

# **MAINBOARD USER'S MANUAL**

# **F486**

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# CHAPTER 1 INTRODUCTION

## 1-1 INTRODUCTION OVERVIEW

The 486 PCI GREEN M/B provides a highly integrated solution for fully compatible high performance PC/AT platforms.

The M/B supports 486 family & 486 S-erial GREEN microprocessors in the most effective and power efficient designs.

### SYSTEM FEATURES

#### 1. SUPPORTS CPU: 5V/4V/3.45V/3.3V POWER SUPPLY

INTEL	486SX/DX/DX2/DX4,P24D,P24T
AMD	486DX/DX2/DX4 & ENHANCED CPU
Cyrix	M6/M7/DX4/5x86
TI	486DX/DX2
IBM	486DX/DX2
SGS	486DX/DX2
UMC	U5SX/DX/DX2

#### 2. SUPPORTS 72PIN SIMM\*2 (4 BANK SD/DD) UP TO 128MB (Standard or EDO DRAM)

#### 3. SUPPORTS 1 BANK W/B CACHE SRAM UP TO 512KB

*EPROM: ISSI IS28F010A-45W B484201P4 9616*

*AWARD BIOS (1995) 07/02/96-ALI-1487/89-  
BIOS ISA 486 2A4KD008C-  
S/N 028826045 V 4.51 PG*

*TERMINATOR 486/5x86 PCI-432MB MAY 22/96*

*TS-486-1.1*

*1*

*TS-100656*

*TANS TS5188*

*ALI M5818P*

6. Buld in

4\*ISA MASTER BUS

3\*PCI V2.0 MASTER BUS

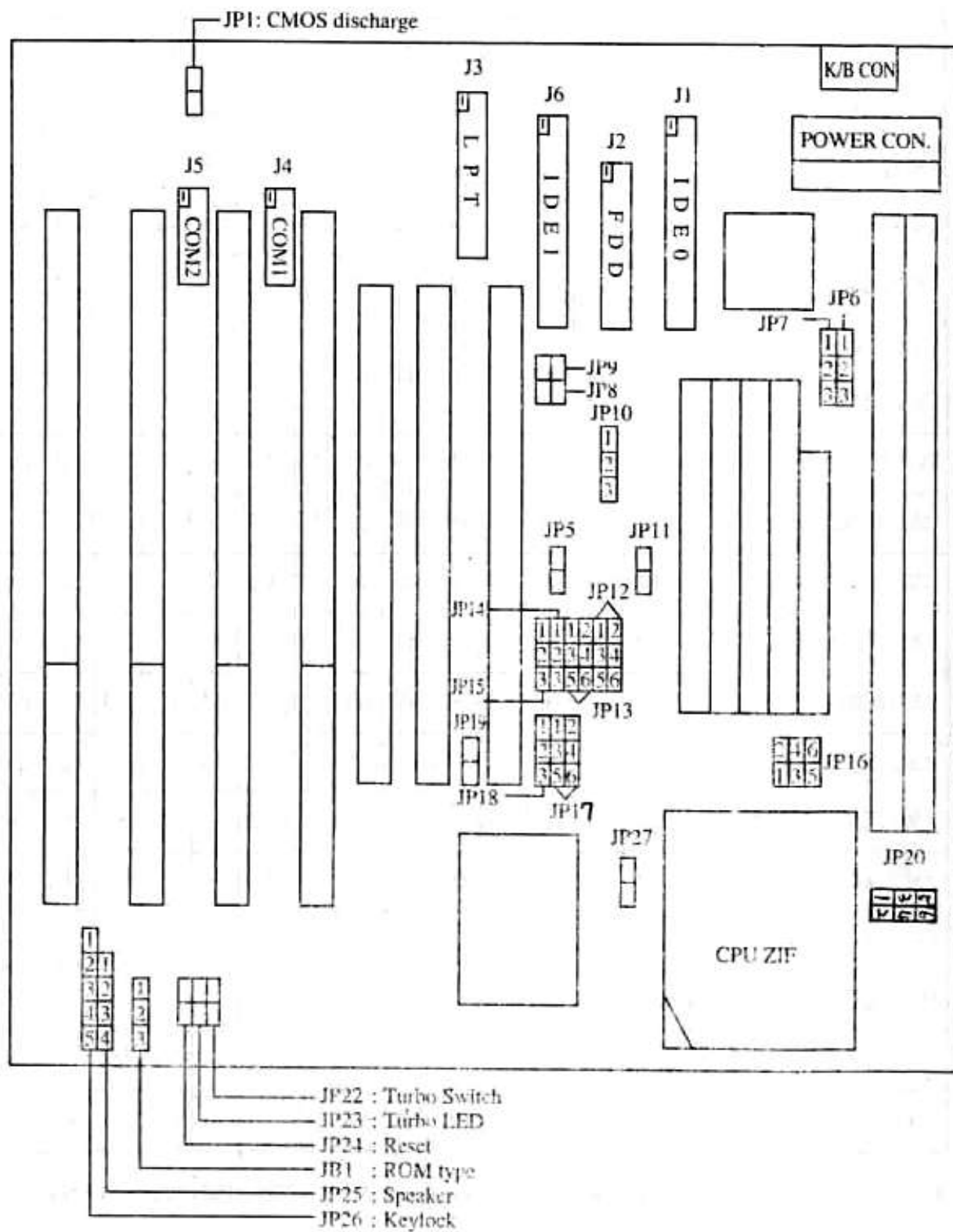
2\*E.IDE SUPPORTS 4 HIGH CAP. DRIVER

2\*SERIAL PORT HIGH SPEED 16C550 UART

1\*E.FDC SUPPORTS 2.88MB FDD

1\*PARALLELL PORT

## 1-2 Connectors & Jumpers



### 1-3 QUICK TO SETTING (CPU TYPE JUMPER) & (SYSTEM CLOCK JUMPER)

CPU TYPE (MHZ)	JP5	JP8	JP9	JP10	JP11	JP12	JP13	JP14	JP15	JP16	JP17	JP18	JP19	JP27
INTEL SX, UMC SX-25 MHZ	off	off	off	1-2	off	off	off	off	1-2	off	1-2	1-2	off	on
INTEL SX, UMC SX-33 HMZ	on	on	on	1-2	off	off	off	off	1-2	off	1-2	1-2	off	on
INTEL SX-S, 25 HMZ	on	off	off	1-2	off	3-4	off	off	1-2	3-4	5-6	1-2	off	on
INTEL SX-S, 33 HMZ	on	on	on	1-2	off	3-4	off	off	1-2	3-4	5-6	1-2	off	on
INTE, UMC DX/DX2/DX4 33/66/100 HMZ	off	on	on	1-2	off	off	off	2-3	1-2	off	1-2	2-3	off	on
INTEL DX2-S/DX-S,33/66/100 HMZ	on	on	on	1-2	off	3-4	off	2-3	1-2	3-4	5-6	2-3	off	on
AMD 486X2-50 HMZ	off	off	off	1-2	off	off	off	2-3	1-2	off	1-2	2-3	on	on
AMD 486DX2-66 HMZ	off	on	on	1-2	off	off	off	2-3	1-2	off	1-2	2-3	on	on
AMD 486DX2-80 HMZ	off	on	off	2-3	on	off	off	2-3	1-2	off	1-2	2-3	on	on
AMD 486DX4-100 HMZ	off	on	on	1-2	off	off	off	2-3	1-2	off	1-2	2-3	off	on
AMD 5X86-133 HMZ	on	on	on	1-2	off	3-4	1-3,5-6	2-3	2-3	3-4	5-6	2-3	off	on
AMD 5X86-150 HMZ	on	off	on	2-3	on	3-4	5-6	2-3	2-3	3-4	5-6	2-3	off	on
AMD 5X86-160 HMZ	on	on	off	2-3	on	3-4	1-3,5-6	2-3	2-3	3-4	5-6	2-3	off	on
Cyrix, TI, IBM, SGS DX/DX2/DX4,33/66/100 HMZ	on	on	on	1-2	off	5-6	1-2	2-3	1-2	5-6	3-4	2-3	off	off
Cyrix 5X86-100 HMZ	on	on	on	1-2	off	3-4	5-6	2-3	1-2	3-4	5-6	2-3	off	on
Cyrix 5X86-120 HMZ	on	on	off	2-3	on	3-4	5-6	2-3	1-2	3-4	5-6	2-3	off	on

If you not found cpu type in the section, please refer 2-3 CPU INSTALLATION.

## CHAPTER 2 INSTALLATION

### 2-1 SIMM MODULE INSTALLATION

The Terminator PCI system designed to use 72 pin SIMM module. supports 4 bank SD/DD module standard or EDO DRAM.

SIMM1	SIMM2	TOTAL
1MB	NONE	1MB
1MB	1MB	2MB
4MB	NONE	4MB
4MB	4MB	8MB
8MB	NONE	8MB
8MB	8MB	16MB
16MB	NONE	16MB
16MB	16MB	32MB
32MB	NONE	32MB
32MB	32MB	64MB
64MB	NONE	64MB
64MB	64MB	128MB

### 2-2 SRAM INSTALLATION

This M/B can support cache memory from 128KB up to 512 KB.

CACHE SIZE	TAG SRAM	DATA	JP6	JP7
128KB	8K/16K/32*8	32K*8	<b>2-3</b>	2-3
256KB	16K/32K*8	64K*8	2-3	1-2
512KB	32K*8	128K*8	1-2	1-2

## 2-3 CPU INSTALLATION

Please check CPU type & use power voltage & pin 1 location before install CPU to ZIF socket.

### A. VOLTAGE REGULATOR JUMPER: JP20

VOLTAGE	JP20	J8
5V	<b>OFF</b>	<b>ON</b>
4V	3-5	<b>OFF</b>
3.45V	2-4	<b>OFF</b>
3.3V	1-3	<b>OFF</b>

### B. SYSTEM CLOCK SELECTION: JP8, JP9, JP10, JP11

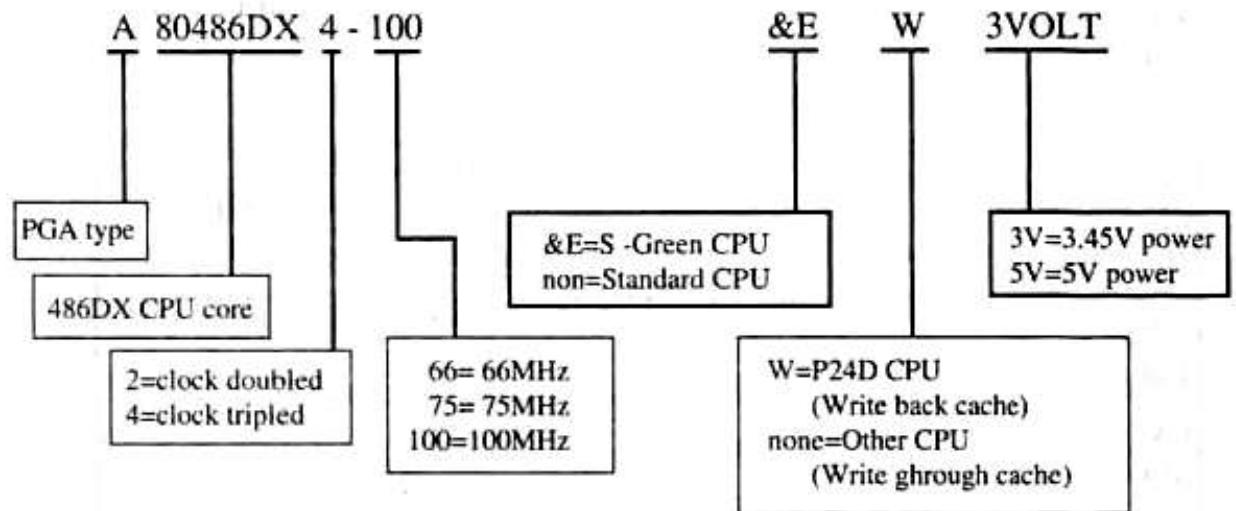
SYSTEM CLK	CPU SPEED (HMZ)	JP8	JP9	JP10	JP11
25 MHZ	SX-25 DX2-50 DX4-75	OFF	OFF	1-2	OFF
33 MHZ	SX-25 DX2-50 DX4-75	ON	ON	1-2	OFF
40 HMZ	DX2-80 5X86-120/160	ON	OFF	2-3	ON
50 HMZ	5X86-150	OFF	OFF	2-3	ON



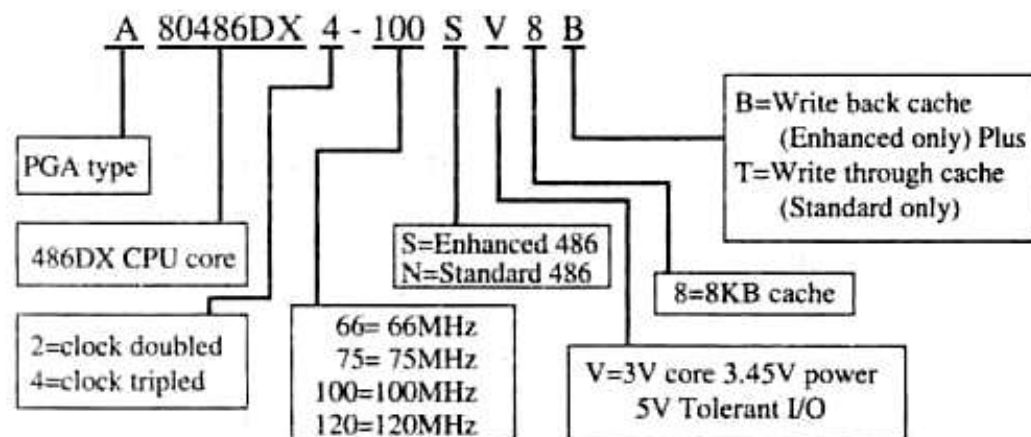
## C. CPU nomenclature:

### CPU Nomenclature

#### 1. INTEL product



#### 2. AMD product



#### 3. Cyrix product

Cx 486DX-4-100P  
3.45V

STANDARD Cyrix DX4 CPU

Cx 486DX-4-100P  
DX4-100-P/O  
3.45V

OEM CPU JUMPER set  
at Cyrix 5x86 CPU

#### D. CPU TYPES SELECTION:

\ JUMPER CPU\	JP5	JP12	JP13	JP14	JP15	JP16	JP17	JP18	JP19	JP27
INTEL DX2 /DX4-S	ON	3-4	OFF	2-3	1-2	3-4	5-6	2-3	OFF	ON
AMD 66 (80) /100, 120	OFF	OFF	OFF	2-3	1-2	OFF	1-2	2-3	ON/ OFF	ON
AND Enhanced	ON	3-4	5-6	2-3	2-3	3-4	5-6	2-3	OFF	ON
Cyrix\ 5x86	ON	3-4	5-6	2-3	1-2	3-4	5-6	2-3	OFF	ON
Cyrix\ Ti\IBM \SGS DX/DX2 /DX4	ON	5-6	1-2	2-3	1-2	5-6	3-4	2-3	OFF	OFF
P24D	ON	3-4	5-6	2-3	2-3	3-4	5-6	2-3	OFF	ON
P24T	ON	3-4	OFF	1-2	2-3	3-4	5-6	2-3	OFF	ON
INTEL UMC U5 SX	OFF	OFF	OFF	OFF	1-2	OFF	1-2	1-2	OFF	ON
INTEL UMC U5 DX/DX2	OFF	OFF	OFF	2-3	1-2	OFF	1-2	2-3	OFF	ON
INTEL SX-S	ON	3-4	OFF	OFF	1-2	3-4	5-6	1-2	OFF	ON

## 2-4 FUNCTION CONNECTOR:

JP1: OFF NORMAL SETTING.

ON DISCHARGE RTC . LOSS CMOS RAM MEMORY.

JP3: ON BOARD E.IDE LED CONNECTOR

1 -- > -

2 -- > +

JP21: SHORD.

JP22: TURBO SWITCH

ON -- > TURBO

OFF -- > DETURBO

JP23: TURBO LED

1 -- > +

2 -- > -

JP24: RESET

JP25: SPEAKER CONNECTOR

1 ----- > +5V DC

2~4 ----- > DATA OUT

JP26: KEYLOCK

1 -- > POWER LED +

2 -- > NOT USED

3 -- > POWER LED GND

4 -- > KEYBOARD INHIBITOR

5 -- > GND

## P8, P9: POWER CONNECTOR

1 ----- > POWER GOOD  
2 ----- > +5V DC  
3 ----- > +12V DV  
4 ----- > -12V DV  
5,6,7,8, ----- > GND  
9 ----- > -5V DC  
10,11,12 ----- > +5V DV

## KB1: KEYBOARD CONNECTOR

J1: E.IDE 0 CONNECTOR PRIMARY

J6: E.IDE 1 CONNECTOR SECONDARY

J2: FLOPPY CONNECTOR

J3: PRINTER PORT CONNECTOR

J4: SERIAL 1 CONNECTOR

J5: SERIAL 2 CONNECTOR

JB1: EPROM FLASH ROM SELECT

EPROM OR 5V FLASH ROM (SST)	1-2
12V FLASH ROM	2-3

## CHAPTER 3 BIOS SETUP

### 3-1 AWARD BIOS SYSTEM SETUP

This section explains how to setup system configuration (CMOS) under the AWARD BIOS. The setup program is stored in the ROM BIOS. The setup program is stored in the ROM BIOS on the motherboard rather than on a diskette to enter setup, press the <del> key when the system is booting up.

The following menu appears:

Please enter "Standard Coms Setup" to enter the next screen.

PCI/ISA BIOS (2A4KDF91 )

----- COOS ETUP UTILITY -----

AWARD SOFTWARE, INC.

<div>STANDARD COMOS SEIUP</div> CHIPSET FEATURES SETUP POWER MANAGEMENT SETUP PCI CONFIGURATION SETUP LOAD BIOS DEFAULTS LOAD SETUP DEFAULTS	SUPERVISOR PASSWORD USER PASSWORD IDE HDD AUTO DETECTION HDD LOW LEVEL FORMAT SAVE & EXIT SETUP EXIT WITHOUT SAVING
Esc: Quit F10: Save & Exit Setup	↑ ↓ ← → : Select Item (Shift) F2: Change Color
Time, Date, Hard Disk Type .....	

# PCI/ISA BIOS (2A4KDF91)

## STANDARD CMOS SETUP

AWARD SOFTWARE, INC.

Date (mm:dd:yy) : Sat, Jan : 1 : 2028								
Time (hh:mm:ss) : 1 : 44 : 23								
HARD DISKS	TYPE	SIZE	CYLS	HEAD	PREOOMP	LANDZ	SECTOR	MODE
Primary Master :	AUTO	0	0	0	0	0	0	AUTO
Primary Slave :	AUTO	0	0	0	0	0	0	AUTO
Secondary Master :	AUTO	0	0	0	0	0	0	AUTO
Secondary Slave :	AUTO	0	0	0	0	0	0	AUTO
Drive A : 1.2MB, 5.25in.				<div> Base Memory : 640K  Extended Memory : OK  Other Memory : 384K  <hr/> Total Memory : 1024K </div>				
Drive B : None								
Video : EGA/VGA								
Halt On : All Errors								
Esc : Quit		↑ ↓ ← → Select Item			PU/PD/+/- : Modify			
F1 : Help		(Shift) F2 : Change Color						

PCI/ISA BIOS (2A4KDF91 )

----- CMOS SETUP UTILITY -----

AWARD SOFTWARE, INC.

STANDARD COMOS SEIUP <div>BIOS FEATURES SETUP</div> CHIPSET FEATURES SETUP POWER MANAGEMENT SETUP PCI CONFIGURATION SETUP LOAD BIOS DEFAULTS LOAD SETUP DEFAULTS	SUPERVISOR PASSWORD USER PASSWORD IDE HDD AUTO DETECTION HDD LOW LEVEL FORMAT SAVE & EXIT SETUP EXIT WITHOUT SAVING
Esc: Quit F10: Save & Exit Setup	↑ ↓ ← → : Select Item (Shift) F2: Change Color
Virus Protection. Boot Sequence .....	

PCI/ISA BIOS (2A4KDF91)

----- BIOS FEATURES SETUP -----

AWARD SOFTWARE, INC.

Virus Warning	: Disable	Video BIOS Shawdo	: Enable
CPU Internal Cache	: Enable	C8000-CFFFF Shadow	: Disable
External Cache	: Enable	D0000-D7FFF Shadow	: Disable
Quick Power On Self Test	: Disable	D8000-DFFFF Shadow	: Disable
Boot Sequence	: A,C	Esc : Quit F1 : Help F5 : Old Values F6 : Load Bios Defaults F7 : Load Setup Defaults ↑ ↓ ← → : Select Item (shift) F2: Change Color PU/PD/+/- : Modify	
Swap Floppy Drive	: Disable		
Boot Up Floppy Seek	: Enable		
Boot Up Numlock Status	: On		
Boot Up System Speed	: High		
Gate A20 Option	: Fast		
Memory Parity Check	: Enable		
Typematic Rate Setting	: Disable		
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay (Msec)	: 250		
Security Option	: Setup		



PCI/ISA BIOS (2A4KDF91 )

----- CMOS SETUP UTILITY -----

AWARD SOFTWARE, INC.

STANDARD COMOS SEIUP BIOS FEATURES SETUP <div style="border: 1px solid black; padding: 2px; display: inline-block;">CHIPSET FEATURES SETUP</div> POWER MANAGEMENT SETUP PCI CONFIGURATION SETUP LOAD BIOS DEFAULTS LOAD SETUP DEFAULTS	SUPERVISOR PASSWORD USER PASSWORD IDE HDD AUTO DETECTION HDD LOW LEVEL FORMAT SAVE & EXIT SETUP EXIT WITHOUT SAVING
Esc: Quit F10: Save & Exit Setup	↑ ↓ ← → : Select Item (Shift) F2: Change Color
AT Clock, DRAM timing .....	

PCI/ISA BIOS (2A4KDF91)

-----CHIPSET FEATURES SETUP-----

AWARD SOFTWARE, INC.

Auto Configuration	: Enable	Onboard FDC Controller	: Enable
	:	Onboard Serial Port 1	: COM1/3F8H
AT-BUS Clock	: CLK/4	Onboard Serial Port 2	: COM2/2F8H
DRAM Read Timing	: Normal	Onboard Parallel Port	: 278H
DRAM Write Timing	: Normal		
SRAM Read Timing	: 3222		
SRAM Write Timing	: 0 Wait		
Internal Cache WB/WT	: WT		
Hidden Refresh	: Disable		
ISA I/O Recovery	: Disable		
Fast-Back-to-Back	: Disable		
On-Chip Local Bus IDE	: Enable	Esc	: Quit
IDE Buffer for DOS & IDE	: Enable	F1	: Help
The 2nd channel IDE	: Enable	F5	: Old Values
IDE HDD Block Mode	: Enable	F6	: Load Bios Defaults
IDE Primary Master PIO	: Auto	F7	: Load Setup Defaults
IDE Primary Slave PIO	: Auto	↑ ↓ ← →	: Select Item
IDE Secondary Master PIO	: Auto	(Shift) F2	: Change Color
IDE Secondary Slave PIO	: Auto	PU/PD/+/-/	: Modify

PCI/ISA BIOS (2A4KDF91 )

----- CMOS SETUP UTILITY -----

AWARD SOFTWARE, INC.

STANDARD COMOS SEIUP BIOS FEATURES SETUP CHIPSET FEATURES SETUP <div>CHIPSET FEATURES SETUP</div> PCI CONFIGURATTON SETUP LOAD BIOS DEFAULTS LOAD SETUP DEFAULTS	SUPERVISOR PASSWORD  USER PASSWORD  IDE HDD AUTO DETECTION  HDD LOW LEVEL FORMAT  SAVE & EXIT SETUP  EXIT WITHOUT SAVING
Esc: Quit F10: Save & Exit Setup	↑ ↓ ← → : Select Item (Shift) F2: Change Color
Sleep timer, Suspoend timer .....	

PCI/ISA BIOS (2A4KDF91)

----- POWER MANAGEMENT SETUP -----

AWARD SOFTWARE, INC.

Power Management : Disable	IRQ6 (Floppy Disk) : ON
PM Control by APM : Yes	IRQ7 (LPT1) : ON
Video Off Option : Susp.Stby->OFF	IRQ8 (RTC Alarm) : OFF
Video Off Method : V/H SYNC+Blank	IRQ9 (IRQ2 Redir) : ON
	IRQ10 (Reserved) : OFF
<b>** PM Timers **</b>	IRQ11 (Reserved) : OFF
HDD Power Down : Disable	IRQ12 (PS/2 Mouse) : ON
Doze Mode : Disable	IRQ13 (Coprocesor) : OFF
Standby Mode : Disable	IRQ14 (Hard Disk) : ON
Suspend Mode : Disable	IRQ15 (Reserved) : OFF
<b>** PM Events **</b>	
VGA : OFF	Esc : Quit
FDD (3FXb) : ON	F1 : Help
LPT & COM : LPT/COM	F5 : Old Values
HDD (1FXb) : ON	F6 : Load Bios Defaults
NMI : OFF	F7 : Load Setup Defaults
IRQ3 (COM2) : ON	↑ ↓ ← → : Select Item
IRQ4 (COM1) : ON	(Shift) F2: Change Color
IRQ5 (LPT1) : ON	PU/PD/+/-/ : Modify

NOTE : This M/B can't support UMC U5 CPU DEEP GREEN function.

PCI/ISA BIOS (2A4KDF91 )

----- CMOS SETUP UTILITY -----

AWARD SOFTWARE, INC.

STANDARD CMOS SETUP BIOS FEATURES SETUP CHIPSET FEATURES SETUP POWER MANAGEMENT SETUP <div>PCI CONFIGURATION SETUP</div> LOAD BIOS DEFAULTS LOAD SETUP DEFAULTS	SUPERVISOR PASSWORD USER PASSWORD IDE HDD AUTO DETECTION HDD LOW LEVEL FORMAT SAVE & EXIT SETUP EXIT WITHOUT SAVING
Esc: Quit F10: Save & Exit Setup	↑ ↓ ← → : Select Item (Shift) F2: Change Color
IRQ Setting, Latency Timers .....	

# PCI/ISA BIOS (2A4KDF91)

## ----- PCI CONFIGURATION SETUP -----

AWARD SOFTWARE, INC.

PnP BIOS Auto-Config : Disable	CPU to PCI Write Buffer : Enable
	CPU to PCI Byte Merge : Enable
	PCI to DRAM Buffer : Enable
Slot 1 Using INT # : Auto	
Slot 2 Using INT # : Auto	
Slot 3 Using INT # : Auto	
1st Available IRQ : 9	
2nd Available IRQ : 11	
3rd Available IRQ : 12	
4th Available IRQ : 5	
PCI IRQ Activated By : Edge	Esc : Quit
PCI IDE 2nd Channel : ENABLE	F1 : Help
PCI IDE IRQ Map To : PCI-AUTO	F5 : Old Values
Primary IDE INT # : A	F6 : Load Bios Defaults
Secondary IDE INT : B	F7 : Load Setup Defaults
	↑ ↓ ← → : Select Item
	(Shift) F2: Change Color
	PU/PD/+/-/ : Modify

PCI/ISA BIOS (2A4KDF91 )

----- 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	SUPERVISOR PASSWORD USER PASSWORD IDE HDD AUTO DETECTION HDD LOW LEVEL FORMAT  SAVE & EXIT SETUP  EXIT WITHOUT SAVING
Esc: Quit F10: Save & Exit Setup	↑ ↓ ← → : Select Item (Shift) F2: Change Color
Save data to Cmos and Exit .....	

PCI/ISA BIOS (2A4KDF91 )

----- CMOS SETUP UTILITY -----

AWARD SOFTWARE, INC.

STANDARD COMOS SETUP	SUPERVISOR PASSWORD
BIOS FEATURES SETUP	USER PASSWORD
CHIPSET FEATURES SETUP	IDE HDD AUTO DEIECTION
POWER MANAGEMENT SETUP	HDD LOW LEVEL FORMAT
PCI CONFIGURATION SETUP	SAVE & EXIT SETUP
LOAD BIOS DEFAULTS	Save to Cmos and Exit ? Y
LOAD SETUP DEFAULTS	
Esc: Quit	↑ ↓ ← → : Select Item
F10: Save & Exit Setup	(Shift) F2: Change Color
Save Data to Coms & Exit .....	