

IND-CL370

**Single Board Computer
with LCD/VGA/LAN
for Intel® Celeron™ Processor
Socket 370**

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Indocomp System's IND-CL370 is a Celeron™ Industrial CPU board based on the Intel® 440BX chipset and is fully designed for harsh industrial environment. It features a Socket-370 processor connector that is compatible with Intel® Celeron™ processors. This card accommodates up to 768MB SDRAM configuration.

Take note that the IND-CL370 is a high power & full engine SBC with on-board LCD/VGA display with resolutions up to 1280 x 1024 x 8 bit. Another extra feature of 100 BASE-TX LAN that goes for web application it is a board that has so much for a deluxe cost. It is all you got in this full engine SBC with so much features. No hassle of going through the extra effort and cost of additional I/O cards.

The IND-CL370 comes with Winbond's W83781D hardware monitoring device that monitors system and CPU temperature, system voltages, and CPU and chassis fan speeds to prevent system crashes by warning the user of adverse conditions. The power management feature provides power savings by slowing down the CPU clock, turning off the monitor screen and stopping the HDD spindle motor.

Other on-board features include two serial ports (RS-232 and RS-232/422/485), one multi-mode parallel (ECP/EPP/SPP) port, a floppy drive controller, and a PS/2 keyboard / mouse interface. The built-in high speed PCI IDE controller supports both PIO and bus master modes. Up to four IDE devices can be connected, including large hard disks, CD-ROM drives, tape backup drives and other IDE devices. Its 6-layer printed circuit board combines with noise-tolerant and low power consumption CMOS technology applied on the board makes IND-CL370 able to withstand any harsh industrial environments very well.

1.1 SPECIFICATIONS

- ❑ Processor : For Intel[®] Celeron™ Processor in 370 pin Socket
- ❑ Chipset : Intel 440BX chipset, C&T 69000 chip, Adaptec AIC-7890, Intel 82558B, Winbond 977TF I/O chip
- ❑ System Memory : Three 168-pin DIMM sockets, support up to 768MB SDRAM
- ❑ BIOS : 2MB Award License Flash BIOS
- ❑ Flash Memory Disk : Reserved socket for DiskOnChip from M-System support up to 144 MB flash memory disk
- ❑ LCD/VGA Controller : C&T 69000 chip, on-board 2 MB video memory, resolution up to 1280 x 1024 x 8 bit
- ❑ Ethernet Controller : Intel 82558B chip, support 100BASE-TX, on-board RJ-45 connector
- ❑ IDE Drive Interface : Two PCI IDE ports that support up to four IDE devices and Ultra DMA/33
- ❑ Floppy Drive Interface : One FDD port, support up to two floppy devices
- ❑ Serial Port : Two COM ports, one RS-232 and one RS-232/422/485 serial ports
- ❑ Parallel Port : One multi-mode parallel port (SPP/EPP/ECP)
- ❑ Bus Interface : ISA/PCI bus (PICMG)
- ❑ RTC Battery : Li battery or compatible
- ❑ PS/2 Keyboard Conn. : On-board 6-pin Mini-Din PS/2 keyboard connector & 5-pin header
- ❑ PS/2 Mouse Connector : On-board 6-pin Mini-Din PS/2 Mouse connector
- ❑ Watchdog Timer : 16 level time-out intervals
- ❑ Universal Serial Bus : Support two USB ports
- ❑ IR Interface : Support one IrDA header
- ❑ Health Monitoring : On-board Winbond W83781D monitoring IC
- ❑ Operating Temperature : 0°C~55°C (32°F~132°F)
- ❑ Humidity : 10 ~90 RH
- ❑ Dimensions : 338 mm X 122 mm (13¹/₄" X 4⁵/₆")
- ❑ Net weight : 420 g (0.924 lb.)

1.2 PACKING CHECK LIST

Before you begin to install your card, please make sure that you received the following materials as listed below:

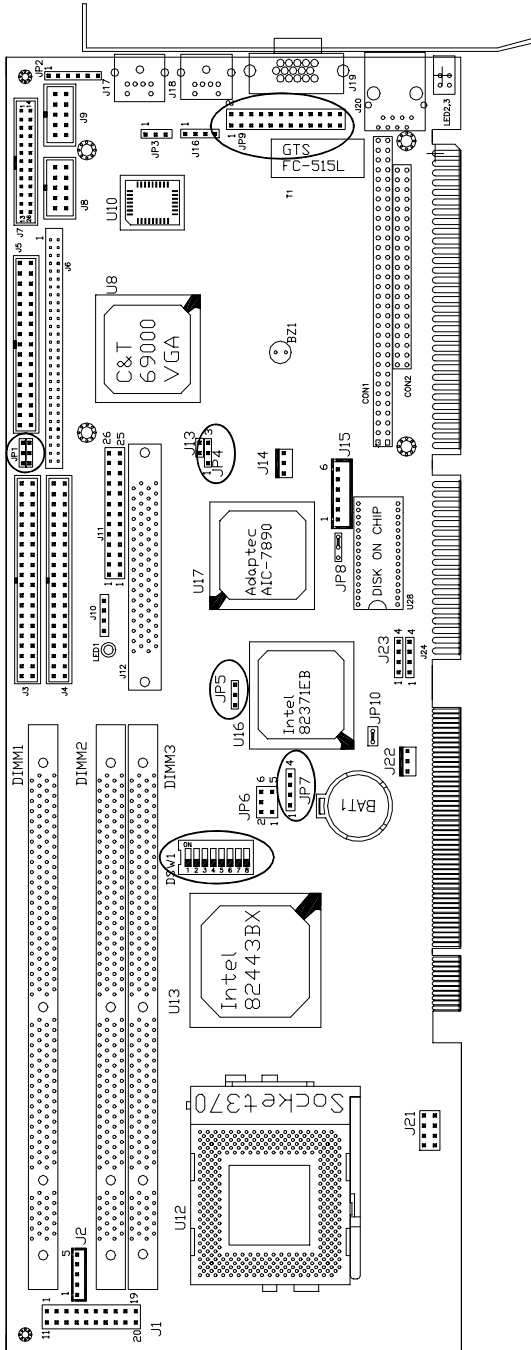
<i>Item</i>	<i>Qty</i>	<i>Remark</i>
IND-CL370 Single Board Computer	1 pc.	IND-CL370 SBC
EIDE/Floppy cable	1 set	40-pin to 40-pin standard header flat ribbon cable 34-pin to 34-pin standard header flat ribbon cable
Printer / COM port cable	1 set	2 x 10-pin standard flat header to 9-pin D-Sub cable 26-pin female flat connector header to 25-pin female D-Sub connector
Utility Drivers	2 set	Total 10 pcs. Diskettes
User's manual	1 set	IND-CL370 user's manual, Adaptec user's guide
Keyboard adapter cable	1 pc.	1 x 6-pin PS/2 to 5-pin PS/2 keyboard connect cable
CPU Card to Backplane connect cable	1 pc.	1 x 5-pin to 5-pin connect cable

CHAPTER 2.

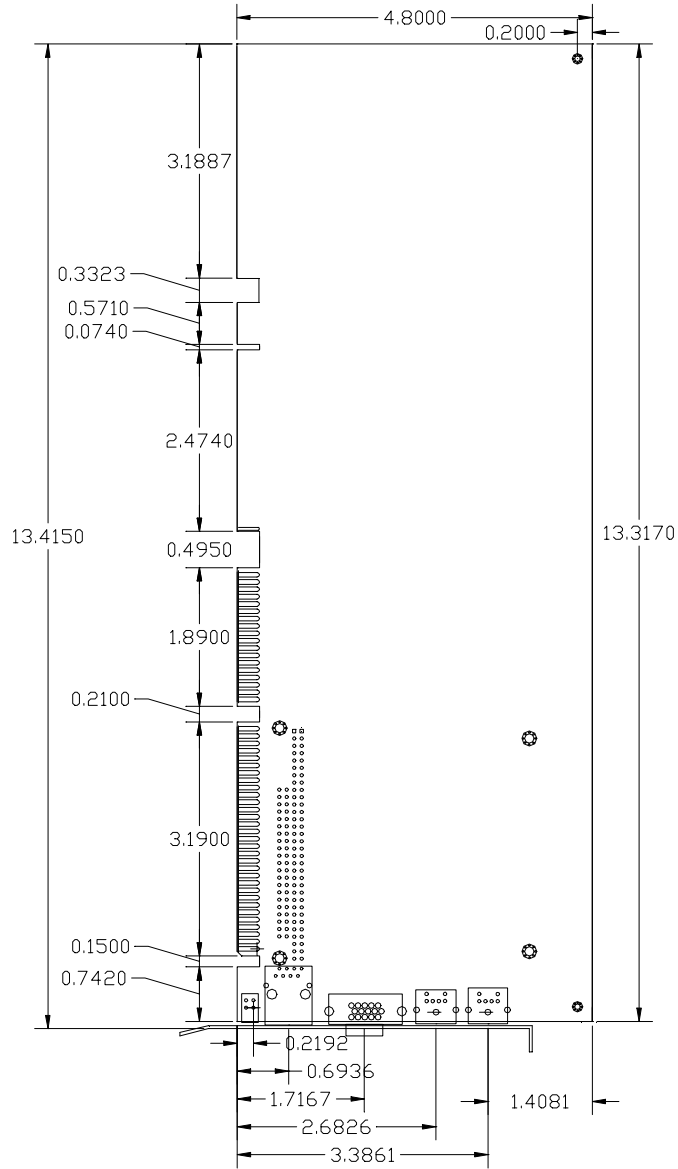
JUMPER SETTINGS AND CONNECTORS

The Figure below shows the jumpers and connectors location on the IND-CL370:

2.1 BOARD OUTLINE OF IND-CL370



BOARD DIMENSIONS OF IND-CL370



2.2 INSTALLING AND UPGRADING THE CPU

To upgrade to a higher power Celeron™ CPU, simply remove the old CPU and install to a new one; be sure to set the jumpers for the new CPU type and speed.

WARNING!

Disconnect the power cord from your system when you intend to work on it or you plan to open the chassis of your IPC. Do not make connections when the power is turned on as sensitive electronic components can be damaged by the sudden rush of power. Please only allow experienced electronics technicians to do this job.

STATIC ELECTRICITY PRECAUTION!

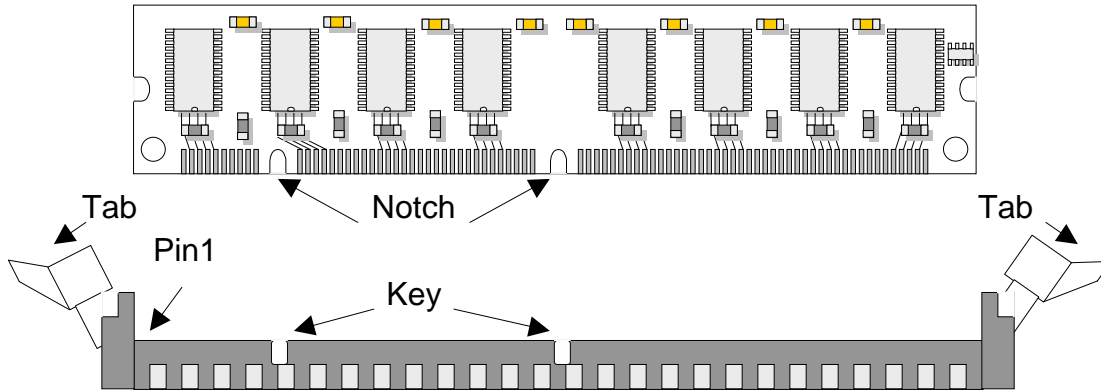
Caution! Computer components are very sensitive to damage from static electric discharge. Always ground yourself to remove static charge build-up before touching the boards in the computer. Use a grounding wrist strap at all time. Place all electronic components on the anti-static pad for static-dissipation or in a static-shielded bag when they are not in the chassis.

CAUTION!

Danger of Explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the battery manufacturer's instructions.

2.3 INSTALLING THE DIM MODULE:

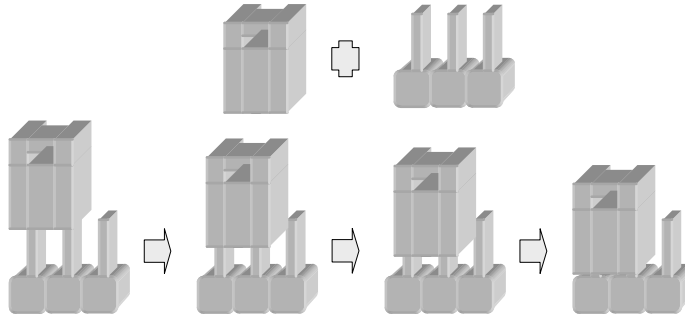
A DIM module simply snaps into a socket on the system board. Pin1 of the DIM module must correspond with Pin1 of the socket.



1. Pull the “tabs” which are at the ends of the socket to the side.
2. Position the DIMM above the socket with the “notches” in the module aligned with the “keys” on the socket.
3. Seat the module vertically into the socket. Make sure it is completely seated. The tabs will hold the DIMM in place.

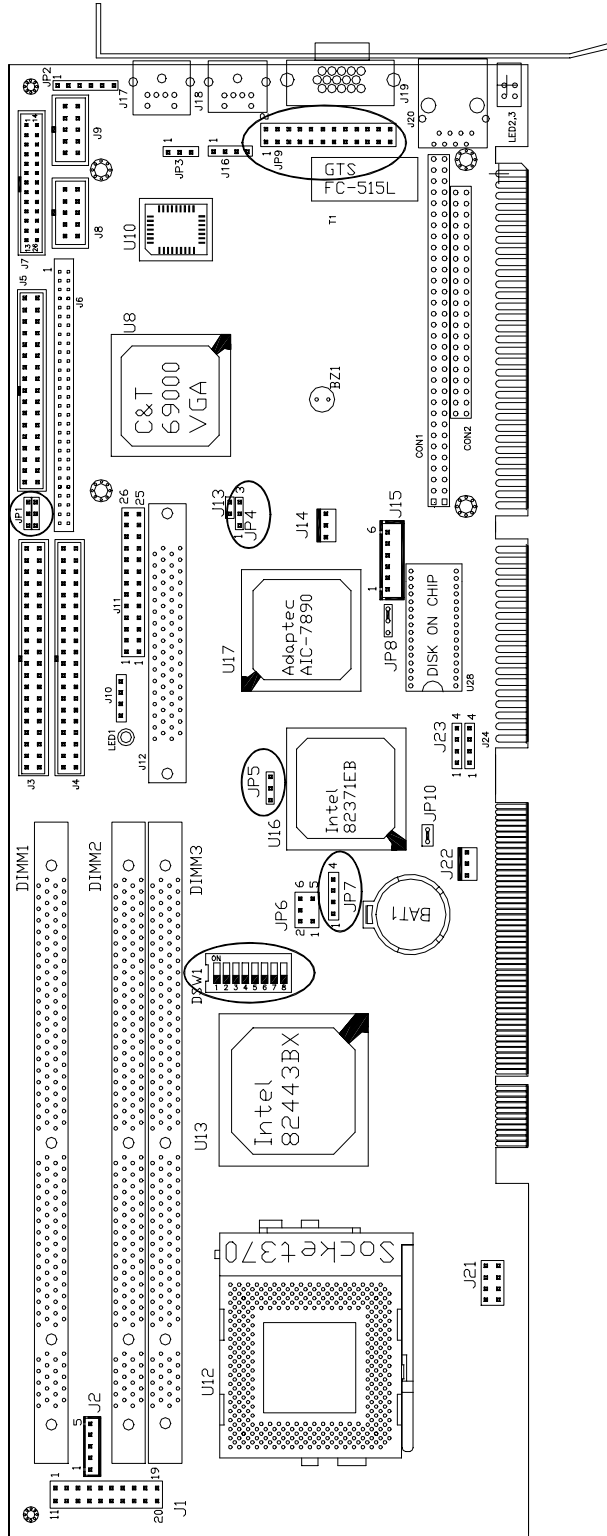
2.4 JUMPER SETTING OVERVIEW

In order to select the operation modes of your system, configure and set the jumpers on the your SBC to match the need of your application. To set a jumper, a black plastic cap containing metal contacts is placed over the jumper pins as designated by the required configuration as listed in this section. A jumper is said to be “ on ” or “ 1-2 ” when the black cap has been placed on two of its pins, as show in the figure below:



A pair of needle-nose pliers is recommended when working with jumpers. If you have any doubts about the best hardware configuration for your application, contact your local sales representative before you make any changes. In general, you simply need a standard cable to make most connections.

2.5 JUMPER LOCATION FOR IND-CL370



2.6 JUMPER SETTINGS SUMMARY FOR IND-CL370

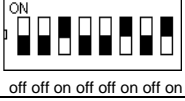
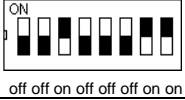
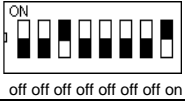
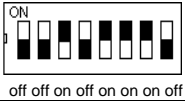
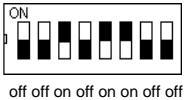
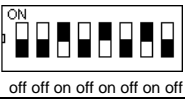
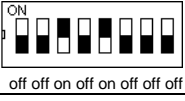
JUMPERS	
LOCATION	FUNCTION
DSW1	CPU Frequency Selector
JP1	LCD Power Setting
JP4	DiskOnChip BIOS Expansion Address Select
JP5	Clear CMOS Content
JP7	External Battery Connector
JP9	RS-232/422/485 (COM2) Selection

NOTE: Jumpers J15, J20, and JP13 are for manufacturer testing use only.

2.7 JUMPER SETTINGS FOR IND-CL370

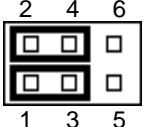
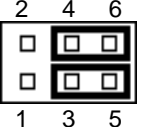
- **DSW1 (1-8): CPU Frequency Selector**

The table below shows the correct setting to match the CPU frequency.



CPU Type	CPU Frequency	DSW1(1-8)
Celeron/ Mendocino 66MHz Host Clock CPU	4.5 x 66MHz = 300MHz	 off off on off off on on on
	5 x 66MHz = 333MHz	 off off on off off off on on
	5.5 x 66MHz = 366MHz	 off off off off off off off on
	6 x 66MHz = 400MHz	 off off on on on on on on
	6.5 x 66MHz = 433MHz	 off off on on on on off off
	7.0 x 66MHz = 466MHz	 off off on on on on on on
	7.5 x 66MHz = 500MHz	 off off on on on off off off

- **JP1: LCD Power Setting**



The IND-CL370 XGA interface supports 5V and 3.3V LCD displays. Use JP1 to change between 5V (*default*) and 3.3V panel video signal level.

3.3V Setting	5V Setting
	

● **JP4: DiskOnChip BIOS Expansion Address Select**

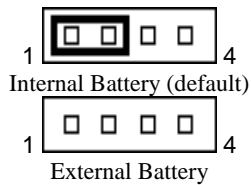
JP4	Address
	D0000-D7FFF
	D8000-DFFFF (default)

● **JP5: Clear CMOS Content**

JP5	Setting	Function
	Pin 2-3 Short/Closed	Clear CMOS Content
	Pin 1-2 Short/Closed	Normal Operation

● **JP7: External Battery Connector**

This 4-pin connector allows the user to connect an external battery to maintain the information stored in the CMOS RAM in case the built-in battery malfunctions.



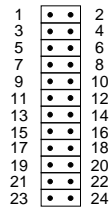
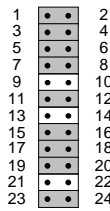
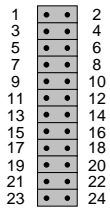
Pin #	Signal Name
1	Vcc
2	N.C.
3	Battery GND
4	Ground

● **JP9: RS-232/422/485 (COM2) Selection**

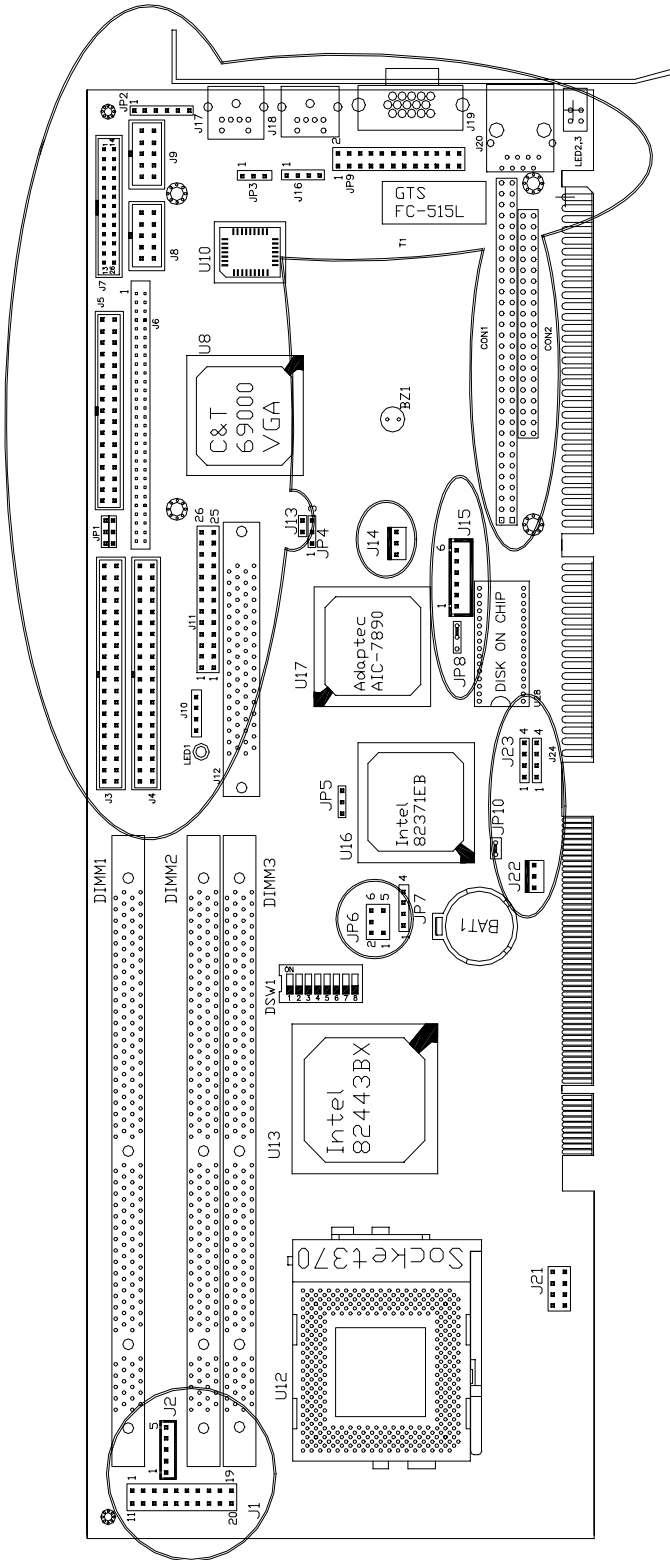
COM1 is fixed for RS-232 use only.

COM2 is selectable for RS232, RS-422 and RS-485.

The following table describes the jumper settings of this connector.

COM2 Function	RS-232	RS-422	RS-485
Jumper Setting (pin closed)	all jumpers open	1-2 3-4 5-6 7-8 11-12 15-16 17-18 19-20 23-24	1-2 3-4 5-6 7-8 9-10 11-12 13-14 15-16 17-18 19-20 21-22 23-24
Jumper Illustration	 <p>JP9</p>	 <p>JP9</p>	 <p>JP9</p>

2.8 I/O CONNECTOR LOCATION FOR IND-CL370



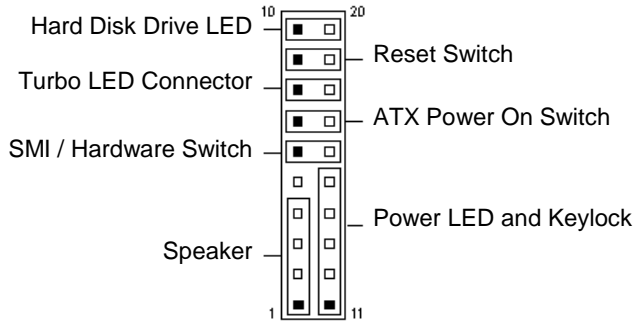
2.9 I/O CONNECTOR SUMMARY FOR IND-CL370

CONNECTOR	FUNCTION
J1	Front Bezel Connector
J2	External Keyboard Connector
J3, J4	EIDE Connectors
JP3	Wake On LAN Connector
J5	Floppy Drive Connector
JP6	SB-Link Connector
J6	Flat Panel LCD Connector Flat Panel Display Interface Pin Descriptions
J7	Parallel Port Connector
JP8	IrDA Connector
J8	COM1 Serial Port
J9	COM2 Serial Port
J10	External HDD LED
J14	Chassis Fan Power Connector
J15	External ATX Power Connector
J17	PS/2 Keyboard Connector
J18	PS/2 Mouse Connector
J19	VGA CRT Connector
J20	RJ45 Connector
J22	CPU Fan Power Connector
J23, J24	USB Connectors
CON1, CON2	PC-104 Connector
LED1	Internal HDD LED
LED2, LED3	LAN Activity Indicators

2.10 I/O CONNECTORS DESCRIPTION

● J1: Front Bezel Connector

The front bezel of the case has a control panel that provides light indication of the computer activities and switches to change the computer status. J1 is a 20-pin header that provides interfaces for the following functions.



Speaker: Pins 1 - 4

This connector provides an interface to a speaker for audio tone generation. An 8-ohm speaker is recommended.



Pin #	Signal Name
1	Speaker out
2	No connect
3	Ground
4	+5V

Power LED and Keylock: Pins 11 - 15

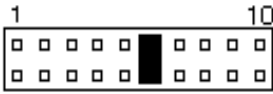
The power LED indicates the status of the main power switch. The keylock switch, when closed, will disable the keyboard function.



Pin #	Signal Name
11	Power LED
12	No connect
13	Ground
14	Keylock
15	Ground

SMI/Hardware Switch: Pins 6 and 16

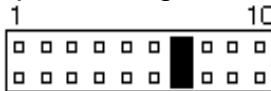
This connector supports the "Green Switch" on the control panel, which, when pressed, will force the system into the power-saving mode immediately.



Pin #	Signal Name
6	Sleep
16	Ground

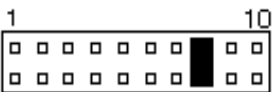
ATX Power ON Switch: Pins 7 and 17

This 2-pin connector is an "ATX Power Supply On/Off Switch" on the system that connects to the power switch on the case. When pressed, the power switch will force the system to power on. When pressed again, it will force the system to power off.



Turbo LED Connector: Pins 8 and 18

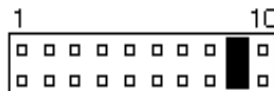
There is no turbo/deturbo function on the CPU card. The Turbo LED on the control panel will always be On when attached to this connector.



Pin #	Signal Name
8	5V
18	Ground

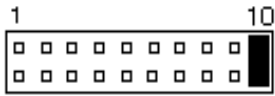
Reset Switch: Pins 9 and 19

The reset switch allows the user to reset the system without turning the main power switch off and then on again. Orientation is not required when making a connection to this header.



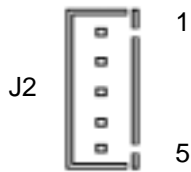
Hard Disk Drive LED Connector: Pins 10 and 20

This connector connects to the hard drive activity LED on control panel. This LED will flash when the HDD is being accessed.



Pin #	Signal Name
10	Ground
20	5V

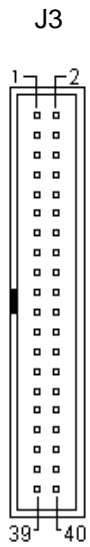
● **J2: External Keyboard Connector**



Pin #	Signal Name
1	Keyboard clock
2	Keyboard data
3	NC
4	GND
5	Vcc

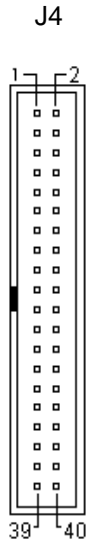
● **J3, J4: EIDE Connectors**

J3: Primary IDE Connector



Pin #	Signal Name	Pin #	Signal Name
1	Reset IDE	2	Ground
3	Host data 7	4	Host data 8
5	Host data 6	6	Host data 9
7	Host data 5	8	Host data 10
9	Host data 4	10	Host data 11
11	Host data 3	12	Host data 12
13	Host data 2	14	Host data 13
15	Host data 1	16	Host data 14
17	Host data 0	18	Host data 15
19	Ground	20	Key
21	DRQ0	22	Ground
23	Host IOW	24	Ground
25	Host IOR	26	Ground
27	IOCHRDY	28	Host ALE
29	DACK0	30	Ground
31	IRQ14	32	No connect
33	Address 1	34	No connect
35	Address 0	36	Address 2
37	Chip select 0	38	Chip select 1
39	Activity	40	Ground

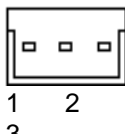
J4: Secondary IDE Connector



Pin #	Signal Name	Pin #	Signal Name
1	Reset IDE	2	Ground
3	Host data 7	4	Host data 8
5	Host data 6	6	Host data 9
7	Host data 5	8	Host data 10
9	Host data 4	10	Host data 11
11	Host data 3	12	Host data 12
13	Host data 2	14	Host data 13
15	Host data 1	16	Host data 14
17	Host data 0	18	Host data 15
19	Ground	20	Key
21	DRQ1	22	Ground
23	Host IOW	24	Ground
25	Host IOR	26	Ground
27	IOCHRDY	28	Host ALE
29	DACK1	30	Ground
31	IRQ15	32	No connect
33	Address 1	34	No connect
35	Address 0	36	Address 2
37	Chip select 0	38	Chip select 1
39	Activity	40	Ground

● **JP3: Wake On LAN Connector**

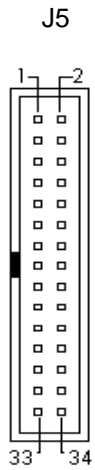
JP3 is a 3-pin header for the Wake On LAN function on the CPU card. The following table shows the pin out assignments of this connector. Wake On LAN will function properly only with an ATX power supply with 5VSB that has 200mA.



Pin #	Signal Name
1	+5VSB
2	Ground
3	Wake on LAN

● **J5: Floppy Drive Connector**

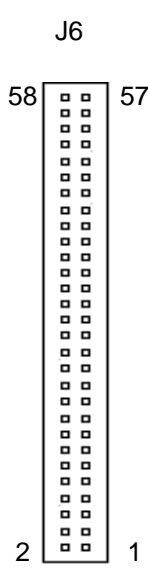
J5 is a 34-pin header and will support up to 2.88MB floppy drives.



Pin #	Signal Name	Pin #	Signal Name
1	Ground	2	RM/LC
3	Ground	4	No connect
5	Ground	6	No connect
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

● **J6: Flat Panel LCD Connector**

J6 is a 58-pin (dual in line header) for flat panel LCD displays. The following shows the pin assignments of this connector.



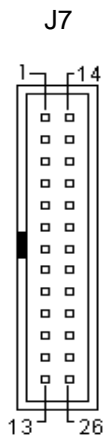
Pin #	Signal Name	Pin #	Signal Name
1	+12V	2	+12V
3	GND	4	GND
5	+5V/3.3V	6	+5V/3.3V
7	ENPVEE	8	GND
9	PD0	10	PD1
11	PD2	12	PD3
13	PD4	14	PD5
15	PD6	16	PD7
17	PD8	18	PD9
19	PD10	20	PD11
21	PD12	22	PD13
23	PD14	24	PD15
25	PD16	26	PD17
27	PD18	28	PD19
29	PD20	30	PD21
31	PD22	32	PD23
33	GND	34	GND
35	SHFCLK	36	FLM
37	M	38	LP
39	GND	40	ENABKL
41	GND	42	ASCLK
43	ENAVDD	44	+5V/3.3V
45	NC	46	NC
47	PD24	48	PD25
49	PD26	50	PD27
51	PD28	52	PD29
53	PD30	54	PD31
55	PD32	56	PD33
57	PD34	58	PD35

● Flat Panel Display Interface Pin Descriptions

	Mono	Mono	Mono	Color	Color	Color	Color	Color	Color	Color	Color	Color
	SS	DD	DD	TFT	TFT	TFT	TFT	TFT+HR	STN-SS	STN-SS	STN-DD	STN-DD
Pin Name	8-bit	8-bit	16-bit	9/12/16 bit	18/24 bit	36-bit	18/24 bit	8-bit (4bP)	16-bit (4bP)	8-bit (4bP)	16-bit (4bP)	24-bit
P0	D0	UD3	UD7	B0	B0	FB0	FB0	R1	R1	UR1	UR0	UR0
P1	D1	UD2	UD6	B1	B1	FB1	FB1	B1	G1	UG1	UG0	UG0
P2	D2	UD1	UD5	B2	B2	FB2	FB2	G2	B1	UB1	UB0	UB0
P3	D3	UD0	UD4	B3	B3	FB3	FB3	B3	R2	UB2	UR1	LR0
P4	D4	LD3	UD3	B4	B4	FB4	SB0	G4	G3	LR1	LR0	LG0
P5	D5	LD2	UD2	G0	B5	FB5	SB1	R5	B2	LG1	LG0	LB0
P6	D6	LD1	UD1	G1	B6	SB0	SB2	B5	R3	LB1	LB0	UR1
P7	D7	LD0	UD0	G2	B7	SB1	B3		G3	LR2	LR1	UG1
P8			LD7	G3	G0	SB2	FG0		B3		UG1	UB1
P9			LD6	G4	G1	SB3	FG1		R4		UB1	LR1
P10			LD5	G5	G2	SB4	FG2		G4		UR2	LG1
P11			LD4	R0	G3	SB5	FG3		B4		UG2	LB1
P12			LD3	R1	G4	FG0	SG0		R5		LG1	UR2
P13			LD2	R2	G5	FG1	SG1		G5		LB1	UG2
P14			LD1	R3	G6	FG2	SG2		B5		LR2	UB2
P15			LD0	R4	G7	FG3	SG3		G6		LG2	LR2
P16					R0	FG4	FR0					LG2
P17					R1	FG5	FR1					LB2
P18					R2	SG0	FR2					UR3
P19					R3	SG1	FR3					UG3
P20					R4	SG2	SR0					LR3
P21					R5	SG3	SR1					LG3
P22					R6	SG4	SR2					LB3
P23					R7	SG5	SR3					
P24						FR0						
P25						FR1						
P26						FR2						
P27						FR3						
P28						FR4						
P29						FR5						
P30						SR0						
P31						SR1						
P32						SR2						
P33						SR3						
P34						SR4						
P35						SR5						
SHFCL	SHFCL	SHFCL	SHFCL	SHFCL	SHFCL	SHFCL	SHFCL	SHFCL	SHFCL	SHFCL	SHFCL	SHFCL
K	K	K	K	K	K	K	K	K	K	K	K	K
Pixels/ Clk:	8	8	16	1	1	2	2	2-2/3	5-1/3	2-2/3	5-1/3	8

● **J7: Parallel Port Connector**

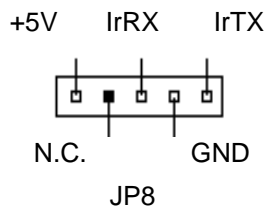
The following table describes the pin out assignments of this connector.



Pin #	Signal Name	Pin #	Signal Name
1	Line printer strobe	14	AutoFeed
2	PD0, parallel data 0	15	Error
3	PD1, parallel data 1	16	Initialize
4	PD2, parallel data 2	17	Select
5	PD3, parallel data 3	18	Ground
6	PD4, parallel data 4	19	Ground
7	PD5, parallel data 5	20	Ground
8	PD6, parallel data 6	21	Ground
9	PD7, parallel data 7	22	Ground
10	ACK, acknowledge	23	Ground
11	Busy	24	Ground
12	Paper empty	25	Ground
13	Select	N/A	N/A

● **JP8: IrDA Connector**

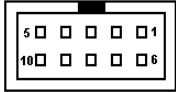
This connector is used for an IrDA connector for wireless communication.



Pin #	Signal Name
1	+5V
2	No connect
3	IrRX
4	Ground
5	IrTX

● **J8: COM1 Serial Port**

J8, a 10-pin header connector, is an onboard serial port of the IND-CI370. The following table shows the pin assignments of this connector.

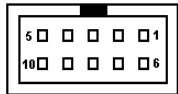


J8: COM1

Pin #	Signal Name
1	DCD, Data carrier detect
2	RXD, Receive data
3	TXD, Transmit data
4	DTR, Data terminal ready
5	GND, ground
6	DSR, Data set ready
7	RTS, Request to send
8	CTS, Clear to send
9	RI, Ring indicator
10	NC

● **J9: COM2 Serial Port**

J9, a 10-pin header connector, is the onboard COM2 serial port of the IND-CL370. The following table shows its pin assignments.



J9: COM2

Pin #	Signal Name		
	RS-232	R2-422	RS-485
1	DCD	TX-	DATA-
2	RX	TX+	DATA+
3	TX	RX+	NC
4	DTR	RX-	NC
5	GND	GND	GND
6	DSR	RTS-	NC
7	RTS	RTS+	NC
8	CTS	CTS+	NC
9	RI	CTS-	NC
10	NC	NC	NC

● **J10: External HDD LED**

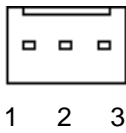
The HDD activity LED flashes when the HDD is being accessed.



Pin #	Signal Name
1	LED+
2	LED-
3	LED-
4	LED+

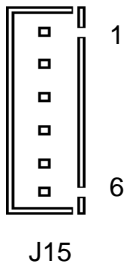
● **J14: Chassis Fan Power Connector**

J14 is a 3-pin header for the chassis fan. The fan must be a 12V fan.



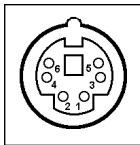
Pin #	Signal Name
1	Rotation
2	+12V
3	Ground

● **J15: External ATX Power Connector**



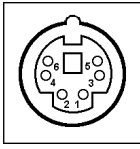
Pin #	Signal Name
1	N.C.
2	GND
3	N.C.
4	GND
5	PS-ON (soft on/off)
6	5V SB (standby +5V)

● **J17: PS/2 Keyboard Connector**



Pin #	Signal Name
1	Keyboard data
2	N.C.
3	GND
4	5V
5	Keyboard clock
6	N.C.

● **J18: PS/2 Mouse Connector**

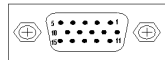


J18

Pin #	Signal Name
1	Mouse data
2	N.C.
3	N.C.
4	5V
5	Mouse Clock
6	N.C.

● **J19: VGA CRT Connector**

The pin assignments of the J19 VGA CRT connector are as follows:



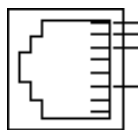
J19

Pin	Signal Name	Pin	Signal Name
1	Red	2	Green
3	Blue	4	N.C.
5	GND	6	GND
7	GND	8	GND
9	N.C.	10	GND
11	N.C.	12	N.C.
13	HSYNC	14	VSYNC
15	NC		

● **J20: RJ45 Connector**

This connector is for the 10/100Mbps Ethernet capability of the CPU card. The figure below shows the pin out assignments of this connector and its corresponding input jack.

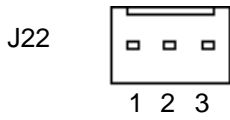
J20



TD+(pin#1)
 TD-(pin#2)
 RD+(pin#3)
 RD-(pin#6)

● **J22: CPU Fan Power Connector**

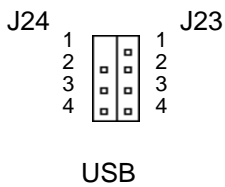
J22 is a 3-pin header for the CPU fan. The fan must be a 12V fan.



Pin #	Signal Name
1	Rotation
2	+12V
3	Ground

● **J23, J24: USB Connectors**

The following table shows the pin outs of the USB connectors.

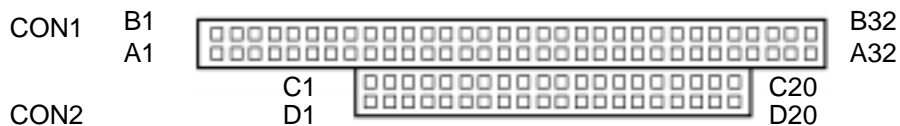


J24 Pin #	Signal Name	J23 Pin #
1	Vcc	1
2	USB-	2
3	USB+	3
4	Ground	4

● **CON1, CON2: PC-104 Connector**

CON1 and CON2 are dual-in-line pin headers that support PC-104 modules. CON1 consists of 64 pins and CON2 has 40 pins. The following table shows the their pin assignments.

CON1				CON2			
Pin	Signal Name	Pin	Signal Name	Pin	Signal Name	Pin	Signal Name
A1	IOCHK	B1	GND	C1	GND	D1	GND
A2	D7	B2	REST	C2	SBHE	D2	MEMCS16
A3	D6	B3	VCC	C3	LA23	D3	IOCS16
A4	D5	B4	IRQ9	C4	LA22	D4	IRQ10
A5	D4	B5	-5V	C5	LA21	D5	IRQ11
A6	D3	B6	DRQ2	C6	LA20	D6	IRQ12
A7	D2	B7	-12V	C7	LA19	D7	IRQ15
A8	D1	B8	OWS	C8	LA18	D8	IRQ14
A9	D0	B9	+12V	C9	LA17	D9	DACK0
A10	IOCHRDY	B10	GND	C10	MEMR	D10	DRQ0
A11	AEN	B11	SMEMW	C11	MEMW	D11	DACK5
A12	A19	B12	SMEMR	C12	D8	D12	DRQ5
A13	A18	B13	IOW	C13	D9	D13	DACK6
A14	A17	B14	IOR	C14	D10	D14	DRQ6
ZA15	A16	B15	DACK3	C15	D11	D15	DACK7
A16	A15	B16	DRQ3	C16	D12	D16	DRQ7
A17	A14	B17	DACK1	C17	D13	D17	VCC
A18	A13	B18	DRQ1	C18	D14	D18	MASTER
A19	A12	B19	REFRESH	C19	D15	D19	GND
A20	A11	B20	CLK	C20	KEY PIN	D20	GND
A21	A10	B21	IRQ7				
A22	A9	B22	IRQ6				
A23	A8	B23	IRQ5				
A24	A7	B24	IRQ4				
A25	A6	B25	IRQ3				
A26	A5	B26	DACK2				
A27	A4	B27	TC				
A28	A3	B28	BALE				
A29	A2	B29	VCC				
A30	A1	B30	OSC				
A31	A0	B31	GND				
A32	GND	B32	GND				



- **LED1: Internal HDD LED**

LED1 is a internal HDD LED that flashes when there is activity on the hard disk.

- **LED2, LED3: LAN Activity Indicators**

LED2 and LED3 are orange and yellow LED indicators located at the bracket side of the CPU card that shows LAN activity and the transfer rate in progress. Refer to the following table for the functions of each LED status.

LED2 (yellow) Status	Function	LED3 (green) Status	Function
ON	Data transfer in progress	OFF	10Mbps transfer rate
OFF	Data transfer off (Link off)	ON	100Mbps transfer rate

Watchdog Timer Configuration

The function of the watchdog timer is to reset the system automatically and is defined at I/O port 0443H. To enable the watchdog timer and allow the system to reset, write I/O port 0443H. To disable the timer, write I/O port 0441H for the system to stop the watchdog function. The timer has a tolerance of 20% for its intervals.

The following describes how the timer should be programmed.

Enabling Watchdog:

```
MOV AX, 000FH (Choose the values from 0)
MOV DX, 0443H
OUT DX, AX
```

Disabling Watchdog

```
MOV AX, 00FH (Any value is fine.)
MOV DX, 0441H
OUT DX, AX
```

WATCHDOG TIMER CONTROL TABLE

Level	Value	Time/sec	Level	Value	Time/sec
1	F	0	9	7	16
2	E	2	10	6	18
3	D	4	11	5	20
4	C	6	12	4	22
5	B	8	13	3	24
6	A	10	14	2	26
7	9	12	15	1	28
8	8	14	16	0	30

CHAPTER 3.***AWARD BIOS SETUP***

The Award BIOS (Basic Input/Output System) installed in your computer system's ROM supports Intel Celeron processor. The BIOS provides critical low-level support for standard devices such as disk drives, serial ports, and parallel ports. It also adds virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

3.1 BIOS Setup

The Award BIOS provides a Setup utility program for specifying the system configurations and settings. The BIOS ROM of the system stores the Setup utility. When you turn on the computer, the Award BIOS is immediately activated. Pressing the key immediately allows you to enter the Setup utility. If you are a little bit late pressing the key, POST (Power On Self Test) will continue with its test routines, thus preventing you from invoking the Setup. If you still wish to enter Setup, restart the system by pressing the "Reset" button or simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys. You can also restart by turning the system Off and back On again. The following message will appear on the screen:

Press to Enter Setup

In general, you press the arrow keys to highlight items, <Enter> to select, the <PgUp> and <PgDn> keys to change entries, <F1> for help and <Esc> to quit.

When you enter the Setup utility, the Main Menu screen will appear on the screen. The Main Menu allows you to select from various setup functions and exit choices.

ROM PCI/ISA BIOS
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

<p>STANDARD CMOS SETUP</p> <p>BIOS FEATURES SETUP CHIPSET FEATURES SETUP POWER MANAGEMENT SETUP PNP/PCI CONFIGURATION LOAD BIOS DEFAULTS LOAD SETUP DEFAULTS</p>	<p>CPU SPEED SETTING INTEGRATED PERIPHERALS SUPERVISOR PASSWORD USER PASSWORD IDE HDD AUTO DETECTION SAVE & EXIT SETUP EXIT WITHOUT SAVING</p>
<p>ESC : Quit F10 : Save & Exit Setup</p>	<p>↑ ↓ → ← : Select Item (Shift) F2 : Change Color</p>
<p>Time, Date, Hard Disk Type</p>	

The section below the setup items of the Main Menu displays the control keys for this menu. Another section at the bottom of the Main Menu just below the control keys section displays information on the currently highlighted item in the list.

NOTE: *After making and saving system changes with Setup, you find that your computer cannot boot, the Award BIOS supports an override to the CMOS settings that resets your system to its default.*

We strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both Award and your system manufacturer to provide the absolute maximum performance and reliability.

3.2 Standard CMOS Setup

“Standard CMOS Setup” choice allows you to record some basic hardware configurations in your computer system and set the system clock and error handling. If the motherboard is already installed in a working system, you will not need to select this option. You will need to run the Standard CMOS option, however, if you change your system hardware configurations, the onboard battery fails, or the configuration stored in the CMOS memory was lost or damaged.

ROM PCI/ISA BIOS
 STANDARD CMOS SETUP
 AWARD SOFTWARE, INC.

Date (mm:dd:yy) : Wed, Mar 4 1998								
Time (hh:mm:ss) :00 : 00 : 00								
HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master	Auto	0	0	0	0	0	0	Auto
Primary Slave	Auto	0	0	0	0	0	0	Auto
Secondary Master	Auto	0	0	0	0	0	0	Auto
Secondary Slave	Auto	0	0	0	0	0	0	Auto
Drive A	: 1.44M, 3.5in			Base Memory		: 640K		
Drive B	: None			Extended Memory		: 15360K		
Video	: EGA / VGA			Other Memory		: 384K		
Halt On	: All Errors			Total Memory		: 16384K		
ESC : Quit	↑ ↓ → ← : Select Item				PU / PD / + / - : Modify			
F1 : Help	(Shift) F2 : Change Color							

At the bottom of the menu are the control keys for use on this menu. If you need any help in each item field, you can press the <F1> key. It will display the relevant information to help you. The memory display at the lower right-hand side of the menu is read-only. It will adjust automatically according to the memory changed. The following describes each item of this menu.

Date

The date format is:

- Day :** Sun to Sat
- Month :** 1 to 12
- Date :** 1 to 31
- Year :** 1994 to 2079

To set the date, highlight the “Date” field and use the PageUp/ PageDown or +/- keys to set the current time.

Time

The time format is: **Hour : 00 to 23**
Minute : 00 to 59
Second : 00 to 59

To set the time, highlight the "Time" field and use the <PgUp>/ <PgDn> or +/- keys to set the current time.

Primary HDDs / Secondary HDDs

The onboard PCI IDE connectors provide Primary and Secondary channels for connecting up to four IDE hard disks or other IDE devices. Each channel can support up to two hard disks; the first is the "Master" and the second is the "Slave".

To enter the specifications for a hard disk drive, you must select first a "Type". There are 45 predefined types and 4 user definable types are for Enhanced IDE BIOS. Type 1 to 45 are predefined. Type "User" is user-definable. For the Primary Master/Slave as well as Secondary Master/Slave, you can select "Auto" under the TYPE and MODE fields. This will enable auto detection of your IDE drives and CD-ROM drive during POST.

Press <PgUp>/<PgDn> to select a numbered hard disk type or type the number and press the <Enter> key. The hard disk will not work properly if you enter incorrect information for this field. If your hard disk drive type is not matched or listed, you can use Type User to define your own drive type manually. If you select Type User, related information is asked to be entered to the following items.

CYLS : Number of cylinders
HEAD : Number of read/write heads
PRECOMP : Write precompensation
LANDZ : Landing zone
SECTOR : Number of sectors
SIZE : Automatically adjust according to the configuration
MODE (for IDE HDD only) : Auto
Normal (HD < 528MB)
Large (for MS-DOS only)
LBA (HD > 528MB and supports Logical Block Addressing)

NOTE *The specifications of your drive must match with the drive table. The hard disk : will not work properly if you enter incorrect information in these fields. If your hard disk drive type is not matched or listed, you can use Type User to define your own drive type manually.*

Drive A / Drive B

These fields identify the types of floppy disk drive A or drive B that has been installed in the computer. The available specifications are:

360KB	1.2MB	720KB	1.44MB	2.88MB
5.25 in.	5.25 in.	3.5 in.	3.5 in.	3.5 in.

Video

This field selects the type of video display card installed in your system. You can choose the following video display cards:

EGA/VGA	For EGA, VGA, SEGA, SVGA or PGA monitor adapters. (default)
CGA 40	Power up in 40 column mode.
CGA 80	Power up in 80 column mode.
MONO	For Hercules or MDA adapters.

Halt On

This field determines whether the system will halt if an error is detected during power up.

No errors	The system boot will not be halted for any error that may be detected.
All errors	Whenever the BIOS detects a non-fatal error, the system will stop and you will be prompted.
All, But Keyboard	The system boot will not be halted for a keyboard error; it will stop for all other errors
All, But Diskette	The system boot will not be halted for a disk error; it will stop for all other errors.
All, But Disk/Key	The system boot will not be halted for a key- board or disk error; it will stop for all others.

3.3 BIOS Features Setup

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.

ROM / PCI ISA BIOS
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
CPU L2 Cache ECC Checking	: Enabled	D0000-D3FFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	D4000-D7FFF Shadow	: Disabled
Boot Sequence	: A, C, SCSI	D8000-DBFFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	DC000-DFFF Shadow	: Disabled
Boot Up Floppy Drive	: Enabled		
Boot Up Numlock Status	: On		
Gate A20 Option	: Fast		
Typematic Rate Setting	: Disabled		
Typematic Rate (chars/Sec)	: 6		
Typematic Delay (Msec)	: 250		
Security Option	: Setup		
PCI /VGA Palette Snoop	: Disabled		
OS Select For DRAM>64MB	: Non-OS2	ESC : Quit	↑ ↓ → ← : Select Item
Report No FDD For WIN 95	: Yes	F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values	(Shift) F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Virus Warning

This item protects the boot sector and partition table of your hard disk against accidental modifications. If an attempt is made, the BIOS will halt the system and display a warning message. If this occurs, you can either allow the operation to continue or run an anti-virus program to locate and remove the problem.

NOTE: Many disk diagnostic programs, which attempt to access the boot sector table, can cause the virus warning. If you will run such a program, disable the Virus Warning feature.

CPU Internal Cache / External Cache

Cache memory is additional memory that is much faster than conventional DRAM (system memory). CPUs from 486-type on up contain internal cache memory, and most, but not all, modern PCs have additional (external) cache memory. When the CPU requests data, the system transfers the requested data from the main DRAM into cache memory, for even faster access by the CPU. These items allow you to enable (speed up memory access) or disable the cache function. By default, these items are **Enabled**.

CPU L2 Cache ECC Checking

When enabled, this allows ECC checking of the CPU's L2 cache. By default, this field is **Enabled**.

Quick Power On Self Test

When enabled, this field speeds up the Power On Self Test (POST) after the system is turned on. If it is set to **Enabled**, BIOS will skip some items.

Boot Sequence

This field determines the drive that the system searches first for an operating system. The default value is **A, C, SCSI**. The options are:

A, C, SCSI	D, A, SCSI	SCSI, C, A
C, A, SCSI	E, A, SCSI	C only
C, CDROM, A	F, A, SCSI	LS/ZIP, C
CDROM, C, A	SCSI, A, C	

Swap Floppy Drive

This item allows you to determine whether to enable Swap Floppy Drive or not. When enabled, the BIOS swaps floppy drive assignments so that Drive A becomes Drive B, and Drive B becomes Drive A. By default, this field is set to **Disabled**.

Boot Up Floppy Seek

When enabled, the BIOS will seek whether or not the floppy drive installed has 40 or 80 tracks. 360K type has 40 tracks while 760K, 1.2M and 1.44M all have 80 tracks. By default, this field is set to **Enabled**.

Boot Up NumLock Status

This allows you to activate the NumLock function after you power up the system. By default, the system boots up with **NumLock On**.

Boot Up System Speed

This has no function and selects the default system speed (**High**).

Gate A20 Option

This field allows you to select how Gate A20 is worked. Gate A20 is a device used to address memory above 1 MB. The default setting is **Fast**.

Typematic Rate Setting

When disabled, continually holding down a key on your keyboard will generate only one instance. When enabled, you can set the two typematic controls listed next. By default, this field is set to **Disabled**.

Typematic Rate (Chars/Sec)

When the typematic rate is enabled, the system registers repeated keystrokes speeds. You can select speed range from 6 to 30 characters per second. By default, this item is set to **6**.

Typematic Delay (Msec)

When the typematic rate is enabled, this item allows you to set the time interval for displaying the first and second characters. By default, this item is set to **250msec**.

Security Option

This field allows you to limit access to the System and Setup. The default value is **Setup**. When you select *System*, the system prompts for the User Password every time you boot up. When you select *Setup*, the system always boots up and prompts for the Supervisor Password only when the Setup utility is called up.

PCI/VGA Palette Snoop

Some non-standard VGA display cards may not show colors properly. This field allows you to set whether MPEG ISA/VESA VGA Cards can work with PCI/VGA or not. When this field is enabled, a PCI/VGA can work with a MPEG ISA/VESA VGA card. When this field is disabled, a PCI/VGA cannot work with a MPEG ISA/VESA Card.

OS Select for DRAM > 64MB

This option allows the system to access greater than 64MB of DRAM memory when used with OS/2 that depends on certain BIOS calls to access memory. The default setting is **Non-OS/2**.

Report No FDD for WIN 95

This option allows Windows 95 to share with other peripherals IRQ6 that is assigned to a floppy disk drive if the drive is not existing. The default setting is **No**.

Video BIOS Shadow

This item allows you to change the Video BIOS location from ROM to RAM. Video Shadow will increase the video speed.

C8000 - CBFFF Shadow/DC000 - DFFFF Shadow

Shadowing a ROM reduces the memory available between 640KB to 1024KB. These fields determine whether optional ROM will be copied to RAM or not.

3.4 Chipset Features Setup

This Setup menu controls the configuration of the chipset.

ROM PCI/ISA BIOS
CHIPSET FEATURES SETUP
AWARD SOFTWARE INC.

SDRAM RAS-to-CAS Delay	:3	CPU Warning Temperature	: 66°C/151°F
SDRAM RAS Precharge Time	:3	Current System Temp.	:
SDRAM CAS Latency Timer	:3	Current CPU Temperature	:
SDRAM Precharge Control	:Disabled	CPU Fan Speed	:
DRAM Data Integrity Mode	:Non-ECC	Chassis Fan Speed	:
System BIOS Cacheable	:Disabled	VCCP (V)	:1.98 V VTT (V) :1.50 V
Video BIOS Cacheable	:Enabled	VCC3 (V)	:3.45 V + 5 V :4.99 V
Video RAM Cacheable	:Disabled	+12 V	:12.46 V -12 V :-12.54V
8 Bit I/O Recovery Time	:3	-5V	:- 5.21 V
16 Bit I/O Recovery Time	:2	Shutdown Temperature	: 75°C/167°F
Memory Hole At 15MB-16MB	:Disabled		
Passive Release	:Enabled		
Delayed Transaction	:Disabled		
		ESC : Quit	↑ ↓ → ← : Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values	(Shift) F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

SDRAM RAS-to-CAS Delay

When DRAM is refreshed, both rows and columns are addressed separately. This field allows you to determine the timing of transition from Row Address Strobe (RAS) to Column Address Strobe (CAS).

SDRAM RAS Precharge Time

The precharge time is the number of cycles it takes for the RAS to accumulate its charge before DRAM refresh. If insufficient time is allowed, refresh may be incomplete and the DRAM may fail to retain data.

SDRAM CAS Latency Time

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Do not reset this field from the default value specified by the system designer.

Bank DRAM Timing

These fields define the speed of the DRAM memory onboard. The options are *Normal*, *Medium*, *Fast*, *Turbo*, *SDRAM 8ns* and *SDRAM10ns*. By default, these fields are set to ***SDRAM 10ns***.

DRAM Clock

The DRAM Clock can be set to Host CLK or the CPU clock itself and to *66MHz*. By default, this field is set to ***Host CLK***.

SDRAM Precharge Control

This field enables or enables the SDRAM Precharge Control.

SDRAM Cycle Length

This field sets the SDRAM cycle length to either 2 or 3. The default setting is **3**.

Memory Hole

In order to improve performance, certain space in memory can be reserved for ISA cards. This field allows you to reserve 15MB to 16MB memory address space to ISA expansion cards. This makes memory from 15MB and up unavailable to the system. Expansion cards can only access memory up to 16MB. By default, this field is set to ***Disabled***.

Read Around Write

DRAM optimization feature: If a memory read is addressed to a location whose latest write is being held in a buffer before being written to memory, the read is satisfied through the buffer contents, and the read is not sent to the DRAM. The default setting is ***Enabled***.

Concurrent PCI/Host

This field enables or disables the concurrent PCI/Host. The default setting is ***Disabled***.

Video RAM Cacheable

Selecting ***Enabled*** allows caching of the video BIOS ROM at C0000h to C7FFFh, resulting in better video performance. However, if any program writes to this memory area, a memory access error may result.

DRAM Data Integrity Mode

Set this field to *ECC* if the DRAM installed in the system supports it. Otherwise, do not reset the default of ***Non-ECC***.

System BIOS Cacheable

When enabled, access to the system BIOS ROM addressed at F0000H-FFFFFH is cached, provided that the cache controller is disabled.

Video BIOS Cacheable

When enabled, access to video BIOS addressed at C0000H to C7FFFH is cached, provided that the cache controller is disabled.

Video RAM Cacheable

Selecting *Enabled* allows caching of the video BIOS ROM at C0000h to C7FFFh, resulting in better video performance. However, if any program writes to this memory area, a memory access error may result.

8 Bit I/O Recovery Time

This option specifies the length of the delay (in sysclks) inserted between consecutive 8-bit I/O operations. The settings are 1, 2, 3, 4, 5, 6, 7, or 8. The default setting is **3**.

16 Bit I/O Recovery Time

This option specifies the length of the delay (in sysclks) inserted between consecutive 16-bit I/O operations. The settings are 1, 2, 3, 4, 5, 6, 7, or 8. The default setting is **2**.

Memory Hole at 15MB - 16MB

In order to improve performance, certain space in memory can be reserved for ISA cards. This field allows you to reserve 15MB to 16MB memory address space to ISA expansion cards. This makes memory from 15MB and up unavailable to the system. Expansion cards can only access memory up to 16MB. By default, this field is set to *Disabled*.

Passive Release

When enabled, CPU to PCI bus accesses are allowed during passive release. Otherwise, the arbiter only accepts another PCI master access to local DRAM.

Delayed Transaction

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select *Enabled* to support compliance with PCI specification version 2.1. The default setting is *Enabled*.

AGP Aperture Size (MB)

The field sets aperture size of the graphics. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation. The options available are 4M, 8M, 16M, 32M, 64M, 128M and 256M. The default setting is **64M**.

Auto Detect DIMM/PCI Clk

When enabled, the system automatically shuts off clocks of unused DIMM/PCI slots. The default setting is **Disabled**. This field is for CE testing use only.

Spread Spectrum

This field sets the value of the spread spectrum. Options are Disabled, 1.8% (CNTR), 0.6% (CNTR), 1.8% (DOWN), and 0.6% (DOWN). The default setting is **Disabled**. This field is for CE testing use only.

CPU Warning Temperature

This field sets the threshold temperature at which an alert is sounded through the system's speaker. The CPU temperature is monitored by the onboard thermal sensor to prevent the CPU from overheating.

Current System/CPU Temperature

These read-only fields reflect the functions of the hardware thermal sensor that monitors the CPU and system temperatures to ensure the system is stable.

Current CPU Fan Speed/Chassis Fan Speed

These read-only fields show the current speeds in RPM (revolution per minute) for the CPU fan and chassis fan as monitored by the hardware monitoring IC.

VCCP / VTT / VCC3

These read-only fields show the current voltages in the voltage regulators and power supply as monitored by the hardware monitoring IC.

Shutdown Temperature

This field allows you to set the temperature at which the system automatically shuts down once it is reached, in order to avoid damage to system components.

3.5 Power Management Setup

The Power Management Setup allows you to save energy of your system effectively. It will shut down the hard disk and turn off video display after a period of inactivity.

ROM PCI/ISA BIOS
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

ACPI Function	: Enabled	** Reload Global Timer Events **	
Power Management	: User Define	IRQ3 (3-7, 9-15), NMI	: Disabled
PM Control by APM	: Yes	Primary IDE 0	: Enabled
Video Off Method	: V/H SYNC	Primary IDE 1	: Enabled
	+Blank		
Video Off After	: Standby	Secondary IDE 0	: Disabled
Modem Use IRQ	: 3	Secondary IDE 1	: Disabled
Doze Mode	: Disabled	Floppy Disk	: Disabled
Standby Mode	: Disabled	Serial Port	: Enabled
Suspend Mode	: Disabled	Parallel Port	: Disabled
HDD Power Down	: Disabled		
Throttle Duty Cycle	: 62.5%		
PCI/VGA Active Monitor	: Disabled		
Soft-Off by PWR-BTTN	: Instant-Off		
PowerOn by Ring	: Disabled		
Resume by Alarm	: Disabled		
IRQ 8 Break Suspend	: Disabled	ESC : Quit	↑ ↓ → ← : Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values	(Shift) F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

ACPI function

ACPI stands for Advanced Configuration Power Interface. The default setting of this field **Enabled**.

Power Management

This field allows you to select the type of power saving management modes. There are four selections for Power Management.

Min. Power Saving	Minimum power management
Min. Power Saving	Minimum power management
Max. Power Saving	Maximum power management.
User Define	Each of the ranges is from 1 min. to 1hr. Except for HDD Power Down which ranges from 1 min. to 15 min. (Default)

NOTE In order to enable the CPU overheat protection feature, the Power Management : field should not be set to Disabled.

PM Control by APM

This field allows you to use the Advanced Power Management device to enhance the Max. Power Saving mode and stop the CPU's internal clock. If the Max. Power Saving is not enabled, this will be preset to NO.

Video Off Method

This field defines the Video Off features. There are three options.

V/H SYNC + Blank Default setting, blank the screen and turn off vertical and horizontal scanning.

DPMS Allows the BIOS to control the video display card if it supports the DPMS feature.

Blank Screen This option only writes blanks to the video buffer.

Video Off After

As the system moves from lesser to greater power-saving modes, select the mode in which you want the monitor to blank.

Video Off Option

This field determines the state at which video enters into when turned off. By default, this field is set to **Suspend -> Off**.

Modem Use IRQ

This field names the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system. By default, the IRQ is set to **3**.

Doze Mode

When enabled, and after the set time of system inactivity, the CPU clock will run at a slower speed while all other devices still operate at full speed.

Standby Mode

After the selected period of system inactivity, the fixed disk drive and the video shut off while all other devices still operate at full speed.

Suspend Mode

When enabled, and after the set time of system inactivity, all devices except the CPU will be shut off.

HDD Power Down

When enabled, and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

Throttle Duty Cycle

When the system enters Doze mode, the CPU clock runs only part of the time. You may select the percent of time that the clock runs.

PCI/VGA Act-Monitor

When enabled, any video activity restarts the global timer for Standby mode. The default setting is **Disabled**.

Soft-Off by PWR-BTTN

This field defines the power-off mode when using an ATX power supply. The Instant-Off mode allows powering off immediately upon pressing the power button. In the *Delay 4 Sec* mode, the system powers off when the power button is pressed for more than four seconds or places the system in a very low-power-usage state, with only enough circuitry receiving power to detect power button activity. The default value is **Instant-Off**.

Resume by Alarm

This allows a computer to be turned on automatically through the timer set in the BIOS to make the system more scheduleable. By default, this field is set to **Disabled**.

IRQ 8 Break Suspend

You can enable or disable the monitoring of IRQ 8 (Real Time Clock) so it does not awaken the system from Suspend mode.

Reload Global Timer Events

This section determines the reloading of the 'timers' after entering the Full On You can enable or disable the monitoring of IRQ 8 (Real Time Clock) so it does not awaken the system from Suspend mode.

PM Events

The VGA, LPT & COM, HDD & FDD, DMA /master, PWR-On by Modem/LAN, RTC Alarm Resume and Primary INTR section are I/O events which can prevent the system from entering a power saving mode or can awaken the system from such a mode. When an I/O device wants to gain the attention of the operating system, it signals this by causing an IRQ to occur. When the operating system is ready to respond to the request, it interrupts itself and performs the service. The default value is **Off**. When set On, activity will neither prevent the system from going into a power management mode nor awaken it. The IRQ section sets the wake-up call of the system. If activity is detected from any enabled IRQ channels in the left-hand group, the system wakes up from suspended mode.

3.6 PNP/PCI Configuration

This option configures the PCI bus system. All PCI bus systems on the system use INT#, thus all installed PCI cards must be set to this value.

ROM PCI/ISA BIOS
PNP/PCI CONFIGURATION
AWARD SOFTWARE INC.

PNP OS Installed	: No	Used MEM base addr	: N/A
Resources Controlled by	: Manual		
Reset Configuration Data	: Disabled		
IRQ-3 assigned to	: Legacy ISA		
IRQ-4 assigned to	: Legacy ISA		
IRQ-5 assigned to	: PCI/ISA PnP		
IRQ-7 assigned to	: Legacy ISA		
IRQ-9 assigned to	: PCI/ISA PnP		
IRQ-10 assigned to	: PCI/ISA PnP		
IRQ-11 assigned to	: PCI/ISA PnP		
IRQ-12 assigned to	: PCI/ISA PnP		
IRQ-14 assigned to	: PCI/ISA PnP		
IRQ-15 assigned to	: PCI/ISA PnP		
DMA-0 assigned to	: PCI/ISA PnP		
DMA-1 assigned to	: PCI/ISA PnP	ESC : Quit	↑ ↓ → ← : Select Item
DMA-3 assigned to	: PCI/ISA PnP	F1 : Help	PU/PD/+/- : Modify
DMA-5 assigned to	: PCI/ISA PnP	F5 : Old Values	(Shift) F2 : Color
DMA-6 assigned to	: PCI/ISA PnP	F6 : Load BIOS Defaults	
DMA-7 assigned to	: PCI/ISA PnP	F7 : Load Setup Defaults	

PNP OS Installed

This field allows you to specify if the operating system installed in your system is plug and play aware.

NOTE: Operating systems such as DOS, OS/2, and Windows 3.x do not use PnP

Resources Controlled by

This PnP BIOS can configure all of the boot and compatible devices automatically. However, this capability needs you to use a PnP operating system such as Windows 95. The default value is **Manual**.

Reset Configuration Data

This field allows you to determine whether to reset the configuration data or not. The default value is **Disabled**.

IRQ3/4/5/7/9/10/11/12/14/15, DMA0/1/3/5/6/7 assigned to

These fields allow you to determine the IRQ/DMA assigned to the ISA bus and is not available to any PCI slot.

Used MEM base addr

Select a base address for the memory area used by any peripheral that requires high memory. The default setting is **N/A**.

3.7 Load BIOS Defaults

This option allows you to load the troubleshooting default values permanently stored in the BIOS ROM. These default settings are non-optimal and disable all high-performance features.

ROM PCI/ISA BIOS
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	CPU SPEED SETTING
BIOS FEATURES SETUP	INTEGRATED PERIPHERALS
CHIPSET FEATURES SETUP	SUPERVISOR PASSWORD
POWER MANAGEMENT SETUP	USER PASSWORD
PNP/PCI CONFIGURATION	HDD AUTO DETECTION
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
ESC : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color
Load BIOS Defaults except Standard CMOS Setup	

To load BIOS defaults value to CMOS SRAM, enter "Y". If not, enter "N".

3.8 Load Setup Defaults

This option allows you to load the default values to your system configuration. These default settings are optimal and enable all high performance features.

ROM PCI/ISA BIOS
 CMOS SETUP UTILITY
 AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	CPU SPEED SETTING
BIOS FEATURES SETUP	INTEGRATED PERIPHERALS
CHIPSET FEATURES SETUP	SUPERVISOR PASSWORD
POWER MANAGEMENT SETUP	USER PASSWORD
PNP/PCI CONFIGURATION	HDD AUTO DETECTION
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
ESC : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color
Load BIOS Defaults except Standard CMOS Setup	

Load Setup Defaults (Y/N)? N

To load SETUP defaults value to CMOS SRAM, enter “Y”. If not, enter “N”.

3.9 Integrated Peripherals

This option sets your hard disk configuration, mode and port.

ROM PCI/ISA BIOS
INTEGRATED PERIPHERALS
AWARD SOFTWARE INC.

IDE HDD Block Mode	: Enabled	Onboard Parallel Port	: 378/IRQ7
IDE Primary Master PIO	: Auto	Parallel Port Mode	: SPP
IDE Primary Slave PIO	: Auto		
IDE Secondary Master PIO	: Auto		
IDE Secondary Slave PIO	: Auto		
IDE Primary Master UDMA	: Auto		
IDE Primary Slave UDMA	: Auto		
IDE Secondary Master UDMA	: Auto		
IDE Secondary Slave UDMA	: Auto		
On-Chip Primary PCI IDE	: Enabled		
On-Chip Secondary PCI IDE	: Enabled		
Onboard PCI SCSI Chip	: Enabled		
USB Keyboard Support	: Disabled		
Init AGP Display First	: AGP		
Onboard FDC Controller	: Enabled	ESC : Quit	↑ ↓ → ← : Select Item
Onboard Serial Port 1	: 3F8/IRQ4	F1 : Help	PU/PD/+/- : Modify
Onboard Serial Port 2	: 2F8/IRQ3	F5 : Old Values	(Shift) F2 : Color
UART Mode Select	: Normal	F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

IDE HDD Block Mode

This field allows your hard disk controller to use the fast block mode to transfer data to and from your hard disk drive.

IDE Primary/Secondary Master/Slave PIO

These fields allow your system hard disk controller to work faster. Rather than have the BIOS issue a series of commands that transfer to or from the disk drive, PIO (Programmed Input/Output) allows the BIOS to communicate with the controller and CPU directly.

The system supports five modes, numbered from 0 (default) to 4, which primarily differ in timing. When Auto is selected, the BIOS will select the best available mode.

IDE Primary/Secondary Master/Slave UDMA

These fields allow your system to improve disk I/O throughput to 33Mb/sec with the Ultra DMA/33 feature. The options are *Auto* and *Disabled*.

On-Chip Primary/Secondary PCI IDE

The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select *Enabled* to activate each channel separately.

USB Keyboard Support

Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard.

Init AGP Display First

This field allows the system to initialize first the VGA card in the AGP slot when system is turned on.

Onboard FDC Controller

Select *Enabled* if your system has a floppy disk controller (FDC) installed on the system and you wish to use it. If you install an add-in FDC or the system has no floppy drive, select *Disabled* in this field. This option allows you to select the onboard FDD port.

Onboard Serial/Parallel Port

These fields allow you to select the onboard serial and parallel ports and their addresses. The default values for these ports are:

Serial Port 1	3F8/IRQ4
Serial Port 2	2F8/IRQ3
Parallel Port	378H/IRQ7

UART Mode Select

This field determines the UART mode in your computer. The settings are *Normal*, *IrDA* and *ASKIR*. The default value is ***Normal***.

Parallel Port Mode

This field allows you to determine parallel port mode function.

SPP	Normal Printer Port
EPP	Enhanced Parallel Port
ECP	Extended Capabilities Port

3.10 Supervisor / User Password

These two options set the system password. Supervisor Password sets a password that will be used to protect the system and Setup utility. User Password sets a password that will be used exclusively on the system. To specify a password, highlight the type you want and press <Enter>. The Enter Password: message prompts on the screen. Type the password, up to eight characters in length, and press <Enter>. The system confirms your password by asking you to type it again. After setting a password, the screen automatically returns to the main screen.

To disable a password, just press the <Enter> key when you are prompted to enter the password. A message will confirm the password to be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

ROM PCI/ISA BIOS
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	CPU SPEED SETTING
BIOS FEATURES SETUP	INTEGRATED PERIPHERALS
CHIPSET FEATURES SETUP	SUPERVISOR PASSWORD
POWER MANAGEMENT S	USER PASSWORD
PNP/PCI CONFIGURAT	HDD AUTO DETECTION
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
ESC : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color
Change / Set / Disable Password	

3.11 IDE HDD Auto Detection

This option detects the parameters of an IDE hard disk drive, and automatically enters them into the Standard CMOS Setup screen.

ROM PCI/ISA BIOS
 STANDARD CMOS SETUP
 AWARD SOFTWARE, INC.

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOM	LANDZ	SECTOR	MODE
P								
Primary Master:								
Select Primary Master Option (N=SKIP) : N								
OPTIONS	TYPE	SIZE	CYLS	HEAD	PCOMP	LANDZ	SECTOR	MODE
1 (Y)	0	0	0	0	0	0	0	NORMAL
NOTE: Some OSes (like SCO-UNIX) must use "NORMAL" for installation								
ESC: SKIP								

Up to four IDE drives can be detected, with parameters for each appearing in sequence inside a box. To accept the displayed entries, press the "Y" key to skip to the next drive, press the "N" key. If you accept the values, the parameters will appear listed beside the drive letter on the screen.

3.12 Save & Exit Setup

This option allows you to determine whether to accept the modifications or not. If you type "Y", you will quit the setup utility and save all changes into the CMOS memory. If you type "N", you will return to Setup utility.

ROM PCI/ISA BIOS
 CMOS SETUP UTILITY
 AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	CPU SPEED SETTING
BIOS FEATURES SETUP	INTEGRATED PERIPHERALS
CHIPSET FEATURES SETUP	SUPERVISOR PASSWORD
POWER MANAGEMENT SETUP	USER PASSWORD
PNP/PCI CONFIGURATION	HDD AUTO DETECTION
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
ESC : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color
Save Data to CMOS & Exit Setup	

Save to CMOS and Exit (Y/N)? N

3.13 Exit Without Saving

Select this option to exit the Setup utility without saving the changes you have made in this session. Typing “Y” will quit the Setup utility without saving the modifications. Typing “N” will return you to Setup utility.

ROM PCI/ISA BIOS
 CMOS SETUP UTILITY
 AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	CPU SPEED SETTING
BIOS FEATURES SETUP	INTEGRATED PERIPHERALS
CHIPSET FEATURES SETUP	SUPERVISOR PASSWORD
POWER MANAGEMENT SETUP	USER PASSWORD
PNP/PCI CONFIGURATION	HDD AUTO DETECTION
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
ESC : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color
Abandon all Data & Exit Setup	

Quit Without Saving (Y/N)? N

3.14 System Requirements

This section describes system requirements for the PIIX Bus Master IDE Device Driver for Windows 95*. This driver has been designed for and tested with Windows 95 only. This driver will only install on systems with Windows 95.

1. The system must contain a supported Intel processor and chipset configuration.
2. Ensure that a mouse is connected to the system.
3. One of the following versions of Windows 95* must be installed on the system prior to running utility program.
 - Windows 95* 4.00.950 (Retail)
 - Windows 95* 4.00.950a (OSR1)
 - Windows 95* 4.00.950b (OSR2 without USB Supplement)
 - Windows 95* 4.00.950b (OSR2.1 with USB Supplement)
4. This utility should only be used on desktop systems. The utility must not be executed
 - on notebook or portable systems with or without dock.
5. It is assumed that the BIOS properly initialized the 82371xB IDE interface for Bus Master IDE operation.
6. There is no other non-82371xB IDE controllers (add-in IDE controller or sound card with IDE) enabled on the system.

3.15 Installing the Software

This subsection describes how to install the software on a system where Windows 95 is installed.

NOTE: Record the location of the Windows 95* directory before installing the driver.

1. Check the System Requirements. Windows 95* must be fully installed and running on the system prior to running this software.

2. Close any running applications.

3. Remove references to installed real-mode IDE device drivers in the

AUTOEXEC.BAT

and CONFIG.SYS files (especially any drivers that control ATAPI CD-ROM and special IDE features). Use the Notepad utility to do this.

The driver files are stored in an integrated application setup program. This program is a Windows 95* program that allows the driver files to be INSTALLED or DE-INSTALLED.

Execute the driver setup program.

Run **SETUP.EXE**.

4. Click 'Next' on Welcome Screen to read and agree to the license agreement. View the text file and choose File\Exit to close Notepad and continue. **NOTE:** If you click **No**, program will terminate.
5. Click **Yes** if you agree to continue. **NOTE:** If you click 'No', the program will terminate.
6. Select **INSTALL**, to install the PIIX Bus Master IDE Device Driver when prompted to do so.

NOTE: If the driver is currently installed on the system, SETUP will ask you whether or not you want to continue. Follow the prompts on the screen to install the driver if desired.

7. Click 'OK' to restart the system when prompted to do so.
8. Follow the screen instructions and use default settings to complete the setup when Windows 95* is re-started. Upon re-start, Windows 95* will display that it has found an Intel PCI Bus Master IDE controller hardware and is installing hardware for it.

If a **New Hardware Found** dialog box is displayed requesting the location of the drivers, use the mouse to click on the scrollbar and click on the <Windows 95* directory>\System\IOSubSys path:

For example:

Click on **C:\WINDOWS\SYSTEMIOSUBSYS**

Click **OK**.

9. Select **Yes**, when prompted to re-start Windows 95.

NOTE: After installation, the following driver and related files are stored as listed.

<Windows 95* directory>\System\IOSubSys\IDEATAPI.MPD

<Windows 95* directory>\System\IOSubSys\PIIXVSD.VXD

<Windows 95* directory>\INF\IDEATAPI.INF

4.1 VGA Driver Installation

This chapter provides information on how to install the C&T 69000 VGA drivers that come in the two floppy diskettes with the package. Please follow the instructions set forth in this chapter carefully. Please note that there must be relevant software installed in your system before you could proceed to install the VGA drivers. It is recommended that you make a copy of the VGA driver diskette and put the backup copy in a safe place.

- **Installing the Drivers for Windows 95**

The following section describes the normal display driver installation procedures for Windows 95. Use the following procedures when installing the display drivers for Windows 95.

1. Click **Start**. Select **Settings**, then click the **Control Panel** icon.
2. Double click **Display**.
3. Click **Settings**.
4. Click **Advanced Properties**.
5. Click **Change**.
6. Click **Have Disk**
7. Insert the diskette/CD containing the **69000 VGA driver for Windows 95** to the floppy disk drive/CD-ROM drive, then type in **A:\WIN95** (assuming drive A is your floppy disk drive) or type in **D:\VGA\C&TWIN95** (assuming drive D is your CD-ROM drive), and press **Enter**.
8. Select **Chips and Tech. 69000 PCI/AGP**, and then click **OK**. After the files are copied, click **Close**.
9. Click **Yes** to restart your computer and for the new settings to take effect.

● Installing the Drivers for Windows 98

The following section describes the normal display driver installation procedures for Windows 98. Use the following procedures when installing the display drivers for Windows 98.

1. Click **Start**. Select **Settings**, and then click the **Control Panel** icon.
2. Double click **Display**.
3. Click **Settings**.
4. Click **Advanced....**
5. Click **Adapter**.
6. Click **Change....**
7. Click **Next**.
8. Select **Display a list of all the drivers in a specific location, so you can select the driver you want.**
9. Click "**Have Disk ...**".
10. Insert the diskette/CD containing the **C&T 69000 VGA driver for Windows 98** to the floppy disk drive/CD-ROM drive, then type in **A:\WIN98** (assuming drive A is your floppy disk drive) or type in **D:\VGA\C&T\WIN98** (assuming drive D is your CD-ROM drive), and press **Enter**.
11. Select **Chips and Tech. 69000 PCI/AGP**", and click **OK**.
12. Click **Next**. After the files are copied, and click **Finish**.
13. Click **Close**.
14. Click **Close**.
15. Click **Yes** to restart your computer and for the new settings to take effect.

- **Installing the Drivers for Windows NT 4.0**

IMPORTANT: You should install the Windows NT 4.0 Service Pack 3 first before installing the C&T 69000 VGA drivers. If you don't have the Windows NT 4.0 Service Pack 3, please contact your software vendor or download it from Microsoft's web site.

The procedures below show you how to install the C&T 69000 VGA drivers for Windows NT 4.0.

1. Boot Windows NT 4.0.
2. Double click the **My Computer** icon.
3. Double click the **Control Panel** icon.
4. Double click the **Display" icon.**
5. Click **Change Display Type.**
6. Click **Change.**
7. Click **Have Disk**, then insert the diskette/CD containing the **C&T 69000 VGA driver for Windows NT 4.0** to the floppy disk drive/CD-ROM drive, then type in **A:\WINNT40** (assuming drive A is your floppy disk drive) or type in **D:\VGA\C&T\WINNT40** (assuming drive D is your CD-ROM drive), and press **Enter.**
8. Select **Chips Video Accelerator (65545/48/50/54/55 68554 69000)**, and then click **OK.**
9. Click **Yes** to copy the drivers from the floppy disk/CD to the hard disk.
10. When copying is done, click **OK.**
11. Click **Close.**
12. Click **OK.**
13. Windows NT 4.0 will prompt you to restart computer. Click **OK** to change the Windows NT configuration.

4.2 LAN Driver Installation

● Introduction

Intel 82558B is a 32-bit 10/100Mbps Ethernet controller for PCI local bus-compliant PCs. It supports the bus mastering architecture, and Auto-negotiation feature which make it possible to combine one common type of Ethernet cabling – an RJ-45 connector for twisted-pair cabling that can be used for both 10Mbps and 100Mbps connection. Extensive driver support for commonly used network operating systems is also provided.

● Features

1. Conforms to the Ethernet IEEE 802.3u standard
2. Compatible with PCI Local Bus Revision 2.1 specification
3. IEEE 802.3u Auto-Negotiation for automatic speed selection
4. Supports Full-Duplex/Half-Duplex Operation
5. Provides 32-bit bus mastering data transfer
6. Supports 10Mbps and 100Mbps operation in a single port
7. Supports remote wake-up (Magic Packet*) in APM and ACPI mode

● Software Drivers Support

NetWare ODI Drivers

Novell NetWare 3.x, 4.x, NetWare LAN WorkPlace TCP/IP, Novell LAN Analyzer for NetWare

Packet Drivers

FTP PC/TCP, NCSA TCP/IP

NDIS Drivers

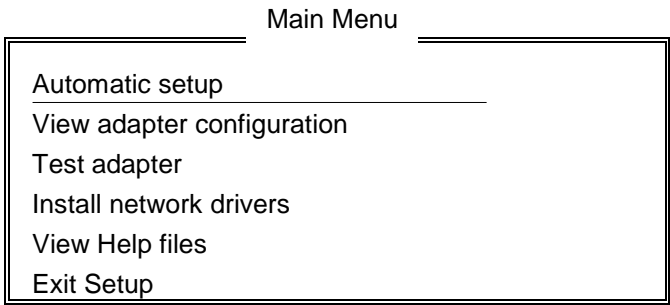
Microsoft LAN Manager V2.x, Windows 3.x, Windows NT 4.0, Windows NT 3.51, Windows 98, Windows 95, SCO3, SCO5; IBM LAN Server 4.0 for DOS and OS/2, and Linux.

● **Running Diagnostics**

The IND-CL370 comes with two diskettes containing drivers and diagnostic software supporting the Intel 82558B Ethernet controller. Follow the steps below to use the *Setup Utility*.

1. Run the file SETUP.EXE typing a:\setup in the DOS prompt, assuming your floppy disk drive is drive A. Upon doing so, the system starts the *Setup Utility* and shows the following screen.

8255x-based PCI EtherExpress™ adapter Setup V4.16



Choose AUTOMATIC SETUP to view the adapter’s configuration, make sure it works properly, and install the software needed to connect to your network.

Help = F1 Exit = Esc Select = ↑↓ Action = ↵

2. Selecting **View adapter configuration** will show the following.

8255x-based PCI EtherExpress™ adapter Setup V4.16

View adapter configuration

Adapter type:.....
Adapter part number:.....
Network address:.....
Interrupt:.....
Bus:.....
Slot:.....
Device:.....
Network speed:.....
Physical layer device:.....
Duplex:.....
Adapter capabilities:
 100BaseTX, full or half duplex.
 10BaseT, full or half duplex.

Press Enter to continue

Help = F1 Previous = Esc Continue = Enter PCI Advanced = F5

3. Selecting **Test adapter** will show the following screen.

8255x-based PCI EtherExpress™ adapter Setup V4.16

Test adapter

Bus=0 Dev=0Bh Slot=11 Addr=004063001000 IRQ=10

Diagnostic tests:

Adapter tests passed
Onboard loopback tests passed
Network test passed

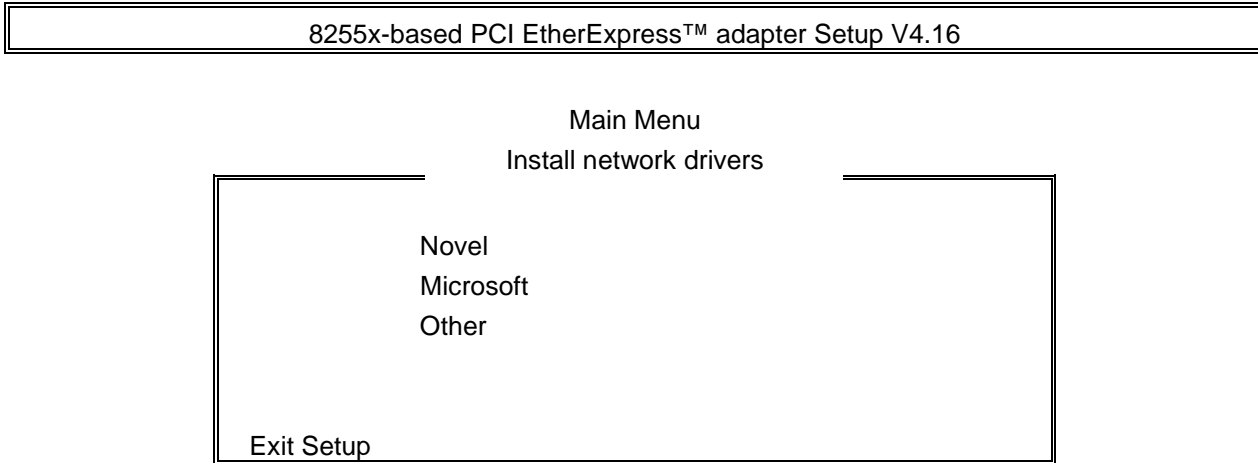
10Mbps

This adapter works properly

Press Enter to continue

Help = F1 Press Enter to continue

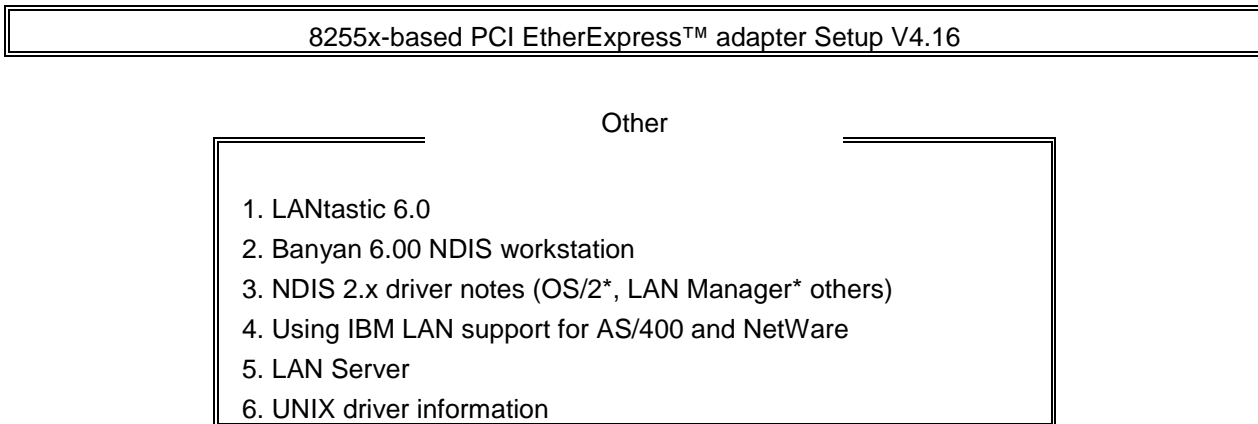
4. Selecting **Install network drivers** will show the following screen.



Choose OTHER if you use a network operating system from a manufacturer not on this list (such as Banyan or UNIX).

Help = F1 Press Enter to continue

5. Upon selecting **Others** under the **Install network drivers main menu** screen, the following screen will appear.



Choose OTHER if you use a network operating system from a manufacturer not on this list (such as Banyan or UNIX).

Help = F1 Previous = Esc Select = ↑↓ Accept = ↵

6. Selecting **View Help files** under the **Main menu** will show the following screen.

8255x-based PCI EtherExpress™ adapter Setup V4.16

Main Menu
View Help files

Installing EtherExpress™ PRO/100+ adapter drivers
Latest News and general adapter information
Hardware specifications and cabling information
Adapter installation and special configurations
Running diagnostics and error messages

Help = F1 Previous = Esc Select = ↑↓ Display Choices = ↵

4.3 System Monitor Utility

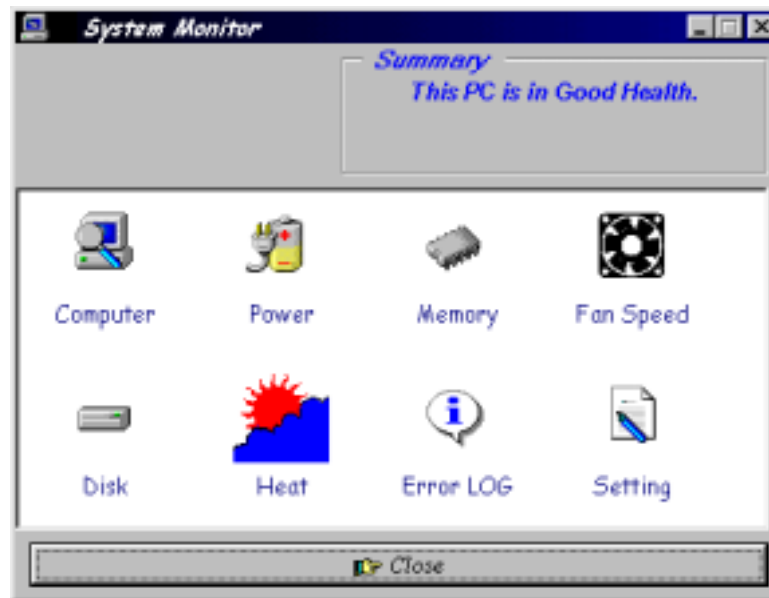
System Monitor is utility software that oversees the general performance of systems, covering areas like system temperature, system voltage, CPU and system fan rotational speeds. If conditions become adverse, that is, when voltages are erratic or CPU temperature exceeds the safe limits, an alarm will be sounded; thereby preventing system crashing and ensuring overall stability.

NOTE: System Monitor currently supports English and Chinese under Windows 95 and Windows NT. English will be used for other language environments.

When System Monitor is initiated, the icon below appears in the task bar in the Windows environment.



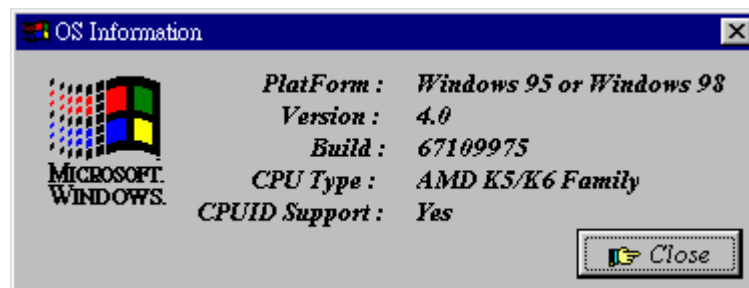
The following screen appears upon clicking on the System Monitor icon.



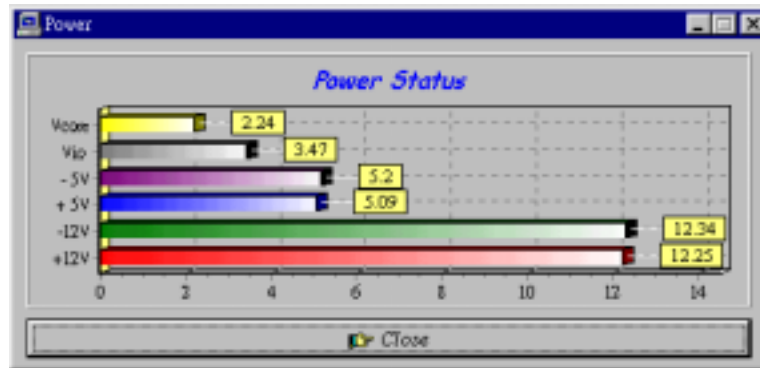
Clicking on the upper left corner button would show you the latest company information. "Summary" provides the current system status.

The section below describes the different functions of System Monitor.

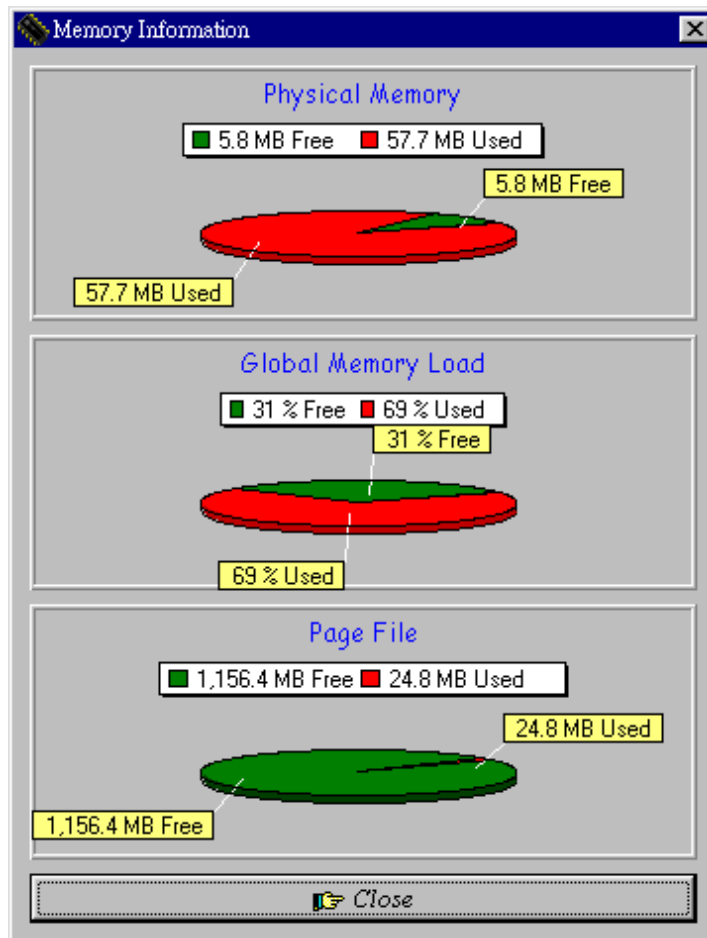
1. Computer - displays the current working system version and processor type.



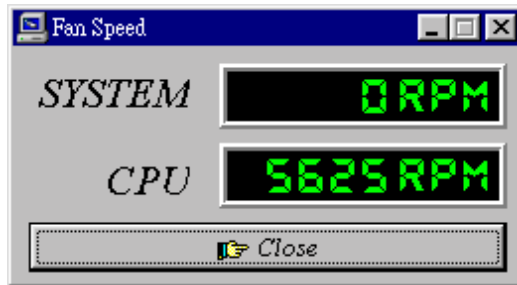
2. Power - displays the current voltage status.



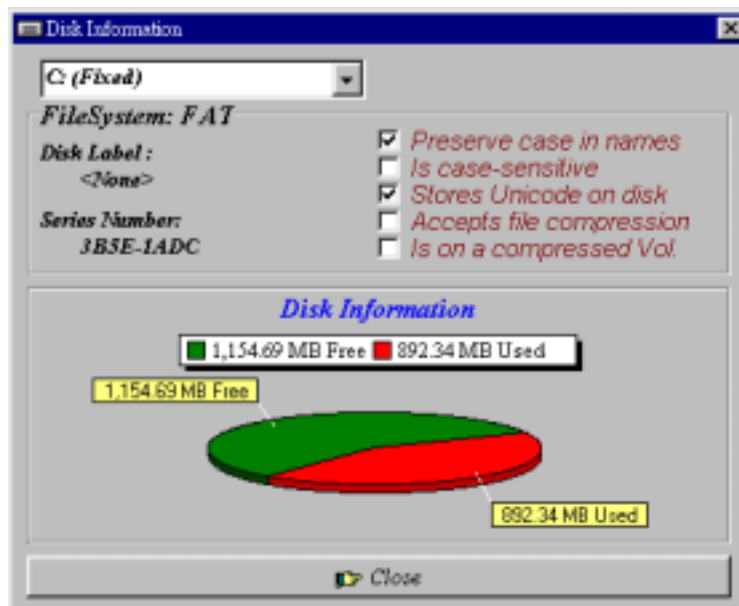
3. Memory - displays the current memory usage status.



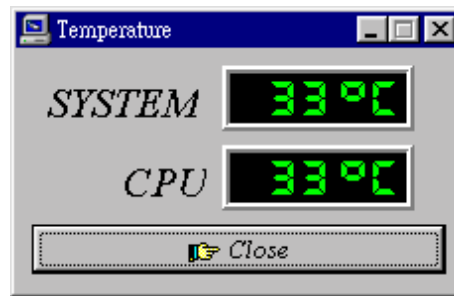
4. Fan Speed - displays the current rotational speeds of CPU and Chassis fans.



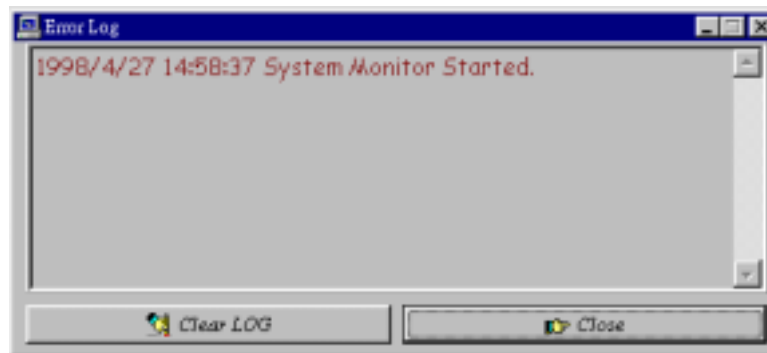
5. Disk - displays the supported disk formats and disk space.



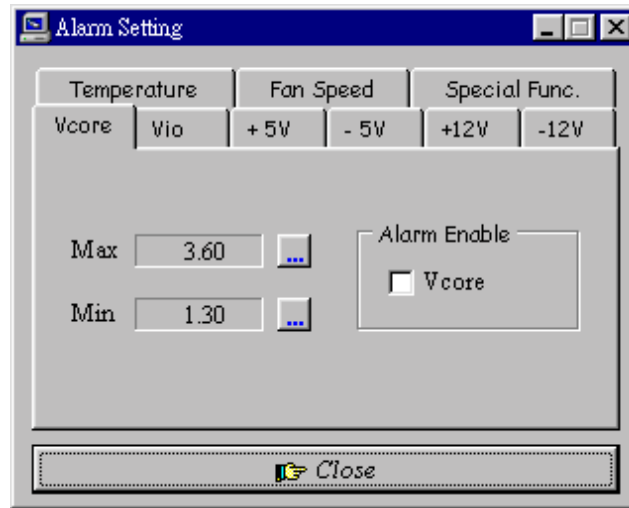
6. Heat - displays the CPU and system temperatures.



7. Error Log - displays errors occurring after System Monitor is started.



8. Setting - sets the values at which an alarm is sounded.



Voltage : the acceptable voltage range between the "MAX" and "MIN" value.

Temperature : temperature threshold.

Fan Rotation Speed : the minimum rotation speed.

NOTE: Intel has defined a margin of difference for the voltages as below:

12 Volts - 10% (10.8V ~ 13.2V)

5 Volts - 5% (4.75 ~ 5.25%)

Vio - 5% (Vio for P54C CPU is 3.5V. Vio for P55C is 3.3V.)

Vcore- 5%

4.4 LANDesk Client Manager

LANDesk Client Manager (LDCM 3.1) provides the capability for managing components (network interface cards, memory, printers, software applications, etc.) within a PC system. It uses the Desktop Management Interface (DMI) standard established by the Desktop Management Task Force (DMTF). Manageable components can be viewed, monitored, and administrated across multiple platforms, either locally or remotely on a network.

The LDCM package has been implemented in two different ways: a user (client/local) version and an administrative version (Remote Companion). The user version provides the ability to only manage the local PC. The administrative version allows a network administrator to manage the local PC and other PC nodes on the network. This means that the administrative version has the ability to gather information about remote PCs, as well as remotely controlling the PCs. The remote access is based upon granted rights by the managed client.

LDCM provides the user with self-help diagnostics, including a PC health meter, local alerting of potential problems, and hardware and software inventory. Automatic polling and alerting of memory and hardware conditions and predictive failure mechanisms minimize downtime and increase effective troubleshooting. LDCM can take periodic “snapshots” of critical configuration files for easy change management and restoration when needed.

To use LDCM, your computer must meet the following requirements:

- Operating System: Windows 95, Windows NT 3.51, or Windows NT4.0
- Memory: about 200KB
- Disk Storage Space: 3-5MB
- Hardware System: a DMI BIOS is required for full LDCM functionality

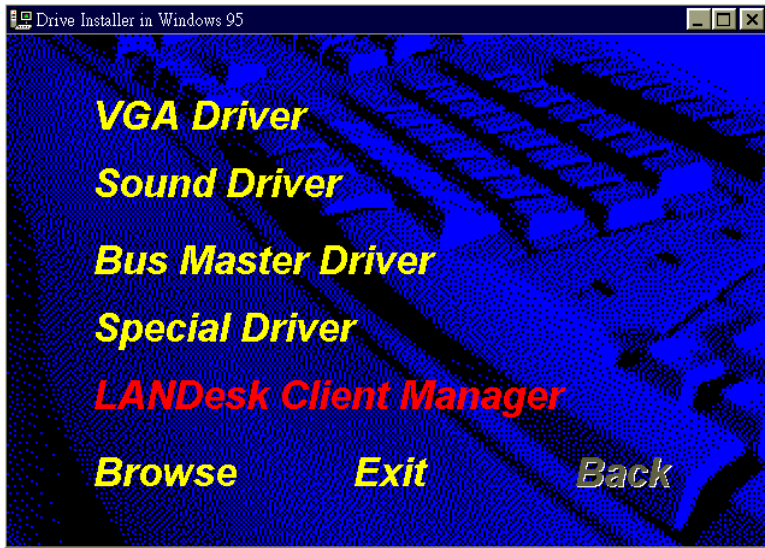
For network computers, the following requirements also apply:

- Protocols: IPX or IP (WinSock-enabled) communication protocol loaded on the client
- Hardware Interfaces: a network card for communication on the network

- **Installation**

The optional LANDesk utility that comes with the CPU card runs in Windows NT or Windows 95 operating system.

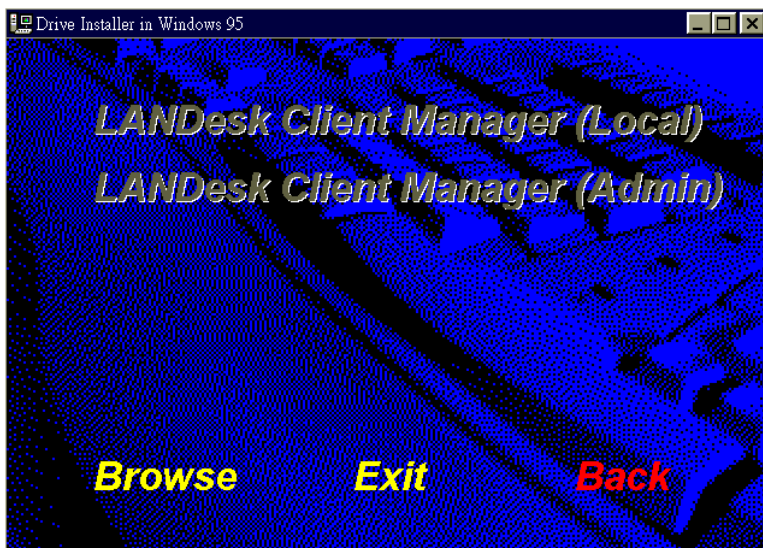
Upon entering the Windows NT 4.0 or Windows 95 environment, insert the CD. Windows will autorun the installation program and show the following screen.



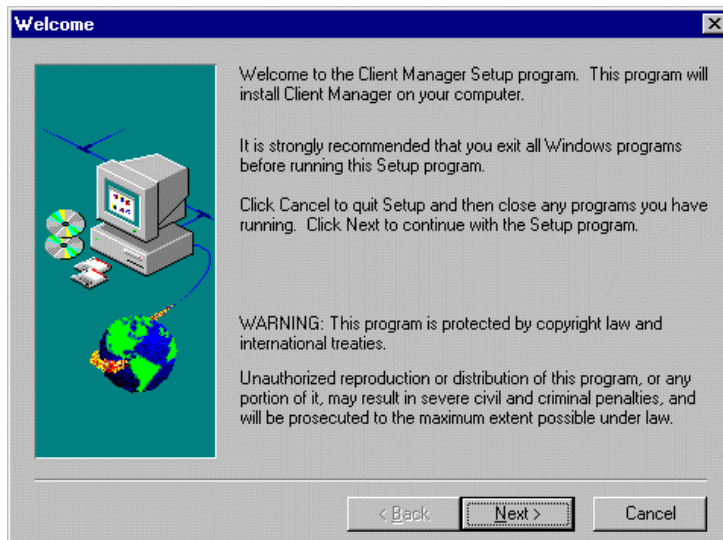
NOTE: During Setup, you will be asked to install Internet Explorer 3.02 in order to continue, or else Setup will be aborted.
LDCM supports various languages and will default to English if it is unable to load 'language.dl'..

● Installing the Local Version of LDCM

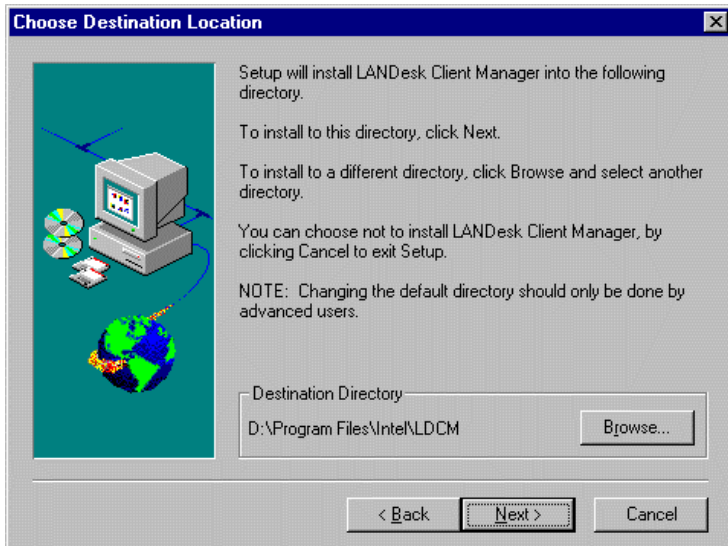
Double Click on 'LANDesk Client Manager' in the initial screen and the following screen will appear. Double click on the local version of LANDesk Client Manager.



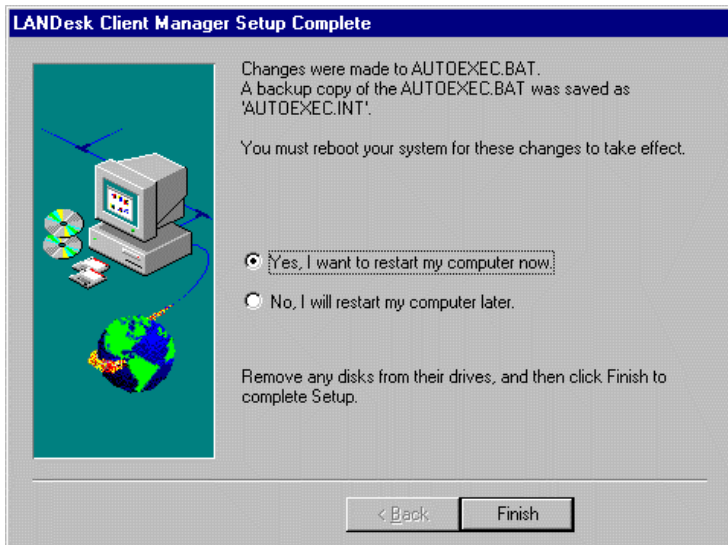
When the Welcome screen appears, click on "Next" to continue with Setup.



Choose the directory location where Setup will install LANDesk Client Manager. Click “Browse” if you want to change the directory suggested. Otherwise, click “Next” to start installing LDCM.

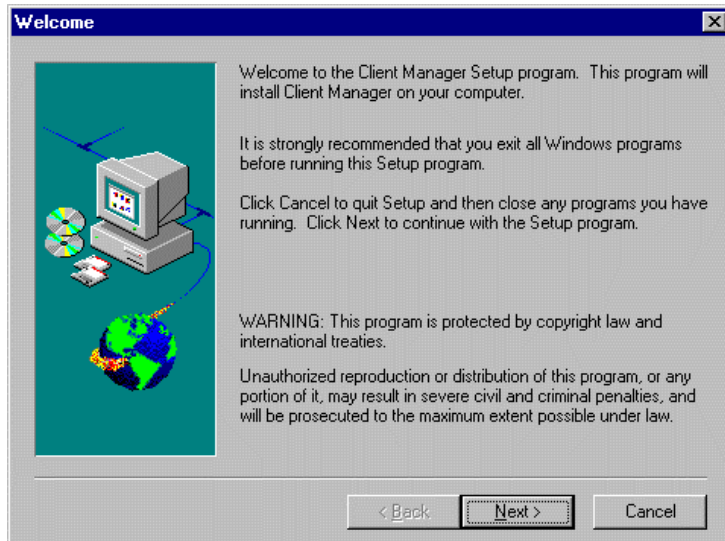


When Setup is finished, changes will have been made to the file AUTOEXEC.BAT. Restart your computer for the changes to take effect.

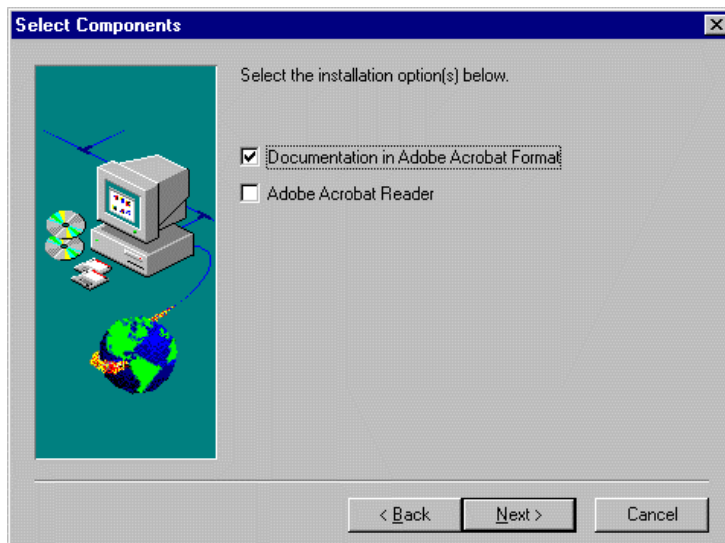


- **Installing the Administrative Version of LDCM**

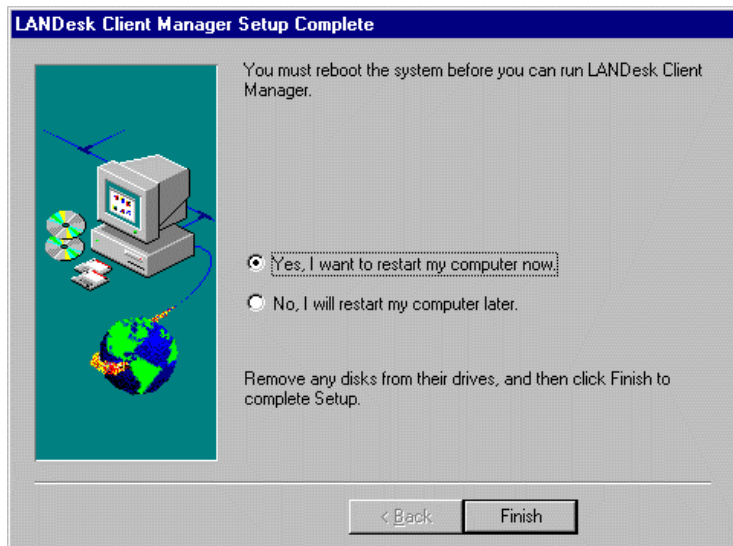
After double clicking on 'LANDesk Client Manager' in the initial screen, select the administrative version of the LDCM and the Welcome screen below will appear. Click on "Next" to continue.



The screen below allows you to install the documentation in Adobe Acrobat format and the Adobe Acrobat Reader software. Select the options you need and click on "Next" to start the installation.



After LANDesk Client Manager Setup is complete, restart your computer to be able to use the LANDesk Client Manager.



APPENDIX A

I/O Port Address Map

Each peripheral device in the system is assigned a set of I/O port addresses, which also becomes the identity of the device. There is a total of 1K port address space available. The following table lists the I/O port addresses used on the Industrial CPU Card.

Address	Device Description
000h - 01Fh	DMA Controller #1
020h - 03Fh	Interrupt Controller #1
040h - 05Fh	Timer
060h - 06Fh	Keyboard Controller
070h - 07Fh	Real Time Clock, NMI
080h - 09Fh	DMA Page Register
0A0h - 0BFh	Interrupt Controller #2
0C0h - 0DFh	DMA Controller #2
0F0h	Clear Math Coprocessor Busy Signal
0F1h	Reset Math Coprocessor
1F0h - 1F7h	IDE Interface
278 - 27F	Parallel Port #2(LPT2)
2F8h - 2FFh	Serial Port #2(COM2)
2B0 - 2DF	Graphics adapter Controller
378h - 3FFh	Parallel Port #1(LPT1)
360 - 36F	Network Ports
3B0 - 3BF	Monochrome & Printer adapter
3C0 - 3CF	EGA adapter
3D0 - 3DF	CGA adapter
3F0h - 3F7h	Floppy Disk Controller
3F8h - 3FFh	Serial Port #1(COM1)

APPENDIX B

Interrupt Request Lines (IRQ)

There are a total of 15 IRQ lines available on the Industrial CPU Card. Peripheral devices use interrupt request lines to notify CPU for the service required. The following table shows the IRQ used by the devices on the Industrial CPU Card.

Level	Function
IRQ0	System Timer Output
IRQ1	Keyboard
IRQ2	Interrupt Cascade
IRQ3	Serial Port #2
IRQ4	Serial Port #1
IRQ5	Parallel Port #2
IRQ6	Floppy Disk Controller
IRQ7	Parallel Port #1
IRQ8	Real Time Clock
IRQ9	Software Redirected to Int 0Ah
IRQ10	Reserved
IRQ11	Reserved
IRQ12	Reserved
IRQ13	80287
IRQ14	Primary IDE
IRQ15	Secondary IDE