster. Both types of DRAM SIMM with parity (x36) or non-parity (x32) are acceptable.

SIMM1	SIMM2	SIMM3	SIMM4	TOTAL
4MB	4MB	---	---	8MBytes
4MB	4MB	4MB	4MB	16MBytes
8MB	8MB	---	---	16MBytes
4MB	4MB	8MB	8MB	24MBytes
8MB	8MB	4MB	4MB	24MBytes
8MB	8MB	8MB	8MB	32MBytes
16MB	16MB	---	---	32MBytes
16MB	16MB	4MB	4MB	40MBytes
8MB	8MB	16MB	16MB	48MBytes
16MB	16MB	8MB	8MB	48MBytes
16MB	16MB	16MB	16MB	64MBytes
32MB	32MB	---	---	64MBytes
4MB	4MB	32MB	32MB	72MBytes
8MB	8MB	32MB	32MB	80MBytes
32MB	32MB	8MB	8MB	80MBytes
16MB	16MB	32MB	32MB	96MBytes
32MB	32MB	16MB	16MB	96MBytes
32MB	32MB	32MB	32MB	128MBytes

(*) EACH BANK CONTAINS TWO SIMM SOCKETS AND MUST BE INSTALLED BY TWO EXACT SAME SIMMs.

(**) OR FOLLOW THE SIMM 4, 3 , SIMM 2, 1 TO INSTALL SIMMs SINCE THIS BOARD HAS " AUTO-BANK " FEATURE.

CHAPTER 1. BIOS SETUP

3-1. AWARD BIOS CMOS SETUP

ROM PCI BIOS
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP BIOS FEATURES SETUP CHIPSET FEATURES SETUP POWER MANAGEMENT SETUP PCI CONFIGURATION SETUP LOAD BIOS DEFAULTS LOAD SETUP DEFAULTS	PASSWORD SETTING IDE HDD AUTO DETECTION SAVE & EXIT SETUP EXIT WITHOUT SAVING
Esc : Quit F10 : Save & Exit Setup	↓↑→← : Select Item (Shift) F2 : Change Color
Time, Date,Hard Disk Type...	

3-2. STANDARD CMOS SETUP

ROM PCI BIOS
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

Date (mm:dd:yy) : Wed Jun 1, 1995
Time (hh:mm:ss) : 00 : 00 : 00

HARD DISK	TYPE	SIZE	CYLS	HEADS	PRECOMP	LANDZ	SECTOR	MODE
Primary Master	User	428MB	899	15	65535	898	62	NORMAL
Primary Slave	None	0MB						
Secondary Master	None	0MB						
Secondary Slave	None	0MB						

Drive A : 1.2M , 5.25 In
Drive B : 1.44M , 3.5 In

Video : EGA/VGA
Halt On : All Errors

Esc : Quit	↓↑→← : Select Item	PU/PD/+/- : Modify
F1 : Help	(Shift) F2 : Change Color	

3-3. BIOS FEATURES SETUP

ROM PCI BIOS
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

Virus Warning	:Disabled	Video BIOS Shadow	:Enabled
CPU Internal Cache	:Enabled	C8000-CBFFF Shadow	:Disabled
External Cache	:Enabled	CC000-CFFFF Shadow	:Disabled
Quick Power On Self Test	:Enabled	D0000-D3FFF Shadow	:Disabled
Boot Sequence	:C, A	D4000-D7FFF Shadow	:Disabled
Swap Floopy Driver	:Disabled	D8000-DBFFF Shadow	:Disabled
Boot Up Floopy Seek	:Enabled	DC000-DFFFF Shadow	:Disabled
Boot Up Numlock Status	:on		
Boot Up System Speed	:High		
Memory Parity Check	:Disabled	ESC : Quit	↓↑→← : Select Item
Typematic Rate Setting	:Disabled	F1 : Help	PU/PD/+/- : Modify
Typematic Rate(Chars/Sec)	:6	F5 : Old Valued	(Shift) F2 : Color
Typematic Delay(Msec)	:250	F6 : Load Bios Defaults	
Security Option	:Setup	F7 : Load Setup Defaults	
PS/2 mouse function control	:Enabled		
PCI VGA Palette Snoop	:Disabled		

Virus Protection :

The "Virus Warning" default setting is "Disabled". When Enabled, This feature protects the boot sector and partition table of your disk. Any attempt to them will halt the system and cause a warning message to appear. If this happens, you can either allow the operation to continue, or stop it to use anti-virus utility on a virus-free,bootable,floppy disk to reboot and investigate your system.

Swap Floppy Driver:

The "Swap Floppy Driver" default setting is "Disabled". When enabled, the BIOS will see the hardware "drive A: " as "drive B:", and hardware "drive B:" as "drive A :". You can use this feature to boot from different size disks.

Security Option

The "Security Option" controls the password setting in the main screen The default setting is "setup". This will allow the system to boot, and use the

password only to protect the Setup Utility configuration settings from being tampered with . The other setting, "System", uses the password feature every time you boot up. You create a password by using the "CHANGE PASSWORD" command from the main screen, as explained later in this section. Shadow RAM address map:

Video BIOS

C8000 - CBFFF, CC000 - CFFFF, D0000 - D3FFF, D4000 - D7FF, D8000 - DCFFF, DD000 - DFFFF.

3-4. CHIPSET FEATURES SETUP

ROM PCI BIOS
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

DRAM RAS# Precharge Time	:4	PCI Concurrency	:Enabled
DRAM RAS TO CAS delay	:3	PCI Streaming	:Enabled
DRAM Read Burst Timing	:X3333	PCI Bursting	:Enabled
DRAM Write Burst Timing	:X3333	Onboard FDD Controller	:Enabled
System BIOS Cacheable	:Enabled	Onboard Serial Port 1	:COM1
Video BIOS Cacheable	:Enabled	Onboard Serial Port 2	:COM2
8 Bit I/O Recovery Time	:1	Onboard Parallel Port	:3F8/IRQ
16 Bit I/O Recovery Time	:1	Onboard Parallel Mode	:ECP+EPP
Memory Hole At 15M-16M	:Disabled	ECP Mode Use DMA	:3
IDE HDD Block Mode	:Enabled		
IDE Primary Master PIO	:Auto		
IDE Primary Slave PIO	:Auto		
IDE Secondary Master PIO	:Auto	ESC : Quit	↓↑→← : Select Item
IDE Secondary Slave PIO	:Auto	F1 : Help	PU/PD/+/- : Modify
On-Chip Primary PCI IDE	:Enabled	F5 : Old Valued (Shift)	F2 : Color
On-Chip Secondary PCI IDE	:Enabled	F6 : Load Bios Defaults	
PCI Slot IDE 2nd Channel	:Enabled	F7 : Load Setup Defaults	

DRAM RAS# Precharge Time [The DRAM Precharge time by RAS.]

: 3 (default)

: 4

DRAM RAS TO CAS Delay[Control the DRAM page miss and row miss leadoff timing.]

: 2

: 3 (default)

DRAM Read Burst Timing [The timing used depends on the type of DRAM on a per-basis. The DRAM read burst timing are controlled by register.]
: X2222
: X3333 (default)
: X4444

DRAM Write Burst Timing [Slower rate may be required in certain system designs to support layout with longer trace length or slower DRAM. The DRAM write burst timing are controlled by register.]
: X2222
: X3333 (default)
: X4444

System BIOS Cacheable[Define whether system BIOS area cacheable or not.]
:Enabled (default)
:Disabled

Video BIOS Cacheable[Define whether video BIOS area cacheable or not.]
:Enabled (default)
:Disabled

Memory Hole AT 15M-16M[This field enable a memory hole in main memory space. CPU cycles matching an enabled hold are passed on to PCI. Note that a selected not be changed while the L2 cache is enabled.]
:Enabled
:Disabled (default)

IDE HDD Block Mode[This feature enhance hard disk performance by making multi sector transfer, instead of one sector per transfer, most IDE drivers, except very early designs ,can use this feature.]
:Enabled (default)
:Disabled

IDE Primary Master PIO [Detect your Primary Master hard disk device.]
:AUTO (default)
:Mode 0,1,2,3,4

IDE Primary Slave PIO [Detect your Primary Slave hard disk device.]
:AUTO (default)
:Mode 0,1,2,3,4

IDE Secondary Master PIO[Detect your Secondary Master hard disk device.]
:AUTO (default)
:Mode 0,1,2,3,4

Addendum FOR PENTIUM P.I. MAIN BOARD

JUMPER SETTINGS FOR CYRIX 6X86 CPUs & AMD 5K86-P75 CPU.

CPU SPEED	CLOCK SPEED	RATIO	JK1	JK2	JK3	JC2	JC3	JP4
INTEL 75 MHZ AMD 5K86-P 75	(50MHZ)	1.5	ON	ON	OFF	1-2	1-2	1-2
CYRIX P120 +	(50MHZ)	2	ON	ON	OFF	1-2	2-3	2-3
INTEL 90 MHZ AMD 5K86-P 90	(60MHZ)	1.5	ON	OFF	ON	1-2	1-2	2-3
INTEL 100 MHZ AMD 5K86-P 100	(66MHZ)	1.5	ON	ON	ON	1-2	1-2	2-3
INTEL 120 MHZ CYRIX P150 +	(60MHZ)	2	ON	OFF	ON	1-2	2-3	2-3
INTEL 133 MHZ CYRIX P160 +	(66MHZ)	2	ON	ON	ON	1-2	2-3	2-3
INTEL 150 MHZ	(60MHZ)	2.5	ON	OFF	ON	2-3	2-3	2-3
INTEL 166 MHZ	(66MHZ)	2.5	ON	ON	ON	2-3	2-3	2-3
INTEL 180 MHZ	(60MHZ)	3	ON	OFF	ON	2-3	1-2	2-3
INTEL 200 MHZ	(66MHZ)	3	ON	ON	ON	2-3	1-2	2-3

NOTE : THIS MAIN BOARD DOESN'T SUPPORT CYRIX P133+ CPU SINCE IT DOESN'T GENERATE 55MHZ CLOCK SPEED. FOR CYRIX P133+ , PLEASE SET JUMPER SETTING OF P133+ AS P120+.