Control Board

Model Number AW-A792

Intel® Pentium® M Embedded SBC with Four Gigabit/Three 10/100LAN & SSD

User's Manual

Version 1.2

User's Manual

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Chapter 1. General Information

1.1 Introduction

The AW-A792 is based on Intel® E7501 chips + ICH3 +P64H2 for supporting Intel® Pentium® M processor. The AW-A792 supports three 10/100Mbps Ethernet and four GbE, the most advanced features with diverse Fiber module combinations, which include SC, LC and copper GbE connectors.

Other features include a CompactFlash socket, right angle 32-bit PCI slot supporting two bus masters with optional Hublink 2.0 PCI-X Slot and two 25-degree DDR memory socket.

The AW-A792 is an advanced solution for Networking and Telecom appliance, it provides multiple networking appliance including Quick Configure Fiber and Copper Ethernet connections for various markets and performance requirements. This new patented technologies provides flexible development options for configuring Fiber GbE I/O's saving customers' valuable development and test time. By simply changing the Quick Configure Ethernet I/O module, which can provide customers with reduced product development/test cycles and time - to- market, cost effectively.

The following information will shows the copper/fiber module and PCI interface with Hublink 2.0 optional.

AW-R007A/B	AW-R008A/B
AW-R017	AW-R021
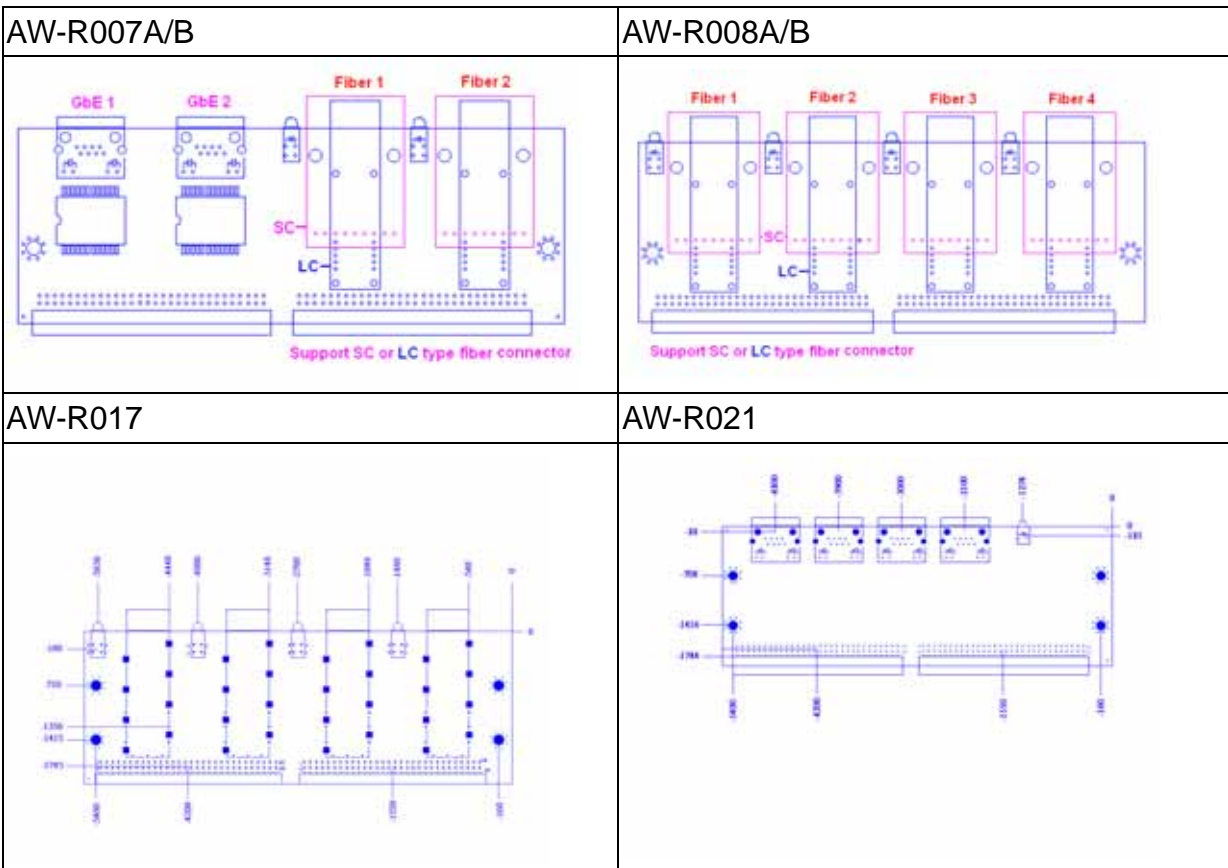
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1.2 Specification

General Functions

CPU	Intel Pentium® M based processors with 400MHz Front-side Bus
BIOS	Award® 512KB Flash BIOS
Chipset	Intel® E7501 + ICH3 + P64H2
I/O Chipset	Winbond® 83627HF
Memory	Onboard two 184-pin DDR DIMM socket, support PC266 registered memory up to 2Gbytes
Enhanced IDE	Support up to two IDE devices
Serial port	Two RS-232 ports, one 9-pin D-Sub connector and one pin header
KB/Mouse connector	5x2 header onboard support PC/AT Keyboard and PS/2 mouse
USB connectors	Two USB ports, one USB connector and one pin header
Battery	Lithium battery for data retention of up to 10 years (under normal condition)
Watchdog Timer	Can generate a system reset, Support software selectable timeout interval.
System Monitoring	Support temp, fan speed and voltages monitoring
Proprietary slot	Proprietary slot support 2 PCI master and UHB 2.0 interface for flexible expansion capabilities optional
Digital I/O	Support eight application definable LEDs
SMBus connector	6-pin header support SMBus LCD interface

Ethernet Interface

Chipset	Triple Intel® 82551QM Fast Ethernet controller. **Two Intel® 82546EB Fast Ethernet controller for optional Extension Fiber/Copper board.**
Ethernet interface	PCI 100/10Mbps Ethernet controller, IEEE 802.3U protocol compatible
SSD Interface	One 50-pin CompactFlash™ socket

Mechanical and Environmental

Power supply voltage	**Standard ATX Power supply**
Operating temperature	32 to 140 (0 to 60)
Board size	10.86"(L) x 10.86"(W) , (276mmx276mm)

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1.3 Package
Please make sure that the following items have been included in the package before installation.
AW-A792 Low Power Embedded SBC
Quick Setup
Cable: Please refer to Appendix B Optional Cables
CD-ROM which contains the following folders:
Manual
System Driver
Ethernet Driver
Tools

If any of these items are missing or damaged, please contact your dealer from whom you purchased the board at once. Save the shipping materials and carton in the event that you want to ship or store the board in the future. After you unpack the board, inspect it to assure an intact shipment. Do not apply power to the board if it appears to have been damaged.

Leave the board in its original packing until you are ready to install

Precautions
Please make sure you properly ground yourself before handling the AW-A792 board or other system components. Electrostatic discharge can be easily damage the AW-A792 board.
Do not remove the anti-static packing until you are ready to install the AW-A792 board.
Ground yourself before removing any system component from it protective anti-static packaging. To ground yourself, grasp the expansion slot covers or other unpainted parts of the computer chassis.
Handle the AW-A792 board by its edges and avoid touching its component.

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1.4 Board Layout
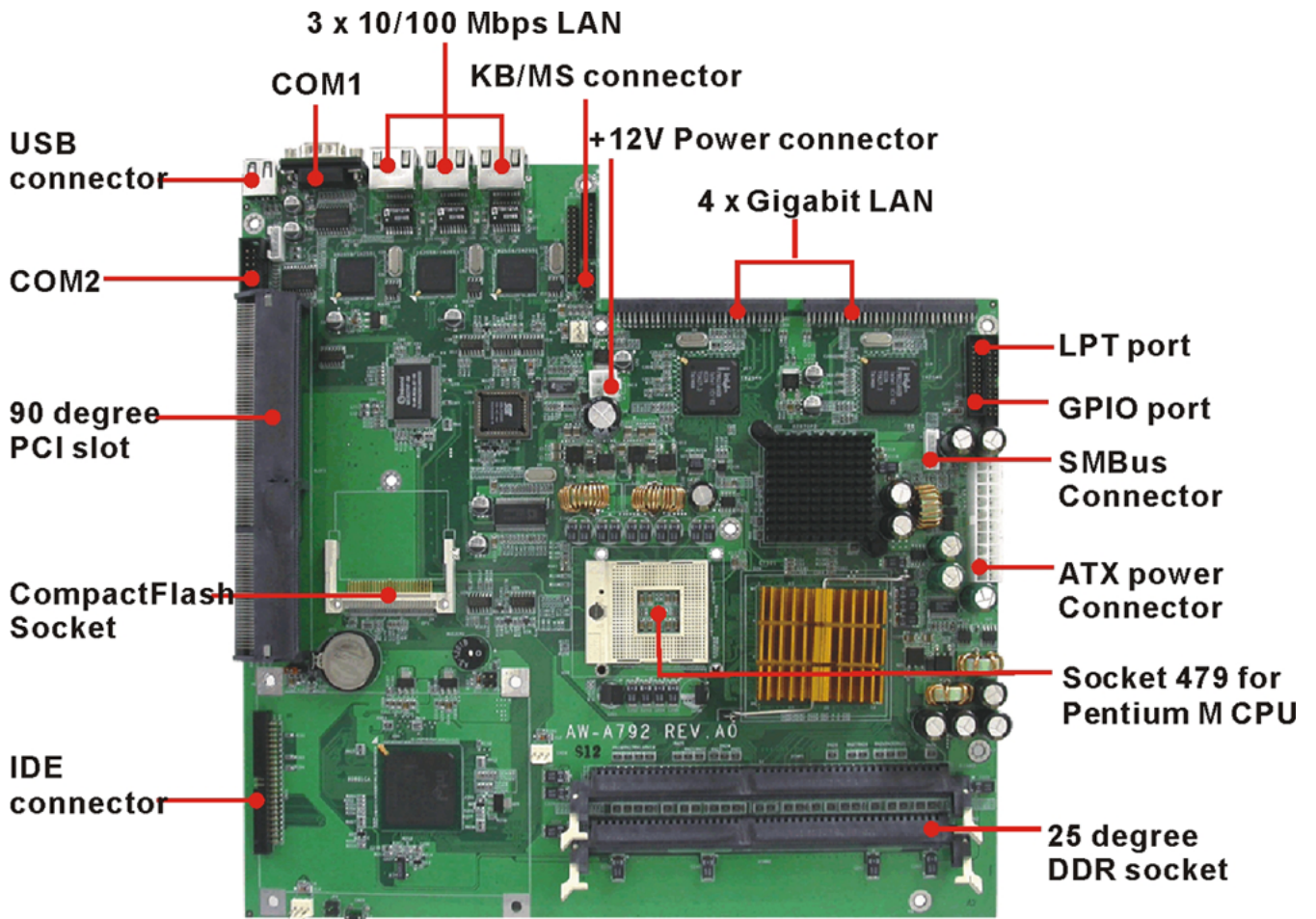
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Fiber /Copper Extension Board Layout

AW-R007A
2 x SC + 2 x copper

AW-R007B
2 x LC + 2 x copper

AW-R008A
4 x SC

AW-R008B
4 x LC

AW-R017
4 x SFP

AW-R021
4 x copper

Note:

AW-R007A: **2 Copper Connectors and 2 Fiber Connectors (SC Type)**

AW-R007B: **2 Copper Connectors and 2 Fiber Connectors (LC Type)**

AW-R008A: **4 Fiber Connectors (SC Type)**

AW-R008B: **4 Fiber Connectors (LC Type)**

AW-R017 :   **4 Fiber SFP Connectors**

AW-R021 :   **4 Copper Connectors**

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1.5 Board Dimension
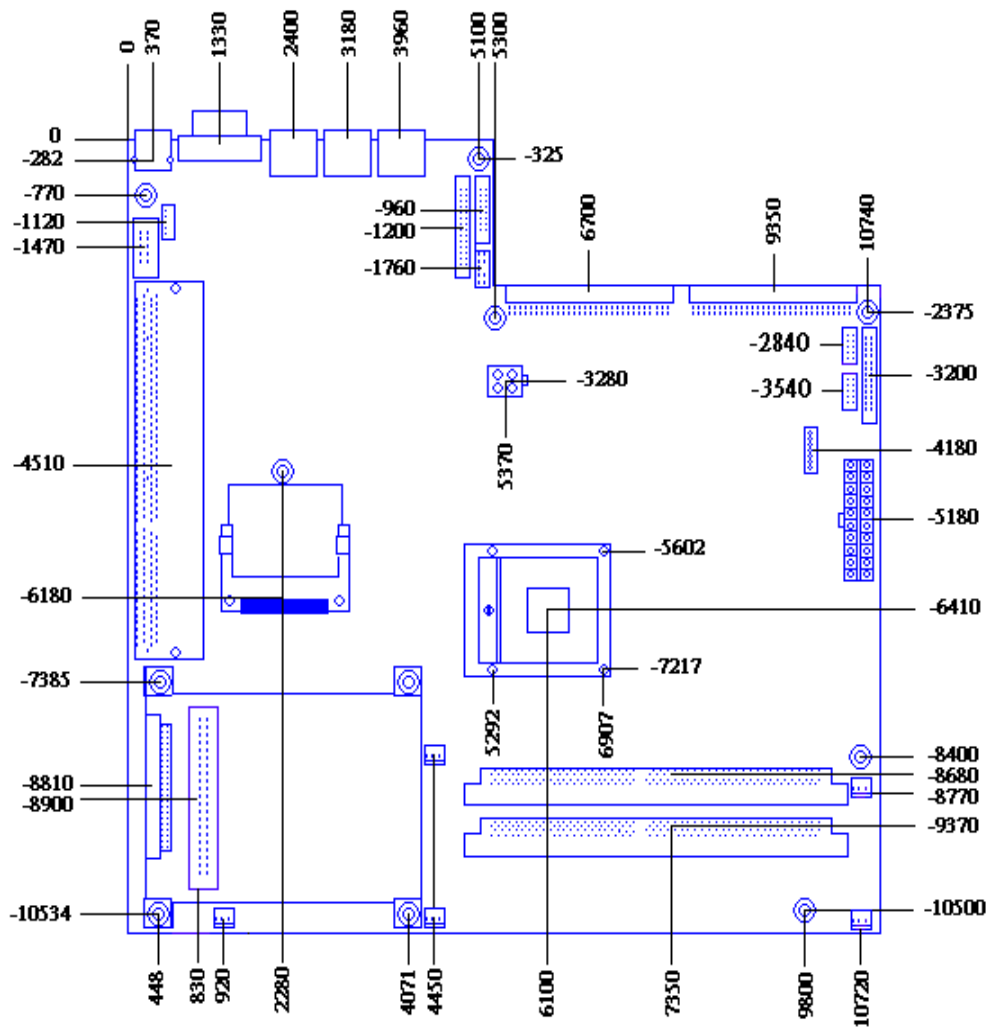
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Chapter 2. Connectors/Switch Location and Configuration

2.1 Connectors/Jumpers Location and Define
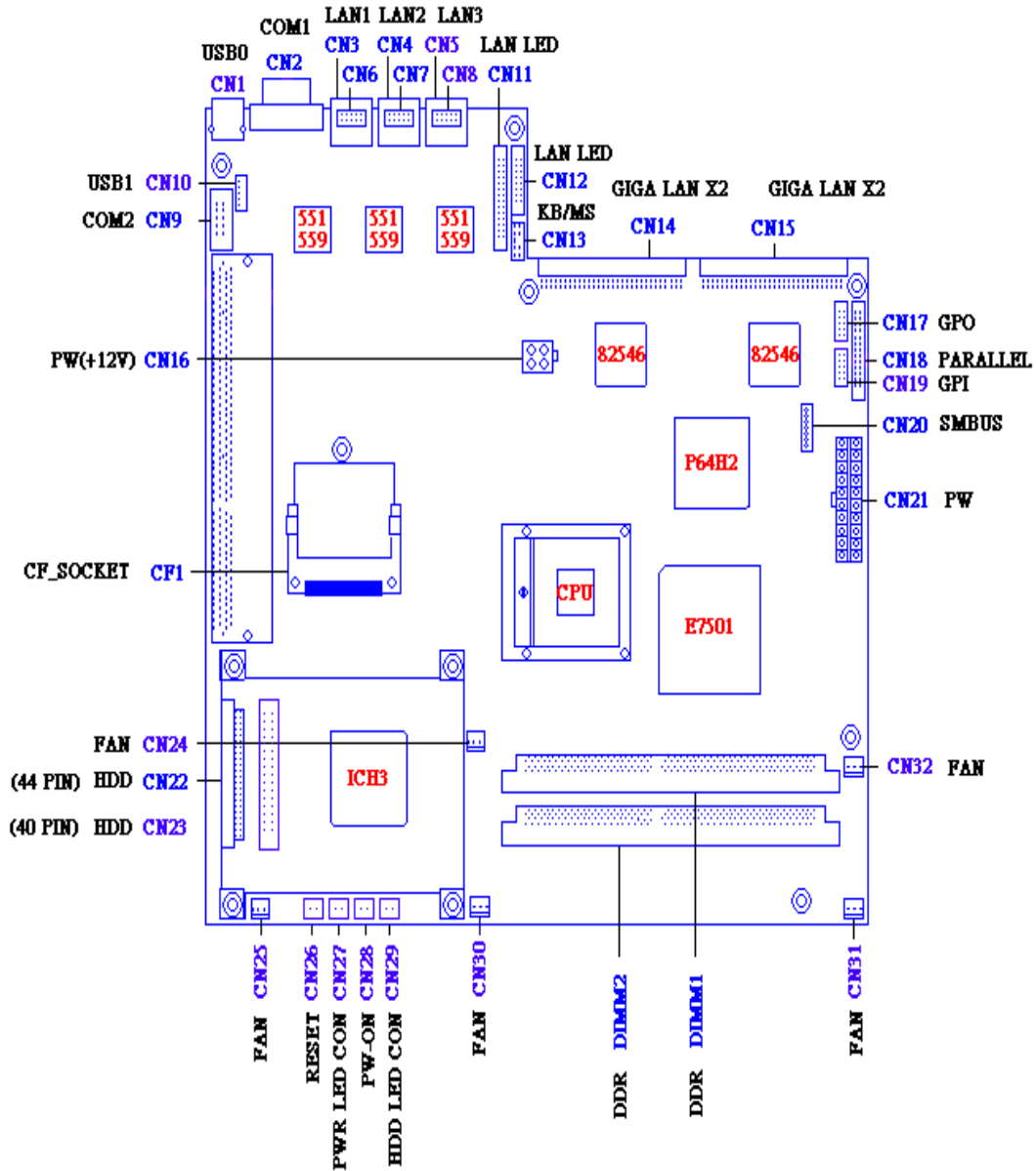
Connector	Define
CN1	USB0 Connector
CN2	D-Sub 9-pin for COM1
CN3	LAN1 (10/100) Connector
CN4	LAN2 (10/100) connector
CN5	LAN3 (10/100) connector

CN6	LAN1 Pin Header optional
CN7	LAN2 Pin Header optional
CN8	LAN3 Pin Header optional
CN9	COM2 Pin Header
CN10	USB1 Pin Header
CN11	10/100 and Gigabit Fiber LAN LED Pin Header
CN12	Gigabit Copper LED Pin Header
CN13	KB/MS Pin Header
CN14	90 degree GbE LAN Connector (2x30) for connecting AW-R007A/B & AW-R008A/B & AW-R017 & AW-R021
CN15	90 degree GbE LAN Connector (2x30) for connecting AW-R007A/B & AW-R008A/B & AW-R017 & AW-R021
CN16	+12V Power Connector
CN17	GPO Box Header Connector
CN18	Parallel Box Header Connector
CN19	GPI Box Header Connector
CN20	SMBus Connector
CN21	ATX Power Connector
CN22	2mm 44-pin HDD Connector
CN23	2.54mm 40-pin HDD Connector
CN24	FAN Connector
CN25	FAN Connector
CN26	Reset Pin Header
CN27	Power LED Pin Header
CN28	PS-ON Pin Header
CN29	HDD LED Pin Header
CN30	FAN Connector
CN31	FAN Connector
CN32	FAN Connector
Buzzer 1	Speak Buzzer
JP1	Clear CMOS
JP2	Speak Buzzer Enable
JP3	PS-ON/Always On Select

2.2. Installing Processors

The AW-A792 onboard built-in socket 479 for Intel® Pentium® M Processors . After installing the processor, you should proceed to installing the heatsink or cooler.

2.2.1 Installing CPU:

The CPU has marks with an triangle then make sure the triangle has the same position with CPU socket; then easily pressing down the processor into the socket.
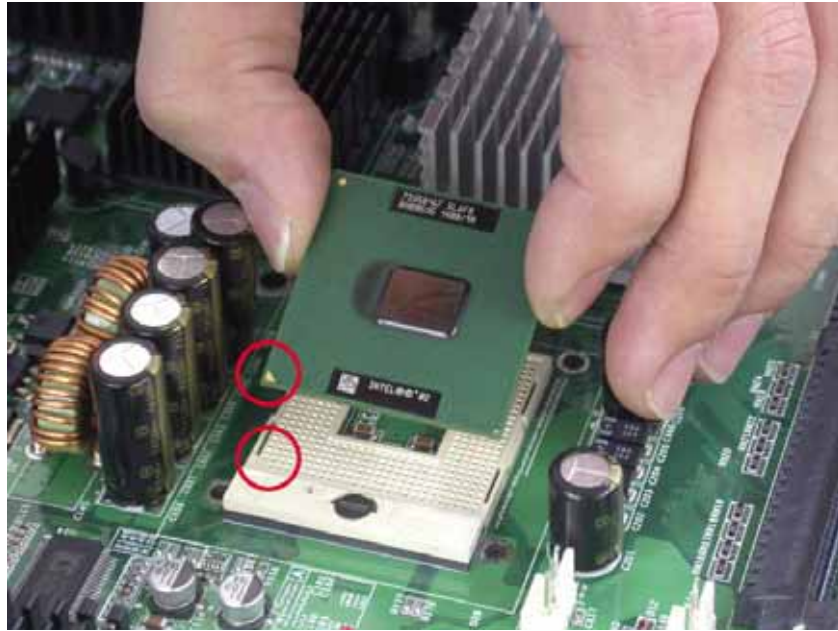
Then tie the screw of CPU socket beginning from right side ; you can refer to below picture.
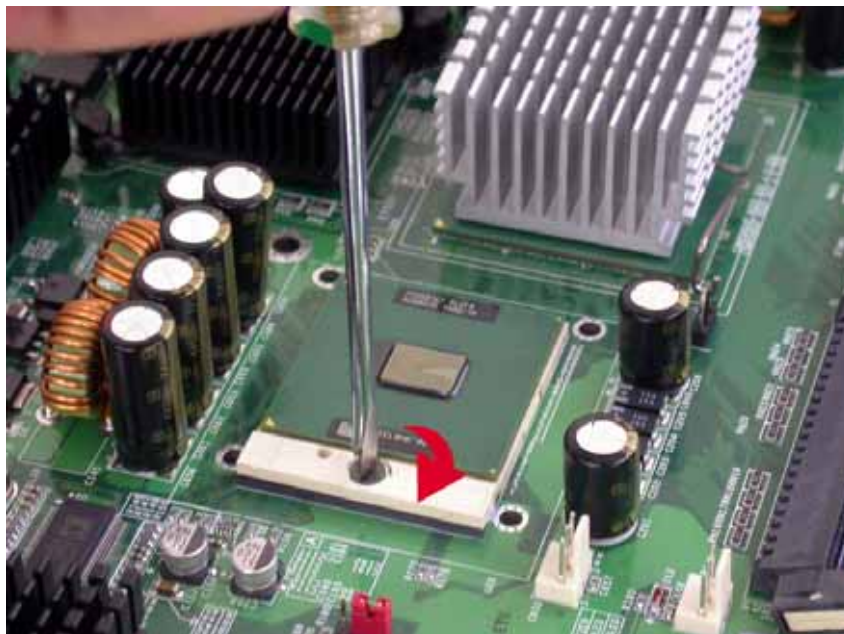
You can see the CPU socket has an lock sign please push the tappet to lock location.

2.2.2 Remove CPU

First , please push the tappet to unlock location.

Then untie the screw beginning from left side you can refer to below the picture.

(3) Now you can take out the CPU from socket.

2.2.3 How to recognize CPU

Before you install CPU please make sure the CPU is exactly Pentium M processor. You can see the difference from CPU code and the pin out at backside.

Pentium M CPU (Socket 479)

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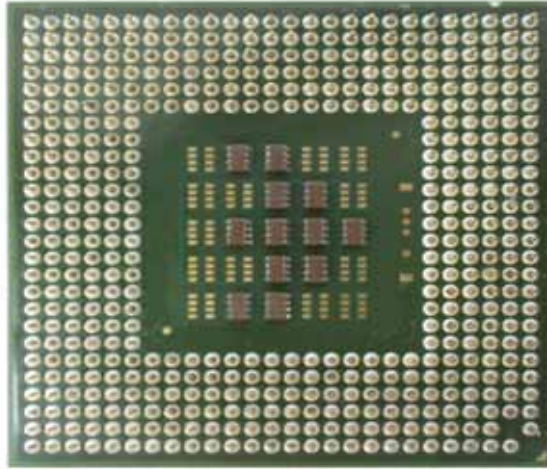
PIII CPU – (uFCPGA Package)
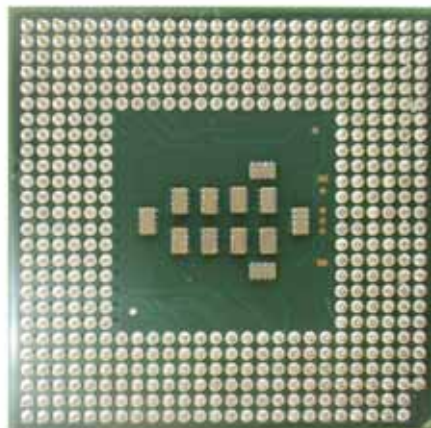
Pentium 4 CPU (Socket 478)
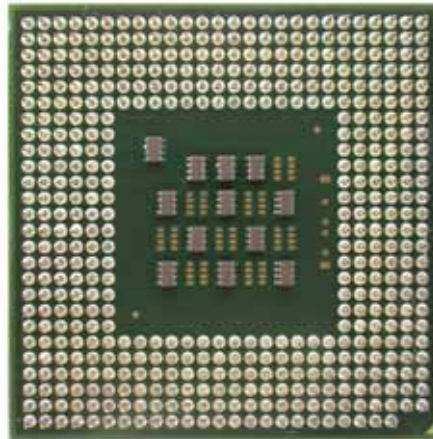
2.3 Installing Memory

To insert a DIMM Memory:

The AW-A792 supports two 184-pin DDR sockets, memory up to 4GB. Please make sure to insert DDR with registered.

To Insert a DIMM Memory*:* Please align the module with the socket key and press down until the levers at each end of the socket snap close up.

There is only one direction for installing a module in the socket. Do not attempt to force the module into the socket incorrectly.

To Remove a DIMM Memory: To remove a DIMM, press down on the levers at both end of the module until the module pops out

There is only one direction for installing a module in the socket. Do not attempt to force the module into the socket incorrectly.

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2.4 Connector and Jumper Settings

CN1:USB0 Connector
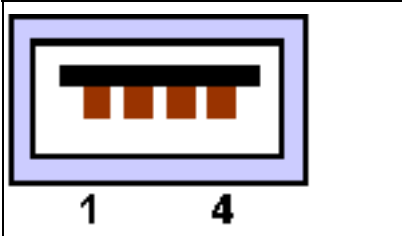
Pin	Define
1	+5V
2	Data0-
3	Data1+
4	Ground

CN2: COM1 Connector
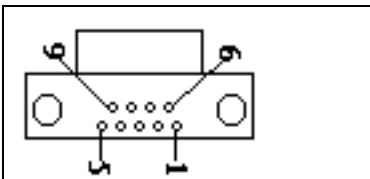
Pin	Define
1	DCD
2	RXD
3	TXD
4	DTR
5	Ground
6	DSR
7	RTS
8	CTS
9	RI

CN3/ 4/ 5 :LAN 1-3 (10/100) Connector
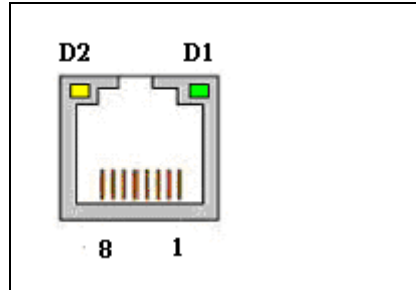
Pin	Define
1	TX+
2	TX-
3	RX+
4	Chassis Ground
5	Chassis Ground
6	RX-
7	Chassis Ground
8	Chassis Ground

D1 :Link/Activity LED	
Link	YELLOW
Activity	BLINKING
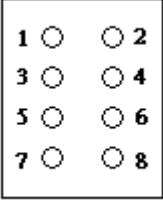
D2: Speed indicated LED	
10 Mbps	DIM
100 Mbps	GREEN
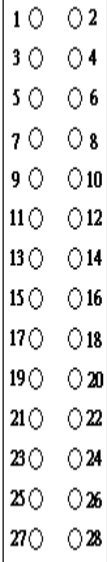
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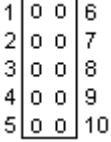
CN6/ 7/ 8 :2mm 2 x 4 LAN
1-3 Pin Header optional

Pin	Define
1	TX+
2	TX-
3	RX+
4	Chassis Ground
5	Chassis Ground
6	RX-
7	Chassis Ground
8	Chassis Ground

CN9: 2.54mm COM2 Box Header

Pin	Define	Pin	Define
1	DCD#	6	DSR#
2	RXD#	7	RTS#
3	TXD#	8	CTS#
4	DTR#	9	RI#2
5	Ground	10	NC

CN10: 2mm USB1 Box Header

Pin	Define
1	USBVCC
2	USBP1N
3	USBP1P
4	Ground
5	Ground
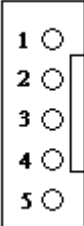
CN11: 10/100 and Gigabit Fiber
LAN LED Pin Header

Pin	Define	Pin	Define
1	L1_Line_Up#	2	L1 Activity#
3	L1_Link100#	4	LED1+
5	L2_Line_Up#	6	L2 Activity#
7	L2_Link100#	8	LED2+
9	L3_Line-UP#	10	L3 Activity#
11	L3_Link100#	12	LED3+
13	LED_SDPA_A	14	FLED1
15	LED_LINKACT_A_N	16	FLED1
17	LED_SDPB_A	18	FLED2
19	LED_LINKACT_B_N	20	FLED2
21	LED_SDPC_A	22	FLED3
23	LED_LINKACT_C_N	24	FLED3
25	LED_SDPD_A	26	FLED4
27	LED_LINKACT_D_N	28	FLED4

CN12:Gigabit Copper LED Pin Header

Pin	Define	Pin	Define
1	GL1_Link100#	2	GL1_Link1000#
3	GL1_Activity#	4	GL1_Link_Up#
5	GL2_Link100#	6	GL2_Link1000#
7	GL2_Activity#	8	GL2_Link_Up#
9	GL3_Link100#	10	GL3_Link_1000#
11	GL3_Activity#	12	GL3_Link_Up#
13	GL4_Link100#	14	GL4_Link_1000#
15	GL4_Activity#	16	GL4_Link_Up#

CN13: 2.54mm KB/MS Header

Pin	Define	Pin	Define
1	KCLK	2	MCLK
3	KDAT	4	MDAT
5	NC	6	NC
7	PS2_GND	8	PS2_GND
9	PS2_VCC	10	PS2_VCC

CN14 : 90deree GbE LAN Connector for connecting AW-R007A/B & AW-R008A/B & AW-R017 & AW-R021

Pin	Define	Pin	Define
1	VCC	2	VCC
3	MDIB1-	4	Ground
5	MDIB1+	6	MDIB0-
7	Ground	8	MDIB0+
9	MDIB2-	10	Ground
11	MDIB2+	12	MDIB3-
13	Ground	14	MDIB3+
15	MDIA3-	16	Ground
17	MDIA3+	18	MDIA2-
19	Ground	20	MDIA2+
21	MDIA1-	22	Ground
23	MDIA1+	24	MDIA0-
25	Ground	26	MDIA0+
27	Ground	28	Ground
29	GL1_Link1000#	30	GL1_Link100#
31	GL1_Link_Up#	32	GL1_Activity#
33	GL2_Link1000#	34	GL2_Link100#
35	GL2_Link_Up#	36	GL2_Activity#
37	Ground	38	Ground
39	LED_LINKACT_A_N	40	LED_SDPA_N
41	A_TX+	42	Ground
43	A_TX-	44	A_RX+
45	Ground	46	A_RX-
47	LED_LINKACT_B_N	48	LED_SDPB-N
49	B_SIGDET	50	A-SIGDET
51	Ground	52	Ground
53	Ground	54	B_RX+
55	B_TX+	56	B_RX-
57	B_TX-	58	Ground
59	2.5V	60	2.5V

CN15: 90deree GbE LAN Connector for connecting AW-R007A/B & AW-R008A/B & AW-R017 & AW-R021

Pin	Define	Pin	Define
1	+2.5V	2	+2.5V
3	Ground	4	MDIC0+
5	MDIC1+	6	MDIC0-
7	MDIC1-	8	Ground
9	Ground	10	MDIC2+
11	MDIC3+	12	MDIC2-
13	MDIC3-	14	Ground
15	Ground	16	MDID1+
17	MDID0+	18	MDID1-
19	MDID0-	20	Ground
21	Ground	22	MDID3+
23	MDID2+	24	MDID3-
25	MDID2-	26	Ground
27	Ground	28	Ground
29	GL3_Link1000#	30	GL3_Link100#
31	GL3_Link_Up#	32	GL3_Activity#
33	GL4_Link1000#	34	GL4_Link100#
35	GL4_Link_Up#	36	GL4_Activity#
37	Ground	38	Ground
39	LED_LineACT_C_N	40	LED_SDPC_N
41	C_TX+	42	Ground
43	C_TX-	44	C_RX+
45	Ground	46	C_RX-
47	LED_LINKACT_N	48	LED_SDPD_N
49	D-SIGDET	50	C-SIGDET
51	Ground	52	Ground
53	Ground	54	D_RX+
55	D_TX+	56	D_RX-
57	D_TX-	58	Ground
59	VCC3	60	VCC3

CN16 : +12V Power Connector

Pin	Define
1	Ground
2	Ground
3	+12V
4	+12V

CN17:GPO Connector , 2mm

Pin	Define	Pin	Define
1	GPO4-	2	GPO4+
3	GPO5-	4	GPO5+
5	GPO6-	6	GPO6+
7	GPO7-	8	GPO7+
9	Ground	10	VCC
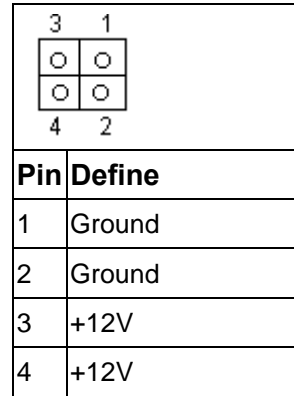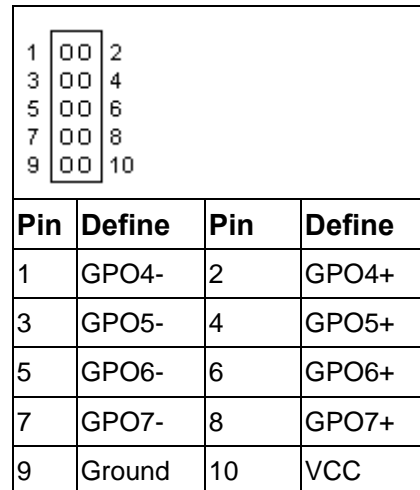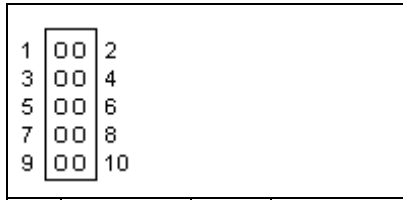
CN18:Parallel connector. 2mm

Pin	Define	Pin	Define
1	STROBE	14	AUTOFD
2	PD0	15	ERR
3	PD1	16	INT
4	PD2	17	SLCTIN
5	PD3	18	Ground
6	PD4	19	Ground
7	PD5	20	Ground
8	PD6	21	Ground
9	PD7	22	Ground
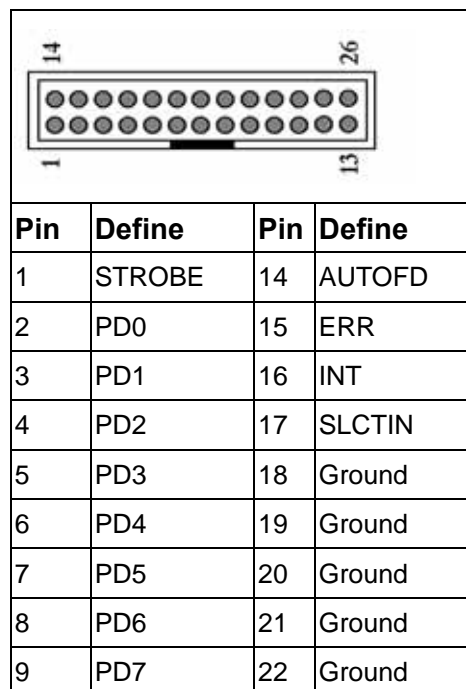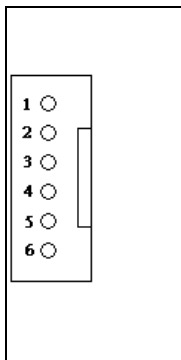
10	ACK*	23	Ground
11	BUSY	24	Ground
12	PE	25	Ground
13	SLCT	26	Ground

CN19:GP1 Connector , 2mm
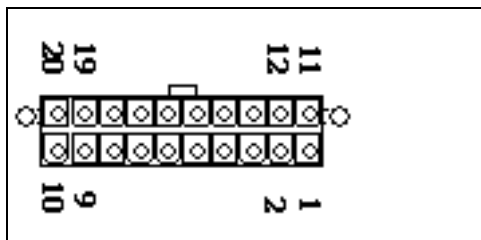
Pin	Define	Pin	Define
1	GPI0	2	NC
3	GPI1	4	Ground
5	GPI2	6	Ground
7	GPI3	8	Ground
9	NC	10	Ground

CN20:SMBus connector. 2mm

Pin	Define
1	Ground
2	VCC
3	SYSMBUS_CLK
4	SYSMBUS_DAT
5	+12V
6	NC
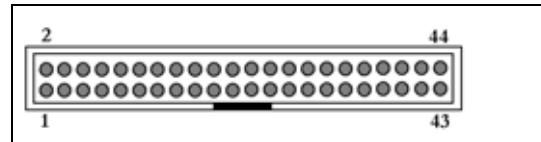
CN21:ATX Power Connector

Pin	Define	Pin	Define
11	+3.3V	1	+3.3V
12	-12V	2	+3.3V
13	Ground	3	Ground
14	PS_ON*	4	+5V

15	Ground	5	Ground
16	Ground	6	+5V
17	Ground	7	Ground
18	-5V	8	POWER GOOD
19	+5V	9	5VSB
20	+5V	10	+12V
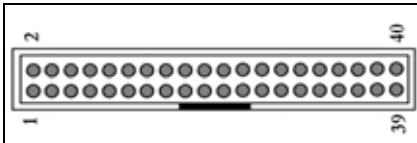
CN22:44-Pin IDE Connector. 2mm

Pin	Define	Pin	Define
1	RESET*	2	Ground
3	DATA7	4	DATA8
5	DATA6	6	DATA9
7	DATA5	8	DATA10
9	DATA4	10	DATA11
11	DATA3	12	DATA12
13	DATA2	14	DATA13
15	DATA1	16	DATA14
17	DATA0	18	DATA15
19	Ground	20	NC
21	DREQ*	22	Ground
23	DIOW*	24	Ground
25	DIOR*	26	Ground
27	IOCHRDY	28	Ground
29	DACK*	30	Ground
31	IRQ14	32	NC
33	A1	34	DETECT
35	A0	36	A2
37	HD SELECT 0*	38	HD SELECT 0*
39	ACTIVE*	40	Ground
41	+5V	42	+5V
43	Ground	44	NC
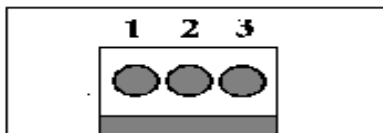
CN23:40-Pin IDE Connector. 2.54mm
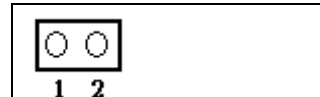
Pin	Define	Pin	Define
1	RESET*	2	GND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	GND	20	KEY PIN
21	DREQ	22	GND
23	DIOW*	24	GND
25	DIOR*	26	GND
27	IOCHRDY	28	GND
29	DACK*	30	GND
31	IRQ14	32	N/C
33	A1	34	DETECT
35	A0	36	A2
37	PDCS#1	38	PDCS#3*
39	ACTIVE*	40	GND

CN24/25/30/31: FAN Connector
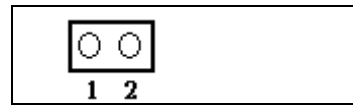
Pin	Define
1	Ground
2	+12V
3	Speed Detect

CN26: Reset Box Header . 2mm
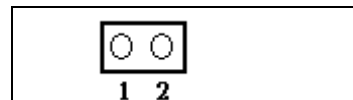
Pin	Define
1	Reset #
2	GND

CN27:Power LED. 2mm
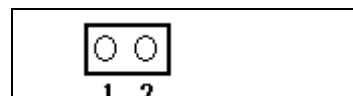
Pin	Define
1	VCC
2	GND

CN28: PS-ON Box Header . 2mm

Pin	Define
1	PAN SWIN
2	5V STBY

CN29:HDD LED . 2mm

Pin	Define
1	IDE ACT#
2	VCC 3

JP1:Clear CMOS

Pin		Setting
	1-2	Hold Data (Default)
	2-3	Clear CMOS

JP2:Speak Buzzer Enable

Pin		Setting
⬚	Close	Enable (Default)
⬚	Open	Disable

JP3: PS-ON or Always On Select

Pin		Setting
1 ⬚ 3	1-2	PS-ON
1 ⬚ 3	2-3	Always on (Default)

Chapter 3. BIOS Setup

The ROM chip of your AW-A792 board is configured with a customized Basic Input/Output System (BIOS) from Phoenix-Award BIOS.   The BIOS is a set of permanently recorded program routines that give the system its fundamental operational characteristics.   It also tests the computer and determines how the computer reacts to instructions that are part of programs.

The BIOS is made up of code and programs that provide the device-level control for the major I/O devices in the system.   It contains a set of routines (called POST, for Power-On Self Test) that check out the system when you turn it on.   The BIOS also includes CMOS Setup program, so no disk-based setup program is required CMOS RAM stores information for:

- Date and time
- Memory capacity of the main board
- Type of display adapter installed
- Number and type of disk drives

The CMOS memory is maintained by battery installed on the AW-A792 board.   By using the battery, all memory in CMOS can be retained when the system power switch is turned off.   The system BIOS also supports easy way to reload the CMOS data when you replace the battery of the battery power lose.

3.1 Quick Setup

In most cases, you can quickly configure the system by choosing the following main menu options:

Choose "Load Optimized Defaults" from the main menu.   This loads the setup default values from the BIOS Features Setup and Chipset Features Setup screens.

Choose "Standard COS Features" from the main menu.   This option lets you configure the date and time, hard disk type, floppy disk drive type, primary display and more.

In the main menu, press F10 ("Save & Exit Setup") to save your changes and reboot the system.

3.2 Entering the CMOS Setup Program

Use the CMOS Setup program to modify the system parameters to reflect the options installed in your system and to customized your system.   For example, you should run the Setup program after you:

- •Received an error code at startup
- •Install another disk drive
- •Use your system after not having used it for a long time
- •Find the original setup missing
- •Replace the battery
- •Change to a different type of CPU
- •Run the Phoenix-Award Flash program to update the system BIOS
- •Run the CMOS Setup program after you turn on the system. On-screen instructions explain how to use the program.

Enter the CMOS Setup program's main menu as follows:

Turn on or reboot the system. After the BIOS performs a series of diagnostic checks, the following message appears:

"Press DEL to enter SETUP"

Preess the <DEL> key to enter CMOS Setup program. The main menu appears:

```
             Phoenix - AwardBIOS CMOS Setup Utility

┌─────────────────────────────────────────────────────────────────┐
│                                    │                             │
│  ▶ Standard CMOS Features          │    Load Fail-Safe Defaults  │
│                                    │                             │
│  ▶ Advanced BIOS Features          │    Load Optimized Defaults  │
│                                    │                             │
│  ▶ Advanced Chipset Features       │    Set Supervisor Password  │
│                                    │                             │
│  ▶ Integrated Peripherals          │    Save User Password       │
│                                    │                             │
│  ▶ Power Management Setup           │    Save & Exit Setup        │
│                                    │                             │
│  ▶ PnP/PCI Configuration           │    Exit Without Saving      │
│                                    │                             │
│  ▶ PC Health Status                │                             │
│                                    │                             │
├─────────────────────────────────────────────────────────────────┤
│  ↑↓→← : Select Item                                              │
│  F10: Save & Exit Setup                                          │
├─────────────────────────────────────────────────────────────────┤
│                 Time, Date, Hard Disk Type....                  │
└─────────────────────────────────────────────────────────────────┘
```

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3. Choose a setup option with the arrow keys and press <Enter>. See the following sections for a brief description of each setup option.

In the main menu, press F10 ("Save & Exit Setup) to save your changes and reboot the system. Choosing "EXIT WITHOUT SAVING" ignores your changes and exits the program. Pressing <ESC> anywhere in the program returns you to the main menu.

3.3 Menu Options

The main menu options of the CMOS Setup program are described in the following and the following sections of this chapter.

STANDARD CMOS FEATURES:
Configure the date & time, hard disk drive type, floppy disk drive type, primary display type and more

ADVANCED BIOS FEATURES:
Configure advanced system options such as enabling/disabling cache memory and shadow RAM

ADVANCED CHIPSET FEATURES:
Configure advanced chipset register options such DRAM timing

INTEGRATED PERIPHERALS:
Configure onboard I/O functions

POWER MANAGEMENT SETUP:
Configure power management features such as timer selects

PNP/PCI CONFIGURATION:
Configure Plug & Play IRQ assignments and PCI slots

PC HEALTH STATUS:
Configure the CPU speed and, if the optional Winbond W83627HF system monitor IC is installed, view system information

LOAD FAIL-SAFE DEFAULT:

Loads BIOS default values.   Use this option as diagnostic aid if your system behaves erratically

LOAD OPTIMIZED DEFAULTS:

Loads optimized BIOS settings

SET SUPERVISORS & USER PASSWORD:

Configure the system so that a password is required when the system boots or you attempt to enter the CMOS setup program.   When you log in with this password, you will be able to enter the COS Setup main menu, but you can not enter other menus in the CMOS Setup program.

SAVE & EXIT SETUP:

Save changes of values to CMOS and exit the CMOS setup program

EXIT WITHOUT SAVING:

Abandon all CMOS changes and exit the CMOS setup program

Standard CMOS Features Setup

⇩ **Use the Standard CMOS Setup option as follows:**

Choose "Standard CMOS Features" from the main menu.   The following screen appears:

```
              Phoenix - Award BIOS CMOS Setup Utility
                      Standard CMOS Features
 ┌──────────────────────────────────────────┬──────────────────────────┐
 │  Date (mm:dd:yy)       Mon, Jan 21 2003   │                          │
 │  Time (hh:mm:ss)       10 : 40 : 23       │        Item Help         │
 │                                           │                          │
 │ ▶ IDE Primary Master     <NONE>           │  Menu Level  ▶           │
 │ ▶ IDE Primary Slave      <NONE>           │                          │
 │ ▶ IDE Secondary Master <NONE>             │  Change the day, month,  │
 │ ▶ IDE Secondary Salve   <NONE>            │                          │
 │                                           │  Year and Century        │
 │   Video                  <EGA/VGA>        │                          │
 │   Halt On                <All, but Keyboard> │                       │
 │   Base Memory            640K             │                          │
 │   Extend Memory          261120K          │                          │
 │   Total Memory           262144K          │                          │
 │                                           │                          │
 │                                           │                          │
 │                                           │                          │
 ├──────────────────────────────────────────┴──────────────────────────┤
 │ ↑↓→← Move   Enter:Select +/-/PU/PD:Value  F10:Save ESC:Exit  F1:General Help │
 │   F5:Previous Value       F6:Fail-Safe Default        F7:Optimized Defaults │
 └──────────────────────────────────────────────────────────────────────┘
```

Use the arrow keys to move between fields. Modify the selected field using the PgUP/PgDN/+/- keys. Some fields let you enter numeric values directly.

Option	Description
Date (mm:dd:yy)	Type the current date
Time (hour:min:sec)	Type the current time (24-hour clock)
Hard Disks	Choose from "Auto", "User", or "None"
	If your drive is not one of the predefined types, choose "User" and enter the following drive specifications:
	Cylinders, heads, Wpcom, L-Zone, sectors, and mode
	Consult the documentation received with the drive for the values that will give you optimum performance.
Video	Choose: EGA/VGA
	CGA 40
	CGA 80
	Mono
Halt On	Controls whether the system stops in case of an error detected during power up.
	Choose: All Errors
	No Errors
	All, But Keyboard (Default)
	All, But Diskette
	All, But Disk/Key

After you have finished with the Standard CMOS Features program, press the <ESC> key to return to the main menu.

Advanced BIOS Features Setup

⇩ **Use the Advanced BIOS Features Setup option as follows:**

Choose "Advanced BIOS Features Setup" from the main menu. The following screen appears:

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```
                    Phoenix - Award BIOS CMOS Setup Utility
                           Advanced BIOS Features
```

```
   Virus Warning              <Disabled>              Item Help
   CPU L1 & L2 Cache           <Enabled>
   First Boot Device           <HDD-0>       Menu Level  ▶
   Second Boot Device          <HDD-2>       Allows you to choose
   Third Boot Device           <CDROM>       the VIRUS warning
   OS Select For DRAM > 64MB   <Non-OS2>     feature for IDE Hard
   Console Redirection         <Enabled>     Disk boot sector
   Baud Rate                   <19200>       protection.  If this
   Agent wait time (min)       <1>           function is enabled
   Agent after boot            <Enabled>     and someone attempt to
   Report No FDD For WIN95                   write data into this area,
   Small Logo (EPA) Show                     BIOS will show
                                             a waring message on
                                             screen and alarm beep


   ↑↓→← Move  Enter:Select +/-/PU/PD:Value  F10:Save ESC: Exit F1: General Help
   F5:Previous Value        F6:Fail-Safe Default      F7:Optimized Defaults
```

Use the arrow keys to move between items and to select values. Modify the selected fields using the PgUP/PgDN keys. Press the <F1> "Help" key for information on the available options:

Option	Description
Virus Warning	When enabled, any attempt to write to the boot sector and partition table will halt the system and cause a warning message to appear. If this happens, you can use an anti-virus utility on a virus-free, bootable floppy disk to reboot and clean your system. The default setting is Disabled.
CPU L1 & L2 Cache	Choose Enable/Disable of the CPU internal Cache.
First/Second/Third Boot Device	The BIOS attempts to load the operating system from the devices in the sequence selected in these items. Choose: HDD-0, LS-120, USB FDD…..
Boot Other Device	Enable other device bootable not selected above.
OS Select for DRAM > 64MB	Set to OS/2 if your system is using OS/2 and has a memory size of more than 64MB
Console Redirection	Choose enabled to allowing agent which connect to this board to administrate this computer
Baud Rate	The data transfer rate (bit per second) to agent. Choose 9600/19200/38400/57600/115200 item.
Agent wait time(min)	Agent negotiate time, choose 1/2/4/8 min.
Agent after boot	Choose enabled to enable agent administrate this board after boot.

Advanced Chipset Features Setup

⇩ **Use the Advanced Chipset Features Setup option as follows:**

Choose "Advanced Chipset Features Setup" from the main menu.   The following screen appears ;
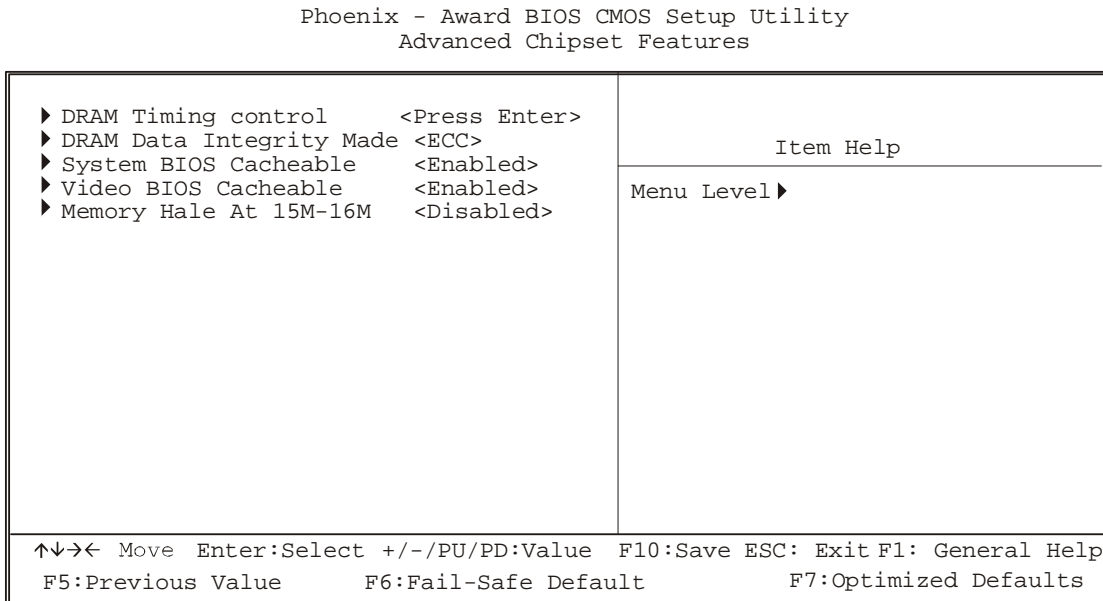
```
                 Phoenix - Award BIOS CMOS Setup Utility
                         Advanced Chipset Features
┌─────────────────────────────────────────────┬─────────────────────────────┐
│  ▶ DRAM Timing control      <Press Enter>     │                             │
│  ▶ DRAM Data Integrity Made <ECC>             │          Item Help          │
│  ▶ System BIOS Cacheable    <Enabled>         ├─────────────────────────────┤
│  ▶ Video BIOS Cacheable     <Enabled>         │  Menu Level ▶               │
│  ▶ Memory Hale At 15M-16M   <Disabled>        │                             │
│                                               │                             │
│                                               │                             │
│                                               │                             │
│                                               │                             │
│                                               │                             │
│                                               │                             │
│                                               │                             │
├───────────────────────────────────────────────┴─────────────────────────────┤
│  ↑↓→←  Move  Enter:Select +/-/PU/PD:Value  F10:Save ESC: Exit F1: General Help │
│  F5:Previous Value       F6:Fail-Safe Default      F7:Optimized Defaults       │
└───────────────────────────────────────────────────────────────────────────────┘
```

Move between items and select values by using the arrow keys. Modify the selected fields using the PnUP/PgDN Keys.   For information on the various options, press <F1> key .

Option	Description
DRAM Timing Control	DRAM timing Configure < By SPD> X – CAS Latency Time 2 X – Active to Precharge Delay 5 X- DRAM RAS # to CAS# Delay 2 X – DRAM RAS# Precharge 2
DRAM Data Integrity Mode	Choose ECC or Non –ECC
System BIOS Cacheable	Choose Enabled or Disabled. When enabled, caching of the system BIOS at F0000h-FFFFFh, enhancing system performance. However, if any program writes to this memory area, a system error may result.
Video BIOS Cacheable	Choose Enabled or Disabled. When Enable this option to allow caching of the Video BIOS.

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Memory Hole At 15M-16M	Choose Enabled or Disabled. You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it can not be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirement.

Integrated Peripherals

⇩ **Use the Integrated Peripherals Setup option as follows:**

Choose "Integrated Peripherals Setup" from the main menu. The following screen appears:

```
              Phoenix - Award BIOS CMOS Setup Utility
                    Advanced Chipset Features
 ┌──────────────────────────────────────────────────────────────┐
 │ ▶ Onchip IDE Device        <Press Enter>                      │
 │ ▶ Onboard Device           <Press Enter>         Item Help    │
 │ ▶ Super IO Devic           <Press Enter>  ┌───────────────────┤
 │                                           │ Menu Level ▶      │
 │                                           │                   │
 │                                           │                   │
 │                                           │                   │
 │                                           │                   │
 │                                           │                   │
 │                                           │                   │
 │                                           │                   │
 │                                           │                   │
 ├───────────────────────────────────────────┴──────────────────┤
 │ ↑↓→← Move  Enter:Select +/-/PU/PD:Value  F10:Save ESC: Exit F1: General Help │
 │  F5:Previous Value      F6:Fail-Safe Default       F7:Optimized Defaults     │
 └──────────────────────────────────────────────────────────────┘
```

Move between items and select values by using the arrow keys.   Modify the selected fields using the PgUP/PgDN keys. Please press the <F1> key for information on the various options.

Option	Description
Onchip IDE Device	IDE HDD Block Mode \<Enabled\>
	Onchip Primary PCI IDE \<Enabled\>
	IDE Primary Master PIO \<Auto\>
	IDE Primary Master UDMA \<Auto\>
	IDE Primary Slave UDMA \<Auto\>
	Onchip Secondary PCI IDE \<Enabled\>
	IDE Secondary Master PIO \<Auto\>
	IDE Secondary Slave PIO \<Auto\>
	IDE Secondary Master UDMA \<Auto\>
Onboard Device	USB Controller \<Enabled\>
	USB Keyboard \<Disabled\>
	USB Mouse Support \<Disabled\>
	BIOS Protected \<Enabled\>
Super IO Device	Onboard Serial Port1 \<3F8/IRQ4\>
	Onboard Serial Port 2 \<2F8/IRQ3\>
	Onboard Parallel Port \<378/IRQ7\>
	EPP Mode Select EPP 1.7
	ECP Mode USE DMA 3

Power Management Setup

The Power Management Setup controls the board's "green" features. To save energy these features shut down the video display and hard disk drive.

⇩**Use the Power Management Setup option as follows:**

Choose "Power Management Setup" from the main menu. The following screen appears.

```
Phoenix - Award BIOS CMOS Setup Utility
            Power Management Setup

     Power Management        <User Define>        Item Help
     Video Off Method        <DPMS>
     Video Off In Suspend    <Yes>               Menu Level ▶
     Suspend Type            <Stop Grant>
     MODEM Use IRQ           <NA>
     Suspend Mode            <Disabled>
     HDD Power Down          <Disabled>


  **Reload Global Timer Events **
     Primary IDE 0           <Disabled>
     Primary IDE 1           <Disabled>
     Secondary IDE 0         <Disabled>
     Secondary IDE 1         <Disabled>
     FDD, COM, LPT Port      <Disabled>
     PCI PIRQ (A-D) #        <Disabled>




  ↑↓→← Move: Enter:Select +/-/PU/PD:Value  F10:Save ESC: Exit F1: General Help
     F5:Previous Value      F6:Fail-Safe Default      F7:Optimized Defaults
```

Move between items and select values by using the arrow keys.   Modify the selected field the PgUP/PgDN keys.   For information on the various options, press <F1> key.

Option	Description
Power Management	Choose Disable, User Define, Min Saving or Max. Saving. "User Define" – Lets you specify when the HDD and system will shut down "Min Saving" - Predefine timer value of 4-12 min. "Max Saving" – Predefine timer value of 1 minute
Video Off Method	Choose V/H SYNC+Blank, DPMS, Blank Screen When power management blanks the screen and turns off vertical and horizontal scanning. The DPMS (Display Power Management System) setting allows the BIOS to control the video card if it has the DPMS features. If you don't have a Green monitor, use the Blank Screen option
Video Off In Suspend	Choose the video off condition: NA/Suspend/Doze
Suspend Type	Choose "Stop Grant" or "Power on Suspend"
MODEM Use IRQ	Choose the IRQ used by the modem. Default: Disabled

Suspend Mode	Sets the time for Suspend mode or disables it
HDD Power Down	Sets the time for the HDD power down mode or disables it
Reload Global Timer Events	Choose Enable or Disable Primary IDE 0 <Disabled> Primary IDE 1 <Disabled> Secondary IDE 0 <Disabled> Secondary IDE 1 <Disabled> FDD, COM, LPT Port <Disabled> PCI PIRQ <A-D> <Disabled>

After you have finished with the Power Management Setup, press the <ESC> key to return to the main menu.

PNP/PCI Configuration

This option is used to configure Plug and Play assignments and route PCI interrupts to designated ISA interrupts.

⇩ **Use the PNP/PCI Configuration Setup option as follows:**

Choose "PNP/PCI Configuration Setup" from the main menu, the following screen appears.

```
               Phoenix - Award BIOS CMOS Setup Utility
                         PNP/PCI Configuration

      Reset Configuration Data    <Disabled>           Item Help

      Resources Controlled by     <Auto(ESCD)>    Menu Level ▶
      IRQ Resources                Press Enter
      DMA Resources                Press Enter     Default is Disabled.  Select
                                                   Enabled to reset Extended
                                                   System Configuration Data
                                                   (ESCD) when you exit Setup
                                                   if you have installed a new
                                                   add-on and the system
                                                   reconfiguration has caused
                                                   such a serious conflict
                                                   that the OS cannot boot

   ↑↓→←  Move   Enter:Select +/-/PU/PD:Value  F10:Save ESC:Exit  F1:General Help
    F5:Previous Value      F6:Fail-Safe Default      F7:Optimized Defaults
```

Move between items and select values by using the arrow keys.   Modify the selected fields using the PgUP/PgDN keys.   For information on the various options, please press <F1> key.

Option	Description
Reset Configuration Data	Choose Enable or Disable "Enable" – PNP configuration data is reset in BIOS "Disable" – PNP configuration date is retained in BIOS
Resources Controlled By	Choose Auto or Manual. This option specifies whether resources are controlled by automatic or manual configuration
IRQ Resources	IRQ-3 Assigned to <PCI Device> IRQ-4 Assigned to <PCI Device> IRQ-5 Assigned to <PCI Device> IRQ-7 Assigned to <PCI Device> IRQ-9 Assigned to <PCI Device> IRQ-10 Assigned to <PCI Device> IRQ-11 Assigned to <PCI Device> IRQ-12 Assigned to <PCI Device> IRQ-14 Assigned to <PCI Device> IRQ-15 Assigned to <PCI Device>
DMA Resources	Assign DMA channel 0/1/3/5/6/7 to legacy ISA or auto by default "PCI/ISA"

Please press the <ESC> key to return the main menu after finishing with the PNP/PCI Configuration Setup.

PC Health Status Configuration Setup

Choose "PC Health Status Configuration Setup" from the main menu, the following screen appears:

Phoenix – Award BIOS CMOS Setup Utility

    PC Health Status

System Temperature : **24** **/ 75**		
CPU Temperature : **37** **/ 98**	**Item Help**	
FAN 1 Speed **:**	**Menu Level ▶**	
FAN 2 Speed **:**		
FAN 3 Speed **:**		
VCORE **1.44V**		
VCCP **1.52V**		
+3.3V **1.03V**		
+5V **4.92V**		
+12V **11.92V**		
-12V **-12.44V**		
-5V **-4.94V**		
VBAT(V) **3.31V**		
+12V **11.92V**		
-12V **-12.44V**		
- 5V **-4.94V**		
VBAT(V) **3.31V**		

↑↓→← Move   Enter : Select   +/-/PU/PD :Value   F10:Save   ESC:Exit
F1:General Help
  F5:Previous   Value   **F6:Fail-Save   Default**
F7:Optimized Defaults

Load Fail-Safe Defaults

This option loads the troubleshooting default values permanently stored in the BIOS ROM. This is useful if you are having problems with the main board and need to debug or troubleshoot the system.   The loaded default settings do not affect the Standard CMOS Setup screen.

```
            Phoenix - AwardBIOS CMOS Setup Utilities

  ┌──────────────────────────────────────────────────────────────────────┐
  │   Standard CMOS Features           Frequency/Voltage Control          │
  │                                                                        │
  │   Advanced BIOS Features            Load Fail-Safe Default             │
  │                                                                        │
  │   Advanced Chipset Features         Load Optimized Defaults            │
  │                                                                        │
  │   Integrated Pheripherals           Set Password                      │
  │                                  ┌─────────────────────────────┐       │
  │   Power Management               │                      : Setup        │
  │                                  │ Load Fail-Safe Defaults (Y/N)? Y     │
  │   PnP/PCI Configura              │                       Saving         │
  │                                  └─────────────────────────────┘       │
  │   PC Health Status                                                     │
  ├──────────────────────────────────────────────────────────────────────┤
  │ Esc : Quit                          ↑↓→←    : Select Item              │
  │ F10 : Save & Exit Setup                                                │
  ├──────────────────────────────────────────────────────────────────────┤
  │                  Time, Date, Hard Disk Type...                         │
  └──────────────────────────────────────────────────────────────────────┘
```

To use this feature, highlight it on the main screen and press <Enter>.   A line will appear on the screen asking if you want to load the BIOS default values.   Pres the <Y> key and then press <Enter> if you want to load the BIOS default.

Load Optimized Defaults

This option loads optimized settings stored in the BIOS ROM.   The auto-configured settings do not affect the Standard CMOS Setup screen.

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```
        Phoenix - AwardBIOS CMOS Setup Utilities

┌──────────────────────────────────────────────────────────────┐
│                                                                │
│    Standard CMOS Features          Frequency/Voltage Control   │
│                                                                │
│    Advanced BIOS Features          Load Fail-Safe Default      │
│                                                                │
│    Advanced Chipset Features       Load Optimized Defaults     │
│                                                                │
│    Integrated Pheripherals         Set Password                │
│                                                                │
│    Power Management      ┌─────────────────────────┐ Setup     │
│                          │ Load Optimized Defaults (Y/N)? Y │   │
│    PnP/PCI Configura     └─────────────────────────┘ Saving    │
│                                                                │
│    PC Health Status                                            │
│────────────────────────────────────────────────────────────────│
│ Esc : Quit                    ↑↓→←    : Select Item            │
│ F10 : Save & Exit Setup                                        │
│────────────────────────────────────────────────────────────────│
│              Time, Date, Hard Disk Type...                     │
└──────────────────────────────────────────────────────────────┘
```

To use this feature, highlight it on the main screen and press <Enter>.   A line will appear on the screen asking if you want to load the Optimized Default Values.   Press the <Y> key and then press <Enter> if you want to load the SETUP default.

Supervisor/User Password

The password options let you prevent unauthorized system boot-up or unauthorized use of CMOS setup.   The Supervisor Password allows both system and CMOS Setup program access; the User Password allows access to the system and the CMOS Setup Utility main menu.

The password functions are disabled by default.   You can use these options to enable a password function or, if a password function is already enabled, change the password.

To change a password, first choose a password option from the main menu and enter the current password.   Then type your new password at the prompt.   The password is case sensitive and you can use up to 8 alphanumeric characters.   Press <Enter> after entering the password.   At the Next Prompt, confirm the new password by typing it and pressing <Enter> again.

```
              Phoenix - AwardBIOS CMOS Setup Utilities
```

```
┌───────────────────────────────────────────────────────────────────┐
│                                                                     │
│      Standard CMOS Features            Frequency/Voltage Control    │
│                                                                     │
│      Advanced BIOS Features            Load Fail-Safe Default       │
│                                                                     │
│      Advanced Chipset Features         Load Optimized Defaults      │
│                                                                     │
│      Integrated Pheripherals           Set Password                 │
│                                                                     │
│      Power Management   ┌──────────────────────────────┐ Setup      │
│                         │       Enter Password:         │            │
│      PnP/PCI Configura  └──────────────────────────────┘ Saving     │
│                                                                     │
│      PC Health Status                                               │
├───────────────────────────────────────────────────────────────────┤
│  Esc : Quit                         ↑↓→←    : Select Item          │
│  F10 : Save & Exit Setup                                            │
├───────────────────────────────────────────────────────────────────┤
│                                                                     │
│                  Time, Date, Hard Disk Type...                      │
└───────────────────────────────────────────────────────────────────┘
```

After you use this option to enable a password function, use the "Security Option" in "BIOS Feature Setup" to specify whether a password is required every time the system boots or only when an attempt is made to enter the CMOS Setup program.

Save and Exit Setup

This function automatically saves all CMOS values before exiting Setup.

```
              Phoenix - AwardBIOS CMOS Setup Utilities
```

```
┌───────────────────────────────────────────────────────────────────┐
│                                                                     │
│      Standard CMOS Features            Frequency/Voltage Control    │
│                                                                     │
│      Advanced BIOS Features            Load Fail-Safe Default       │
│                                                                     │
│      Advanced Chipset Features         Load Optimized Defaults      │
│                                                                     │
│      Integrated Pheripherals           Set Password                 │
│                                                                     │
│      Power Management   ┌──────────────────────────────┐ Setup      │
│                         │   Save CMOS and Exit (Y/N)? Y  │           │
│      PnP/PCI Configura  └──────────────────────────────┘ Saving     │
│                                                                     │
│      PC Health Status                                               │
├───────────────────────────────────────────────────────────────────┤
│  Esc : Quit                         ↑↓→←    : Select Item          │
│  F10 : Save & Exit Setup                                            │
├───────────────────────────────────────────────────────────────────┤
│                                                                     │
│                  Time, Date, Hard Disk Type...                      │
└───────────────────────────────────────────────────────────────────┘
```

Exit Without Saving

Use this function to exit Setup without saving the CMOS value.

Phoenix - AwardBIOS CMOS Setup Utilities

Standard CMOS Features	Frequency/Voltage Control
Advanced BIOS Features	Load Fail-Safe Default
Advanced Chipset Features	Load Optimized Defaults
Integrated Pheripherals	Set Password
Power Management	Setup
PnP/PCI Configura	Saving
PC Health Status	

Quit Without Saveing (Y/N)? Y

Esc : Quit   ↑↓→←   : Select Item
F10 : Save & Exit Setup

Time, Date, Hard Disk Type...

Chapter 4. Driver Utility

The system driver installation procedure must be performed first.

4.1 Ethernet Driver Installation

The AW-A792 supports three 10/100 Ethernet Controller by using Intel® 82551QM and 82546EB for optional Extension Fiber/Copper.

4.1.1. Intel 82546EB Ethernet

(1) Choose Ethernet Controller
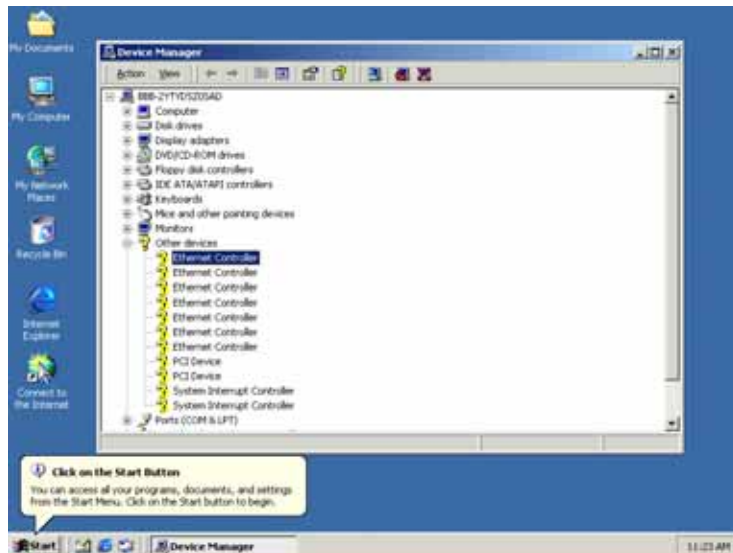
2   Choose Driver
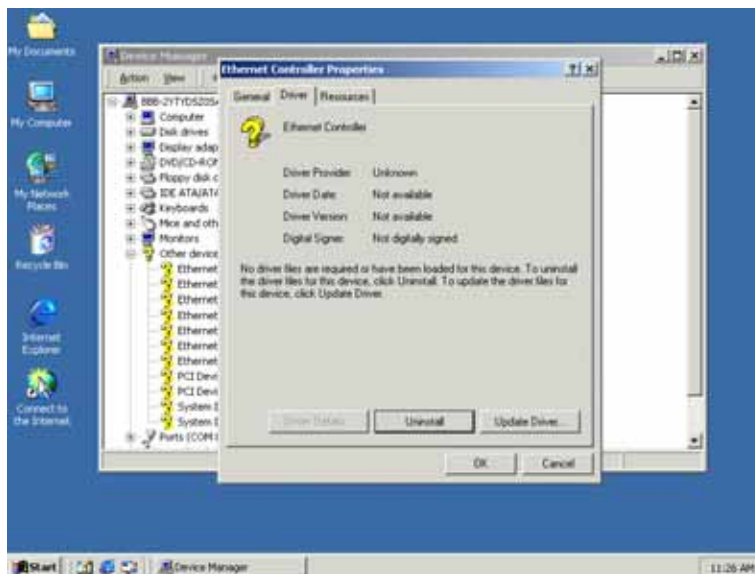
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(3) Click Next
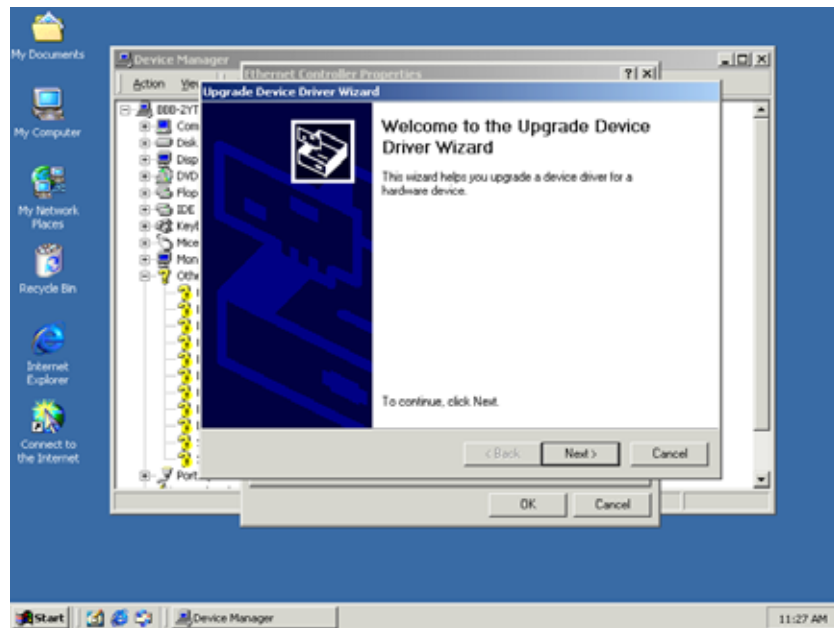
(4) Click Next
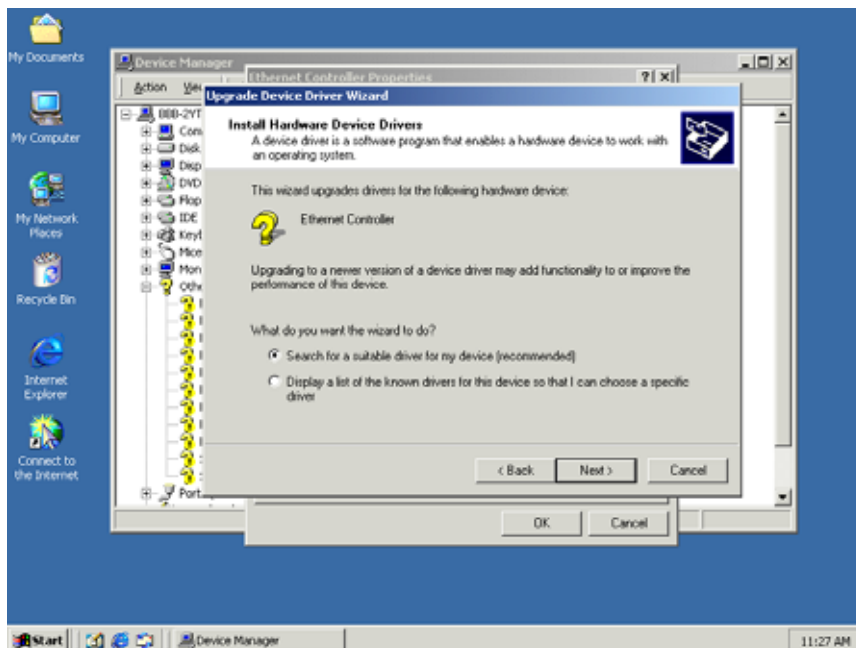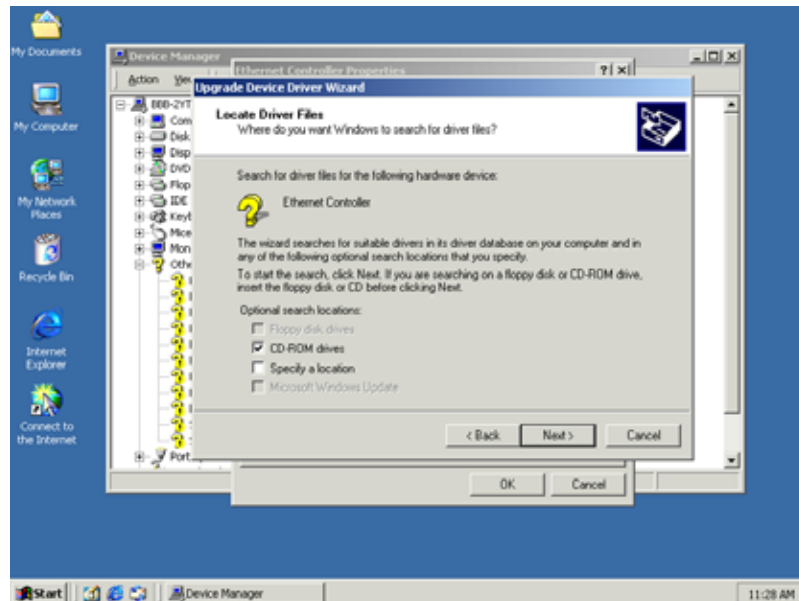
(5)Click Next

(6) Click Next
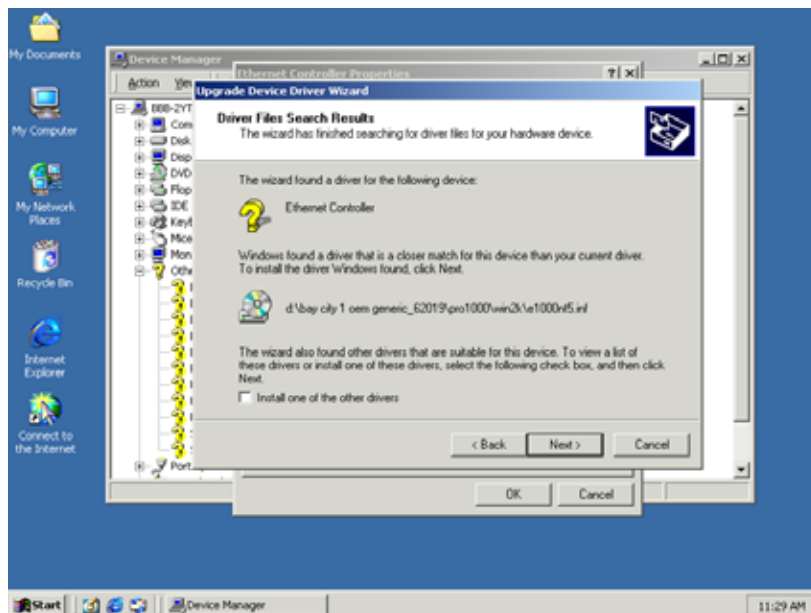
(7) Click Finish
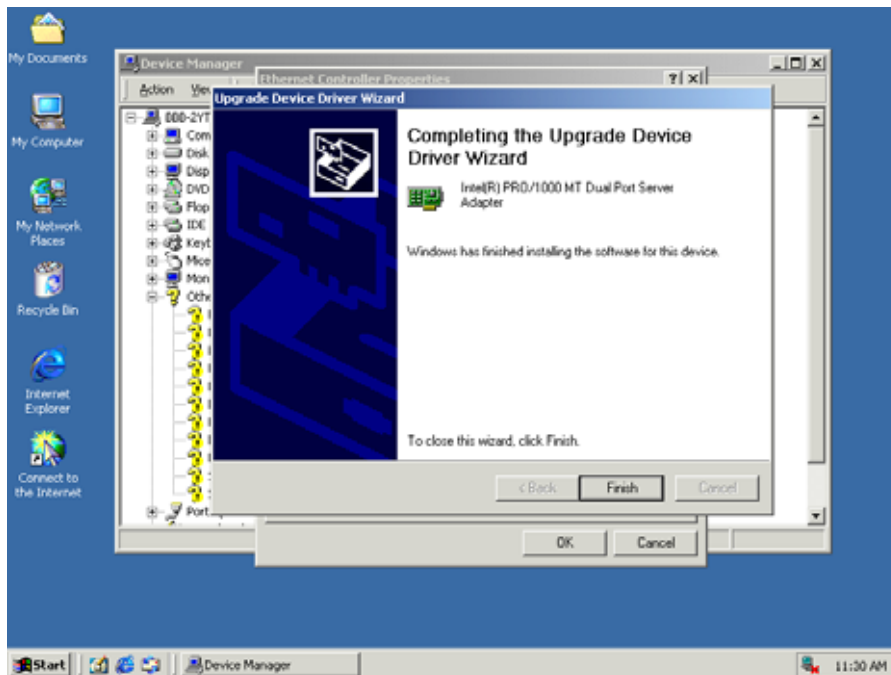
4.1.2 Intel® 82551 Ethernet Installation

  Please install Ethernet drivers as follows:

(1)

1. Insert the AW-A792 CD-ROM driver into the CD-ROM Drive

Select the Drivers/system file to click the Setup icon.

Choose Ethernet controller
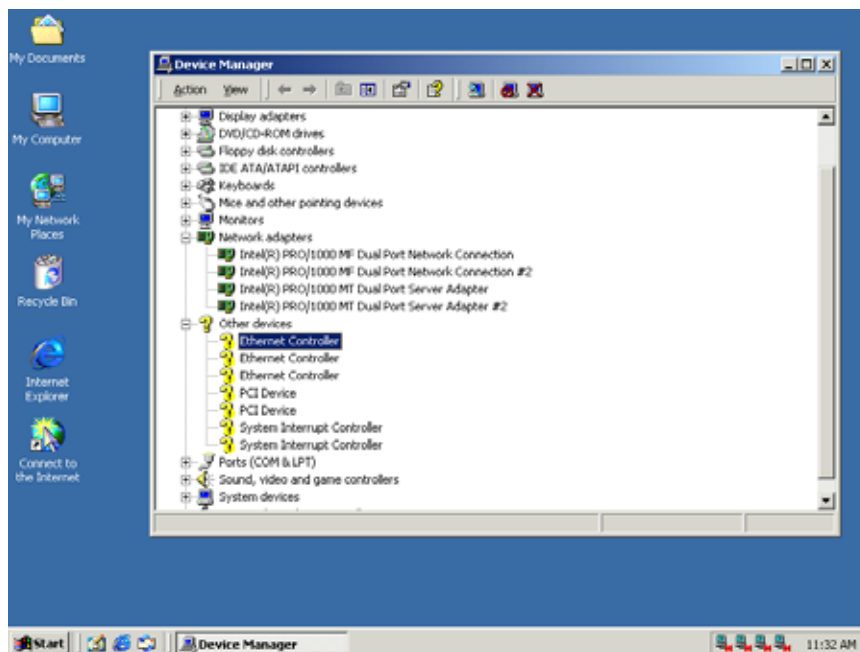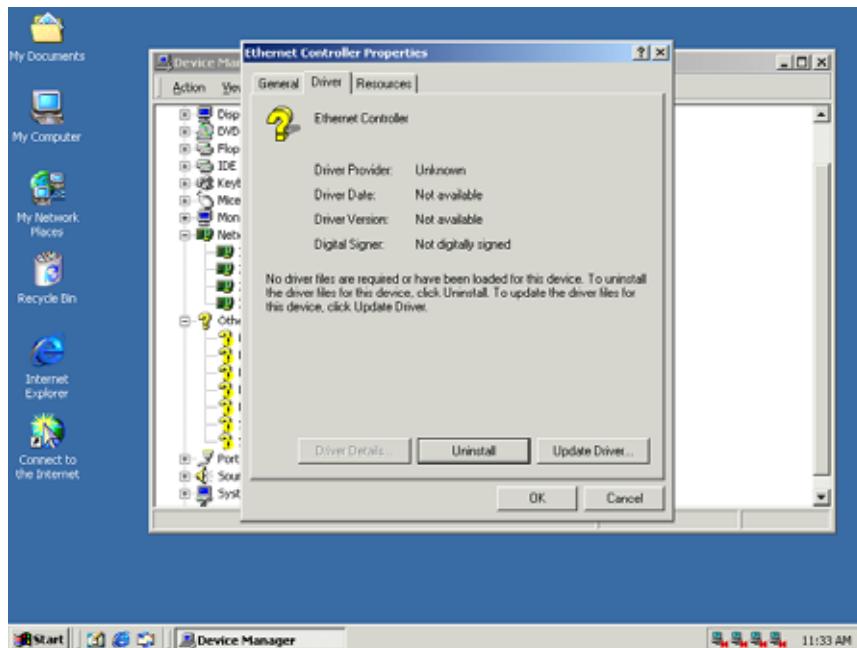
(2) Choose Driver

(3) Click Next
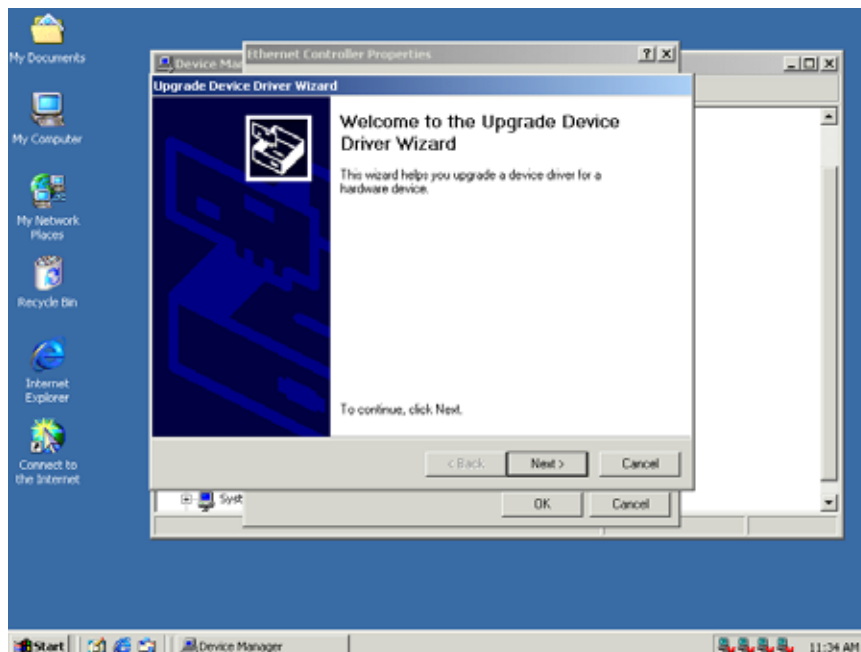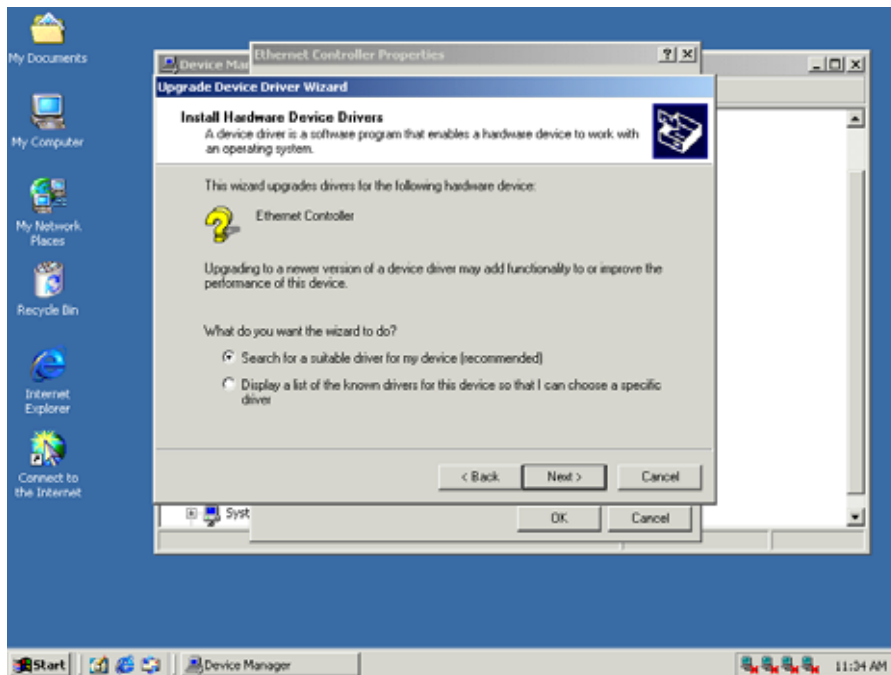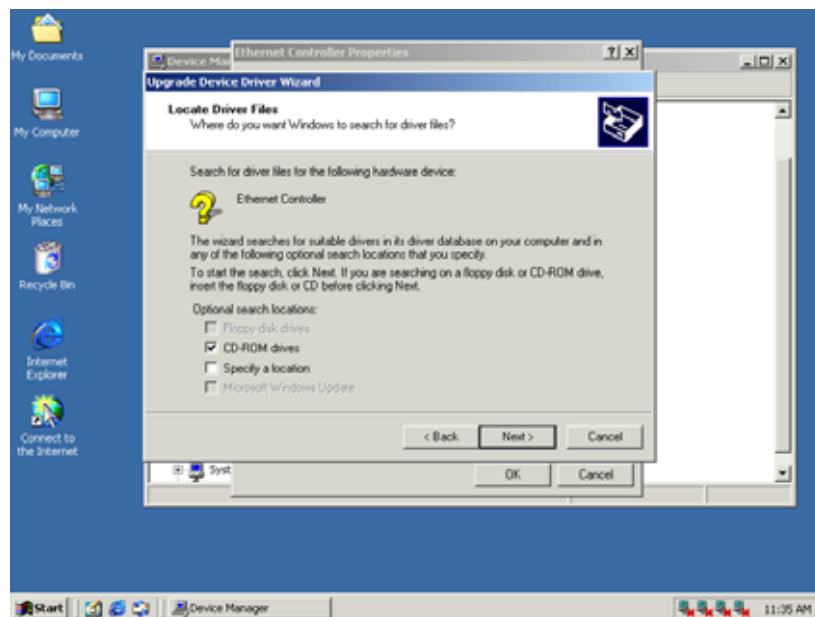
(4) Click Next
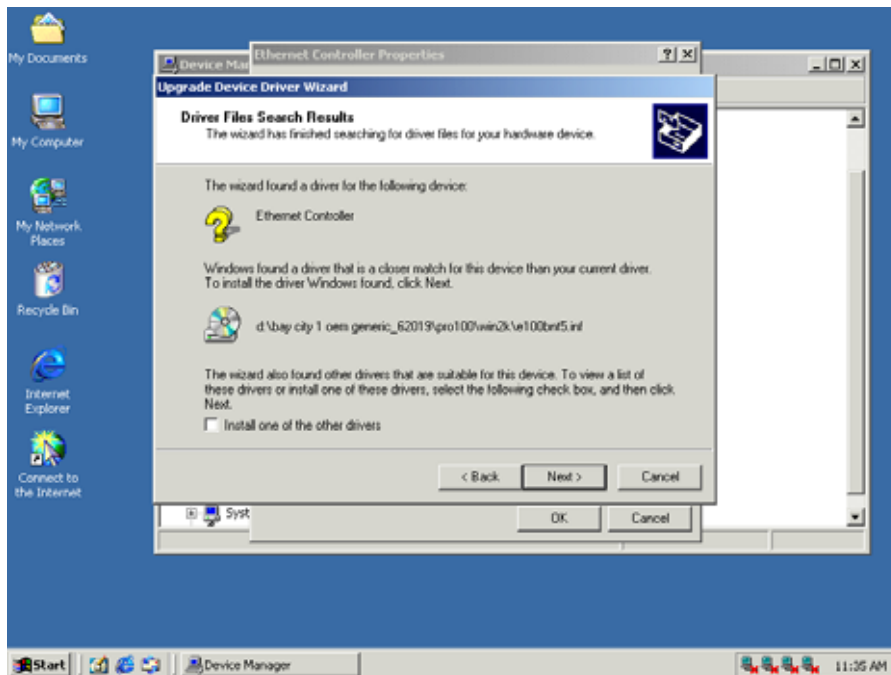
(5) Click Next
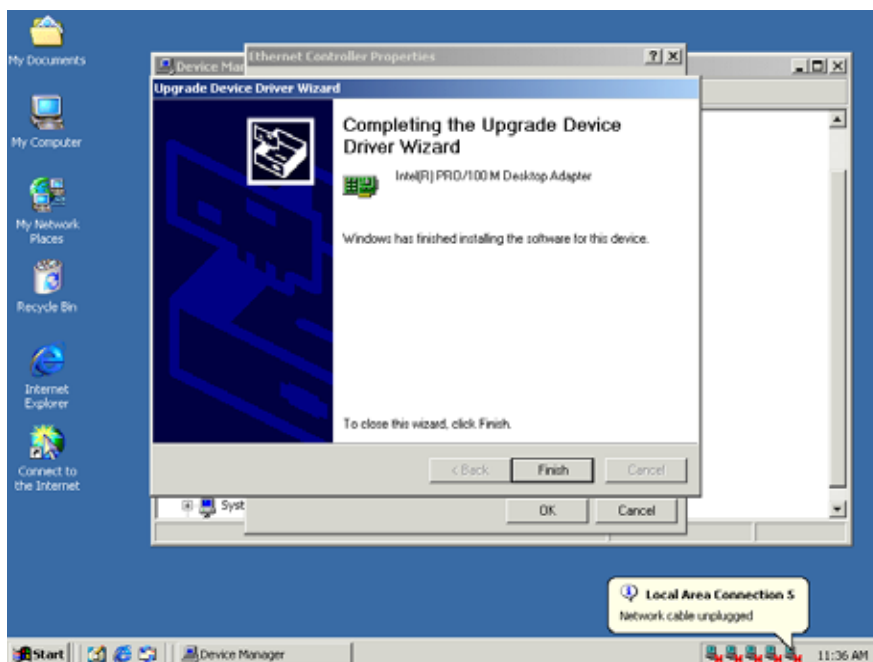
(6) Click Next

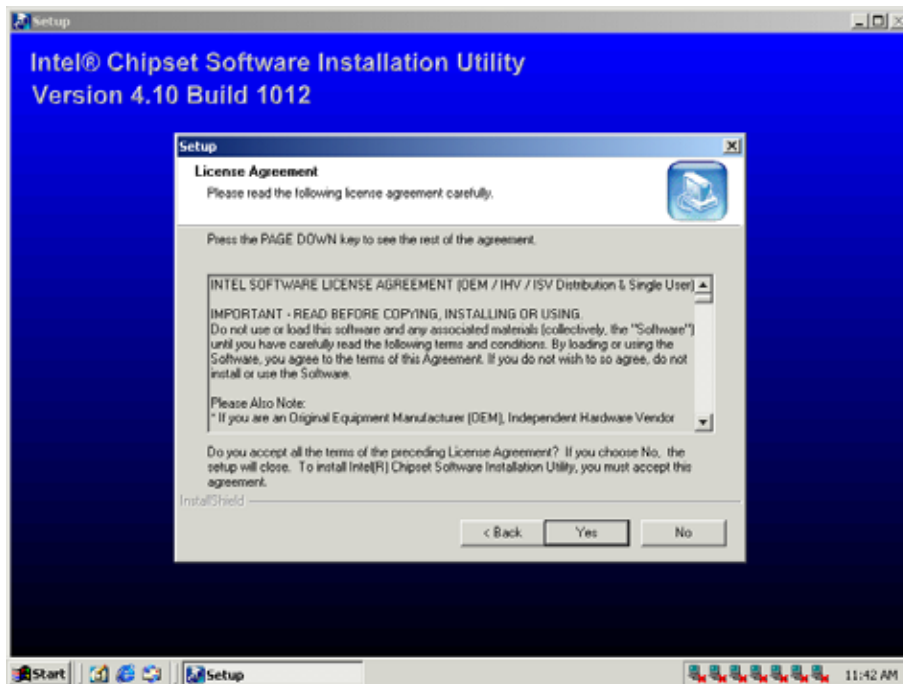**(7) Click Finish**

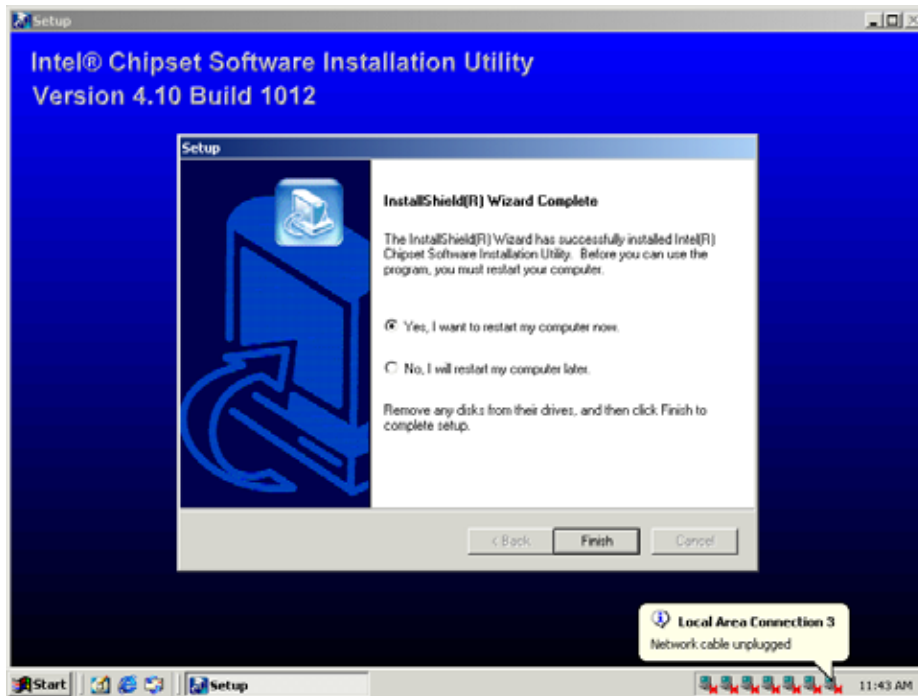## 4.2.1 Install System Chipset Driver
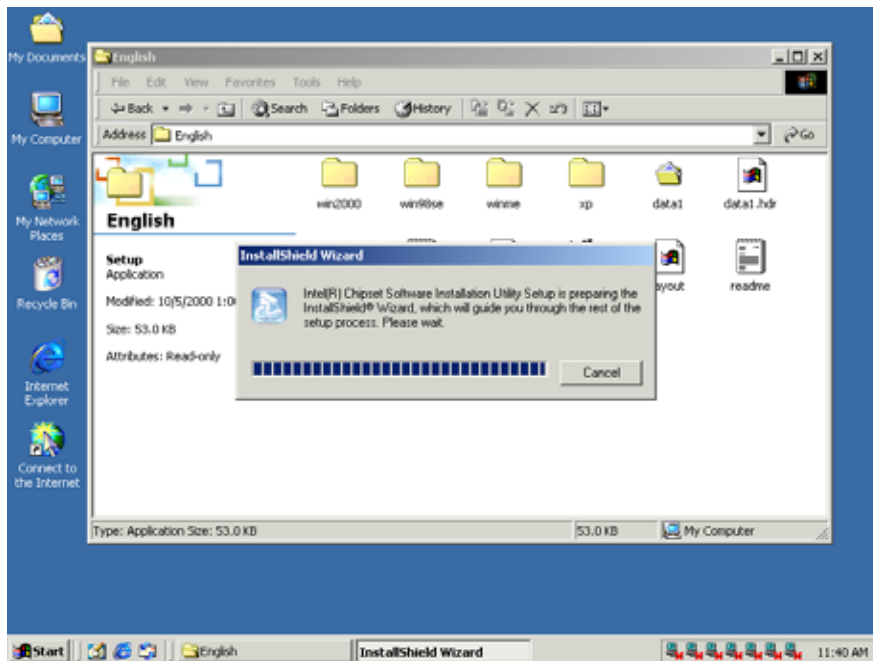
(1) Click Next
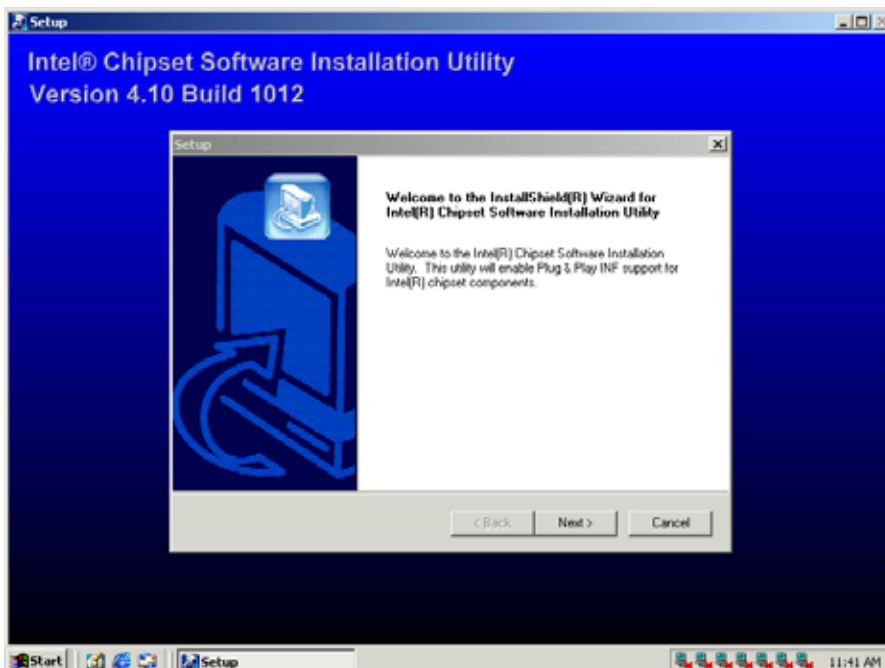
(2) Click Yes

(3) Click Next
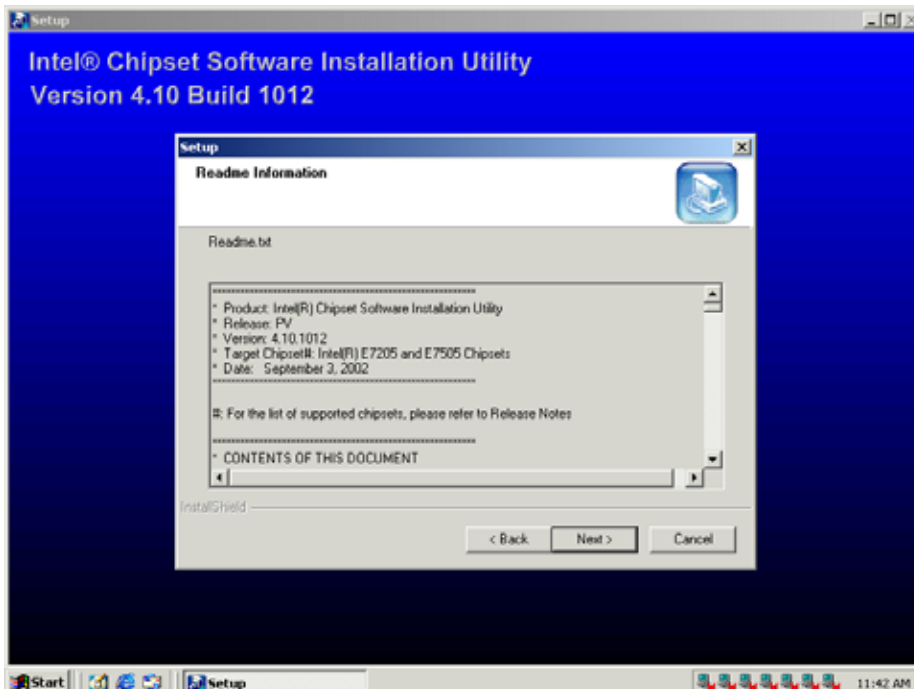
(4) Click Finish

Installation process is completed and allowed the system to reboot.

Appendix A :System Resource

Interrupt Controller

The AW-A792 is a fully PC compatible control board, it consists of 16 ISA interrupt request lines and most of them already in used by other part of the board. Please make sure that the IRQs do not conflict if you would like to use extra add-on cards.

System IRQs are available to cards installed in the ISA expansion Bus first. Any remaining IRQs then may be assigned to this PCI Bus. You are able to use the Microsoft's Diagnostic(MSD.EXE) utility include in Windows director to see their map.

IRQ	Assignment
IRQ0	System Timer Output
IRQ1	Keyboard
IRQ2	Interrupt rerouting from IRQ8 through IRQ15
IRQ3	Serial Port 2
IRQ4	Serial Port 1
IRQ5	USB Controller
IRQ6	Floppy Disk Controller
IRQ7	Parallel Port 1
IRQ8	Real Time Clock
IRQ9	Ethernet Controller
IRQ10	Reserved
IRQ11	USB Controller
IRQ12	Mouse
IRQ13	Math Coprocessor
IRQ14	Primary IDE Controller
IRQ15	Secondary IDE Controller

DMA Channel Assignment

Channel 4 is by default used to cascade the two controllers

Channel	Assignment
DMA0	Available fir PCI and ISA Slot
DMA1	**Available for PCI And ISA Slot**
DMA2	Floppy Disk Controller
DMA3	Available for PCI and ISA Slot

DMA4	Cascade
DMA5	Available for PCI and ISA Slot
DMA6	Available for PCI and ISA Slot
DMA7	Available for PCI and ISA Slot

Memory Map

The following table indicates memory of AW-A792. The address ranges specify the runtime code length.

Memory below 1MB (1Mb ~ 640KB)

Address Range	Type	Owner
A0000~AFFFF	ISA	VGA Adapter
B0000~BFFFF	ISA	VGA Adapter
C0000~C7FFF	ISA	Adapter ROM
F0000~FFFFF	ISA	System BIOS

Memory above 1MB (1MB ~ 142336KB)

Address Range	Type	Owner
F0000000~F7FFFFFF	PCI	PCI – PCI Bridge
F8000000~F82FFFFF	PCI	PCI – PCI Bridge

System Memory Map

Start High	Start Low	Size High	Size Low	Type
00000000	00000000	00000000	0009FC00	Available
00000000	000F0000	00000000	00010000	Reserved
00000000	FFC00000	00000000	00100000	Reserved
00000000	FEE00000	00000000	00001000	Reserved
00000000	FFB00000	00000000	00500000	Reserved
00000000	0009FC00	00000000	00000400	Reserved
00000000	00100000	00000000	3FF00000	Available

I/O Map

The addresses shown in the table are typical locations.

I/O Port	Assignment
0 ~ F	AT DMA Controller
20 ~ 21	AT Interrupt Controller
40 ~ 43	82C54 Compatible Programmable Timer
60	8042 Compatible keyboard Controller
61	AT Style Speaker
64	8042 Compatible keyboard Controller
70 ~ 71	Real Time Clock
81 ~ 83	AT DMA Controller
87	AT DMA Controller
89 ~ 8B	AT DMA Controller
8F ~ 91	AT DMA Controller
A0 ~ A1	AT Interrupt Controller
C0 ~ DF	AT DMA Controller
F0 ~ FF	Math Coprocessor
170 ~ 177	IDE Controller
1F0 ~ 1F7	IDE Controller
294 ~ 297	PCI Bus
2F8 ~ 2FF	Communication Port (COM2)
376	IDE Controller
378 ~ 37A	LPT1
3BB ~ 3B0	VGA Adapter
3C0 ~ 3DF	VGA Adapter
3F0 ~ 3F5	FDD Controller
3F6	IDE Controller
3F7	FDD Controller
3F8 ~ 3FF	Communication Port (COM1)
4D1 ~ 4D0	PCI Bus
778 ~ 77B	Parallel
CF8 ~ CFF	PCI Bus
4000 ~ 40BF	PCI Bus
A000 ~ BFFF	PCI Bus
C000 ~ CFFF	PCI Bus
D000~D01E	USB Controller
D400~D41E	USB Controller
F000~F00E	IDE Controller

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Appendix B:

Standard Cable List

Part No.	Cable Description	AW-A792 Connector	Terminating Connector
46-ICOM00-00	COM Port Cable	CN9	2.54mm ,COM2 Cable
46-I00IDE-00	IDE Cable	CN23	2.54mm , 40-Pin IDE Cable
46-ILPT01-00	Printer Cable	CN18	2.0 mm ,Printer Port Cable

Optional Cable List

Part No.	Cable Description	AW-A792 Connector	Terminating Connector
46-ATA660-00	ATA-66 Cable	CN22	2.0 mm , 44-Pin IDE Cable