Socket 370 5.25” Embedded Single Board Computer
With VGA/LCD, Triple LAN, AUDIO, TV-OUT

User’s Manual

Version 1.0

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Chapter 1. General Information

1.1 Introduction

The AW-C661 is a 5.25" embedded single board use Intel FW82443BX and FW82371EB chipset supports 100MHz FSB for Intel® Pentium III/Celeron™ processors up to 1.1GHz and VIA C3 Ezra processors. The AW-C661 supports CRT/LCD and TV-Out Interface for NTSC, NTSC-EIA and PAL signals for optional, ESS Solo-1 PCI-Bus Audio interface and triple Intel® 82559ER or Realtek RLT8139C Ethernet chipset with RJ45 jack for 10/100Mbps.

The onboard features include three RS-232 and one RS-232/422/485 serial ports, one bi-directional parallel port, two USB ports, also with watchdog timer and connector for SMBus LCD interface. In addition, the onboard SSD interface supports CompactFlash™ socket for TypeI/II.

1.2 Specification

Specifications	
General Functions	
CPU	Socket 370 for Intel® FCPGA/FCPGA2 Celeron™ /Tualatin™ and FCPGA Pentium® III Coppermine™/Celeron as well as VIA C3 Ezra Processors up to 100MHz FSB
BIOS	Award® Flash BIOS
Cache	128/256 KB on-chip cache
Chipset	Intel® 440BX+ 82371EB
I/O Chipset	Dual Winbond W83977EF-AW
Memory	Two 144-pin SO-DIMM sockets up to 512MB
Enhanced IDE	Support up to two IDE devices (Ultra DMA 33)
FDD interface	Supports one 34-pin header and one notebook type connector
Parallel port	Support SPP/ECP/EPP
Serial port	Three RS-232 and one RS-232/422/485 serial ports.
IR interface	Support one IrDA Tx/Rx header
KB/Mouse connector	Support PC/AT keyboard and PS/2 mouse
USB connectors	Support dual USB ports

Battery	Lithium battery for data retention up to 10 years(in normal condition)
Watchdog Timer	Support software selectable timeout interval
System Monitoring	Software programmable.
PC/104 Connector	One PC/104 connector
PCI slot	One 32-bit PCI expansion slot
Power Requirement	+5V and +12V
Digital I/O	Support eight TTL input and output pins for customized purpose
SMBus connector	Support SMBus LCD interface
Power management	Support ATX/AT power supply, PC97, LAN wake up, and modem ring-in functions

Flat Panel/CRT Interface

Chipset	SMI Lynx3DM
Display memory	Built-in 4MB/8MB for Lynx3DM SM721
Display type	Simultaneous supports CRT and LCD displays.
Resolution	Flat panel displays support up to 1024 x 768 16M colors and CRT monitors up to 1280x1024 16M colors

TV-Out Interface (option)

TV Format	Support NTSC, NTSC-EIA(Japan) and PAL signals format
Output connector	Support RCA (Composite) Video and S-Video connector
Resolution	Support 640 x480 and 800 x 600 resolutions

Ethernet Interface

Chipset	Triple Intel® 82559ER or Realtek® RTL8139 100Base-TX Fast Ethernet controller (Option)
Ethernet interface	PCI 100/10 Mbps Ethernet controller
SSD Interface	One 50-pin CompactFlash™ socket

PCI Sound Interface

Chipset	ESS Solo-1
Audio controller	SoundBlaster and SoundBlaster Pro compatible.
Audio interface	Mic in, Line in, Speaker out and CD audio in

Software Driver	Driver Support for Windows 95, Windows 98 and windows NT

Mechanical and Environmental

Power supply voltage	VCC (4.75V to 5.25V), +12V (11.4V to 12.6V)
Max. power requirements	7A @ 5 V, 200mA@ +12V Operating temperature 32 to 140°F (0 to 60°C)
Board size	8"(L) x 5.75"(W)(203mm x 146mm)
Weight	0.6 lb. (0.3 Kg) (bare)

1.3 AW-C661 Package

Please make sure that the following items have been included in the package before installation.

1. AW-C661 Socket 370 5.25" Embedded Single Board Computer
2. Quick Installation Guide
3. Cables: Optional, please refer Appendix E for the list
4. CD-ROM which contains the following folders:
   (1) Manual (in PDF format)
   (2) VGA Driver
   (3) Audio Driver
   (4) LAN Driver
   (5) Hardware Monitor Utility
   (6) BIOS Utility

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. Press down all the integrated circuits to make sure they are properly seated in their sockets. Do not apply power to the board if it appears to have been damaged.

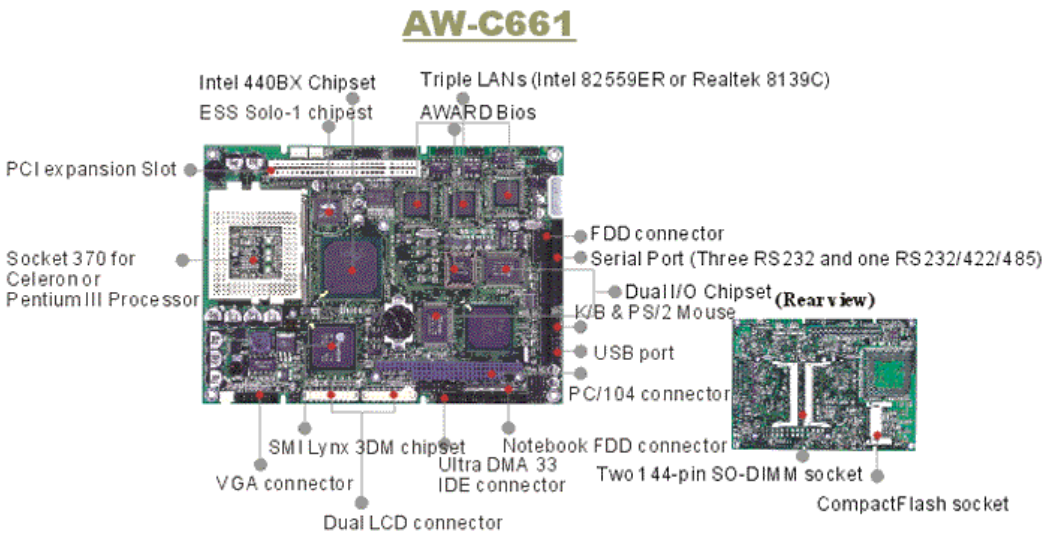
Leave the board in its original packing until you are ready to install

Precautions

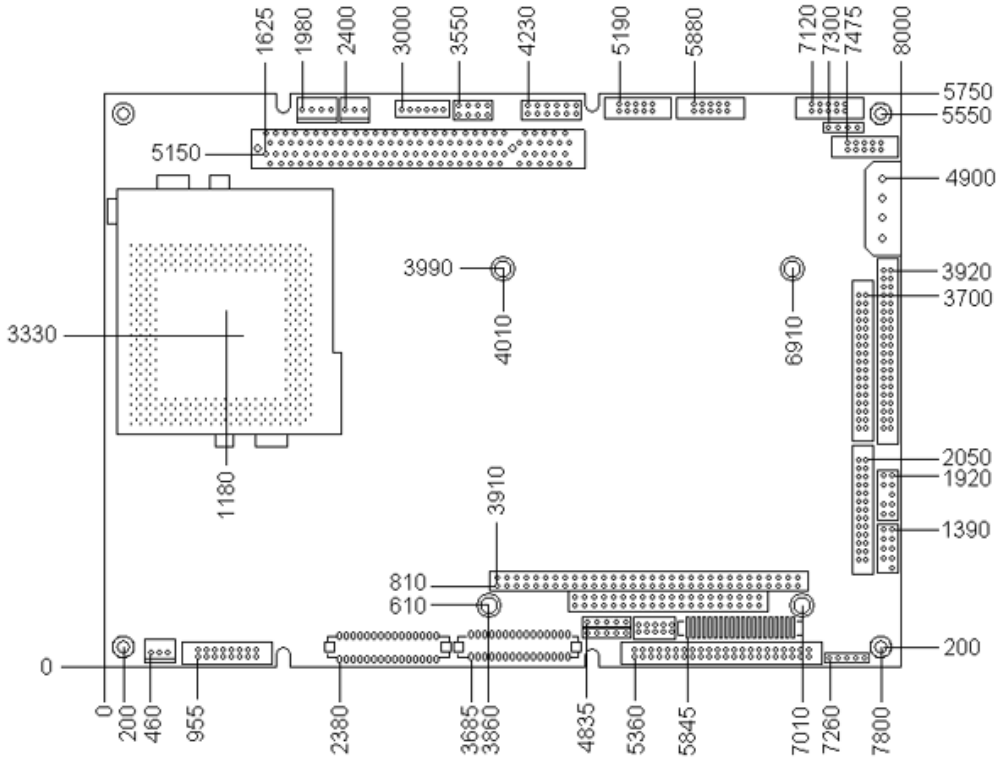
Please make sure you properly ground yourself before handling the AW-C661 board or other system components. Electrostatic discharge can be easily damage the AW-C661 board. Do not remove the anti-static packing until you are ready to install the AW-C661 board. Ground yourself before removing any system component from it protective anti-static packaging. Handle the

AW-C661 board by its edges and avoid touching its component.

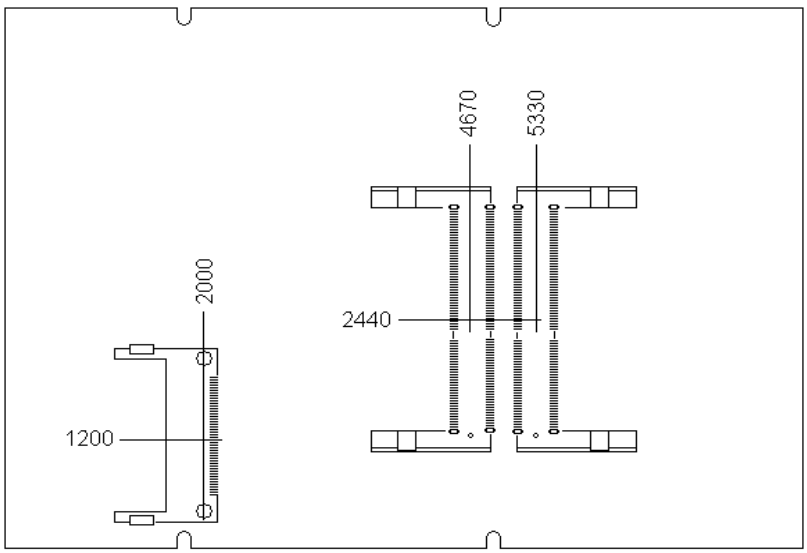
1.4 Board Layout



1.5 Board Dimension



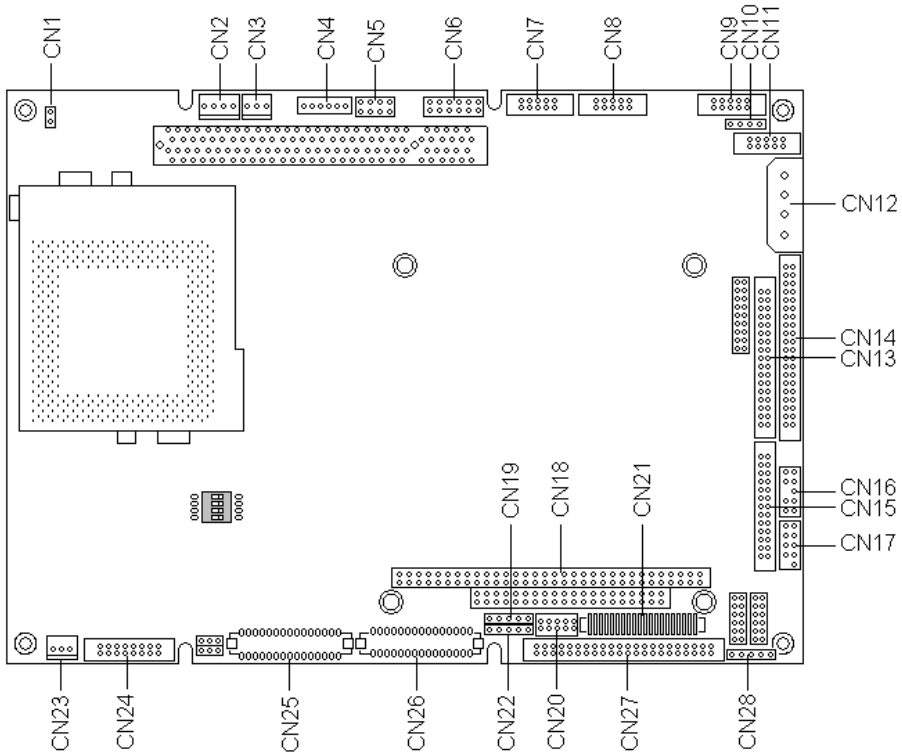
Board Dimension (component side)



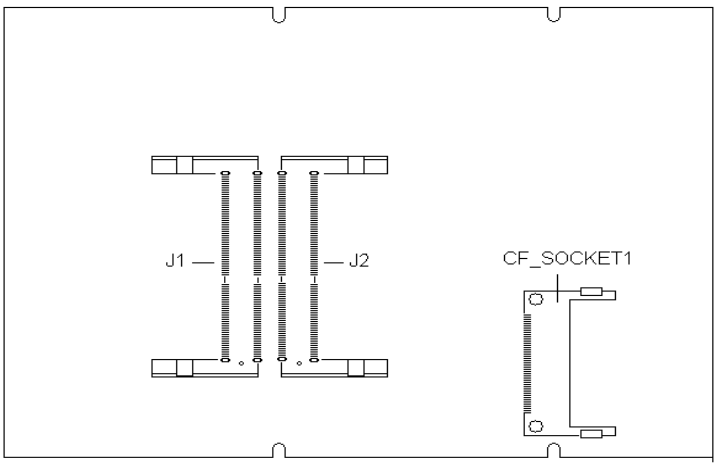
Board Dimension (solder side)

Chapter 2. Installation

2.1 Location of Connectors



(Component Side)

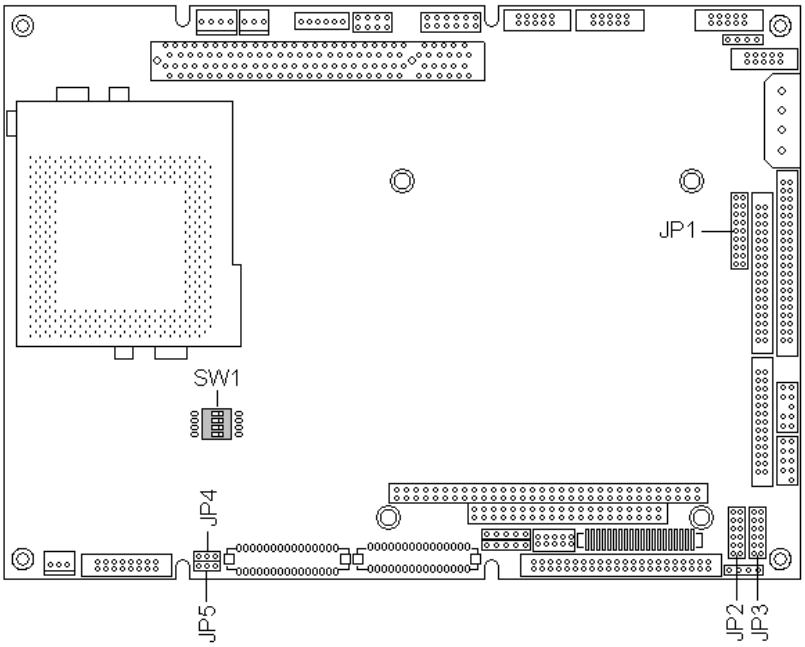


(Solder Side)

2.2 List of Connectors

Connectors	Description	Connectors	Description
CN1	Speaker Connector	CN16	PS/2 Mouse/KB Connector
CN2	-5V/-12V Power Connector	CN17	USB Connector
CN3	ATX Power Control Connector	CN18	PC/104 Connector
CN4	SMBus Connector	CN19	TV-Out Connector
CN5	Front Panel Connector	CN20	GPIO Connector
CN6	LAN LEDs	CN21	Notebook Type FDD Connector
CN7	LAN1 Connector	CN22	Infrared Connector
CN8	LAN 2 Connector	CN23	CPU Fan Connector
CN9	LAN 3 Connector	CN24	CRT Display Connector
CN10	CD Audio Input Connector	CN25, CN26	Flat Panel Connector
CN11	Audio Connector	CN27	2.00mm pitch IDE Connector
CN12	Main Power Connector	CN28	Isolated Digital I/O Connector
CN13	34-pin FDD Connector	J1, J2	SO-DIMM Sockets (Solder Side)
CN14	COM Ports Connector	CF-Socket	CF Socket (Solder Side)
CN15	Parallel Port Connector		

2.3 Location of Jumpers



2.4 List of Jumpers

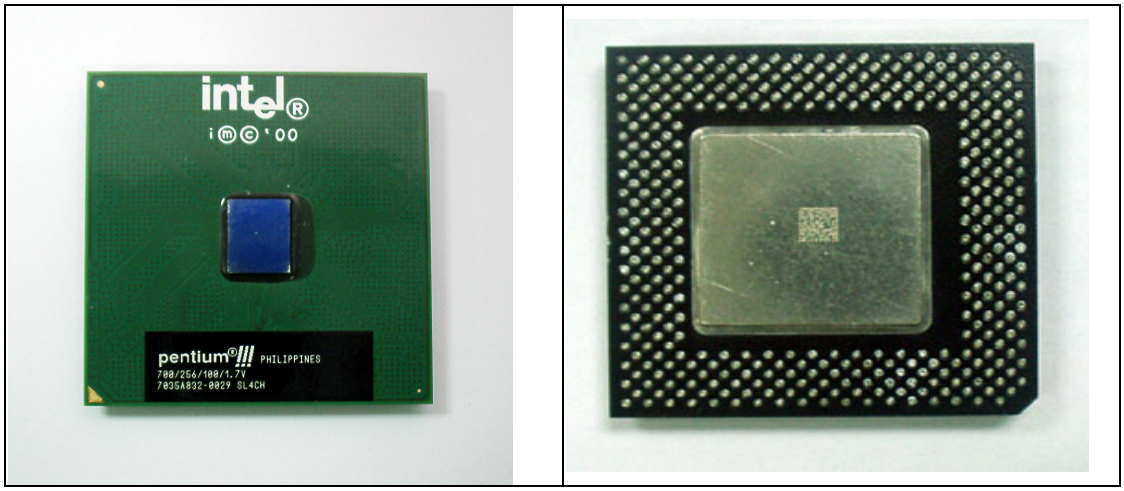
Pin	Description
JP1	COM2 RS-232/422/485 Select
JP2	COM3/COM4 RI/Voltage Select
JP3	COM1/COM2 RI/Voltage Select
JP4	Watch Dog Timer Action Select
JP5	Clear CMOS
SW1	Panel Type Select

2.5 CPU Installing and Upgrading

AW-C661 supports Intel® Pentium III/Celeron™ and compatible processors.

About the FC-PGA and PPGA Form Factors

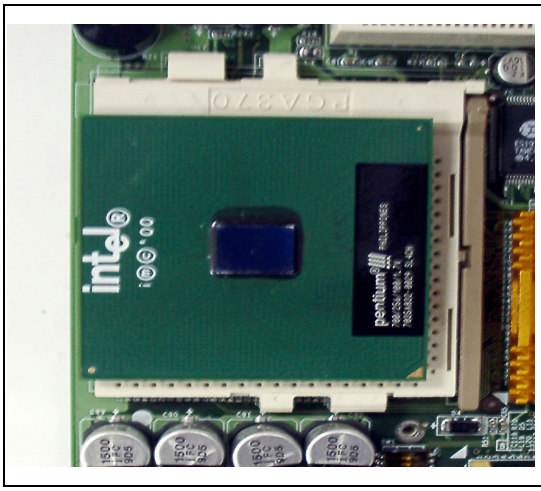
The FC-PGA ("Flip Chip" Pin Grid Array) form factor is a chip packaging designed for Intel® Pentium III/Celeron™ processors up to 100MHz FSB. On the FC-PGA package, the processor's silicon core faces up, and is exposed. This allows the core to have direct contact with a heatsink/fan.

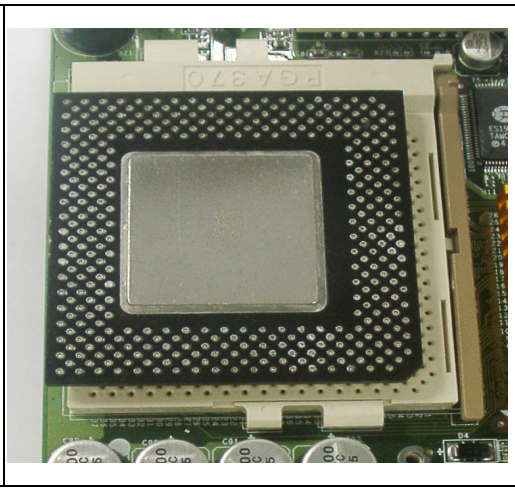


Intel Celeron™ processors are available in the FC-PGA and PPGA (Plastic Pin Grid Array) form factors. Both are compatible with the 370-pin socket on the AW-C661. With the PPGA package, the CPU's silicon core faced don, toward the socket.

Locating Pin 1 on your CPU and ZIP Socket

All Pentium III and Celeron FC-PGA CPUs use a small orange triangle to indicate the location of pin 1. On the corner to the right of pin 1 is an orange dot. On the PPGA Celeron, pin 1 is indicated by an indented corner. Pin 1 corners are used to properly align the joining of the CPU to the ZIP socket.



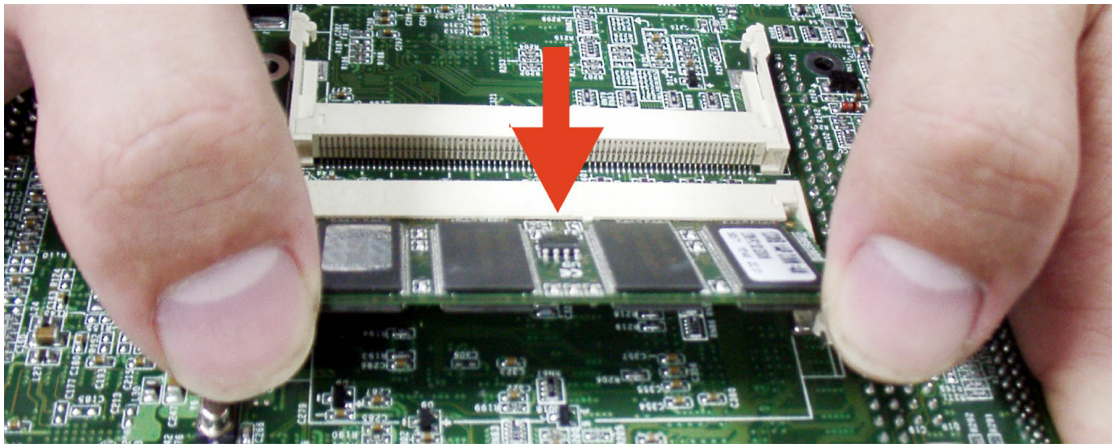


2.6 Installing System Memory

J1, J2: SO-DIMM Socket (solder side)

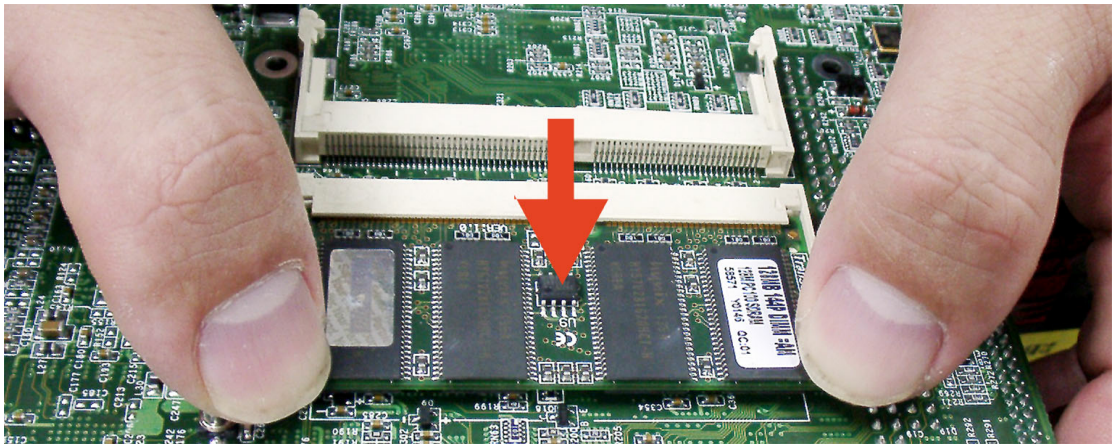
The AW-C661 supports two 144-pin SO-DIMM sockets, memory up to 512Mbyte.

To Insert a SO-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.



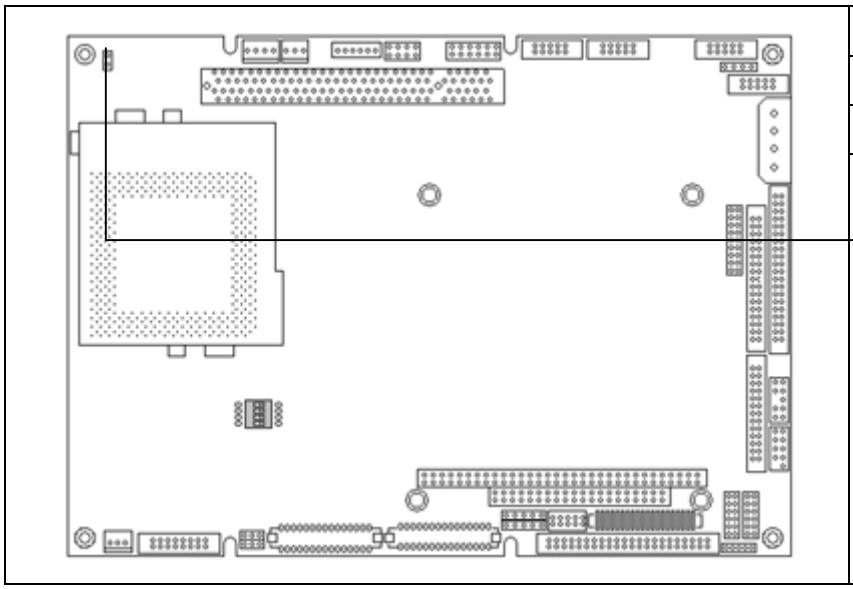
There is only one direction for installing a module in the socket. Do not attempt to force the module into the socket incorrectly.

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



2-7 Connector and Jumper Settings

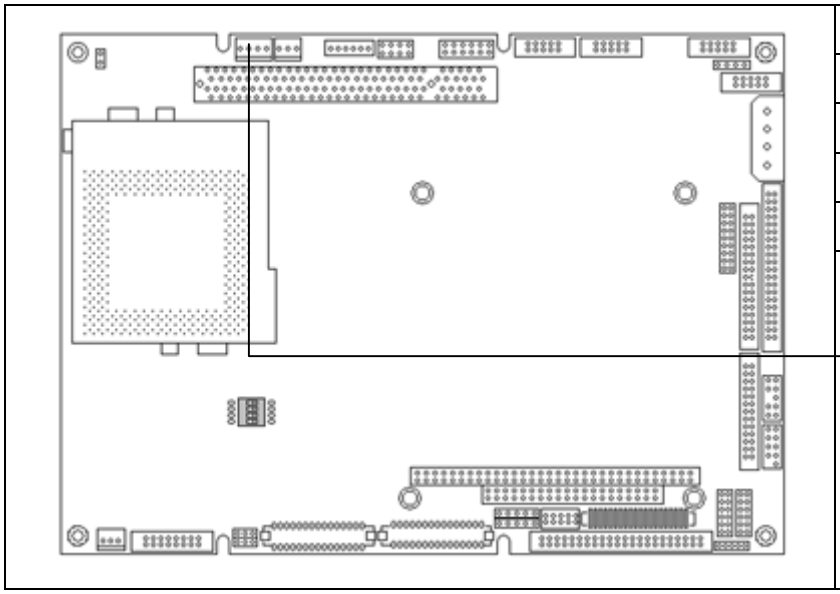
CN1: Speaker Connector



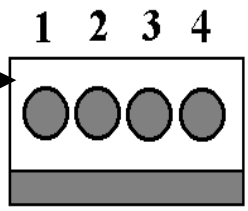
Pin	Assignment
1	Speak out
2	+5V

CN2: Peripheral –5V/-12V Power Connector

The AW-C661 supports an auxiliary power connector that includes –5V and –12V voltages. It supports some PCI add-on cards or PC/104 modules that needs these voltages. Please connect the auxiliary power cable to CN2 and the power supply DC connector.

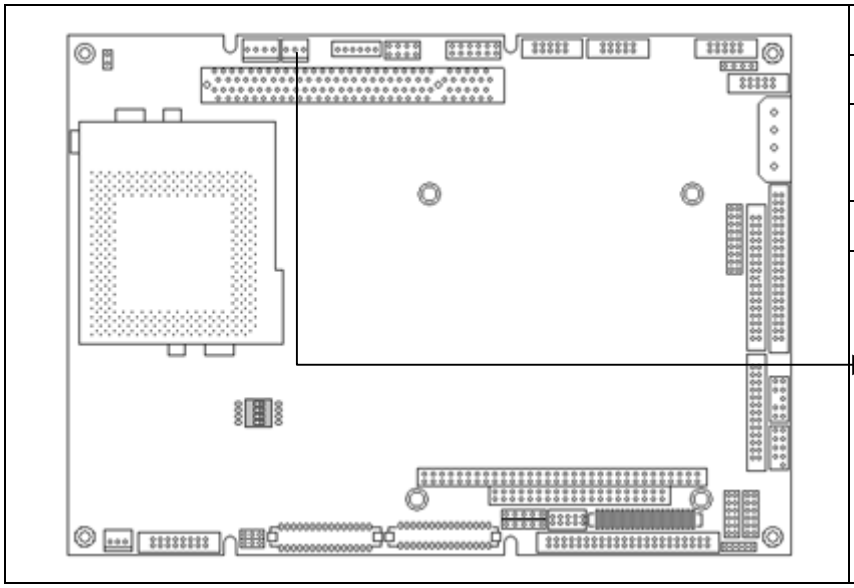


Pin	Assignment
1	Ground
2	-5V
3	Ground
4	-12V

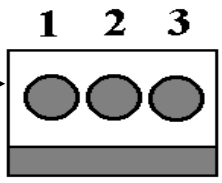


CN3: ATX Power Control Connectors (Supports with CN12 and CN2)

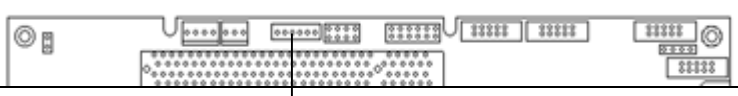
The AW-C661 supports a soft power switch with (CN12 and CN2) function if an ATX power supply is used.



Pin	Assignment
1	5V Standby
2	Power on/of control signal
3	Detect signal



CN4: SMBus Connector (2mm connector)

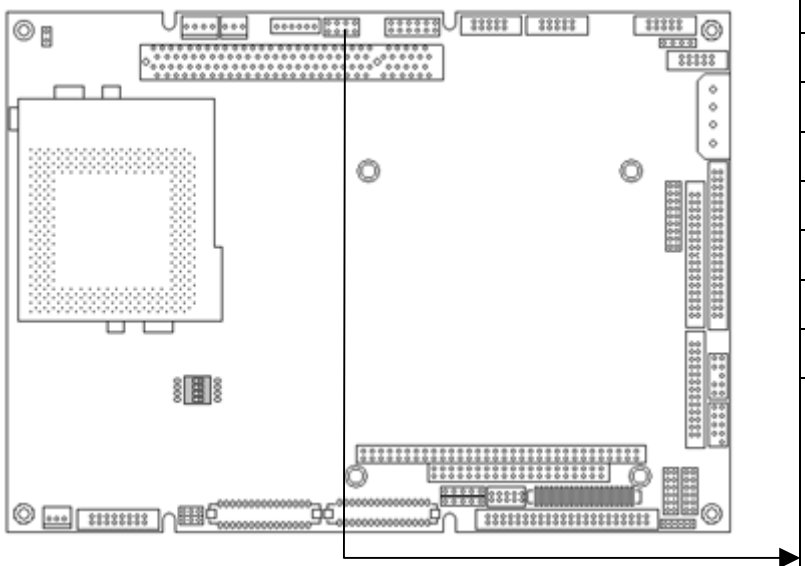


Pin	Assignment
1	Ground

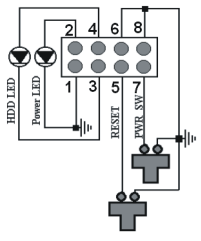
2	+5V
3	SMBCLK
4	SMBDATA
5	+12V
6	NC

1 6

CN5: Front Panel Connector

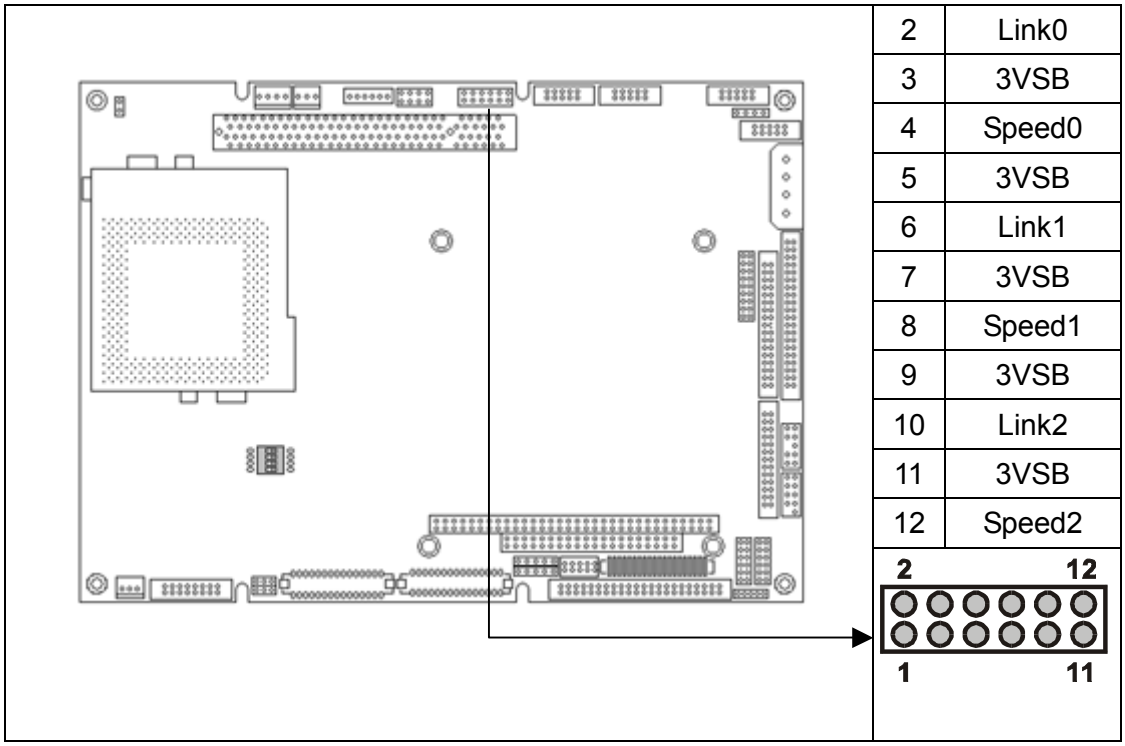


Pin	Assignment
1	Ground
2	+5V
3	IDEACT
4	+5V
5	Reset
6	Ground
7	PANSWIN
8	Ground



CN6: LAN LEDs Connector

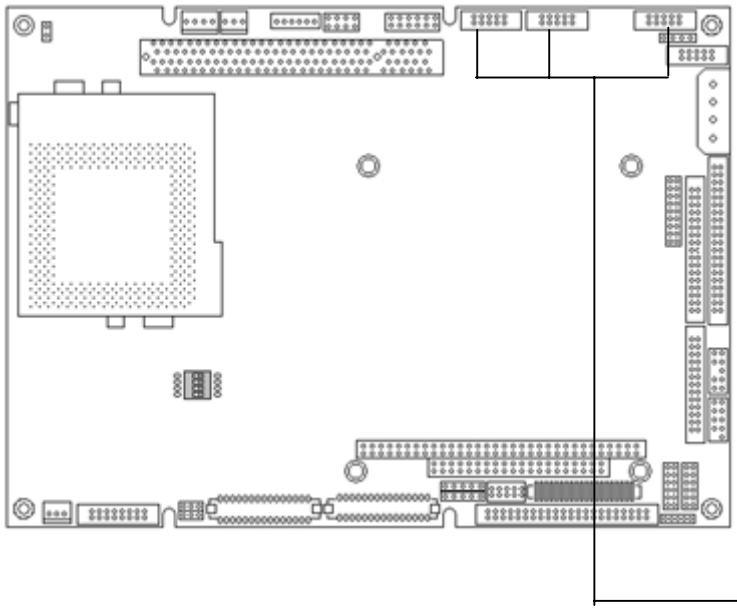
Pin	Assignment
1	3VSB



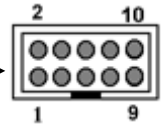
2	Link0
3	3VSB
4	Speed0
5	3VSB
6	Link1
7	3VSB
8	Speed1
9	3VSB
10	Link2
11	3VSB
12	Speed2

CN7, CN8, CN9: LAN1/LAN2/LAN3 10/100BaseT Connector (2mm connectors)

The AW-C661 onboard with three Ethernet ports accessed through CN7, CN8 and CN9. The adapter cable is necessary if a standard RJ45 connector is used. The cable has a 10-pin connector on one end and a standard 100Base-Tx Ethernet RJ45 on the other end. The onboard Intel® 82559ER or RTL8139C fast Ethernet controller supports 10Mbps and 100Mbps N-Way auto-negotiation operations.

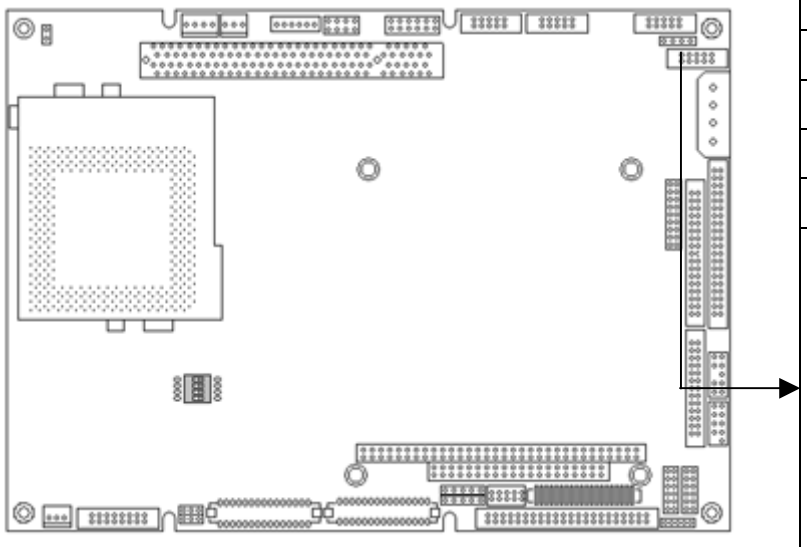


Pin	Assignment
1	TX+
2	TX-
3	RX+
4	SH
5	SH
6	RX-
7	SH
8	SH
9	Ground
10	Ground

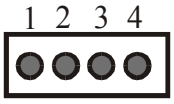


CN10: CD Audio Input Connector

This connector is used to connect a CD Audio cable. Depending on the type of installed CD-ROM drive, connect the CD-ROM drive cable to one of these 4-pin connectors.

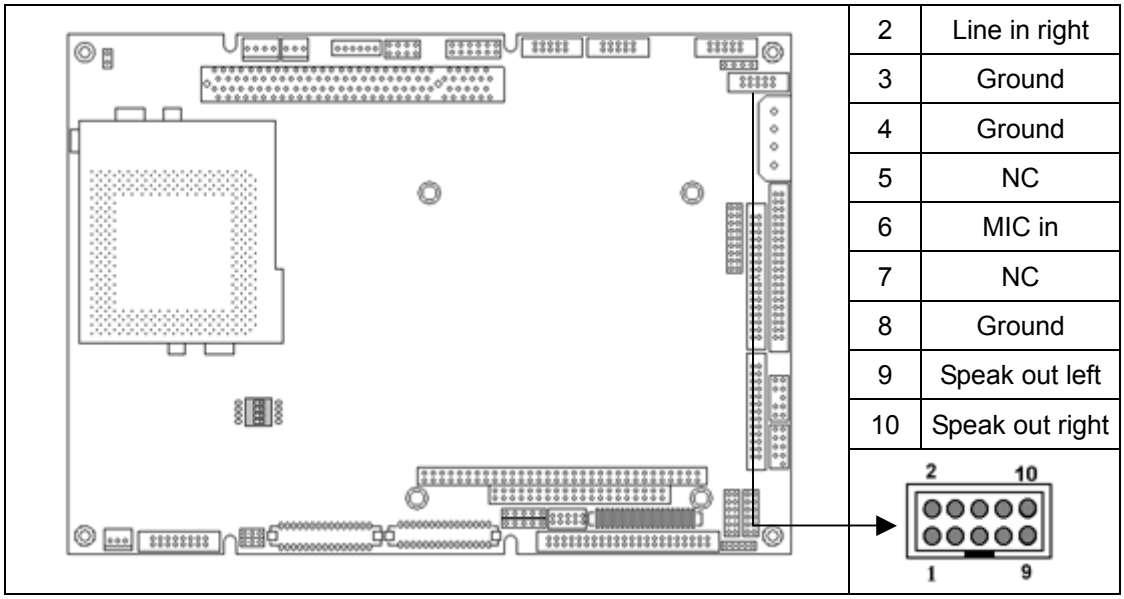


Pin	Assignment
1	L_Input
2	Ground
3	Ground
4	R_Input



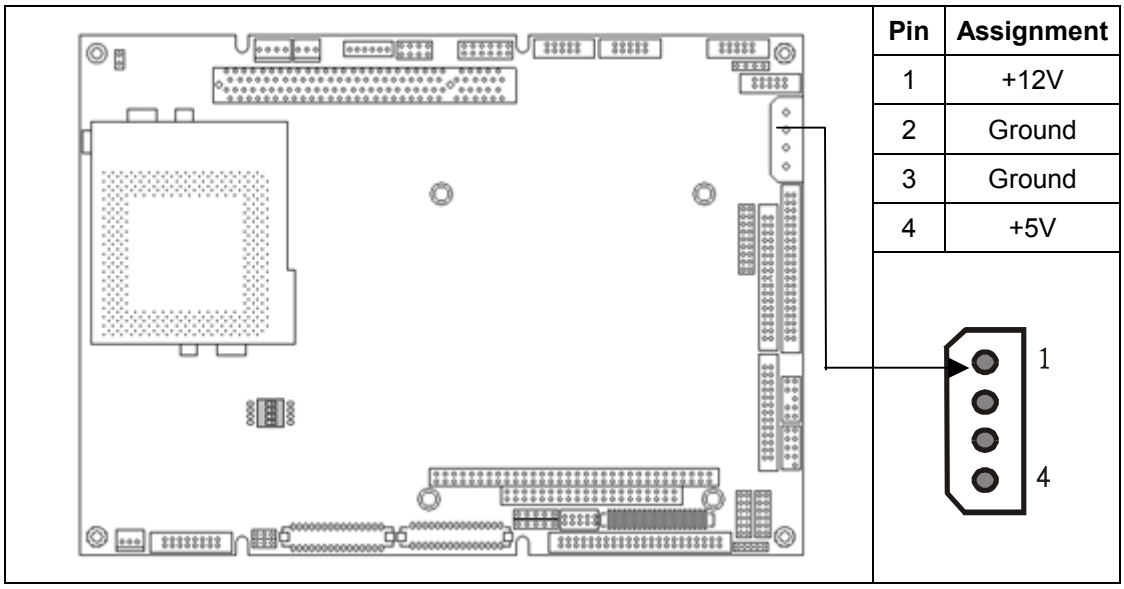
CN11: Audio Connector (2mm connector)

Pin	Assignment
1	Line in left



2	Line in right
3	Ground
4	Ground
5	NC
6	MIC in
7	NC
8	Ground
9	Speak out left
10	Speak out right

CN12: Main Power Connector

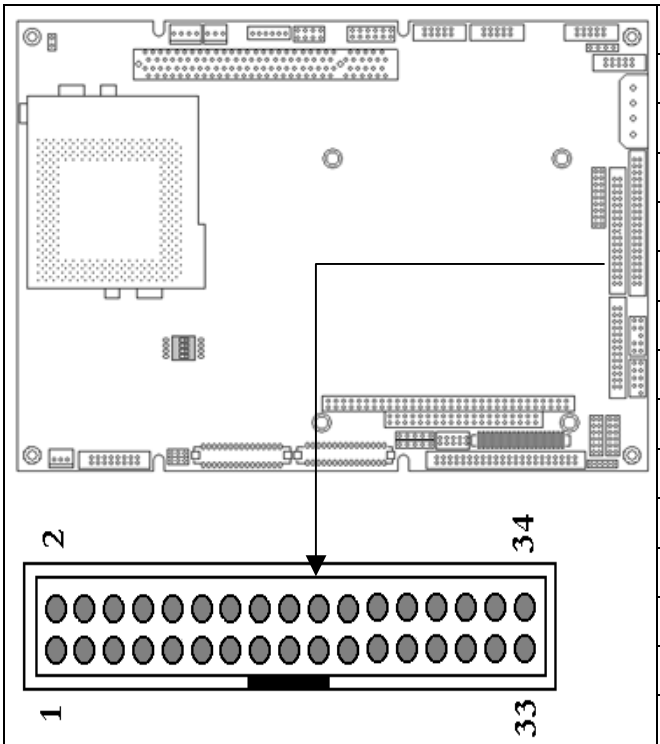


Pin	Assignment
1	+12V
2	Ground
3	Ground
4	+5V

CN13: Standard Floppy Connector

Connect the single end of a floppy disk drive cable to this 32-pin connector block. Connect the other end of the cable to one or more floppy disk drives. The connector with twisted wires always connects to drive A; the connector without twisted wires connects to drive B.

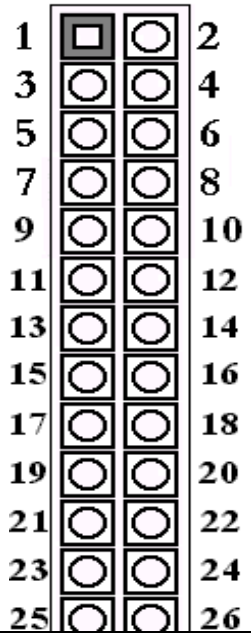
Pin	Assignment	Pin	Assignment
1	Ground	2	Drvden0
3	Ground	4	NC



5	Ground	6	NC
7	Ground	8	Index
9	Ground	10	Motor enable 0
11	Ground	12	Drive select 1
13	Ground	14	Drive select 0
15	Ground	16	Motor enable 1
17	Ground	18	Direction
19	Ground	20	Step
21	Ground	22	Write data
23	Ground	24	Write gate
25	Ground	26	Track 00
27	Ground	28	Write protect
29	Ground	30	Read data
31	Ground	32	Side 1 select
33	Ground	34	Diskette change

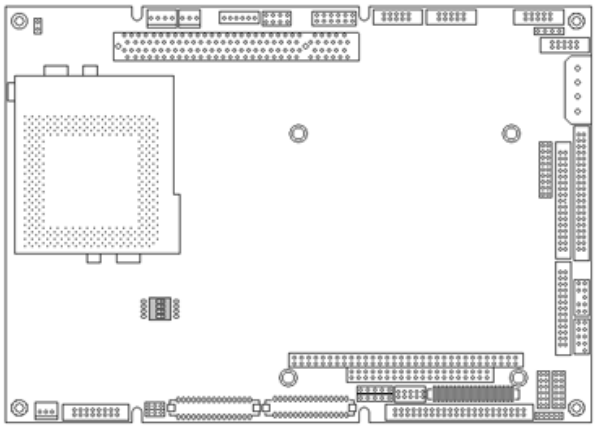
CN14: Serial Ports (COM1/3/4: RS-232; COM2: RS-232/422/485)

The AW-C661 supports four serial ports: Three RS-232 (COM1/3/4) and one RS-232/422/485 (COM2) ports. These ports allow you to connect serial devices such as mouse, printer and more). You need an adapter cable if you use a traditional DB-9 connector. The cable has a 40-pin connector on one end and four DB-9 connectors on the other. The COM2 port is designed as RS232 and can be changed to RS-422/485 by JP1



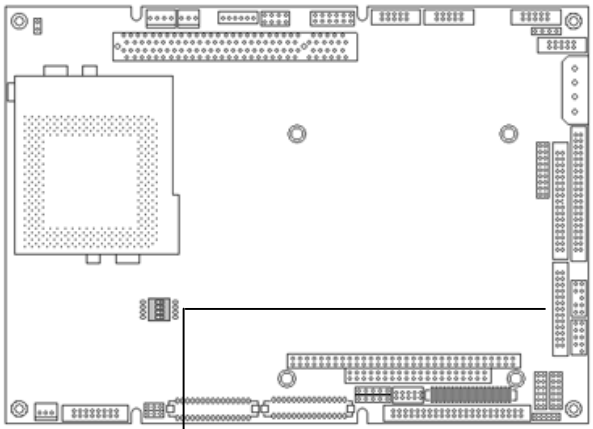
Port	Pin	Assignment	Pin	Assignment
COM1	1	DCD	2	DSR
	3	RXD	4	RTS
	5	TXD	6	CTS
	7	DTR	8	RI
	9	Ground	10	NC
COM2	11	DCD(422RX-)	12	DSR
	13	RXD(422RX+)	14	RTS
	15	TXD(422TX-/485DATA-)	16	CTS
	17	DTR(422TX+/485DATA+)	18	RI
	19	Ground	20	NC
	21	DCD	22	DSR
	23	RXD	24	RTS

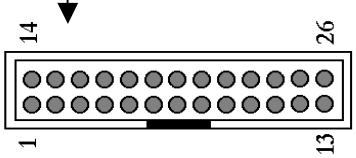
	COM3	25	TXD	26	CTS
		27	DTR	28	RI/VCC/+12V
		29	Ground	30	NC
	COM4	31	DCD	32	RSR
		33	RXD	34	RTS
		35	TXD	36	CTS
		37	DTR	38	RI/VCC/+12V
		39	Ground	40	NC



CN15: Parallel Port Connector

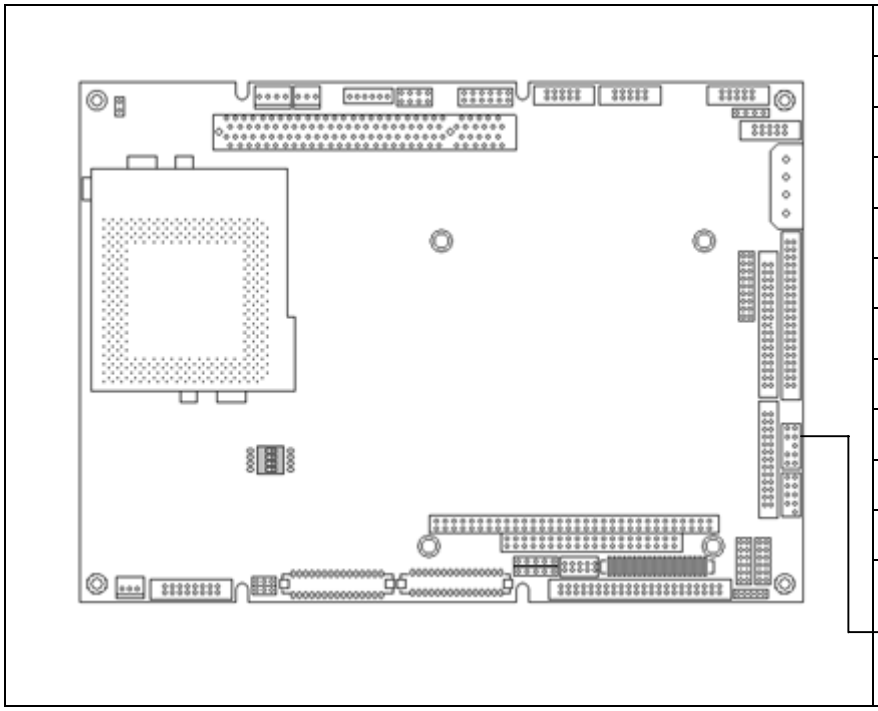
The AW-C661 supports one parallel port, accessed through CN15. You need an adapter cable if you use a traditional DB-25 connector. The cable has a 26-pin connector on one end and a DB-25 connector on the other. The port is designed as LPT1 and can be disabled or changed to LPT2 or LPT3 in the BIOS Integrated Peripherals setup. You also can select the ECP/EPP mode in the BIOS Integrated Peripherals setup.





Pin	Assignment	Pin	Assignment
1	STROBE	2	PD0
3	PI1	4	PD2
5	PD3	6	PD4
7	PD5	8	PD6
9	PD7	10	ACK#
11	BUSY	12	PE
13	SLCT	14	AUTOFD
15	ERR	16	INIT
17	SLCTIN	18	Ground
19	Ground	20	Ground
21	Ground	22	Ground
23	Ground	24	Ground
25	Ground	26	NC

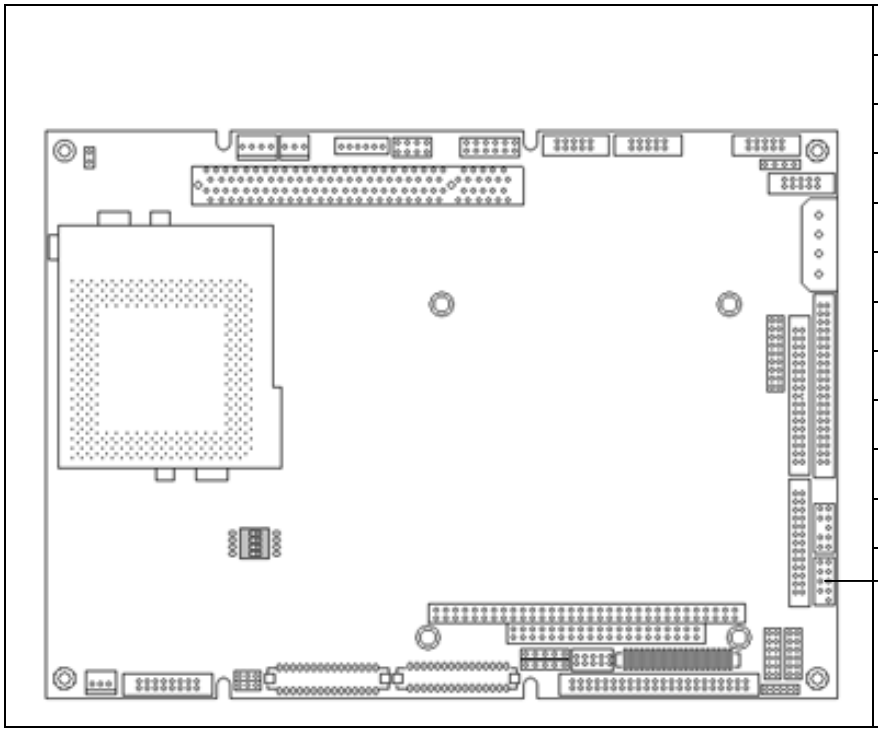
CN16: Keyboard and PS/2 Mouse Connector



Pin	Assignment
1	KBCLK#
2	MSCLK#
3	KBDATA#
4	MSDATA#
5	NC
6	NC
7	Ground
8	Ground
9	+5V
10	+5V

CN17: USB Connector

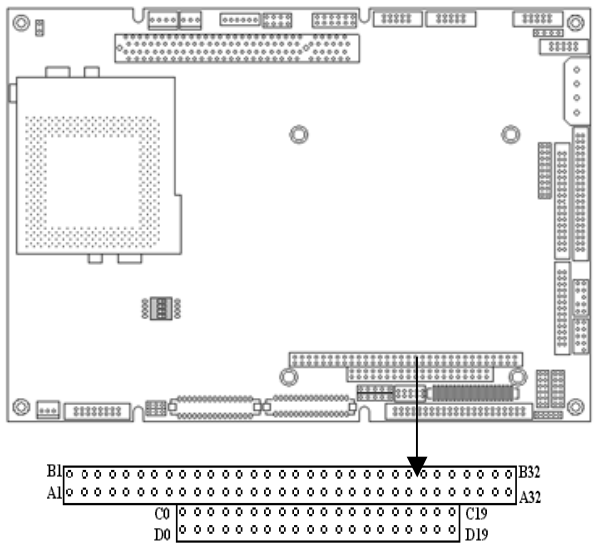
The AW-C661 supports two USB (Universal Serial Bus) interfaces which give complete plug and play, hot attach/detach for up to 127 external devices. You need an adapter cable to support two USB connectors. The cable has 10-pin connector on one end and two USB connectors on the other. The USB interfaces comply with USB specification Rev.1.0 and can be disabled in the system BIOS setup.



Pin	Assignment
1	+5V
2	+5V
3	USBP0
4	USBP1-
5	USBP0+
6	USBP1+
7	Ground
8	Ground
9	NC
10	Ground

CN18: PC/104 Connector

CN18 is a standard PC/104 bus connector, it is fully occupied with the signals of the "ISA" (PC/AT) bus. It offers full architecuture, hardware and software compatibility with the ISA bus and can accept ultra-compact (3.6" x 3.8") stackable modules.



Signal	Pin	Signal	Pin
IOCHCHK	A1	Ground	B1
SD7	A2	RESET	B2
SD6	A3	+5V	B3
SD5	A4	IRQ9	B4
SD4	A5	NC	B5
SD3	A6	NC	B6
SD2	A7	NC	B7
SD1	A8	0 wait state	B8
SD0	A9	+12	B9
IOCHRDY	A10	Ground	B10
AEN	A11	SMEMW#	B11
SA19	A12	SMEMR*	B12
SA18	A13	IOW*	B13
SA17	A14	IOR*	B14
SA16	A15	DACK3*	B15
SA15	A16	DRQ3	B16

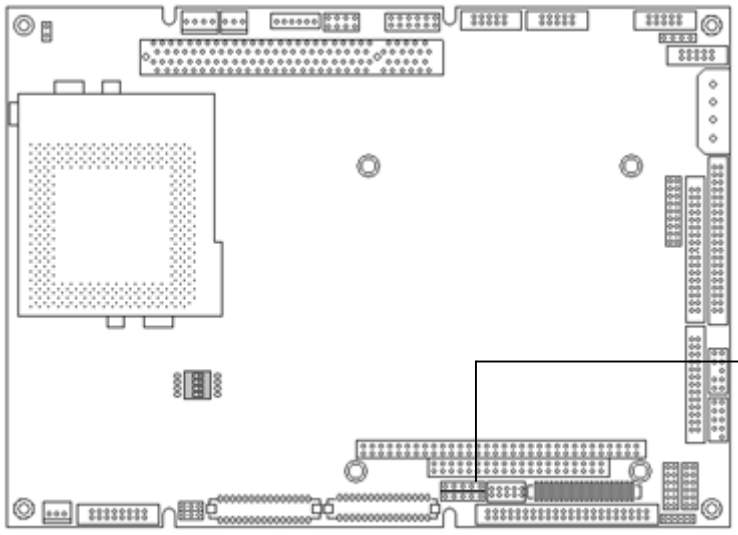
Signal	Pin	Signal	Pin
Ground	C0	Ground	D0
SBHE*	C1	MEMCS16*	D1
LA23	C2	IOCS16*	D2
LA22	C3	IRQ10	D3

LA21	C4	IRQ11	D4	SA14	A17	DACK1*	B17
LA20	C5	IRQ12	D5	SA13	A18	DRQ1	B18
LA19	C6	IRQ15	D6	SA12	A19	REFRESH*	B19
LA18	C7	IRQ14	D7	SA11	A20	SYSCLK	B20
LA17	C8	DACK0*	D8	SA10	A21	IRQ7	B21
MEMR*	C9	DRQ0*	D9	SA9	A22	IRQ6	B22
MEMW*	C10	DACK5*	D10	SA8	A23	IRQ5	B23
SD8	C11	DRQ5	D11	SA7	A24	IRQ4	B24
SD9	C12	DACK6*	D12	SA6	A25	IRQ3	B25
SD10	C13	DRQ6	D13	SA5	A26	NC	B26
SD11	C14	DACL7*	D14	SA4	A27	TC	B27
SD12	C15	DRQ7	D15	SA3	A28	BALE	B28
SD13	C16	+5V	D16	SA2	A29	+5V	B29
SD14	C17	MASTER*	D17	SA1	A30	OSC	B30
SD15	C18	Ground	D18	SA0	A31	Ground	B31
Ground	C19	Ground	D19	Ground	A32	Ground	B32

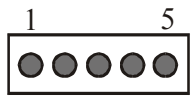
Please refer to the Appendix A for the PC/104 module installation.

CN19: TV-Out Connector

The AW-C661 with TV-Out interface optional, supports NTSC, NTSC-EIA(for Japan System) and PAL signals. The NTSC format's resolution is 640x480 and PAL format's resolution is 800x600 and above.

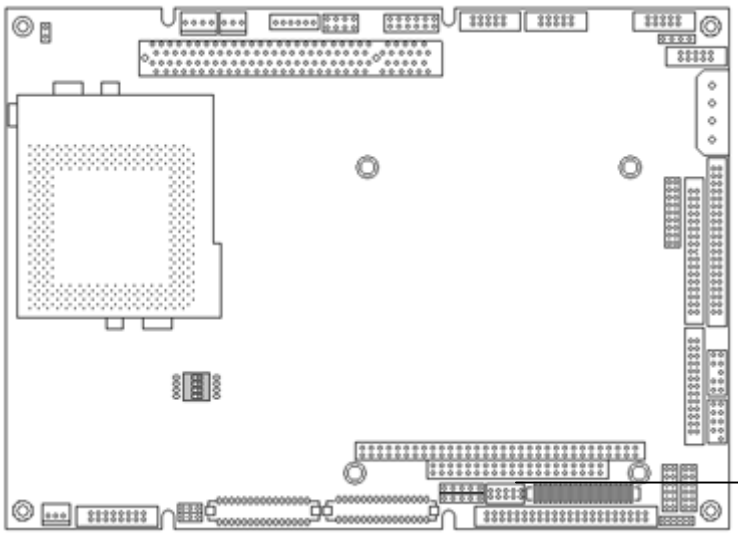


Pin	Assignment
1	LUMA
2	CHROMA
3	Ground
4	Ground
5	COMP

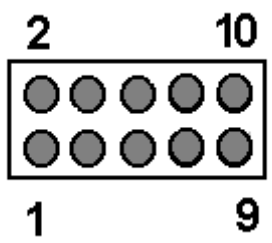


CN20: GPIO Connector

The AW-C661 supports 8-bit GPIO pins to let you read and write data through this port. This port address is designed as 200H and can be changed to 278H or 300H in the BIOS Integrated Peripherals setup.

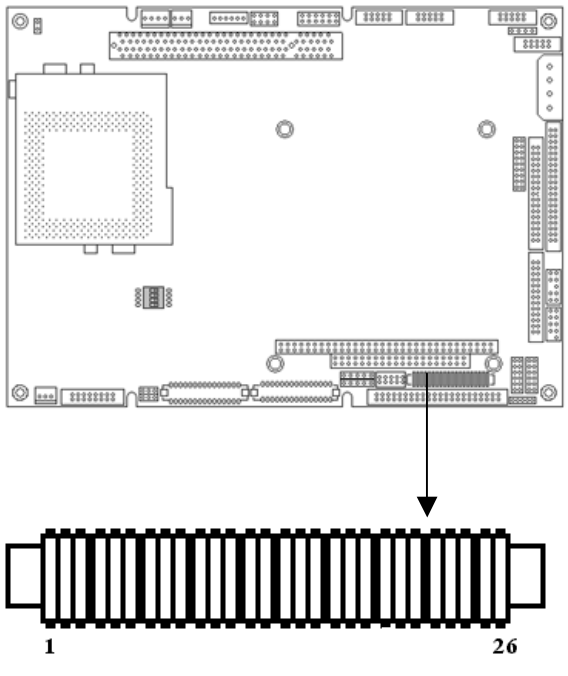


Pin	Assignment
1	+5V
2	GPIO0
3	GPIO1
4	GPIO2
5	GPIO3
6	GPIO4
7	GPIO5
8	GPIO6
9	GPIO7
10	Ground



CN21: Notebook Type Floppy Drive Connector

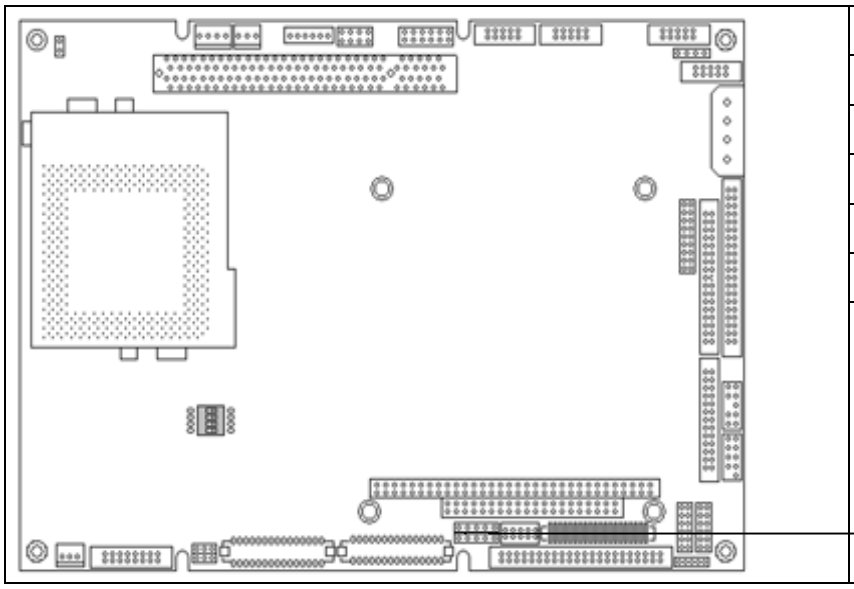
The AW-C661 provides one notebook type floppy connector. You can connect a standard floppy drive cable to CN13 or connect a notebook type floppy drive to CN21.



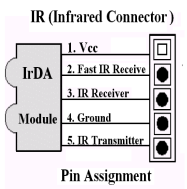
Pin	Signal	Pin	Signal
1	+5V	2	Index
3	+5V	4	Drive select 0
5	+5V	6	Diskette change
7	NC	8	NC
9	High density	10	Motor enable 0
11	Drvden1	12	Direction
13	Drvden0	14	Ground
15	Ground	16	Write data
17	Ground	18	Ground
19	Ground	20	Track 00
21	NC	22	Write protect
23	Ground	24	Read data
25	Ground	26	Side 1 select

CN22: Infrared Connector

The IrDA connector (CN22) can be configured to support a wireless infrared module. With this module and application software such as Laplink or a WIN95/98 direct cable connection, you can transfer files to or from laptops, notebooks, PDAs, and printers. This connector supports HPSIR (115.2Kbps, 2 meters) and ASK-IR (56Kbps). Connect an infrared module to the IrDA connector and enable the infrared function in the BIOS setup.



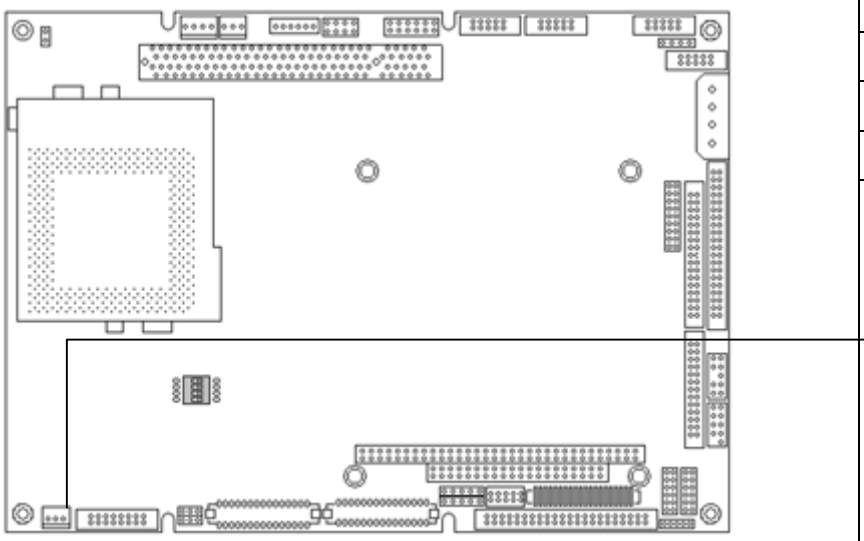
Pin	Assignment
1	Vcc
2	Fast IR Receive
3	IR Receiver
4	Ground
5	IR Transmitter



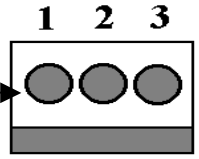
CN23: CPU Fan Connector

This 3-pin connector supports fans of 12V DC/500mA (6V) or less with a minimum of

3,500RPM.

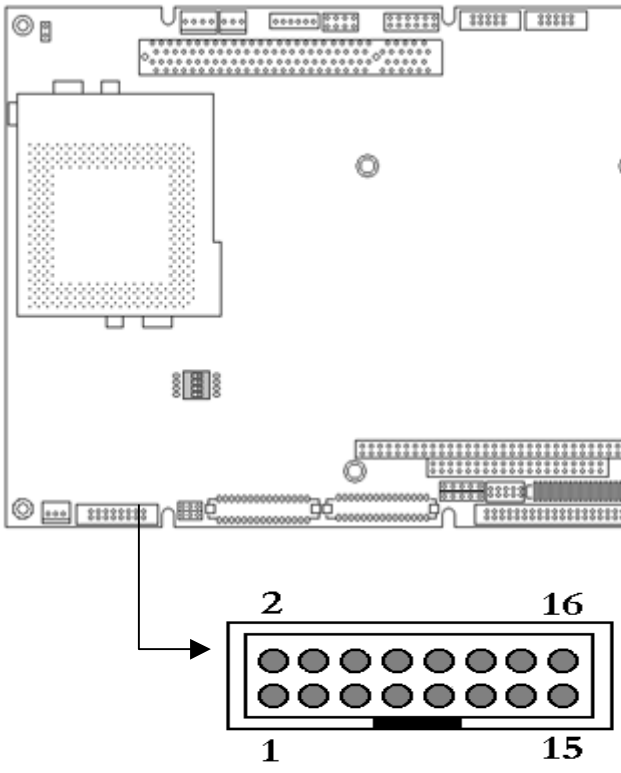


Pin	Assignment
1	Ground
2	+12V
3	Sensor



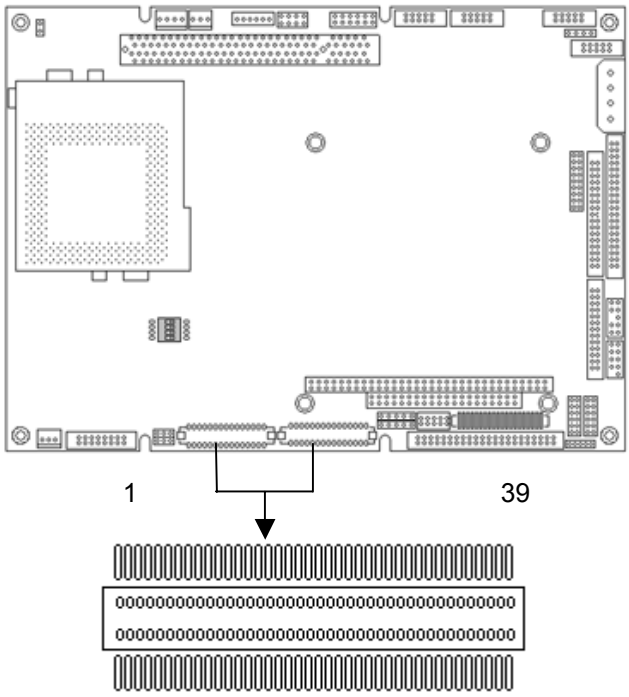
CN24: CRT Display Connector

CN24 is a 16-pin, dual-in-line header used to conventional CRT displays. A simple one-to-one adapter can be used to match CN24 to a standard 15-pin D-SUB connector for VGA.



Pin	Assignment
1	Red
2	Green
3	Blue
4	NC
5	Signal Ground
6	Chassis Ground
7	Chassis Ground
8	Chassis Ground
9	NC
10	Signal Ground
11	NC
12	DCC Data
13	H-SYNC
14	V-SYNC
15	DDC Clock
16	NC

CN25, CN26: Flat Panel Connectors

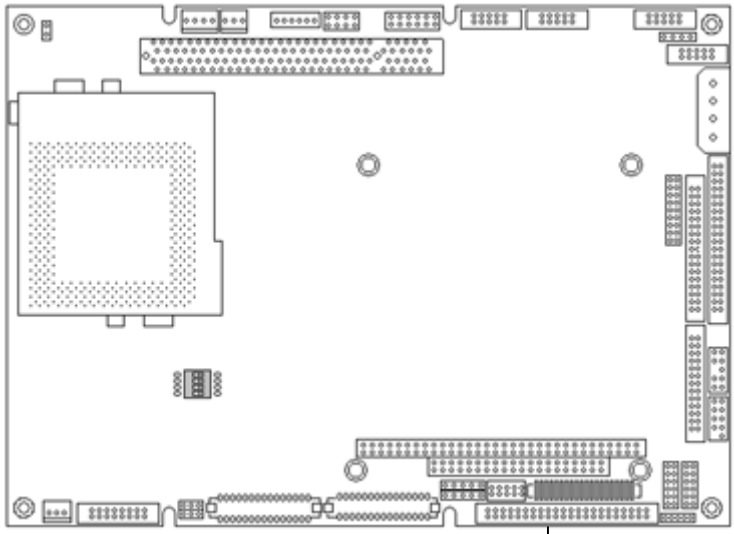


CN25: DF13A-40DP-1.25V				CN26: DF13A-40DP-1.25V			
Pin	**Signal**	**Pin**	**Signal**	**Pin**	**Signal**	**Pin**	**Signal**
1	VDDSAFE5	2	VDDSAFE5	1	VDDSAFE5	2	VDDSAFE5
3	Ground	4	Ground	3	Ground	4	Ground
5	VDDSAFE3	6	VDDSAFE3	5	VDDSAFE3	6	VDDSAFE3
7	NC	8	Ground	7	NC	8	Ground

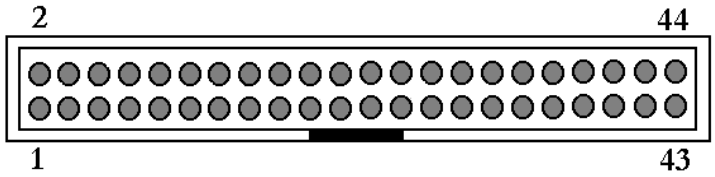
9	LCD_FD24	10	LCD_FD25	9	LCD_FD0	10	LCD_FD1
11	LCD_FD26	12	LCD_FD27	11	LCD_FD2	12	LCD_FD3
13	LCD_FD28	14	LCD_FD29	13	LCD_FD4	14	LCD_FD5
15	LCD_FD30	16	LCD_FD31	15	LCD_FD6	16	LCD_FD7
17	LCD_FD32	18	LCD_FD33	17	LCD_FD8	18	LCD_FD9
19	LCD_FD34	20	LCD_FD35	19	LCD_FD10	20	LCD_FD11
21	LCD_FD36	22	LCD_FD37	21	LCD_FD12	22	LCD_FD13
23	LCD_FD38	24	LCD_FD39	23	LCD_FD14	24	LCD_FD15
25	LCD_FD40	26	LCD_FD41	25	LCD_FD16	26	LCD_FD17
27	LCD_FD42	28	LCD_FD43	27	LCD_FD18	28	LCD_FD19
29	LCD_FD44	30	LCD_FD45	29	LCD_FD20	30	LCD_FD21
31	LCD_FD46	32	LCD_FD47	31	LCD_FD22	32	LCD_FD23
33	Ground	34	Ground	33	Ground	34	Ground
35	RLVDSCLK	36	LCD_FD23	35	LCD_FPSCLK	36	FP/FVSYNC
37	LCD_FD15	38	LCD_FD22	37	DE	38	LP/FHSYNC
39	NP_FPEN	40	VBIASEN	39	NP_FPEN	40	VAIASEN

CN27: 2.00mm-Pitch IDE Connector

This connector supports IDE hard disk and CD-ROM drives. After connecting the single end of the provided IDE ribbon cable to the board, connect the two plugs at the other end to your hard disks or CD-ROM drives. If you install two hard disks from the same connector, you must set the second drive to Slave mode. You can configure two hard disks to Master mode by using one ribbon cable on the primary IDE connector and another on the secondary IDE connector.

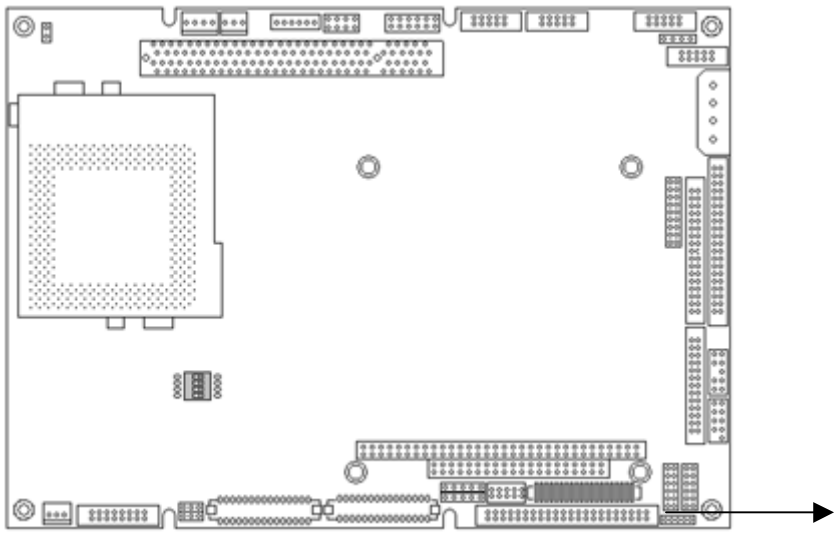


Pin	Signal	Pin	Signal
1	Reset	23	IOW#
2	Ground	24	Ground
3	Data7	25	IOR#
4	Data8	26	Ground
5	Data6	27	IRDY
6	Data9	28	Ground
7	Data5	29	DACK#
8	Data10	30	Ground
9	Data4	31	IRQ14
10	Data11	32	NC
11	Data3	33	Address 1
12	Data12	34	Detect
13	Data2	35	Address 0

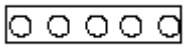


14	Data13	36	Address 2
15	Data1	37	Select 0
16	Data14	38	Select 1
17	Data0	39	Active
18	Data15	40	Ground
19	Ground	41	+5V
20	NC	42	+5V
21	DREQ	43	Ground
22	Ground	44	NC

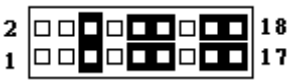
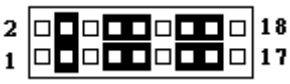
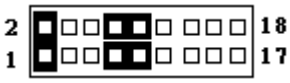
CN28: Isolated Digital I/O Connector



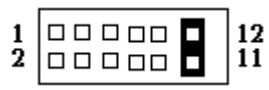
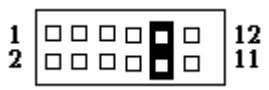
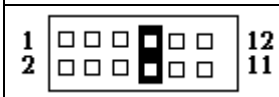
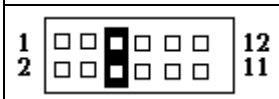
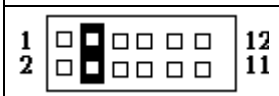
Pin	Assignment
1	+5V
2	ISO_OUT0
3	ISO_OUT1
4	+12V
5	Ground

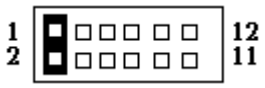


JP1: COM2 RS-232/422/485 Selector (Default: RS-232)

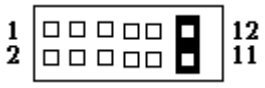
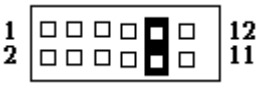
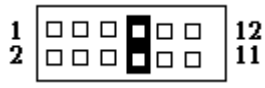
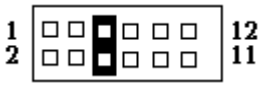
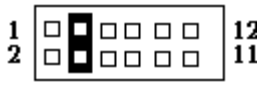
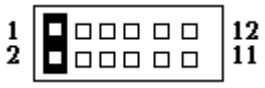
Setting		COM Port
	5-6, 9-11, 10-12, 15-17, 16-18	RS-232 (Default)
	3-4, 7-9, 8-10, 13-15, 14-16	RS-422
	1-2, 7-9, 8-10	RS-485

JP2: COM3/COM4 RI/Voltage Selector

Pin Setting		COM Port	RI/Voltage
	11-12	COM4	+12V
	9-10	COM4	+5V
	7-8	COM4	RI (default)
	5-6	COM3	+12V
	3-4	COM3	+5V

	1-2	COM3	RI (Default)

JP3: COM1/COM2 RI/Voltage Selector

Pin Setting		COM Port	RI/Voltage
	11-12	COM2	+12V
	9-10	COM2	+5V
	7-8	COM2	RI (default)
	5-6	COM1	+12V
	3-4	COM1	+5V
	1-2	COM1	RI (Default)

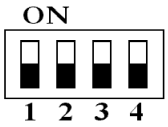
JP4: Watchdog Timer/Action Select

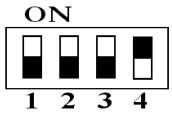
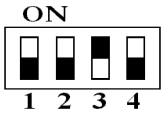
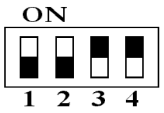
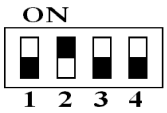
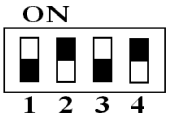
Setting		Define
	1-2	IRQ11
	2-3	Reset System (Default)

JP5: Clear CMOS

Setting		Define
	1-2	Normal Status (Default)
	2-3	Clear CMOS

SW1: Panel Type Select

Setting	Pin No.				Resolution/Type	
	1	2	3	4		
	On	On	On	On	640 x 480 (18-bit)	TFT

	On	On	On	Off	640 x480 (16-bit)	DSTN
	On	On	Off	On	800 x 600 (18-bit)	TFT
	On	On	Off	Off	800 x 600 (16-bit)	DSTN
	On	Off	On	On	1024 x 768 (18-bit)	TFT
	On	Off	On	Off	1024 x 768 (24-bit)	DSTN

Chapter.3 BIOS Setup

The ROM chip of your AW-C661 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 programs, so no disk-based setup program is required COS RAM stores information for:

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

The CMOS memory is maintained by battery installed on the AW-C661 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 or the battery power lose.

3.1 Quick Setup

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

1. Choose "LOAD OPTIMZED DEFAULTS" from the main menu. This loads the optimized default values from the BIOS Features Setup and Chipset Features Setup screens.
2. Choose "STANDARD CMOS FEATURES" from the main menu. This option lets you configure the date and time, hard disk drive type, floppy disk drive type, primary display, and more.
3. In the main menu, press F10 ("Save & Exit Setup") to save your changes and reboot the system.

3-2 Entering the CMOS Setup Program

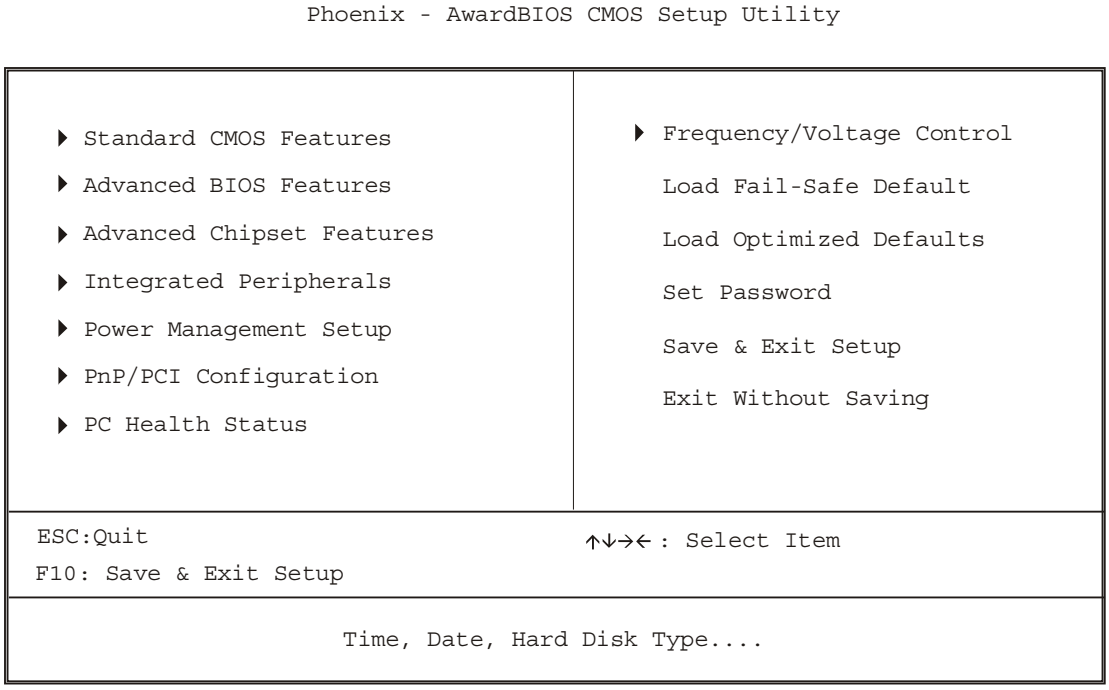
Use the CMOS Setup program to modify the system parameters to reflect the options installed in your system and to customize your system. For example, you should run the Setup program after you:

- Receive 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 Phoenin-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:**

1. Turn on or reboot the system. After the BIOS performs a series of diagnostic checks, the following message appears:
   "Press DEL to enter SETUP"
2. Press the <DEL> key to enter the CMOS Setup program. The main menu appears:



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 table below and in the following sections of this chapter.

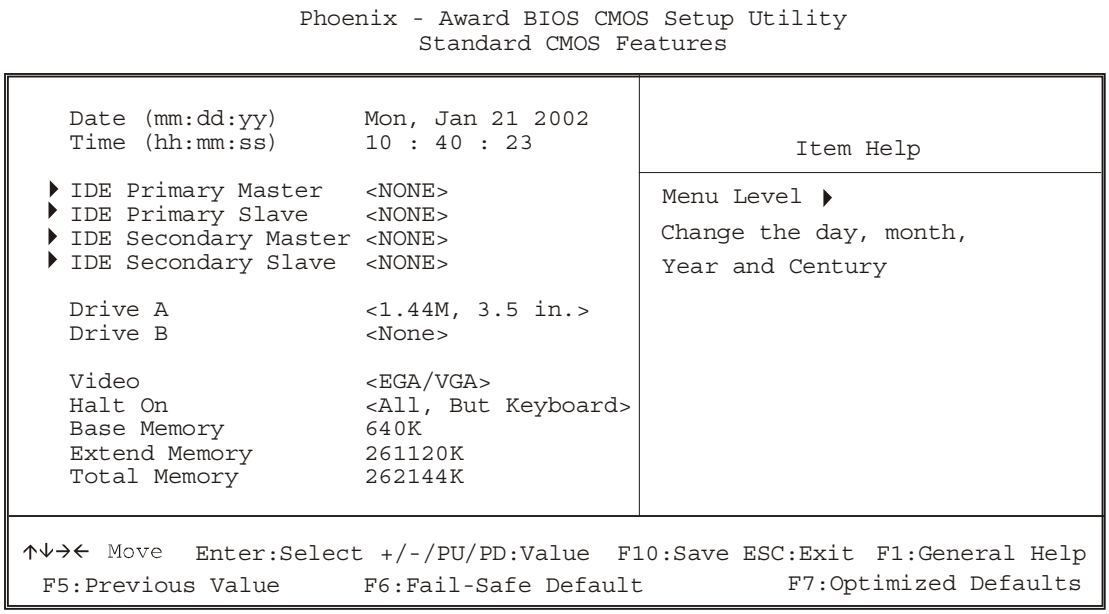
Option	Function
STANDARD CMOS FEATURES	Configure the date & time, hard disk drive type, floppy disk drive type, primary display type and more
ADVANCED BIOS FEATURES	Configure advanced system options such as enabling/disabling cache memory and shadow RAM
ADVANCED CHIPSET FEATURES	Configure advanced chipset register options such as 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

	W83782D system monitor IC is installed, view system information
FREQUENCY/VOLTAGE CONTROL	Change CPU Clock
LOAD FAIL-SAFE DEFAULT	Loads Fail-Safe default values. Use this option as a diagnostic aid if your system behaves erratically.
LOAD OPTIMIZED DEFAULTS	Loads optimized BIOS settings
SET 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 CMOS 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

3.3.1 Standard CMOS Setup

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

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



2. 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.
Drive A Drive B	Choose: None 360K, 5.25 in 1.2M, 5.25 in 720K, 3.5 in 1.44M, 3.5" 2.88M 3.5"
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

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

3.3.2 Advanced BIOS Features

⇩Use the Advanced BIOS Features Setup option as follows:

1. Choose "ADVANCED BIOS FEATURES SETUP" from the main menu. The following screen appears:

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

  Virus Warning                 <Disabled>      |  Item Help
  Processor Number Feature      <Enabled>       |
  Quick Power On Self Test      <Enabled>       |  Menu Level  ▸
  Boot Up NumLock Status        <On>            |  Allows you to choose
  Gate A20 Option               <Fast>          |  the VIRUS warning
  Typematic Rate Setting        <Disabled>      |  feature for IDE Hard
X Typematic Rate (Chars/Sec)    <6>             |  Disk boot sector
X Typematic Delay (Msec)        <250>           |  protection.  If this
  Security Option               <Setup>         |  function is enabled
  OS Select For DRAM > 64MB     <Non-OS2>       |  and someone attempt to
▸ Small Logo(EPA) Show          <Disabled>      |  write data into this area,
▸ Shadow Setup                  <Press Enter>   |  BIOS will show
▸ Cache Setup                   <Press Enter>   |  a waring message on
▸ Boot Seq & Floppy Setup       <Press Enter>   |  screen and alarm beep
  Console Redirection           <Press Enter>   |

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

2. 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.
Processor Number Feature	If PIII series CPU is used in the system, this option will be displayed automatically. Chose Enabled/Disabled for showing/not showing CPU serial number

Quick Power On Self Test	Speeds up POST after turning on the computer. When enabled, this setting will shorten or skip some check items during POST.
Boot Up NumLock Status	Choose On or Off. On puts the numeric keypad in Num Lock mode at boot-up. Off puts the numeric keypad in arrow key mode at boot-up
Gate A20 Option	Choose Enabled or Disabled. Enabled this option to allow RAM accesses above 1MB using the fast gate A20 line. This option makes accesses faster than normal, and is useful in networking operating systems.
Typematic Rate Setting	Choose Enabled or Disabled. Enable this option to adjust the keystroke repeat rate. Adjust the rate via Typematic Rate Delay and Typematic Rate
Typematic Rate(Chars/Sec)	Choose the rate at which character keeps repeating
Typematic Delay (Msec)	Choose the delay between holding down a key and when the character begins repeating
Security Option	Choose Setup or System. This lets you specify whether a password is required every time the system boots or only when an attempt is made to enter the CMOS Setup program. "Setup" – The password prompt only appears if you attempt to enter the CMOS Setup program. "System" – The password prompt appears each time the system is booted. ***Note: The password function is disabled by default. For a description of enabling the password function, refer to the section: Supervisor Password & User Password" later in this chapter.***
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
Small Logo (EPA) Show	Enabled/Disabled small logo (EPA) show
Shadow Setup	Set the Video BIOS shadow <Enabled> C8000-CBFFF shadow <Disabled> CC000-CFFFF shadow <Disabled> D0000-D3FFF shadow <Disabled> D4000-D7FFF shadow <Disabled> D8000-DBFFF shadow <Disabled> DC000-DFFFF shadow <Disabled>
Cache Setup	Set the CPU Internal Cache <Enabled> External Cache <Enabled>

	CPU L2 Cache ECC Checking <Enabled>
Boot Seq & Floppy Setup	By default, the BIOS attempts to first boot from drive A: and then, if unsuccessful, from drive C: You can change this sequence from A, C, D~F, CD-ROM, SCSI, LS120 or ZIP
Console Redirection	Set the Console Redirection <Disabled> This function is let you to connect the Server by hyper terminal to monitor Client, it has to be worked under DOS mode. The Client terminal doesn't need the graphic function.

3. After you have finished with the Advanced BIOS Features Setup, press the <ESC> key to return to the main menu.

3.3.3 Advanced Chipset Features Setup

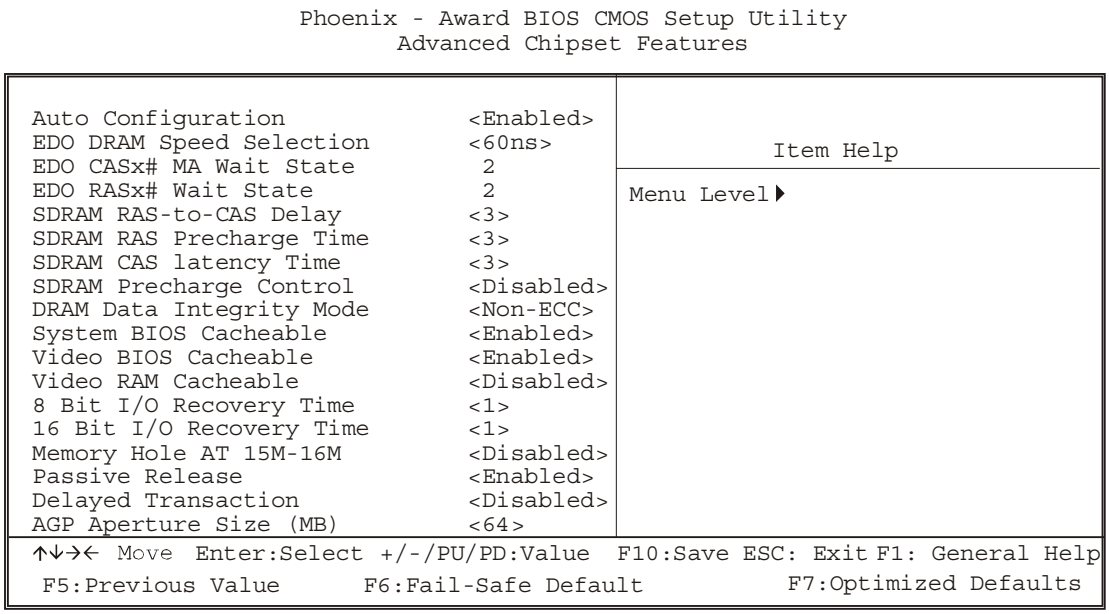
Use this option to enable/disable features of the main board's chipset registers. The chipset manages bus speed and access to system memory resources such as DRAM. It also coordinates the communications between the conventional ISA bus and the PCI bus. *These items should never need to be changed.* The default settings have been chosen because they provide the best operating conditions for your system.

The first chipset setting deals with CPU access to DRAM. The default timings have been carefully chosen and should only be altered if data is lost. Such a scenario might occur if your system has mixed-speed DRAM chips installed, so that greater delays may be required to preserve the integrity of data held in the slower memory chips.

Change these settings only if you are thoroughly familiar with the chipset

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

1. Choose "ADVANCED CHIPSET FEATURES SETUP" from the main menu. The following screen appears:



2. 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, press the <F1> key.

Option	Description
Auto Configuration	Choose Enabled/Disabled. When enabled, selects predetermined optimal values for DRAM. When disabled, chipset parameters revert to setup information stored in CMOS. ***Note: When this item is enabled, the predefined items will become SHOW-ONLY.***
EDO DRAM Speed Selection	Choose 50ns or 60ns. The value in this field must correspond to the speed of the DRAM installed in your system. This value is access speed, where a lower value means a faster system.
EDO CASx# MA Wait State	Lets you select the timing control type of EDO DRAM CAS memory address bus. Choose 1 or 2
EDO RASx# Wait State	Lets you select the timing control type of the EDO DRAM RAS memory address bus. Choose 1 or 2
SDRAM RAS-to-CAS Delay	Determines the timing of the transition from RAS# to CAS$#
SDRAM RAS Precharge Time	Determines the number of the CPU clocks allocated for the RAS# to accumulate its charge before DRAM is refreshed
SDRAM CAS Latency Time	The values in this field were set according to the specification of the installed SDRAM type. If your SDRAM has the SPD IC installed, the BIOS will read the data and instruct you to set the

	latency to 2 for better performance when your SDRAM meets this timing specification
SDRAM Precharge Control	Choose Enabled/Disabled. When enabled, the SDRAM RAS Precharge function is enabled.
DRAM Data Integrity Mode	When choose ECC, the system BIOS will automatically check your memory if it is supports ECC or Non-ECC and will show this message on boot up screen. Choose Non-ECC when your memory does not support it
System BIOS Cacheable	Choose Enabled/Disabled. When enabled, caching of the system BIOS at F0000h-FFFFFh is allowed, enhancing system performance. However, if any program writes to this memory area, a system error may occur.
Video BIOS Cacheable	Choose Enabled/Disabled. When enabled, caching of the video BIOS at C000h-F7FFFh is allowed, enhancing system performance. However, if any program writes to this memory area, a system error may occur
Video RAM Cacheable	Choose Enabled/Disabled. When enable, caching of the video RAM at C0000h-F7FFFh is allowed, enhancing system performance. However, if any program writes to this memory area, a system error may occur.
8 Bit I/O Recovery Time	Choose NA or 1 to 8 CPU clocks. This option lets you determine the recovery time of 8-bit I/O. This I/O recovery mechanism adds bus cycles between PCI-originated I/O cycles to the ISA bus. This delay takes place because the PCI bus is much faster than the ISA bus
16 Bit I/O Recovery Time	Choose NA or 1 to 4 CPU clock. This option lets you determine the recovery time of 16-bit I/O. The I/O recovery mechanism adds bus cycles between PCI-originated I/O cycles to the ISA bus. This delay takes place because the PCI bus is much faster than the ISA bus
Memory Hole	Choose Disabled/15M-16M. When enabled, lets you reserve a system memory area of 15M-16M for special ISA cards. The chipset accesses code/data of these areas from the ISA bus directly. Normally, these areas are reserved for memory-mapped I/O cards.
Passive Release	Choose Enabled/Disabled if you have an ISA card compatibility problem. When enabled, this option lets you control the Passive Release function of the chipset. This function is used

	to meet the latency of the ISA bus master
Delay Transaction	Choose Enabled/Disabled if you have an ISA card compatibility problem. When enabled, this option lets you control the Delayed Transaction function of the chipset. This function is used to meet the latency of the PCI cycles to or from the ISA bus
AGP Aperture Size	Enter a value from 4MB to 128MB to determine the effective size of the graphics aperture sued in the particular PAC configuration. The larger the value, the better the AGP performance.

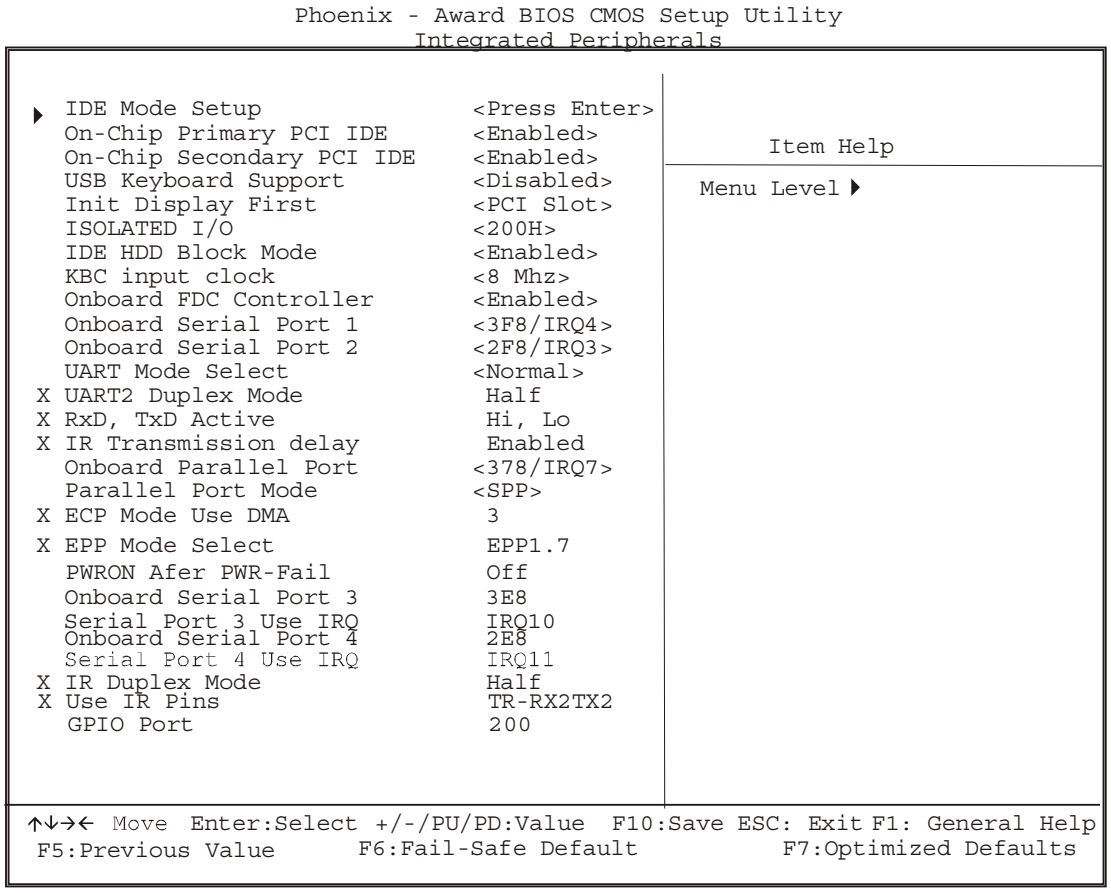
3. After you finished with the Advanced Chipset Features Setup, press the <ESC> key to return to the main menu.

3.3.4 Integrated Peripherals

Use this setup to configure onboard I/O functions.

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

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



2. 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
IDE Mode Setup	Select primary/secondary IDE mode
On-Chip Primary/Secondary PCI IDE	Enables/Disables the first/second onboard PCI IDE
USB Keyboard Support	Enabled/Disabled USB keyboard support
Init Display First	Lets you choose the priority of AGP and PCI VGA card
Isolated I/O	Select Isolated I/O address
IDE HDD Block Mode	Enables/Disables the IDE HDD Block Mode function ***Note: Not all drives support this function***
KBC Input Clock	Have 6MHz, 8MHz (Default), 12MHz, 16MHz select KBC input clock
Onboard FDC Controller	Enables/Disables the onboard FDD controller
Onboard Serial Port 1 and 2	Enables/Disables the onboard serial port 1 and 2 respectively

UART Mode Select	Choose Normal for general use or IrDA, ASKIK for infrared use
Onboard Parallel Port	Enables/Disables the onboard parallel port
PWRON After PWR-Fail	This setting specifies whether your system will reboot after a power failure occurs. The available settings: OFF: Leaves the computer in the power off state and need to push the power button to turn on the power supply. ON: Reboots the computer Former-STS: Restores the system to the status before power failure occurs.
Onboard Serial Port 3 and 4	Enables/Disables the onboard serial port 3 and 4 respectively
GPIO Port	Choose GPIO address

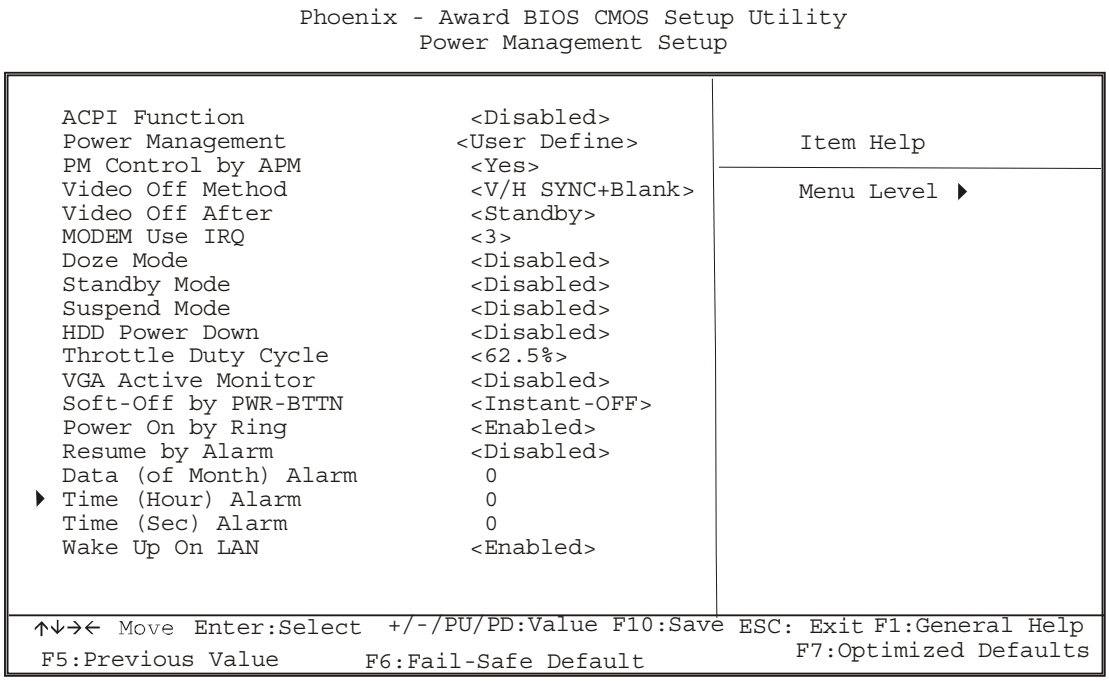
3. After you finished with the Advanced Chipset Features Setup, press the <ESC> key to return to the main menu.

3.3.5 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:

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



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

Options	Description
ACPI Function	Enables/disables the ACPI function
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 minutes "Max Saving" – Predefined timer value of 1 minute
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 1 hour Max Saving: Predefined timer value of 1 minute
PM Control by APM	Choose Yes/No for Advanced Power Management. If APM is used, you must run POWER.EXE under DOS v6.0 or higher
Video Off Method	This determines the manner in which the monitor is blanked. V/H SYNC+Blank: This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks

	to the video buffer. Blank screen: This option only writes blanks to the video buffer. If you don't have a "green monitor", use this item. DPMS: This option allows the BIOS to control the video card if it has the DPMS features.
Video Off After	Choose the video off condition: NA/Suspend/Doze
MODEM Use IRQ	Choose the IRQ used by the modem. Default is 3.
Doze Mode	Sets the time for Doze mode or disables it
Standby Mode	Sets the time for Standby mode or disables it
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
Throttle Duty Cycle	The item allows you to specify the CPU speed (at percentage) to which it will slow down when the CPU reaches the predetermined overheat temperature. The setting range from *12.5%* 50 *87.5%* at 12.5% increment.
VGA Active Monitor	Disable/Enable the VGA Active Monitor (Default: Disabled)
Soft-Off by PWR-BTTN	Choose Instant-Off or Delay 4 Sec. Instant-Off: Causes the power to turn off immediately when you press the power button Delay 4 Sec: Causes the system to go to Suspend mode when you press the power button for less than 4 seconds. When you hold the button down for more than 4 seconds, the power goes off
Power On by Ring	Choose Enable or Disable. When enabled, the system will turn on when the modem rings.
Resume by Alarm	Choose Enabled/Disabled. Set to "Enabled" to wake the system will turn on when the modem rings or by an instruction from a network server. ***Note: This item will not appear when your system is using an AT Power Supply.***
Wake Up On LAN	Choose Enable or Disable. When enabled, the system will turn on by an instruction from a network server. ***Note: For this function to operate, your LAN interface must supports the function***
IRQ8 Break Suspend	Enabled/Disabled the IRQ8 break suspend
Reload Global Time Events	Choose Enable or Disable. "Enable" – Cause the Doze mode, Standby mode, and Suspend mode to reload "Disable" – The Doze mode, Standby mode, and Suspend mode

	will not reload

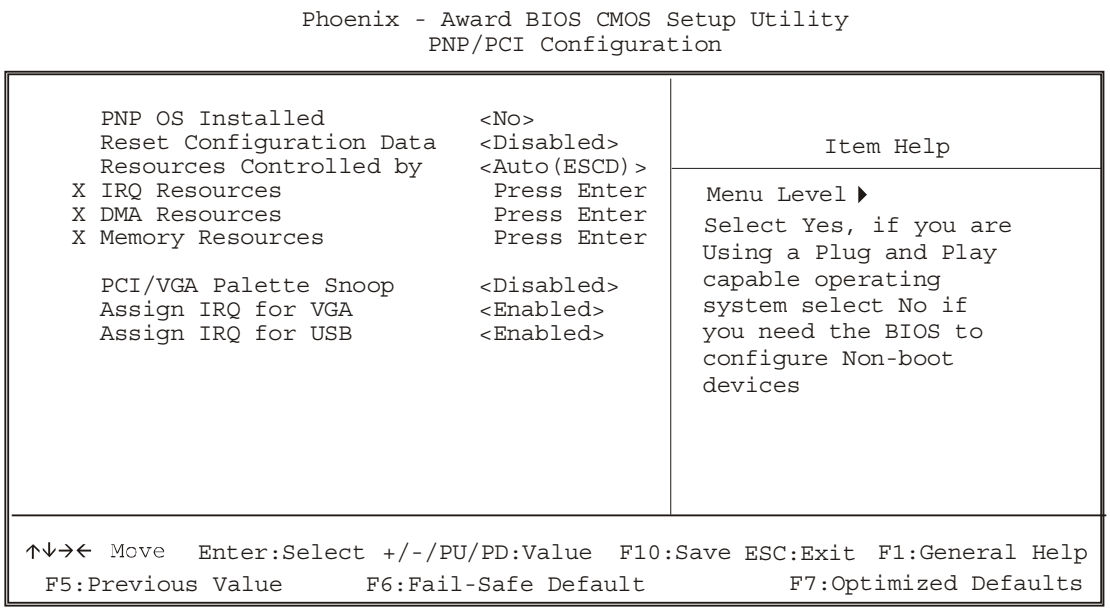
3. After you have finished with the Power Management Setup, press the <ESC> key to return to the main menu.

3.3.6 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:**

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



2. 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
PNP OS Installed	Choose Yes or No. When Yes is selected, the OS will assign an IRQ
Reset Configuration Data	Choose Enable or Disable "Enable" – PNP configuration data is reset in BIOS "Disable" – PNP configuration data is retained in BIOS
Resources Controlled By	Choose Auto or Manual. This option specifies whether resources are controlled by automatic or manual configuration

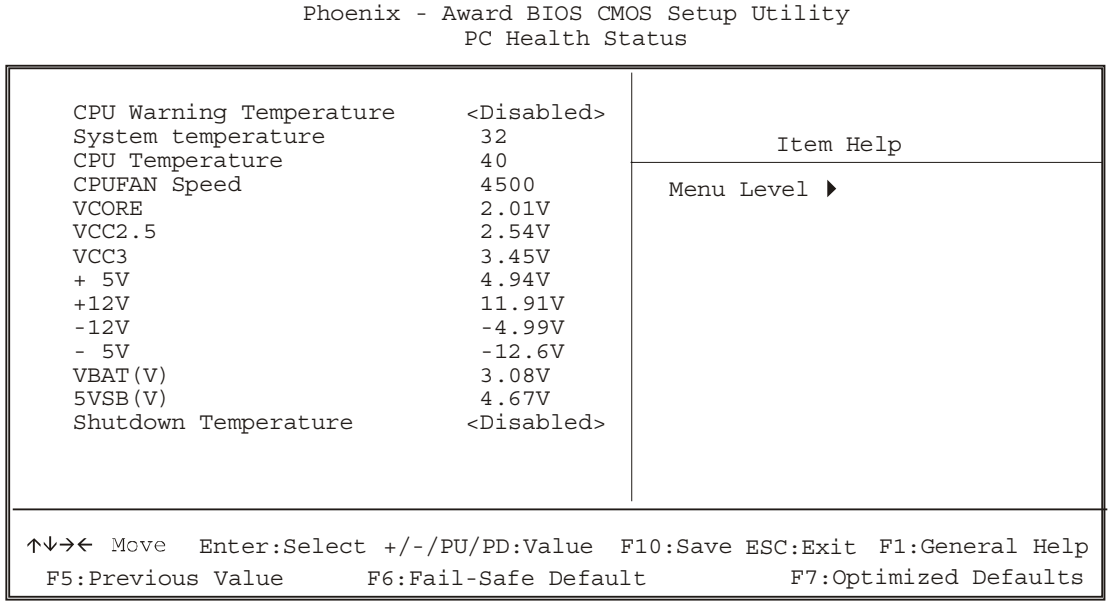
PCI/VGA Palette Snoop	Enabling this item informs the PCI/VGA card to keep silent when palette register is updated. ***Note: Some non-standard VGA card, like graphics accelerators or MPEG video cards, may not show colors properly. Setting this field to <Enabled> corrects this problem. If you are using standard VGA cards, leave this field to the default setting <Disabled>. Configuration options: <Disabled> <Enabled>***
Assign IRQ for VGA	Choose Enable or Disable. Specifies whether the VGA uses an IRQ or not
Assign IRQ for USB	Choose Enable or Disable. Specifies whether the USB used an IRQ or not

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

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

⇩ 3.3.7 Use the PC Health Status Configuration Setup option as follows:

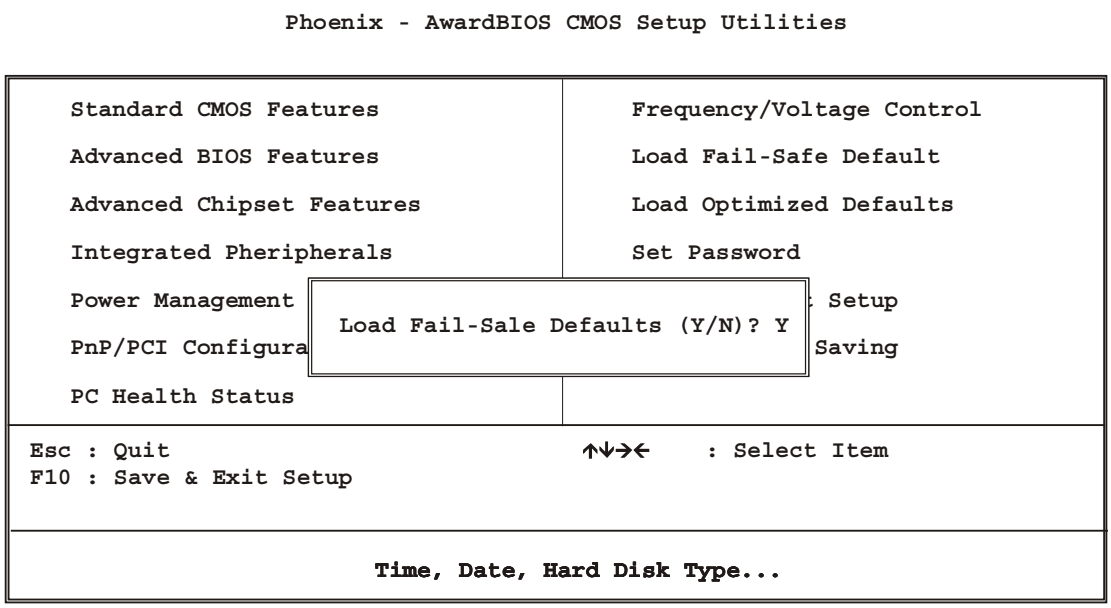
1. Choose "PC Health Status Configuration Setup" from the main menu, the following screen appears:



3.3.8 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

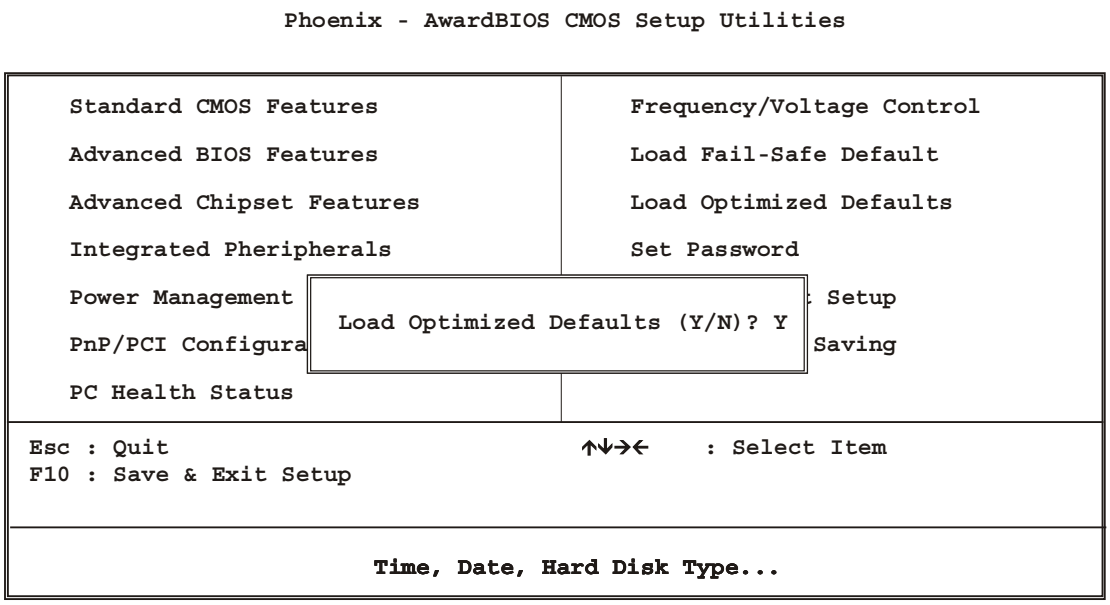
screen.



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. Press the <Y> key and then press <Enter> if you want to load the BIOS default.

3.3.9 Load Optimized Default

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



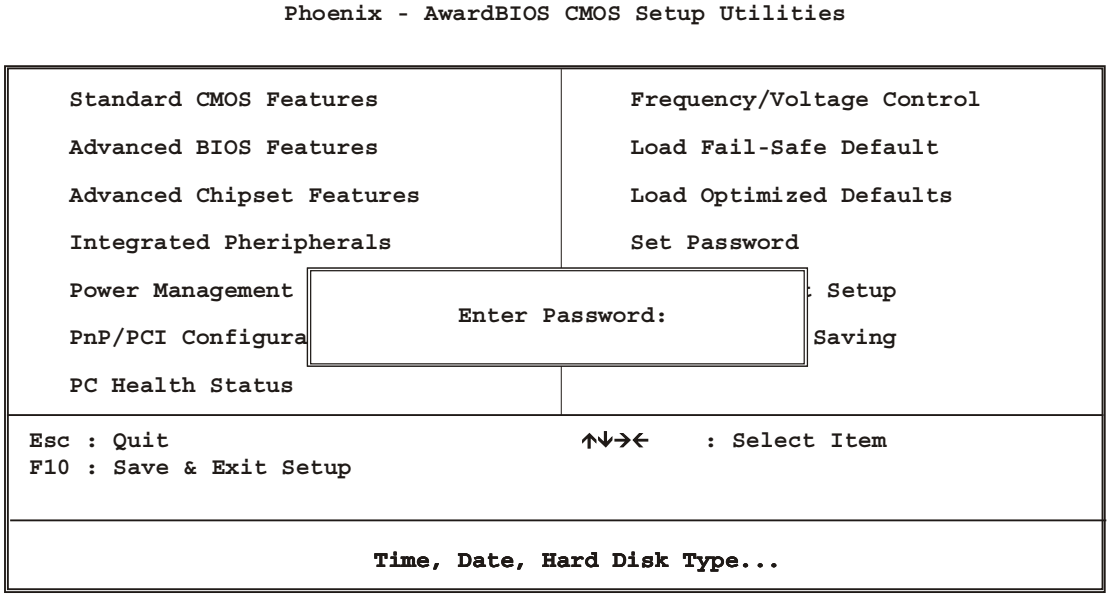
To Use this feature, highlight it on the main screen and press <Enter>. A line will appear on the screen asking if you want to load the SETUP default values. Press the <Y> key and then press <Enter> if you want to load the SETUP default

3.3.10 Set 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.

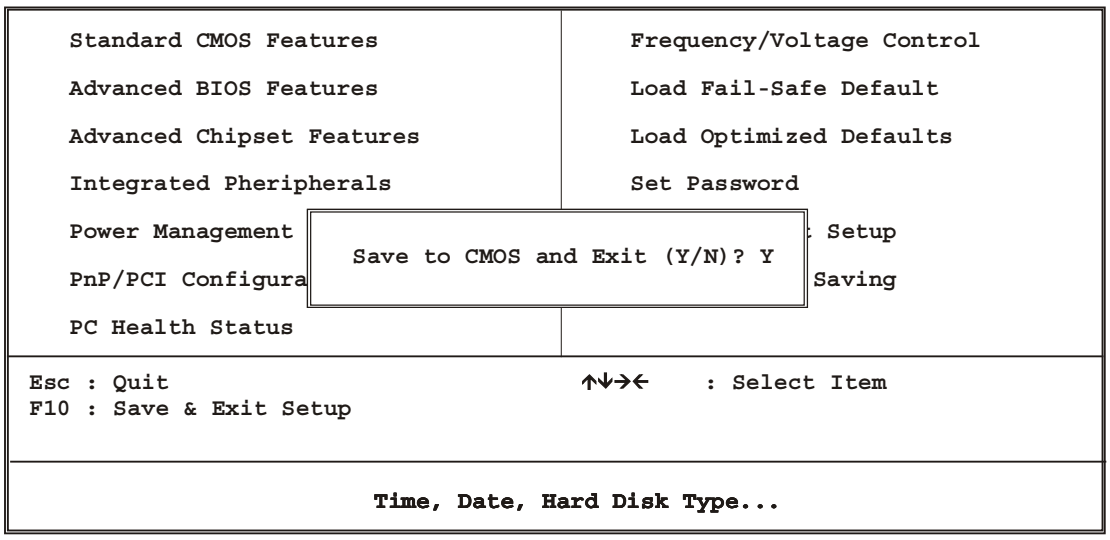
To change a password, first choose a password option from the main menu and enter the current password. Then type your new password at the prompt. The password is case sensitive and you can use up to 8 alphanumeric characters. Press <Enter> after entering the password. At the Next Prompt, confirm the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



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.

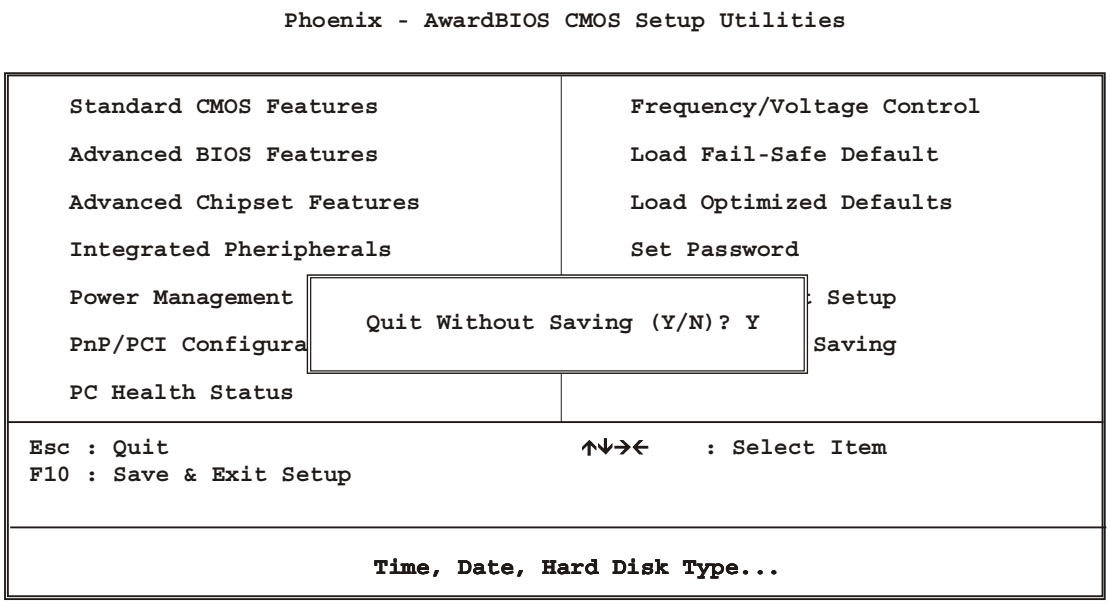
3.3.11 Save and Exit Setup

This function automatically saves all CMOS values before exiting Setup.



3.3.12 Exit Without Saving

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



Chapter 4. Drivers and Utilities Setup

The AW-C661 Drivers and Utilities CD-ROM contains the following folders:

- VGA: VGA drivers
- Audio: Sound drivers
- LAN: Intel and Realtek Ethernet drivers
- Hardware Monitor drivers
- Tools: BIOS Flash Utility
- Manual: User's Manual for AW-C661
- Quicksetup: Quick setup procedures for AW-C661
- Readme: User's Guide for this CD-ROM

This chapter describes installing software from the Drivers and Utilities CD-ROM. You may have received floppy disks instead of a CD-ROM, in which case you will need to insert Disk 1 into your floppy disk drive and run the software from the floppy disks.

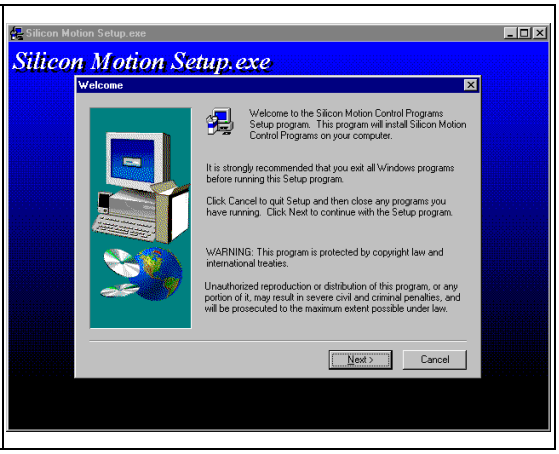
Installing the VGA Drivers

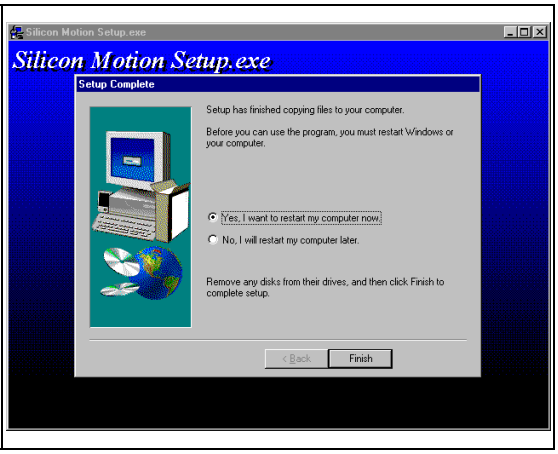
The AW-C661 uses SMI Lynx3DM VGA chipset. It supports many popular flat panel and CRT display. With a SMI Lynx3DM VGA chipset, 4MB of memory can drive the display with resolution up to 1024 x 768 at 16M colors

⇩ **Install the drivers for VGA as follows:**

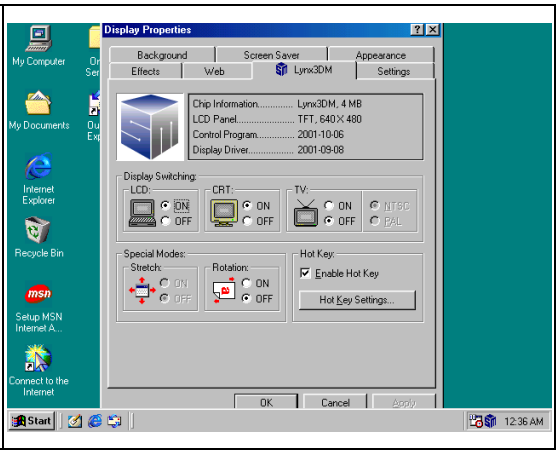
It is strongly recommended that you exit all Windows programs before running this Setup program.

Warning: This program is protected by copyright law and international treaties. Unthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.

1. Please insert the CD-ROM into your CD-ROM drive bay. Please click "**setup"** to start the VGA driver installation. The configuration screen will appear, click "Next>" to the next step of installation.	

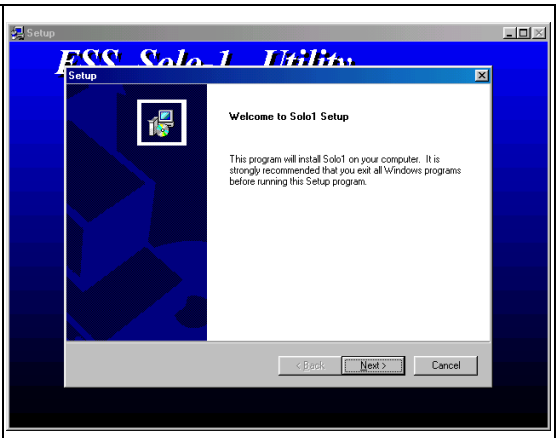
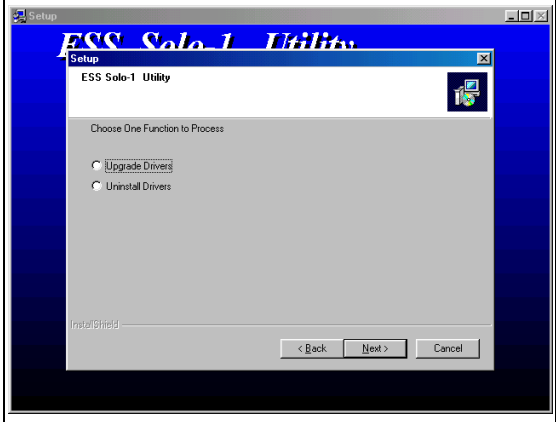
2. The Setup has finished copying files to your computer. Before you can use the program, you must restart Windows or your computer.	

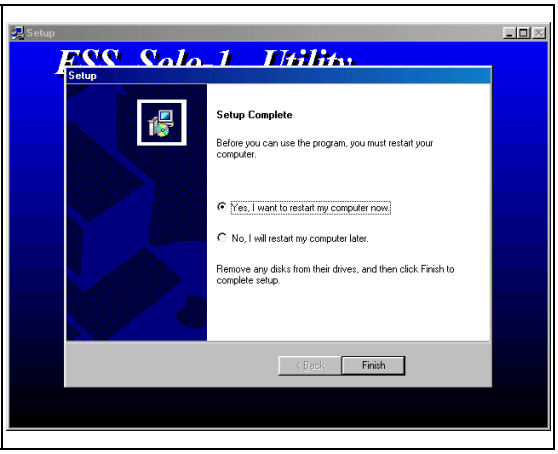
VGA Utilities: you can choose the different displays type from this screen

1. LCD 2. CRT 3. TV-Out	

Installing the Sound Drivers

The AW-C661 uses ESS Solo-1, please exit all Windows programs before running this Setup program.

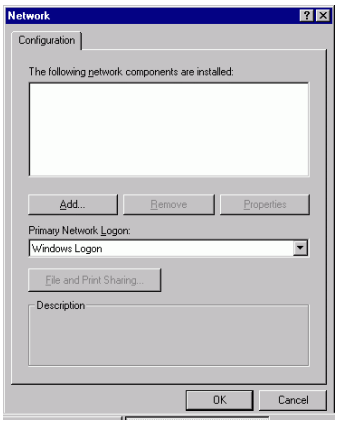
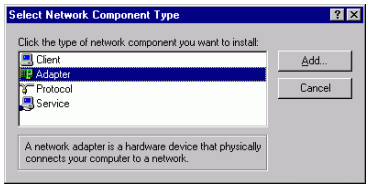
1. Please insert the CD-ROM into your CD-ROM drive bay. Please click "**setup"** to start the Sound driver installation. The configuration screen will appear, click "Next>" to the next step of installation.	
2. Choose One Function to Process and press "Next>" to next step of installation.	
3. Choose One Function to Process and press "Next>" to the next step of installation.	

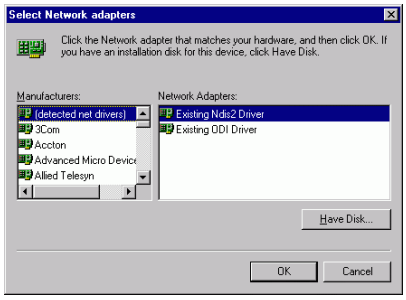
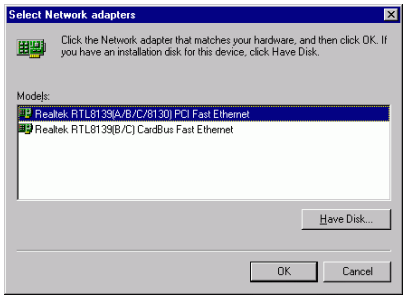
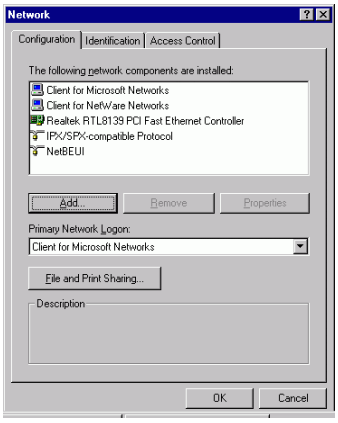
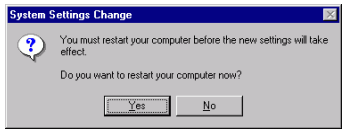
4. **Setup Complete**. Before you can use the program, you must restart your computer.	

Installing the Ethernet Drivers

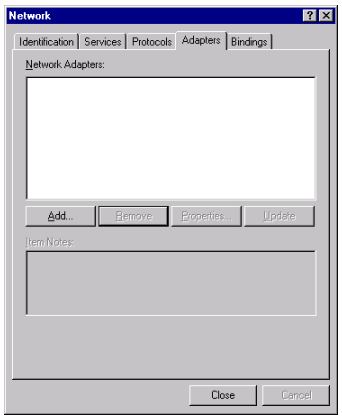
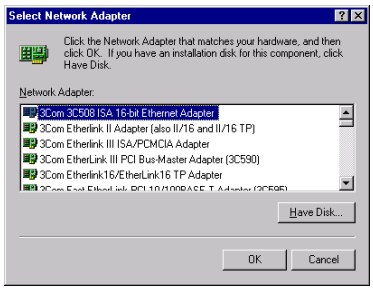
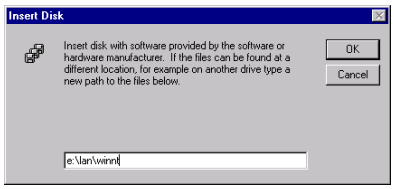
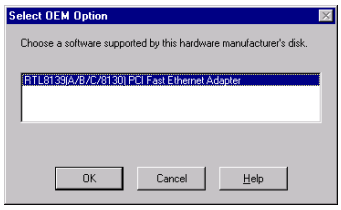
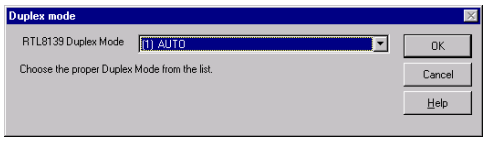
The AW-C661 has a high-performance Ethernet chipset Intel® 82559/82559ER or Realtek RTL8139C that provide 32-bit performance, PCI Bus master capability, fully compliance with the IEEE 802.3u 100Base-T specification, and IEEE 802.3x Full Duplex Flow Control. It supports the Advanced Configuration Power Management Interface (ACPI), PCI power management for modern operating systems that is capable of Operating System Directed Power Management (OSPM) to achieve the most efficient power management. It also supports remote wake-up in both ACPI and APM environments.

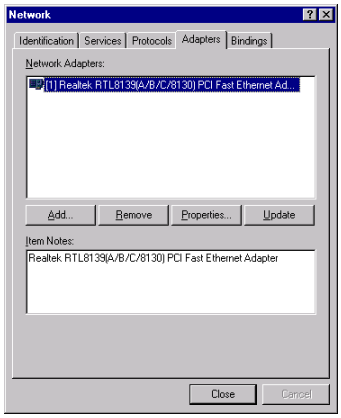
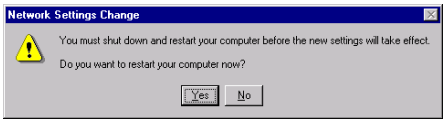
1. Installation for Windows 95/98 (Realtek RTL8139C)

1. Click **"Start"**, go to **"Settings"** and click **"Control Panel"**. Choose the **"Network"** icon and double-click the icon. The Configuration screen will appear. Click **"OK"** to continue.	
2. Select **"Adapter"** and click **"Add"**.	

3. Click **"Have Disk"** to continue.	
4. Insert the Drivers and Utilities CD into the CD-ROM drive (example E:). Click **Browse** to find the INF file. The file is located at **E:\lan\win9598.**	
5. Select **"Realtek RTL8139C (A/B/C/8130) PCI Fast Ethernet"** and click **"OK"**.	
6. Set the configuration of the related items and click **"OK"**.	
7. Click **"Yes"** to restart the system for the new settings to take effect.	

Installation for Windows NT

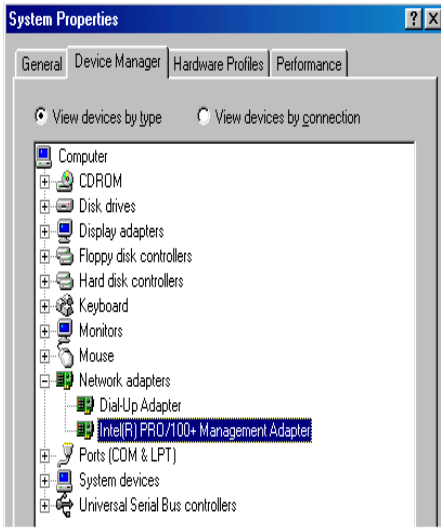
1. Click **"Start"**, go to **"Settings"** and click **"Control Panel"**. Choose the **"Network"** icon and double-click the icon. The Configuration screen will appear. Click **"Add"** to continue.	
2. Click **"Have Disk"** to continue.	
3. Insert the Drivers and Utilities CD into the CD-ROM drive (example E:). Click **Browse** to find the INF file. The file is located at **E:\lan\winnt.**	
4. Select **"Realtek RTL8139 (A/B/C/8130) PCI Fast Ethernet"** and click **"OK"**.	
5. Select **"(1) Auto"** for the Duplex Mode and click **"OK".**	

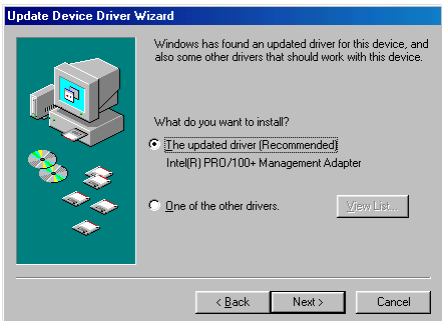
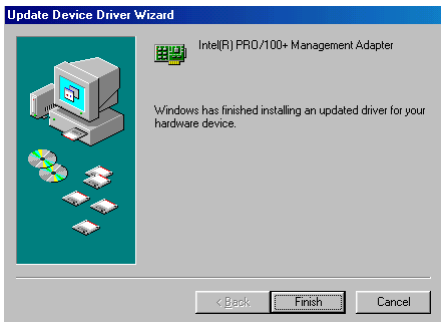
6. Setting the configuration of the related items and click **"OK"**.	
7. Click **"Yes"** to restart the system for the new settings to take effect.	

3. Installation for Windows95/98 (Intel 82559)

Please install Ethernet drivers for Windows 95/98 as follows:

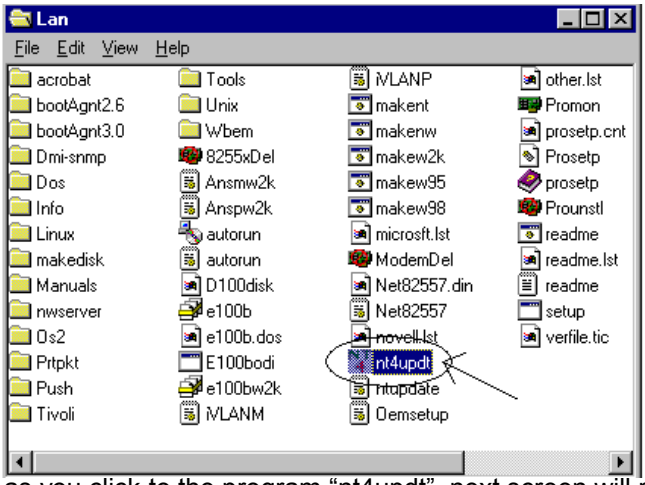
Please install Ethernet drivers for Windows NT as follows:

1. Click "Start", go to "Settings" and click "Control Panel". Choose the "System" icon and double-click the icon. The System Properties screen will appear. Click "Network Adapters" to show the components found. Intel® Pro/100+Management Adapter is already found by your Windows System. Click to the Adapter bar to start driver setup.	

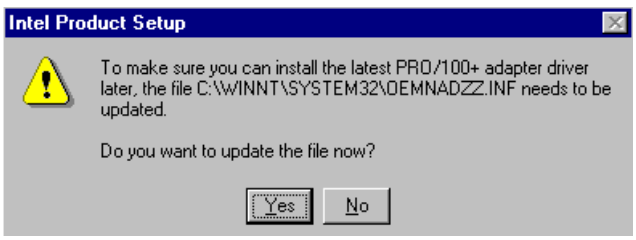
2. Next screen turns up to prompt to update the adapter driver. Click the "Update driver" button to set up the Intel® Pro/100+Management Adapter driver. You must follow the instructions shown in the subsequence screen until the "Finish" screen appears to instruct you to re-start system.	
3. Insert the drivers and utilities CD into the CD-ROM drive (example E). Click "Browse" to find the INF file. The file is located at **E:\lan** Click "OK" to start setup	

Installing LAN Driver for Windows NT

Before setting up Intel Pro LAN Adaptor in your Windows NT, you must update your system. Please insert your AW-C661 CD-ROM into your CD-ROM drive and open the folder for LAN Setup. Look for the program:"nt4updt" and click to it to update your system:

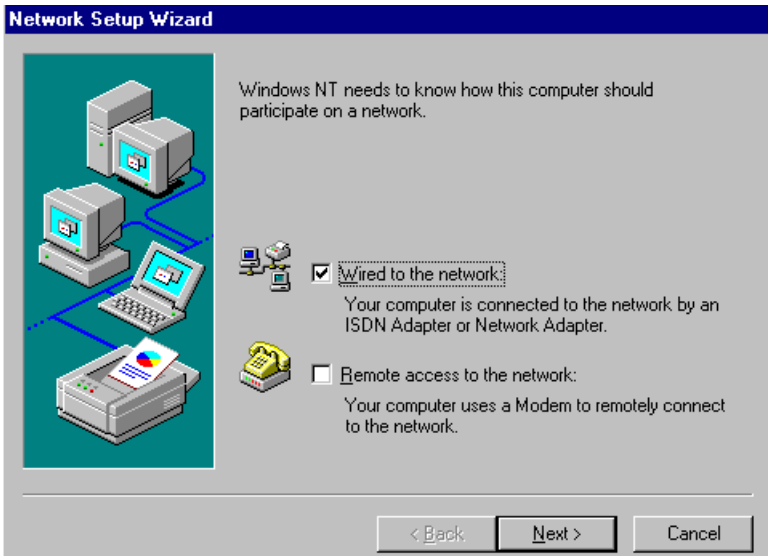


As soon as you click to the program "nt4updt", next screen will raise to ask you to update your System32. Click "Yes" to finish update and go on to set up Intel Pro LAN Adaptor and driver.

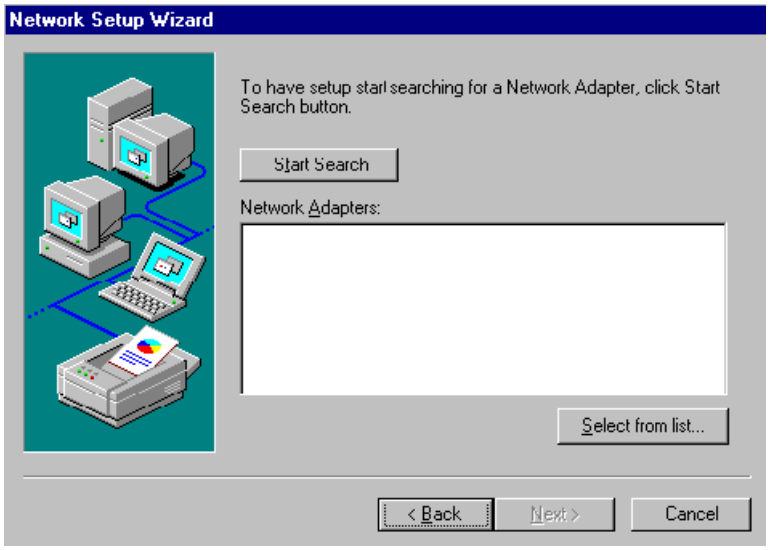


(1) To setup LAN Adaptor and Driver during WinNT Installation:

1. During WinNT installation, the setup program will ask you to install Windows NT Networking. Click "Next" to continue.
2. In the next screen, choose "Wired to the network" and click "Next" to continue



3. In the subsequent screen, select "Select from list" (do not select "Start Search") to setup Intel Pro LAN adapter and driver. Please remember to insert the AW-O671 drivers CD-ROM into your CD-ROM drive now.

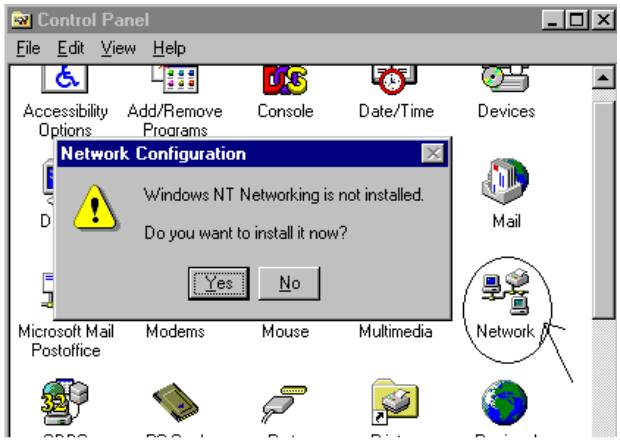


4. In next screen, click to "Have Disk", and the setup program will ask you to enter the correct path to locate the LAN driver. Please key in :\LAN under your CD-ROM drive and click "OK" to continue.
5. In a few seconds, the correct Adapter "Intel® PRO Adapter" is shown on next screen. Click "OK" to continue Adapter driver setup together with other network components till Setup program asks you to restart system.

.

(2) To setup LAN Adaptor and Driver on Existing WinNT system:

1. If you are running WinNT system without LAN driver completely installed , you should set up the LAN adaptor and driver from the "Network" of your system. Enter the "Control Panel" and click to "Network" to start setup.



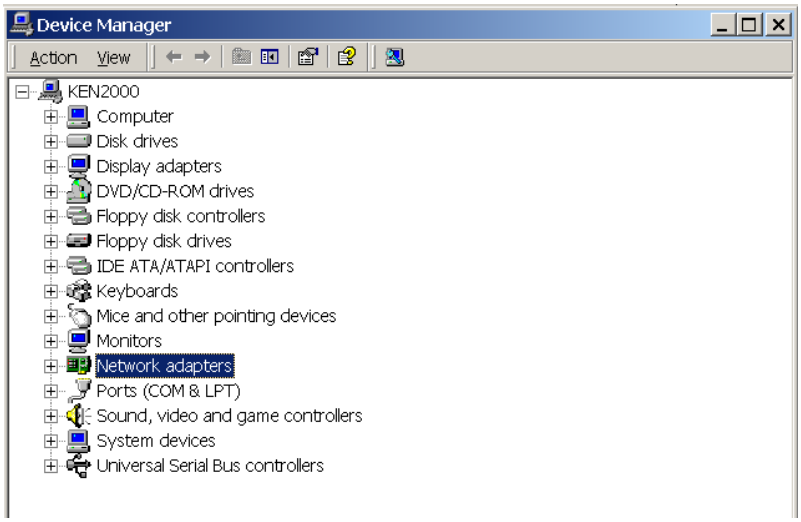
2. The subsequent screen will ask you to install the Windows NT Networking. Click "Yes" to setup.
3. The subsequent screens will guide you through the whole LAN Adaptor and Driver setup, which is similar to the LAN Driver Setup during WinNT installation.

Install LAN Driver for Windows 2000

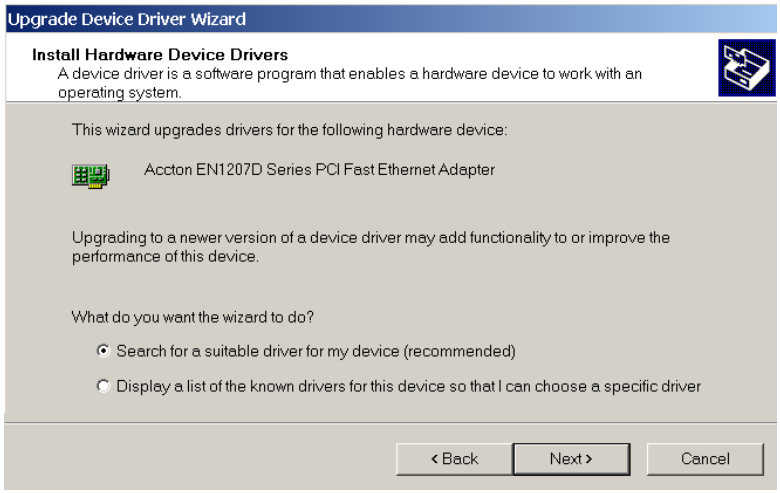
To install the Network Driver from Drivers CD:

Intel 82559 Chip for LAN is already mounted on board. To install the driver for this LAN controller, please take the following steps:

1. Insert the Intel adapter CD in the CD-ROM drive.
2. From the Control Panel, double-click the System icon, select the Hardware tab, and click the "Device Manager" button.
3. Select "Network Adapters" and right-click on the adapter listing to display its menu. Then click the Properties menu option.



4. From the Properties dialog box, click the "Driver" tab and click the "Update Driver" button. The Update Device Driver Wizard appears, click Next.
5. At the prompt "What do you want the wizard to do?", select the radio button "Search for a suitable driver for my device" and click Next.



6 Select the CD-ROM drives check box and click Next.

7 Select the "Install one of the other drivers" check box and click Next.

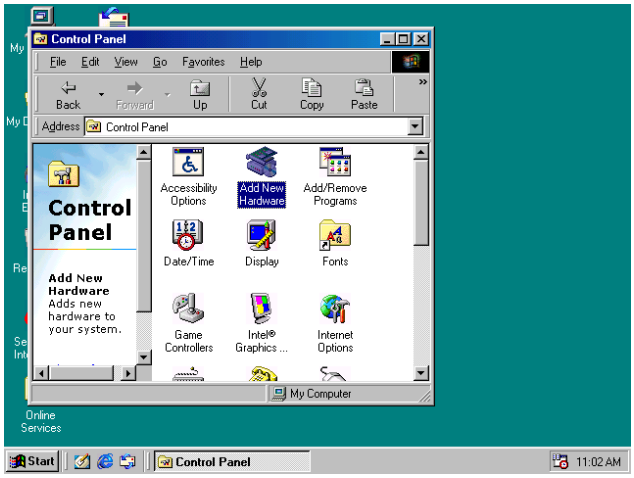
8 Restart your computer.

After restarting your computer, connect to your network by double-clicking the My Network Places icon on the desktop.

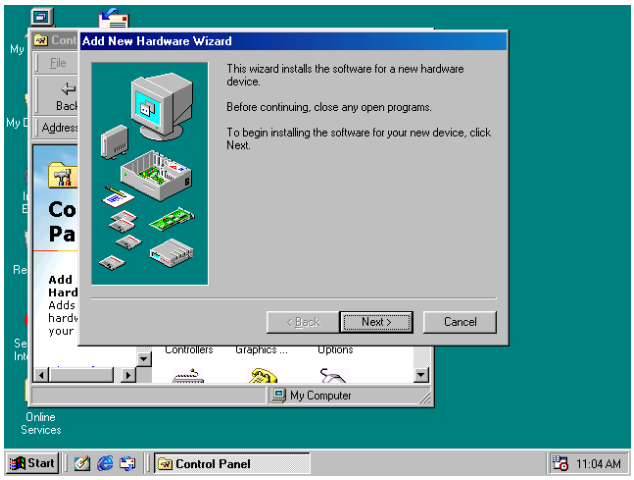
Installation for Windows95/98 (Intel 82559ER)

Please install Ethernet drivers as follows:

1. Click **"Start"**, go to **"Setting"** and click **"Control Panel"**. Choose the **"Add New Hardware"** icon and double-click the icon, the next configuration screen will appear.

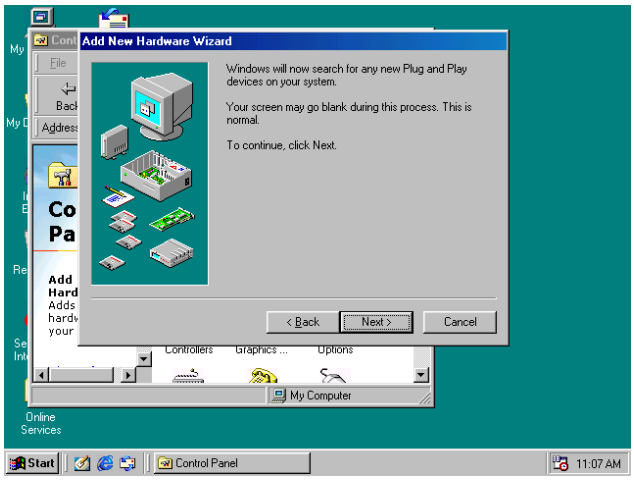


2. **"Add New Hardware Wizard"** shown this wizard installs the software for a new hardware device. Before continuing, close any open programs. To begin installing the software for your new device, click "Next>", go to the next step of installation.

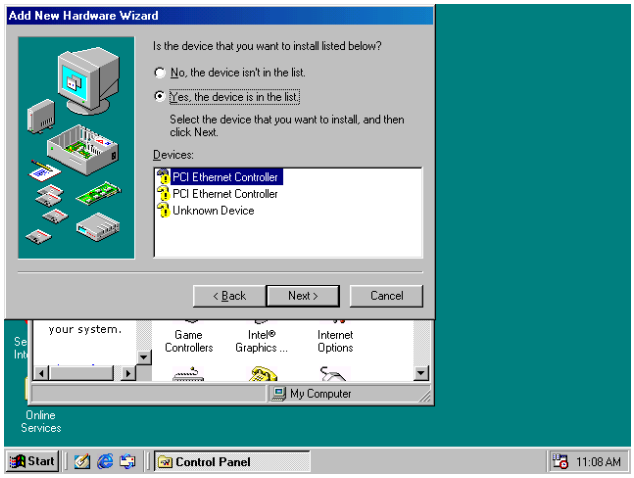


3. **"Add New Hardware Wizard"** shown Windows will no search for any new Plug and Play devices on your system. Your screen may go black during this process. This is normal.

   To continue, click "Next>" to the next step of installation.

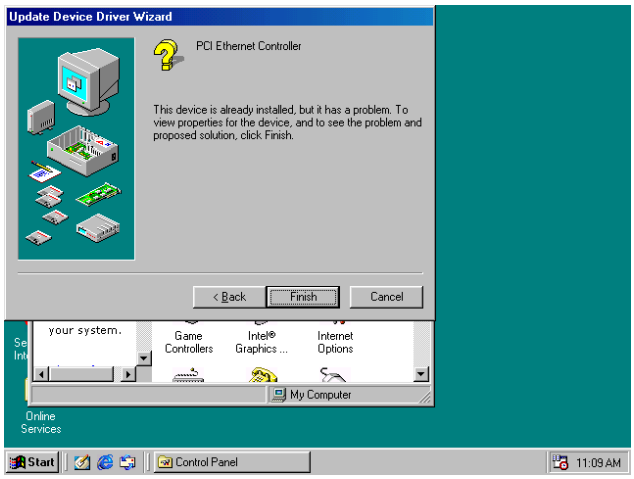


4. Please select the device that you want to install, and then click "Next>" to the next step of installation.



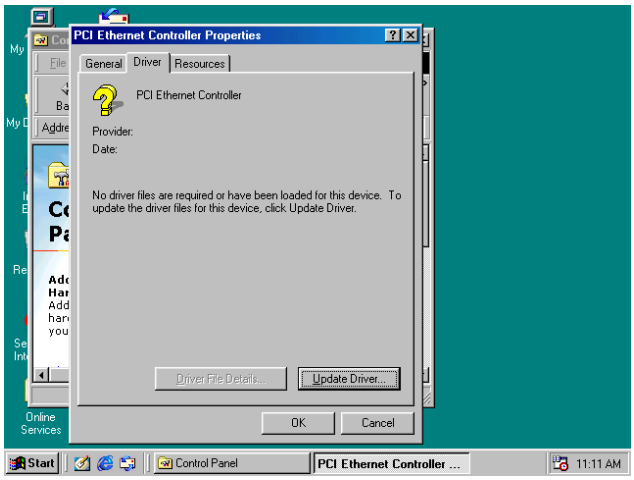
5. This is Update Device Driver Wizard.

   This device is already installed, but it has a problem. To view properties for the device, and to see the problem and proposed solution, please click "Finish" to the next step of installation



6. This is PCI Ethernet Controller Properties screen.

   No driver files are required or have been loaded for this device. To update the driver files for this device, please click "Update Driver" to the next step of installation

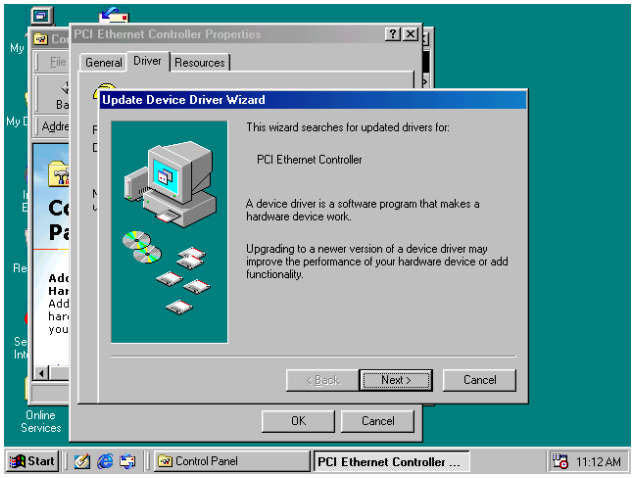


7. This Wizard searches for update drivers for:

   PCI Ethernet Controller

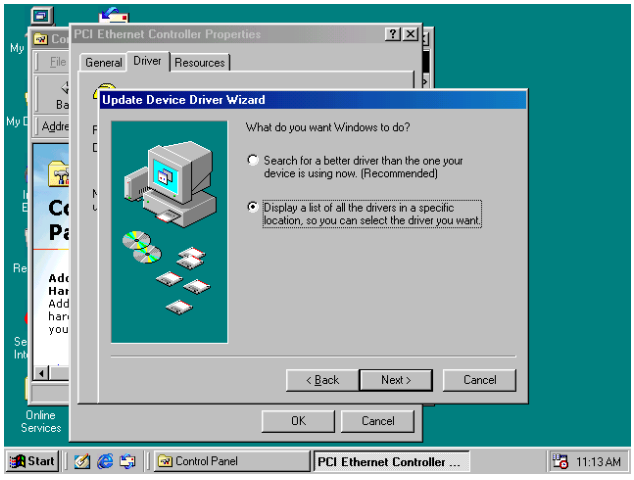
   A device driver is a software program that makes a hardware device work.

   Updating to a newer version of a device driver may improve the performance of your hardware device or add functionality, please click "Next>" to the next step of installation

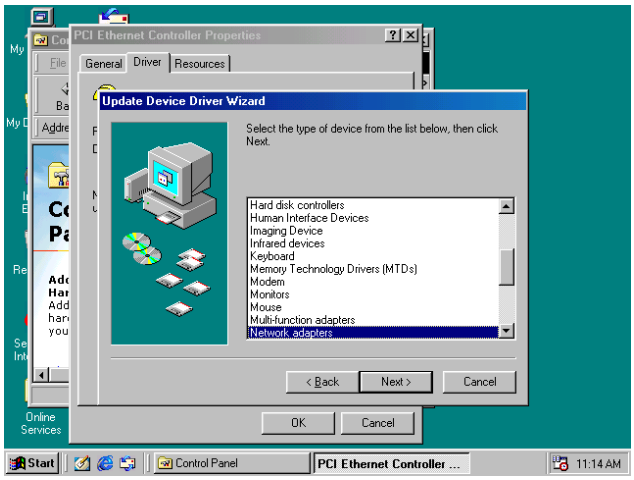


8. This is Update Device Driver Wizard. What do you want Windows to do? Please choose "Display a list of all the drivers in a specific location, so you can select the driver you want.

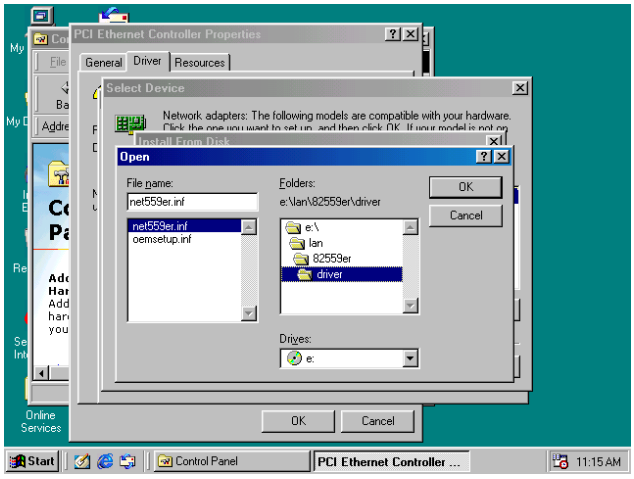
   Please click "Next>" to the next step of installation



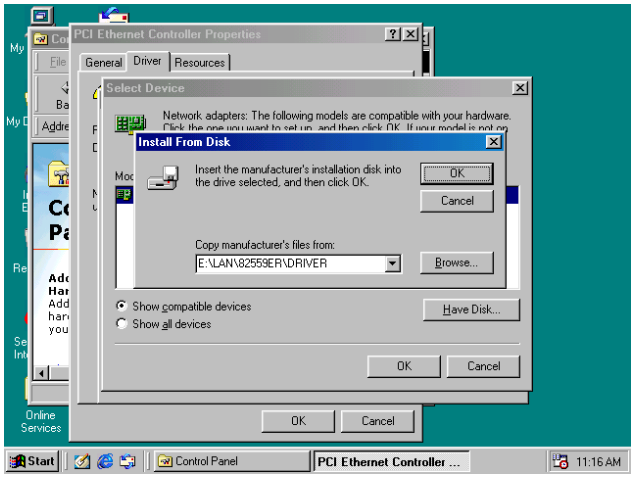
9. This s screen for selecting the type of device from the list, then click "Next>" to next step of installation



10. This is to show the "Folders", please click "OK" to the next step of installation.

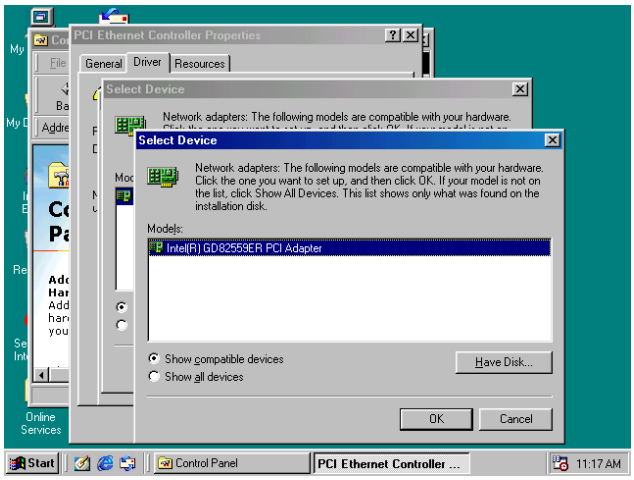


11. This is Install from Disk. Please insert the manufacturer's installation disk into the drive selected, and then please click "OK" to next step of installation.



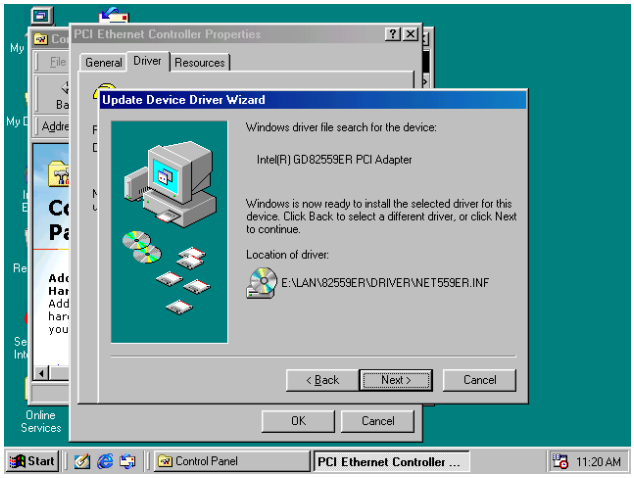
12. This is Select Device screen.

Network adapters: The following models are compatible with your hardware. Click the one you want to set up, and then click "OK". If your model is not on the list, please click Show All Devices. This list shows only what was found on the installation disk

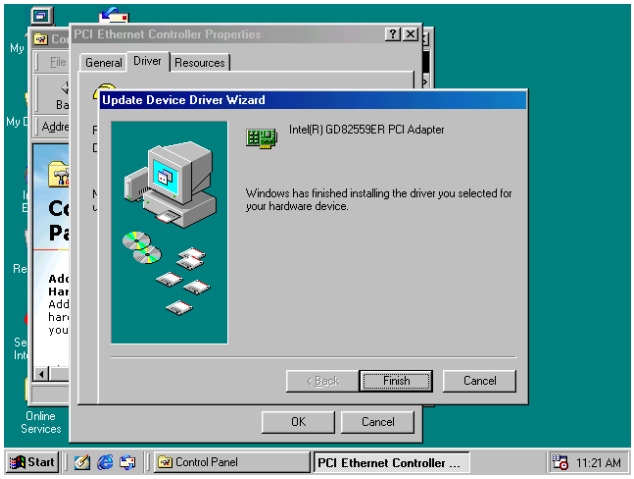


13. This is Update Driver Wizard.

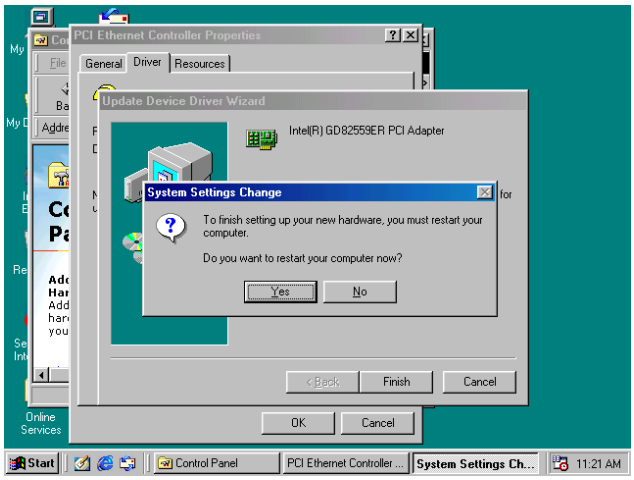
Windows is now ready to install the selected driver for this device. Please click Back to select a different driver, or click Next to continue.



14. This screen shown Windows has finished installing the driver you selected for your hardware device. Please click "Finish" to the next step of installation



15. This screens the System Settings Change. To finish setting up your new hardware, you must restart your computer. Please click "YES" to restart your computer.



Hardware Monitoring Installation

The Winbond W83782D is a Hardware Environment Monitoring chip, which has already been built on AW-C661 to monitor (via the help of a hardware monitoring utility) the system voltage, temperature and fan speed:

(1) It monitors system voltage levels to ensure a stable current for components mounted on board.

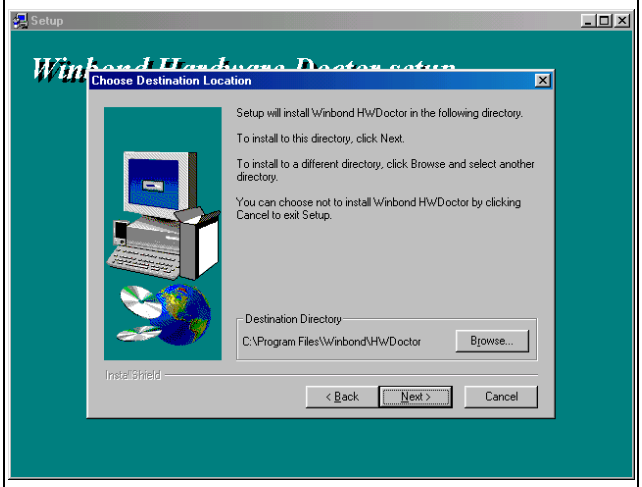
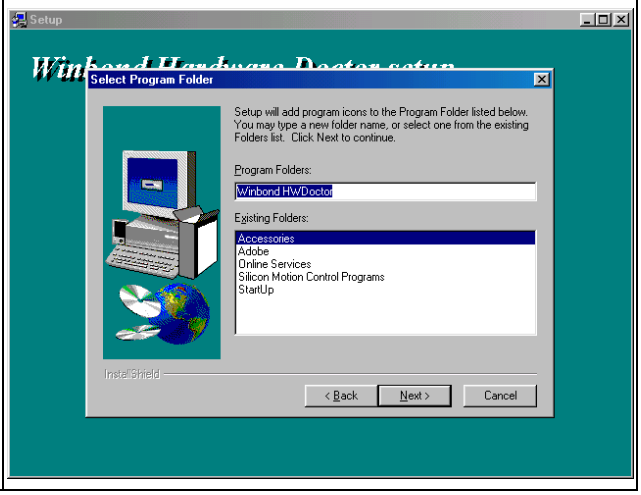
(2) It provides heat sensors to monitor the CPU and system temperature so as to prevent system overheating and damage.

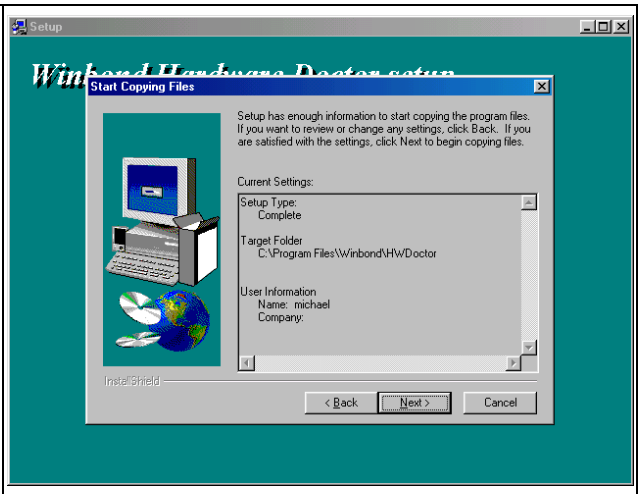
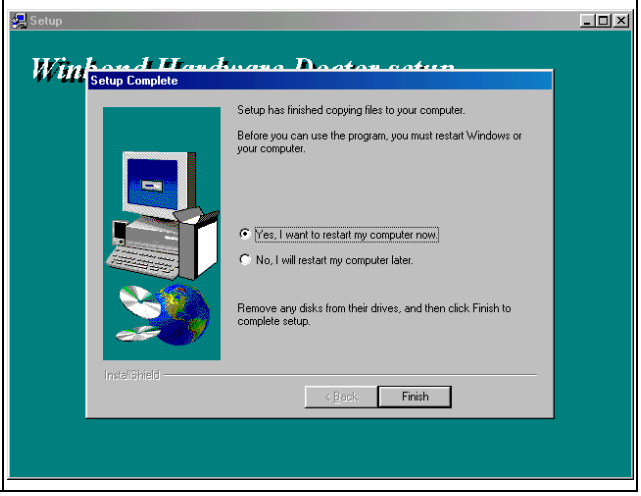
(3) It can monitor the CPU fan and system fan speeds, allowing user to set each fan to its normal RPM range and alarm threshold.

To Set up the Hardware Monitoring Utility – the Hardware Doctor:

It is strongly recommended that you exit all Windows programs before running the Setup program.

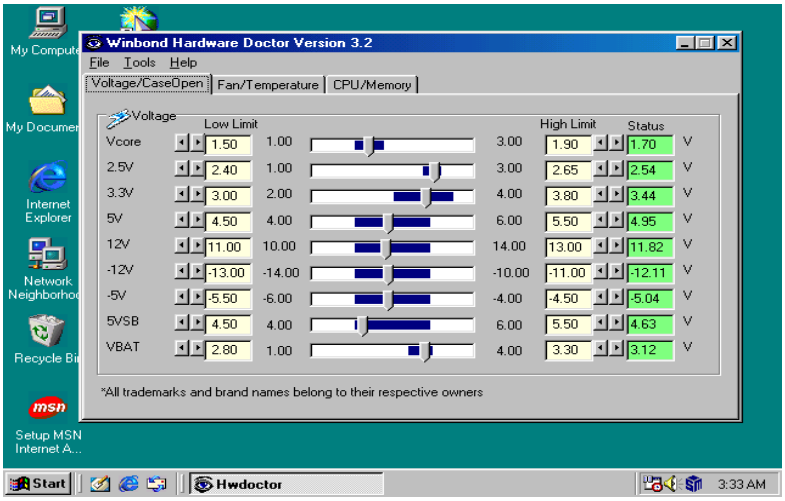
Warning: This program is protected by copyright law and international treaties. Unthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.

1. Please insert the drivers CD to your CD-ROM drive bay and open the folder "Winbond Hardware Doctor Setup". The screen will appear at once. Please click "Next>" to the start the setup Hardware Doctor Setup.	
2. This is Choose Destination Location screen. Setup will install Winbond HWDotctor in the following directory. You also can choose not to install Winbond HWDoctor by clicking Cancel to exit Setup	
3. This is **Setup Program Folder** screen. You may type a new folder name, or select one from the existing Folders list. Click Next to continue	

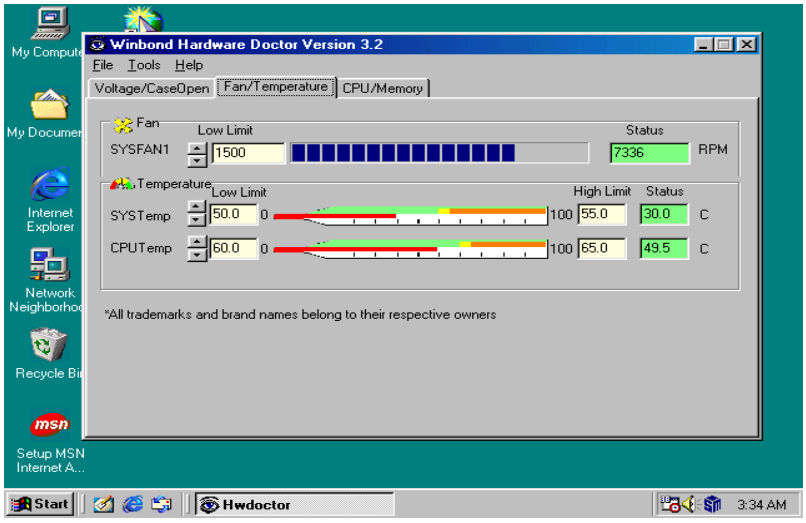
4. This is **Start Copying File"** screen shown Setup has enough information to start copying the program files. If you want to review or change any settings, click Back. If you are satisfied with the settings, click NEXT to being copying files.	
5. **"Setup Complete"** shown Setup has finished copying files to your computer. Before you can use the program, you must restart Windows or your computer.	

When you execute the hardware monitor function, the screen will be shown as following:

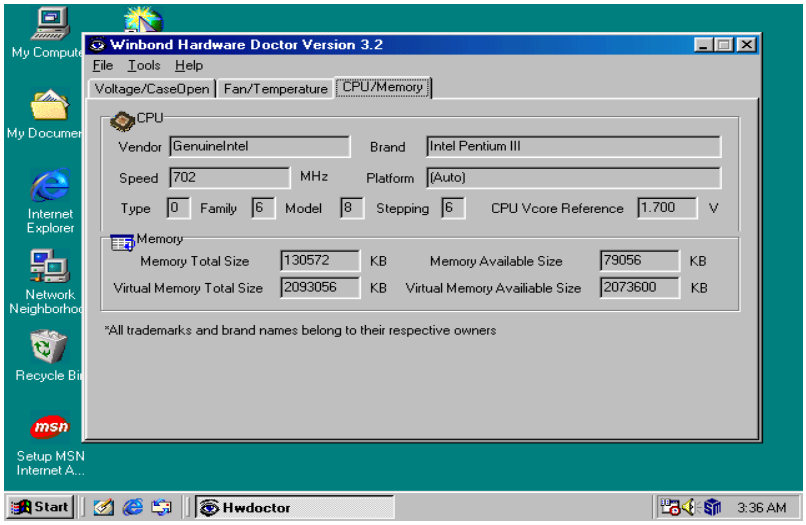
This screen is to show the Voltage/CaseOpen Status



This screen is to show the Fan/Temperature Status



This Screen is to show the CPU/Memory Status



Using the BIOS Flash Utility

The BIOS of the AW-C661 SBC can be updated by using the Award Flash Utility. A new version of the BIOS can be downloaded from the vendor's Web Site.

Update the system BIOS as follows:

1. Boot the system from the DOS prompt without loading any memory manager (such as HIMEM, EMM386, Qemm386….(
2. Insert the Drivers and Utilities CD into the CD-ROM drive (example E:) and execute the awdflash.exe program from the directory (E:\toos) of this CD. You will see a prompt like than below:

FLASH MEMORY WIRTER V7.22 **© Award Software 2001 All Rights Reserved**
Flash Type – Winbond 29C020 /5V **File Name Program: AW-C661.bin** (Enter the updated BIOS file name into the blank)
Error Message:

3. Enter the update BIOS file name (Example:
4. After loading the new BIOS code, the utility will prompt you to save the original BIOS code to disk. Press "Y" to store it as "BIOS.BIN"
5. After the old BIOS has been successfully saved, press "Y" to replace the BIOS

Important! DO not interrupt or turn off system power during BIOS flashing.

6. Reboot the system and run the setup program again.]

You have to disable the "System BIOS Cacheable" option in the Chipset Features Setup if the updated BIOS date is older than the current BIOS date during you updating the BIOS.

Appendix A: Programming the Watchdog Timer

The AW-C661 provides a watchdog timer that resets the CPU or generates an interrupt if processing comes to a stop. This function ensures greater system reliability in industrial stand-alone and unmanned environments.

In order to enable the watchdog timer, you have to output the value of the watchdog timer interval to the controller. The value range is from 01H to FFH, and the related time watchdog timer interval is 1 sec to 255 sec.

Data	Timer interval
00	Disabled
01	1 sec
02	2 sec
*	*
*	*
FF	255 sec

If you want to disable the watchdog timer, just set the timer interval value to 00H.

After setting the timer interval value, the watchdog timer begins to count down. You have to refresh the watchdog timer, so that the watchdog timer will return to its initial value; otherwise, your system will reset after a time-out. The following program shows how to set the watchdog timer:

ASSEMBLY LANGUAGE	DOS DEBUG

Program 1: Initializing the watchdog controller

MOV DX,370H	O 370 87
MOV AL,87H	O 370 87
OUT DX,AL	
OUT DX,AL	
MOV AL,07H	O 370 07
OUT DX,AL	O 371 08
MOV DX,371H	
MOV AL,08H	
OUT DX,AL	

Program 2: Writing a watchdog timer interval value

MOV DX,370H	; Set timer interval value to 16	O 370 F2
seconds		O 371 XX
MOV AL,F2H		O 370 AA
OUT DX,AL		
MOV DX,371H		
MOV AL,XXH	; Timer interval (see note)	
OUT DX,AL		
MOV DX,370H		
MOV AL,AAH		
OUT DX,AL		

Note: This XX value range is from 01H to FFH, and the related watchdog timer interval is 1 sec. to 255 sec. (as in the previous description).

Using the Demo Program

Update the System BIOS as follows:

1. Run Program 1
2. Run Program 2 (load the timer interval of 1EH, 30 seconds)
3. Run your Application Program #1 (**Be sure your Application Program will finish within 30 seconds)**
4. Run Program 1
5. Run Program 2 (change the timer interval value to 3CH, 60 seconds)
6. Run your Application Program#2 (**Be sure your Application Program will be finished within 60 seconds)**
7. Run Program 1
8. Run Program 2 (reload the timer interval value of 3CH, 60 seconds)
9. Run Program 1
10. Run Program 3 (**Load the timer interval of 00H, and disable the watchdog timer function)**

Appendix B: Programming the GPIO Port

The AW-C661 provides an 8-bit GPIO port that you can use to read and write data through. You can set this port address from the BIOS setup. The default address is 200H; this can be changed to 278H or 300H in the BIOS "Integrated Peripherals" setup.

Reading the GPIO Data

```
MOV DX,200H   ; the GPIO address
IN AL,DX      ; read the data into AL register
```

Writing the GPIO Data

```
MOV DX,200H   ; the GPIO address
MOV AL,XXH    ; output data value "XX"
OUT DX,AL
```

Programming Parallel Port Data pin to GPIO

The AW-C661 Parallel Data pin can be used to read and write data through. You can set this port address from the BIOS Setup. The default address is 200H, this can be changed to 300H, 278H and "Parallel port mode" must set EPP mode. All select in the BIOS "Integrated Peripherals" setup.

Example:

Reading the Parallel Port Data

```
MOV DX,37AH   ; Select control register (200H for 202H address, 300H for 302H address,
                278H for 27AH address)
MOV AL,ECH    ; Set Parallel Data pin to input function
OUT DX,AL
MOV DX,378H   ; The Parallel address
IN AL,DX      ; Read the data into AL register
```

Writing the Parallel Port Data

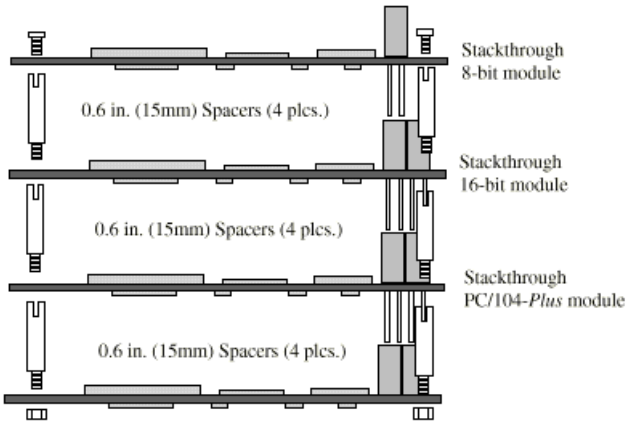
```
MOV DX,37AH   ; Select control register (200H for 202H address, 300H for 302H address,
                278H for 27AH address)
MOV AL,CCH    ; Set Parallel Data pin to output function
MOV DX,378H   ; The Parallel address
MOV AL,xxH    ; Output data value "xx"
Out DX,AL
```

Appendix C: Installing PC/104 Modules

The AW-C661 provides the standard PC/104 connector to give you the flexibility to attach PC/104 module.

⇩Please follow these steps to install the PC/104 modules to the AW-C661:

1. Set all jumpers or switches for the AW-C661. Once the PC/104 module is installed you may have difficulty setting these.
2. Seat the PC/104 module male connector into the AW-C661 CN18
3. Use the spacers and screws to secure the PC/104 module onto the AW-C661

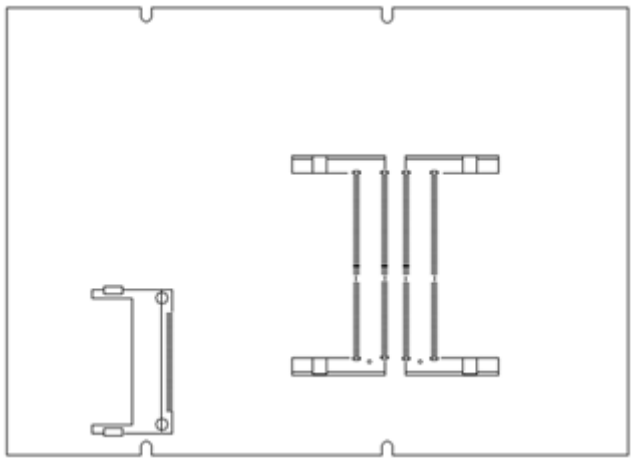


Appendix D: Installing CompactFlash Memory

CompactFlash™ is a very small removable mass storage device, it provides complete PCMCIA-ATA functionality and compatibility pluse TrueIDE functionality compatible with ATA/ATAPI-4.

CompactFlash storage products are solid state, meaning they contain no moving parts, and provide users with much greater protection of their data than conventional magnetic disk device.

Pin	Assignment	Pin	Assignment	Pin	Assignment	Pin	Assignment	Pin	Assignment
1	Ground	11	Ground	21	D00	31	D15	41	RESET
2	D03	12	Ground	22	D01	32	CS	42	ORDY
3	D04	13	VCC	23	D02	33	NC	43	NC
4	D05	14	Ground	24	WP	34	IOR	44	REG
5	D06	15	Ground	25	NC	35	IOW	45	LED
6	D07	16	Ground	26	NC	36	WE	46	BVD
7	CS	17	Ground	27	D11	37	RDY/BSY	47	D08
8	Ground	18	A02	28	D12	38	VCC	48	D09
9	Ground	19	A01	29	D13	39	SCSE;	49	D10
10	Ground	20	A00	30	D14	40	NC	50	Ground



Note: Face-up the CompactFlash Card and slide into the socket till the CF card at the end of socket.

Appendix E: System Resources

Interrupt Controller

The AW-C661 is a fully functional PC compatible Single Board Computer, it consists of 16 ISA interrupt request line and most of them already in used by other part of the board. If you would like to use extra add-on cards, please make sure that the IRQs do not conflict.

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 Microsoft's Diagnostic (MSD.EXE) utility included in Windows directory 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	Ethernet Controller
IRQ6	Floppy Disk Controller
IRQ7	Parallel Port 1
IRQ8	Real Time Clock
IRQ9	Ethernet Controller
IRQ10	Reserved
IRQ11	Reserved
IRQ12	USB Controller
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 for 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-C661. 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
C8000~CBFFF	ISA	Adapter ROM
F0000~FFFFF	ISA	System BIOS

Memory above 1MB (1Mb ~ 142336KB)

Address Range	Type	Owner
E0000000~E3FFFFF7	PCI	Host Bridge
E4000000~E7FFFFFF	PCI	PCI – PCI Bridge
E9000000~E90FFFFF	PCI	Ethernet Controller
E9100000~E91FFFFF	PCI	Ethernet Controller
E9200000~E92FFFFF	PCI	Ethernet Controller
E9300000~E93FFFFF	PCI	Ethernet Controller
E9301000~E9301FFF	PCI	Ethernet Controller
E9302000~E9302FFF	PCI	Ethernet Controller

System Memory Map

Start High	Start Low	Size High	Size Low	Type
00000000	00000000	00000000	000A0000	Available
00000000	000F0000	00000000	00010000	Reserved
00000000	FFFF0000	00000000	00010000	Reserved
00000000	00100000	00000000	07F00000	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
2E8 ~ 2EF	COM4
2F8 ~ 2FF	Communication Port (COM2)
376	IDE Controller
378 ~ 37A	LPT1
3B0 ~ 3BB	VGA Adapter
3C0 ~ 3DF	VGA Adapter
3E8 ~ 3EF	COM3
3F6	IDE Controller
3F7	FDD Controller
3F8 ~ 3FF	Communication Port (COM1)
4D0 ~ 4D1	PCI Bus
CF8 ~ CFF	PCI Bus
4000 ~ 403F	PCI Bus
5000 ~ 501F	PCI Bus
C000 ~ C01E	USB Controller
C400 ~ C43E	Ethernet Controller
C800 ~ C83E	Ethernet Controller
CC00 ~ CC3E	Ethernet Controller
D000 ~ D03E	Multimedia Audio
D400 ~ D40E	Multimedia Audio

D800 ~ D80E	Multimedia Audio
DC00 ~ DC02	Multimedia Audio
E000 ~ E002	Multimedia Audio
F002 ~ F00E	Ultra-DMA IDE Controller

Appendix F: Optional Cables

Part Number	Cable Description	AW-C661 Connector	Terminating Connector
46-I-00IDE-00	2.5" & 1.8" IDE Cable	CN27	2mm, 44-pin Dual IDE, 45cm
46-I00PS2-00	Keyboard & PS/2 Mouse	CN16	5-pin mini-circular & 6-pin circular DIN, 5cm
46-IAUD01-00	Audio Cable	CN11	Audio Cable 2mm, 20.50cm
46-IFDC01-00	FDC Cable	CN13	Floppy Cable (2.54 to 2.0), 50cm
46-IIO001-00	COM Ports Cable	CN14	2m, 9-pin Male D-Sub x 4, 26cm
46-ILAN01-00	10/100Base-T LAN Cable	CN7-9	2mm, 8-pin RJ-45 Module Jack, 18cm
46-ILPT01-00	Printer Cable	CN15	2mm, 25-pin Female D-Sub, 26cm
46-IPOWER-00	Auxiliary Power Cable	CN2, CN3	Male ATX Power Control Connector 20.5cm
46-IUSB01-00	USB Port Cable	CN17	Two-channels USB Cable(pin1 block),25cm
46-IVGA01-00	CRT VGA Cable	CN24	2mm 15-pin Female D-Sub, 20cm
46-ITV001-00	TV-Out Cable	CN27	TV-Out Cable (2.54 to 2.0), 18.50cm