

# HS-6039

## Socket 370 Celeron™/FC-PGA

- CRT/Panel • Dual Display • Dual LAN • 133MHz FSB • SCSI • PC/104 •
- WDT • DOC • USB • IrDA • Hardware Monitor •
- PICMG Industrial Single Board Computer •

# HS-6039LV

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# Chapter-1

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## General Information

The HS-6039 is a 100MHz system clock provides up to 133MHz PICMG Bus Socket 370 for Intel® Celeron™/Coppermine™ Industrial Single Board CPU Card with features combine together to make it an ideal all-in-one industrial single board computer, enhanced I/O effects with LAN and CRT/Panel interface and Ultra II SCSI interface.

With on board DMA33 of Mode 3/4 to IDE disk drive interface architecture, the HS-6039 supports with maximum 33MB/sec in data transfer rating to two IDE disk drive connections.

On board 4MB Intel® 69030 CRT/Panel display controller provides up to 1280 x 1024 64K colors resolution. And it also provides one internal 50pin connector for carious type of the Panel connection.

The advanced PICMG Bus add on connection of HS-6039 allows user could easily obtain both ISA's 16bit and PCI's 32bit full set signals from a full-size PICMG slot for suitable plug into a any size system with 8/16/32bit ISA and PCI slots operating. The HS-6039 provides with four DIMM sockets provides up to 1GB of main system memory.

A single Flash chip holds the system BIOS, and you can easy update the Flash BIOS by the Utility Update. Advanced USB and IR ports also provide for faster and easily in data transmission. You can also use the DOS version of the DiskOnChip™ socket by issuing commands from the DOS prompt without the necessity of other software supports up to 144MB.

The HS-6039 features include Dual Intel® 82559 100 Based LAN design on board. With two RJ-45 and two 10pin header connector provides an easily for user's LAN application.

If a non-expect program cause halts, the on board Watch-Dog Timer will automatically Reset the COU or generate an interrupt. The Watch-Dog is designed with hardware only and doesn't need any arithmetical functions of a real-time clock chip. This ensures the reliability in an unmanned or standalone system.

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## 1.1 Major Features

- ✓ Socket 370 for Intel® Celeron™/Coppermine™ 266~933MHz CPU
- ✓ Four DIMM sockets provides up to 1GB (Only for PCB v1.3)
- ✓ Fast PCI DMA33 controller supports four IDE disk drives
- ✓ 100MHz system clock provides up to 133MHz
- ✓ Two RS-232 serial ports include 16C550 UART with 16byte FIFO
- ✓ One enhanced bi-directional parallel port supports SPP/ECP/EPP
- ✓ On board PS/2 Keyboard and PS/2 Mouse connector
- ✓ On board Winbond W83977 super I/O chipset
- ✓ On board 69030 CRT/Panel Dual display controller
- ✓ On board Dual Intel® 82559 100 Based LAN
- ✓ On board Symbios 53C895 Ultra II SCSI
- ✓ On board PCI Bridge
- ✓ DiskOnChip memory size up to 144MB
- ✓ PC/104 Bus connector
- ✓ ATX Power Function support
- ✓ Hardware Monitor support

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## 1.2 Specifications

- ✓ **CPU** : Socket 370 for Intel® Celeron™/Coppermine™  
266~933MHz CPU
- ✓ **Bus Interface** : PICMG Bus
- ✓ **Bus Clock Rate** : 100MHz system clock provides up to 133MHz
- ✓ **Memory** : Four DIMM sockets provides up to 1GB (Only for PCB v1.3)
- ✓ **Chipset** : Intel® 82443BX
- ✓ **I/O Chipset** : Winbond W83977
- ✓ **PCI Bridge** : Intel® 21152 or equivalent device
- ✓ **VGA** : 69030 with 4MB memory support CRT/Panel display controller
- ✓ **IDE** : Four IDE disk drives support DMA33 transfer rate up to 33MB/sec
- ✓ **Floppy** : Support up to two floppy disk drives
- ✓ **Parallel Port** : Support SPP/ECP/EPP
- ✓ **Dual LAN** : Dual Intel® 82559 100 Based LAN
- ✓ **SCSI** : Symbios 53C895 Ultra II SCSI
- ✓ **Serial Port** : Two RS-232 serial ports include 16C550 UART with 16byte FIFO
- ✓ **PC/104** : PC/104 connector for 16bit ISA Bus
- ✓ **IR** : One IrDA TX/RX header
- ✓ **USB** : Support two USB ports
- ✓ **Keyboard** : PS/2 6pin Mini Din or 5pin connector

- ✓ **Mouse** : PS/2 6pin Mini Din or 4pin header
- ✓ **DiskOnChip** : Socket for DiskOnChip and memory size up to 144MB
- ✓ **BIOS** : Award Y2K PnP Flash BIOS
- ✓ **Watch-Dog Timer** : Set 1, 2, 10, 20, 110, 220 seconds activity trigger with Reset or NMI
- ✓ **CMOS** : DS12C887 or equivalent device
- ✓ **DMA Channels** : 7
- ✓ **Interrupt Levels** : 15
- ✓ **Maximum Power Consumption** : +5V@8A(933MHz) 、 +12V@120mA 、 [-12V@50mA](#)
- ✓ **Operating Temperature** : 0~60°C
- ✓ **Hardware Monitor** : W83783S
- ✓ **Board Size** : 13.26"(L)x4.8"(W)

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## 1.3 Delivery Package

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The delivery package of HS-6039 includes all following items:

- One HS-6039 Industrial Single Board
- One Printer Ports Bracket Flat Cable
- One com port Bracket Flat Cable
- Two IDE port Flat Cable
- One FDD port Flat Cable
- Utility CD
- User's Manual

Please contact with your dealer if any of these items are missing or damaged when purchasing. And please keep all parts of the delivery package with packing materials in case of you want to ship or store the product in feature.

# Chapter-2

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## Hardware Installation

This chapter provides the information on how to install the hardware of HS-6039. At first, please follow up sections 1.3, 2.1 and 2.2 in check the delivery package and carefully unpacking. Following after, the jumpers setting of switch, Watch-Dog Timer and the DiskOnChip™ address selection etc.

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### 2.1 Caution of Static Electricity

The HS-6039 has been well package with an anti-static bag in protect its sensitive computer components and circuitry from the damage of static electric discharge.

Note: DO NOT TOUCH THE BOARD OR ANY OTHER SENSITIVE COMPONENTS WITHOUT ALL NECESSARY ANTI-STATIC PROTECTION.

You should follow the steps as following to protect the board in against the static electric discharge whenever you handle the board:

1. Please use a grounding wrist strap on whoever needs to handle the HS-6039. Well clip the ALLIGATOR clip of the strap to the end of the shielded wire lead from a grounded object. Please put on and connect the strap before handle the HS-6039 for harmlessly discharge any static electricity through the strap.
2. Please use anti-static pad for put any components or parts or tools on the pad whenever you work on them outside the computer. You may also in use the anti-static bag instead the pad. Please ask from your local supplier in help up your necessary parts on anti-static requirement.

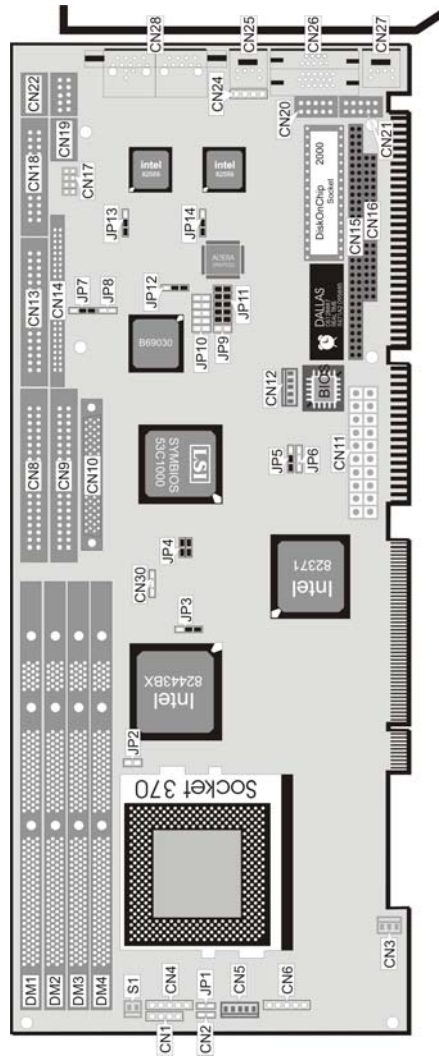
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## 2.2 Caution on Unpacking and Before Installation

First of all, please follow with all necessary steps of section 2.1 in protection the HS-6039 from electricity discharge. With refer to section 1.3, please check the delivery package again with following steps:

1. Unpacking the HS-6039, keep well storage of all packing material, manual and diskette etc. if has.
2. Is there any components lose or drop from the board? DO NOT INSTALL IF HAPPENED.
3. Is there any visual damaged of the board? DO NOT INSTALL IF HAPPENED.
4. Well check from your optional parts (i.e. CPU, SRAM, DRAM, ROM-Disk etc.) for completed setting all necessary jumpers setting to jumper pin-set and CMOS setup correctly. Please also reference to all information of jumpers setting in this manual.
5. Well check from your external devices (i.e. Add-On-Card, Driver Type etc.) for completed add-in or connection and CMOS setup correctly. Please also reference to all information of connector connection in this manual.
6. Please keep all necessary manual and diskette in a good condition for your necessary re-installation if you change your Operating System or whatever needs.

## 2.3 HS-6039's Layout



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## 2.4 Quick Listing of Jumpers

JP1	RESET PIN.....	P.25
JP3	BUS CLOCK RATE SELECT .....	P.14
JP4	BUS CLOCK RATE SELECT .....	P.14
JP5	VGA ENABLE / DISABLE SELECT .....	P.18
JP6	SCSI ENABLE / DISABLE SELECT .....	P.17
JP7	LCD VOLTAGE SELECT .....	P.18
JP8	CTA ENABLE / DISABLE SELECT .....	P.22
JP9	CLEAR CMOS.....	P.14
JP11(1-4)	DISKONCHIP™ ADDRESS .....	P.22
JP11(5-10)	TIME OF WATCH-DOG SELECT .....	P.15
JP12	WATCH-DOG TIMER ACTIVE TYPE SETTING.....	P.15
JP13	LAN1 ENABLE / DISABLE SELECT .....	P.32
JP14	LAN2 ENABLE / DISABLE SELECT .....	P.32

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## 2.5 Quick Listing of Connectors

S1	ATX POWER SWITCH .....	P.23
CN1	SPEAKER .....	P.25
CN2	HDD LED .....	P.25
CN3	FAN .....	P.23
CN4	KEYLOCK .....	P.25
CN5	5PIN KEYBOARD CONNECTOR .....	P.30
CN6	IR CONNECTOR.....	P.31
CN8	PRIMARY IDE CONNECTOR.....	P.26
CN9	SECONDARY IDE CONNECTOR.....	P.26
CN10	68PIN SCSI CONNECTOR.....	P.34
CN11	ATX POWER CONNECTOR .....	P.23
CN12	5PIN ATX POWER CONNECTOR.....	P.23
CN13	FDD CONNECTOR .....	P.29
CN14	LCD PANEL CONNECTOR.....	P.18
CN15	PC/104 64PIN CONNECTOR.....	P.35
CN16	PC/104 40PIN CONNECTOR .....	P.35
CN17	USB .....	P.32
CN18	PARALLEL CONNECTOR.....	P.28
CN19	COM2 (2X5 HEADER) .....	P.30
CN20	LAN2 INTERNAL CONNECTOR (2X5 HEADER).....	P.32
CN21	INTERNAL CRT CONNECTOR.....	P.18
CN22	COM1 (2X5 HEADER) .....	P.30
CN23	LAN1 INTERNAL CONNECTOR (2X5 HEADER).....	P.32
CN24	4PIN MOUSE CONNECTOR	
CN25	PS/2 6PIN MINI DIN MOUSE CONNECTOR .....	P.31
CN26	CRT DB15 CONNECTOR .....	P.18
CN27	PS/2 6PIN MINI DIN KEYBOARD CONNECTOR .....	P.30
CN28	LAN1 AND LAN2 RJ-45 CONNECTOR.....	P.32

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## 2.6 Jumper Setting Description

A jumper pin-set is **ON** as a shorted circuit with a plastic cap inserted over two pins. A jumper pin-set is **OFF** as a open circuit with a plastic cap inserted over one or no pin(s) between pins. The below figure 2.2 shows the examples of different jumper pin-set setting as **ON** or **OFF** in this manual.

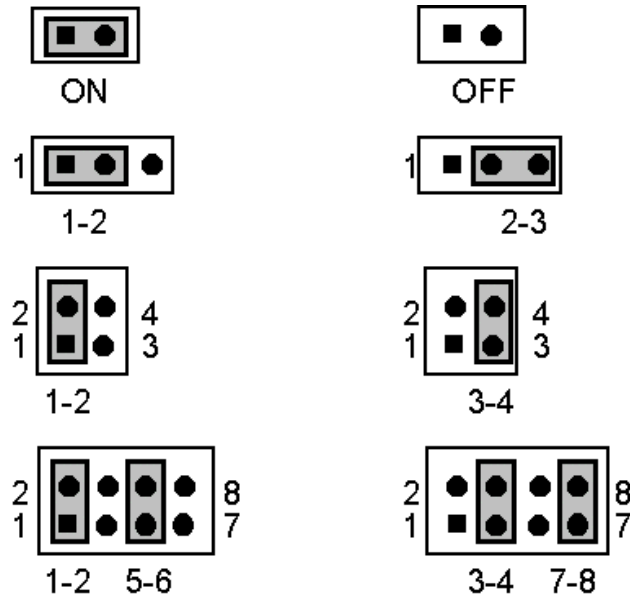


Figure 2.2

All jumper pin-set already has its default setting with the plastic cap inserted as ON, or without the plastic cap inserted as OFF. The default setting may reference in this manual with a " \* " symbol in front of the selected item.

---

## 2.7 Setting the CPU Host Clock Frequency

The HS-6039 provides all necessary by jumper setting in using Bus-Clock frequency as the system bus clocking with JP3 setting as following:

- **Setting the CPU Host Clock of JP3 :**

Host Clock	JP3
66MHz	1-2
100MHz	1-2
<b>*133MHz</b>	<b>2-3</b>

- **Setting the CPU Host Clock of JP4 :**

Host Clock	1-2	3-4
<b>*Auto</b>	<b>ON</b>	<b>ON</b>
BIOS Setting	OFF	OFF

---

## 2.8 Setting the RTC Configuration

The HS-6039 provides a setting for the selection of the RTC Clear Jumper by JP9 setting as following:

- **CMOS Setting of JP9(Only for DS12B887) :**

CMOS Clear Jumper	JP9
<b>Normal</b>	<b>* OFF</b>
Clear CMOS	ON

---

## 2.9 System Memory DRAM

The HS-6039 provides a wide SDRAM memory by four DIMM sockets request the access time should meet PC-133 standard. The maximum capacity of the on board memory is 1GB.



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## 2.10 Watch-Dog Timer

There are three access cycles of Watch-Dog Timer as Enable, Refresh and Disable. The Enable cycle should proceed by READ PORT 443H. The Disable cycle should proceed by READ PORT 045H. A continue Enable cycle after a first Enable cycle means Refresh.

Once if the Enable cycle activity, a Refresh cycle is request before the time-out period for restart counting the Watch-Dog Timer period. Otherwise, it will assume that the program operation is abnormal when the time counting over the period preset of Watch-Dog Timer. A System Reset signal to start again or a NMI cycle to the CPU comes if over.

The JP12 is using for select the active function of Watch-Dog Timer in disable the Watch-Dog Timer, or presetting the Watch-Dog Timer activity at the reset trigger, or presetting the Watch-Dog Timer activity at the NMI trigger.

### JP12 : Watch-Dog Active Type Setting

JP12	DESCRIPTION
*1-2	System Reset
2-3	Active NMI
OFF	Disable Watch-Dog Timer

The Watch-Dog Timer is disabled after the system Power-On. The Watch-Dog Timer can be enabled by a Enable cycle with reading the control port (443H), a Refresh cycle with reading the control port (443H) and a Disable cycle by reading the Watch-Dog Timer disable control port (045H). After a Enable cycle of Watch-Dog Timer, user must constantly proceed a Refresh cycle to Watch-Dog Timer before its period setting comes ending of every 1, 2, 10, 20, 110 or 220 seconds which pre-setting by JP11(5-10). If the Refresh cycle does not active before Watch-Dog Timer period cycle, the on board Watch-Dog Timer architecture will issue a Reset or NMI cycle to the system.

• **JP11 (5-10) : Watch-Dog Timer - Out Period**

PERIOD	5-6	7-8	9-10
*1 sec	ON	ON	ON
2 sec	OFF	ON	ON
10 sec	ON	OFF	ON
20 sec	OFF	OFF	ON
110 sec	ON	ON	OFF
220 sec	OFF	ON	OFF

The Watch-Dog Timer is control by two I/O ports.

443H	I/O Read	The Enable cycle.
443H	I/O Read	The Refresh cycle.
045H	I/O Read	The Disable cycle.

The following sample programs showing how to Enable, Disable and Refresh the Watch-Dog Timer:

```

WDT_EN_RF      EQU    0443H
WDT_DIS       EQU    0045H
WT_Enable      PUSH   AX           ; keep AX DX
               PUSH   DX
               MOV    DX,WDT_EN_RF ; enable the watch-dog timer
               IN    AL,DX
               POP   DX           ; get back AX, DX
               POP   AX
               RET
WT_Rresh       PUSH   AX           ; keep AX, DX
               PUSH   DX
               MOV    DX,WDT_ET_RF ; refresh the watch-dog timer
               IN    AL,DX
               POP   DX           ; get back AX, DX
               POP   AX
               RET
WT_DISABLE     PUSH   AX
               PUSH   DX
               MOV    DX,WDT_DIS   ; disable the watch-dog timer
               IN    AL,DX
               POP   DX           ; get back AX, DX
               POP   AX
               RET

```

---

## 2.11 SCSI Controller

The HS-6039 provides SYMBIOS™ 53C895 Ultra II SCSI Controller transferred rate up to 80 Mbytes/Sec, and can drive up to 15 set SCSI HDD. A JP6 is using for select the enable or disable function of SCSI control.

- **JP6 : SCSI Enable/Disable Select**

JP12	DESCRIPTION
<b>*1-2</b>	<b>Enable</b>
2-3	Disable

---

## 2.12 VGA Controller

The HS-6039 provides three possible connectives of VGA connections. One standard DB15 internal VGA connector as following CN26 pin information. Another header is 5X2 internal VGA connector. Others internal 50-pin header for LCD Panel connection as following CN14 pin information.

- **CN14 : 50pin Internal LCD Panel Connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+12V	2	+12V
3	Ground	4	Ground
5	3.3V / 5V <sup>Note-1</sup>	6	ENAVDD
7	ENAVEE	8	Ground
9	P0	10	P1
11	P2	12	P3
13	P4	14	P5
15	P6	16	P7
17	P8	18	P9
19	P10	20	P11
21	P12	22	P13
23	P14	24	P15
25	P16	26	P17
27	P18	28	P19
29	P20	30	P21
31	P22	32	P23
33	P24	34	P25
35	SHFCLK	36	FP
37	M	38	LP
39	Ground	40	FPBACK
41	P26	42	P27
43	P28	44	P29
45	P30	46	P31
47	P32	48	P33
49	P34	50	P35

Note-1: Please setting the voltage correctly of individual panel by JP7

## Flat Panel Display Interface

HS-6039		Mono			Color										
		SS	DD	DD	TFT	TFT	TFT	TFT	STN-HR	STN-SS	STN-SS	STN-DD	STN-D D	STN-D D	
PIN #	Pin Name	8-bit	8-bit	16-bit	9/12/16 bit	18 bit	18/24 bit	36-bit	18/24 bit	8-bit (4bP)	16-bit (4bP)	8-bit (4bP)	16-bit (4bP)	24-bit	
9	P0	D0	UD3	UD7	B0		B0	FB0	FB0	R1	R1	UR1	UR0	UR0	
10	P1	D1	UD2	UD6	B1		B1	FB1	FB1	B1	G1	UG1	UG0	UG0	
11	P2	D2	UD1	UD5	B2	B0	B2	FB2	FB2	G2	B1	UB1	UB0	UB0	
12	P3	D3	UD0	UD4	B3	B1	B3	FB3	FB3	R3	R2	UR2	UR1	LR0	
13	P4	D4	UD3	UD3	B4	B2	B4	FB4	SB0	B3	G2	LR1	UR0	LG0	
14	P5	D5	UD2	UD2	G0	B3	B5	FB5	SB1	G4	B2	LG1	LG0	LB0	
15	P6	D6	UD1	UD1	G1	B4	B6	SB0	SB2	R5	R3	LB1	LB0	UR1	
16	P7	D7	UD0	UD0	G2	B5	B7	SB1	SB3	B5	G3	LR2	LR1	UG1	
17	P8			UD7	G3		G0	SB2	FG0		B3		UG1	UB1	
18	P9			UD6	G4		G1	SB3	FG1		R4		UB1	LR1	
19	P10			UD5	G5	G0	G2	SB4	FG2		G4		UR2	LG1	
20	P11			UD4	R0	G1	G3	SB5	FG3		B4		UG2	LB1	
21	P12			UD3	R1	G2	G4	FG0	SG0		R5		LG1	UR2	
22	P13			UD2	R2	G3	G5	FG1	SG1		G5		LB1	UG2	
23	P14			UD1	R3	G4	G6	FG2	SG2		B5		LR2	UB2	
24	P15			UD0	R4	G5	G7	FG3	SG3		R6		LG2	LR2	
25	P16						R0	FG4	FR0					LG2	
26	P17						R1	FG5	FR1					LB2	
27	P18					R0	R2	SG0	FR2					UR3	
28	P19					R1	R3	SG1	FR3					UG3	
29	P20					R2	R4	SG2	SR0					UB3	
30	P21					R3	R5	SG3	SR1					UR3	
31	P22					R4	R6	SG4	SR2					LG3	
32	P23					R5	R7	SG5	SR3					LB3	
33	P24							FR0							
34	P25							FR1							
41	P26							FR2							
42	P27							FR3							
43	P28							FR4							
44	P29							FR5							
45	P30							SR0							
46	P31							SR1							
47	P32							SR2							
48	P33							SR3							
49	P34							SR4							
50	P35							SR5							
35	SHFCLK: Pixel clock .Shift Clock														
36	FLM.VSYNC: First line marker														
37	M, DE: Panel AC driver control														
38	LP, HSYNC: Latch pulse														
40	ENABKL: Power sequencing control for enabling the back-light.(high active)														

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The HS-6039 has built-in a Intel® 69030 VGA Controller with on chip 4MB memory, support resolutions up to 1024x768x16M colors, reserved internal 50pin Panel connector.

To get more VGA drivers information, please refer to the Intel® Internet address: [www.intel.com](http://www.intel.com)

- **JP5 : VGA Enable/Disable Select**

JP5	Description
*1-2	Enable
2-3	Disabled

- The HS-6039 provides a setting for the selection of the working voltage of individual flat panel by JP7 setting as following:

- **Flat Panel Voltage Selecting of JP7:**

Panel's Working Voltage	JP7
5.0 V	1-2
3.3 V	* 2-3

---

**CN21 : 10pin Header 5X2 VGA connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RED	2	GROUND
3	GREEN	4	GROUND
5	BLUE	6	GROUND
7	HSYNC	8	GROUND
9	VSYNC	10	GROUND

• **CN26 : 15pin DB-15 Female VGA connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RED	2	GREEN
3	BLUE	4	NC
5	GROUND	6	GROUND
7	GROUND	8	GROUND
9	NC	10	GROUND
11	NC	12	NC
13	HSYNC	14	VSYNC
15	NC		

---

## 2.13 DiskOnChip™ Address Setting

The HS-6039 provides a U16 socket for install the DiskOnChip™ module.

A JP11 may select the starting memory address of the DiskOnChip™ (D.O.C.) for avoid the mapping area with any other memory devices. If you have another extra memory devices in the system with the same memory, neither the HS-6039 nor the extra memory devices

will function normally. Please setting both at different memory address mapping.

- **JP11(1-4) : DiskOnChip™ Address Select**

Memory Address Mapping	1-2	3-4
D000	ON	ON
D800	OFF	ON
E000	ON	OFF
E800	OFF	OFF

\*) : default setting

The D.O.C. function allows the system in using without FDD nor HDD. The D.O.C. may formatting as driver C: or driver A: User may also easily uses the DOS's commands such as FORMAT, SYS, COPY, XCOPY, DISCOPY and DISKCOMP etc. This is means that the D.O.C. may uses as driver-A if the system without FDD-A for ambient application. Please contact with your supplier for different size D.O.C. module.

---

## 2.14 CPU Temperature Alarm

The HS-6039 provides CPU Temperature Alarm Function. A JP8 is using for select the enable or disable function of CTA.

- **JP8 : CPU Temperature Alarm Enable/Disable Select**

1-2	Enable
2-3	Disable



# Chapter-3

---

## Connection

This chapter gives all necessary information of the peripheral connections, switches and indicators.

---

### 3.1 Power and FAN Connectors

The HS-6039 provides one 3pin FAN out connector as following CN3 pin information.

S1 is ATX Power Switch, CN11 is ATX Power Connector, CN12 is 5pin ATX Power Connector.

- **CN3 : 3pin FAN Connector**

PIN NO.	DESCRIPTION
1	GND
2	+12V
3	N.C.

- **S1 : ATX Power Function Switch**

PIN NO.	DESCRIPTION
1	3VSB
2	Power On Single

- **CN12 : 5pin ATX Power Connector**

PIN NO.	DESCRIPTION
1	VCC (+5V)
2	5VSB
3	+12V
4	SUSC (ATX Power ON/OFF Single)
5	GND

---

The HS-6039 support ATX Power function by CN11. The connector of CN12 can control the 5pin ATX Power via the extension cable from the Backplane.

CN11	DESCRIPTION	CN11	DESCRIPTION
1	3V	11	3V
2	3V	12	-12V
3	GND	13	GND
4	+5V	14	PS_ON
5	GND	15	GND
6	+5V	16	GND
7	GND	17	GND
8	PG	18	-5V
9	5VSB	19	+5V
10	+12V	20	+5V

---

### 3.2 IDE's LED, Keylock and Reset Button

The HS-6039 has one LED indicates out power-on status. And the following provides the pin information for IDE's LED indicator, Keylock and Reset Button connections from CN2, CN4 and JP1.

- **CN2 : IDE LED Connector**

PIN NO.	DESCRIPTION
1	HDD ACTIVE#
2	+5V

- **CN4 : Keylock**

PIN NO.	DESCRIPTION
1	VCC (with 330 resist)
2	N.C.
3	GND
4	KEYLOCK-
5	GND

- **JP1 : Reset Button**

PIN NO.	DESCRIPTION
1	GROUND
2	EXTERNAL RESET

---

### 3.3 External Speaker

The HS-6039 has an on-board buzzer (BZ1). And it also provides the CN1 in allows user to connecting to the external speaker.

- **CN1 : Speaker Connector**

PIN NO.	DESCRIPTION
1	SPEAKER SINGAL
2	N.C.
3	GND
4	+5V

---

### 3.4 PCI E-IDE Drive Connector

Two standard 40pin header daisy chain drive connector provides as CN8 and CN9 with following pin assignment. Total four IDE disk (Integrated Device Electronics) drivers may connect.

- **CN8: Primary IDE Interface Connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RESET	2	GROUND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	GROUND	20	N/C
21	N/C	22	GROUND
23	IOW#	24	GROUND
25	IOR#	26	GROUND
27	N/C	28	BALE - DEFAULT
29	N/C	30	GROUND# -DEFAULT
31	INTERRUPT	32	IOCS16#-DEFAULT
33	SA1	34	N/C
35	SA0	36	SA2
37	HDC CS0	38	HDC CS1#
39	HDD ACTIVE	40	GROUND

---

- **CN9: Secondary IDE Interface Connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RESET	2	GROUND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	GROUND	20	N/C
21	N/C	22	GROUND
23	IOW#	24	GROUND
25	IOR#	26	GROUND
27	N/C	28	BALE - DEFAULT
29	N/C	30	GROUND# -DEFAULT
31	INTERRUPT	32	IOCS16#-DEFAULT
33	SA1	34	N/C
35	SA0	36	SA2
37	HDC CS0	38	HDC CS1#
39	HDD ACTIVE	40	GROUND

---

### 3.5 Parallel Port Connector

A standard 26pin flat cable driver connector provides as CN18 with following pin assignment for connection to parallel printer.

- **CN18: Parallel Port Connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	STROBE	2	DATA 0
3	DATA 1	4	DATA 2
5	DATA 3	6	DATA 4
7	DATA 5	8	DATA 6
9	DATA 7	10	ACKNOWLEDGE
11	BUSY	12	PAPER EMPTY
13	PRINTER SELECT	14	AUTO FORM FEED
15	ERROR#	16	INITIALIZE
17	PRINTER SELECT LN#	18	GROUND
19	GROUND	20	GROUND
21	GROUND	22	GROUND
23	GROUND	24	GROUND
25	GROUND	26	GROUND

---

### 3.6 The Floppy Disk Drive Connector

A standard 34pin header daisy-chain drive connector provides as CN13 with following pin assignment. Total two FDD drivers may connect.

- **CN13 : FDD Connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GROUND	2	REDUCE WRITE
3	GROUND	4	N/C
5	GROUND	6	N/C
7	GROUND	8	INDEX#
9	GROUND	10	MOTOR ENABLE A#
11	GROUND	12	DRIVE SELECT B#
13	GROUND	14	DRIVE SELECT A#
15	GROUND	16	MOTOR ENABLE B#
17	GROUND	18	DIRECTION#
19	GROUND	20	STEP#
21	GROUND	22	WRITE DATA#
23	GROUND	24	WRITE DATA#
25	GROUND	26	TRACK 0#
27	GROUND	28	WRITE PROTECT#
29	GROUND	30	READ DATA#
31	GROUND	32	SIDE 1 SELECT
33	GROUND	34	DISK CHANGE#

---

### 3.7 Serial Ports Connectors

The HS-6039 offers two high speeds 16C550 compatible UART with Read/Receive 16byte FIFO serial ports with two internal 10pin header.

- **CN22/19 : Serial Port 10pin Header (COM1/COM2)**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD	2	DSR
3	RXD	4	RTX
5	TXD	6	CTX
7	DTR	8	RI
9	GND	10	NC

---

### 3.8 Keyboard Connectors

The HS-6039 offers two possibilities for keyboard connections to external PS/2 type keyboard at CN27 or an internal 5pin header at CN5.

- **CN5: 5pin Keyboard Connector**

PIN NO.	DESCRIPTION
1	KEYBOARD CLOCK
2	KEYBOARD DATA
3	N.C.
4	GND
5	+5V

- **CN27 : 6pin Mini Din Keyboard Connector**

PIN NO.	DESCRIPTION
1	KEYBOARD DATA
2	N.C.
3	GND
4	+5V
5	KEYBOARD CLOCK
6	N.C.



---

### 3.9 PS/2 Mouse 6pin Mini Din Connector

The HS-6039 provides an external PS/2 mouse connector at CN25.

- **CN25 : PS/2 6pin Mini Din Mouse Connector**

PIN NO.	DESCRIPTION
1	DATA
2	N.C.
3	GND
4	+5V
5	CLK
6	N.C.

---

### 3.10 IR Connector

The HS-6039 provides a 5pin internal IR communication connector as following CN6 pin information.

- **CN6 : 5pin IR Connector**

PIN NO.	DESCRIPTION
1	VCC
2	FIRRX
3	IRRX
4	GROUND
5	IRTX

---

### 3.11 USB Ports Connector

The HS-6039 provides two internal 8pin USB ports connectors. Please refer to the following detail pin information.

- **CN17 : USB Connector**

PIN NO.	CN17	PIN NO.	CN17
1	VCC	2	VCC
3	BD0-	4	BD1-
5	BD0+	6	BD1+
7	GROUND	8	GROUND

---

### 3.12 LAN Interface Connector

The HS-6039 provides two external (RJ-45) and two internal (Header 5x2) 100 Based LAN interface connector. Please refer to the following detail of pin information.

- **CN28 : LAN1/LAN2 RJ-45 Connector**

PIN NO.	CN28
1	TX+
2	TX-
3	RX+
4	R/C GND
5	R/C GND
6	RX-
7	R/C GND
8	R/C GND
9	GND

---

**CN20, CN23 : LAN1 & LAN2 Connector (Header 5x2 )**

PIN NO.	CN20, CN23
1	VCC
2	LED
3	RX+
4	RX-
5	LED
6	R/C GND
7	LED
8	R/C GND
9	TX+
10	TX-

- **JP13 : LAN1 Enable/Disable Select**

PIN NO.	DESCRIPTION
<b>*1-2</b>	<b>Enable</b>
2-3	Disable

- **JP14 : LAN2 Enable/Disable Select**

PIN NO.	DESCRIPTION
<b>*1-2</b>	<b>Enable</b>
2-3	Disable

-

---

### 3.13 Ultra II SCSI Interface Connector

This HS-6039 provides one internal Ultra II SCSI connector for all kinds of user application and easy connection, one 68pin female D-Sub connector for 16bit Ultra II SCSI port. Please reference to the following for detail pin assignment.

Pin	CN10 pin assignment	Pin	CN10 pin assignment
1	+SD12	35	-SD12
2	+SD13	36	-SD13
3	+SD14	37	-SD14
4	+SD15	38	-SD15
5	+SDP1	39	-SDP1
6	+SD0	40	-SD0
7	+SD1	41	-SD1
8	+SD2	42	-SD2
9	+SD3	43	-SD3
10	+SD4	44	-SD4
11	+SD5	45	-SD5
12	+SD6	46	-SD6
13	+SD7	47	-SD7
14	+SDP0	48	-SDP0
15	GROUND	49	GROUND
16	DIFFSEN	50	NC
17	TPW-EX	51	TPW-EX
18	TPW-EX	52	TPW-EX
19	NC.	53	NC.
20	GROUND	54	GROUND
21	+SATN	55	-SATN
22	GROUND	56	GROUND
23	+SBSY	57	-SBSY
24	+SACK	58	-SACK
25	+SRST	59	-SRST
26	+SMSG	60	-SMSG
27	+SSEL	61	-SSEL
28	+SCD	62	-SCD
29	+SREQ	63	-SREQ
30	+SIO	64	-SIO
31	+SD8	65	-SD8
32	+SD9	66	-SD9
33	+SD10	67	-SD10
34	+SD11	68	-SD11

---

### 3.14 PC/104 Bus Connection

The HS-6039's PC/104 expansion bus provides you to connect all kind of PC/104 modules. The PC/104 bus has been already become the industrial embedded 16bit PC standard bus. You can easily install over thousands type of PC/104 modules from hundreds of venders in the world. The detailed pin assignment of the PC/104 expansion bus connectors CN15 and CN16 are specified as following tables:

**Note :** *The PC/104 connector allows to directly plug-in Stack-thru PC/104 modules without the PC/104 mounting kit.*

• **CN15&CN16 : PC/104 Expansion Bus**

(CN15 = 64pin female connector; CN16 = 40pin female connector.)

Pin No.	CN15 Row A	Pin No.	CN15 Row B
1	IOCHECK*	33	0V
2	SD7	34	RESETDRV
3	SD6	35	+5V
4	SD5	36	IRQ9
5	SD4	37	-5V
6	SD3	38	DRQ2
7	SD2	39	-12V
8	SD1	40	NOW*
9	SD0	41	+12V
10	IOCHRDY	42	(KEY)
11	AEN	43	SMEMW*
12	SA19	44	SMEMR*
13	SA18	45	IOW*
14	SA17	46	IOR*
15	SA16	47	DACK3*
16	SA15	48	DRQ3
17	SA14	49	DACK1*
18	SA13	50	DRQ1
19	SA12	51	REFRESH*
20	SA11	52	SYSCLK
21	SA10	53	IRQ7
22	SA9	54	IRQ6
23	SA8	55	IRQ5
24	SA7	56	IRQ4
25	SA6	57	IRQ3
26	SA5	58	DACK2*
27	SA4	59	TC
28	SA3	60	BALE
29	SA2	61	+5V
30	SA1	62	OSC
31	SA0	63	0V
32	0V	64	0V

Pin No.	CN16 Row D	Pin No.	CN16 Row C
1	0V	21	0V
2	MEMCS16*	22	SBHE*
3	IOSC16*	23	LA23
4	IRQ10	24	LA22
5	IRQ11	25	LA21
6	IRQ12	26	LA20
7	IRQ15	27	LA19
8	IRQ14	28	LA18
9	DACK0*	29	LA17
10	DRQ0	30	MEMR*
11	DACK5*	31	MEMW*
12	DRQ5	32	SD8
13	DACK6*	33	SD9
14	DRQ6	34	SD10
15	DACK7*	35	SD11
16	DRQ7	36	SD12
17	+5V	37	SD13
18	MASTER*	38	SD14
19	0V	39	SD15
20	0V	40	(KEY)

# Chapter-4

---

## AWARD BIOS Setup

The HS-6039 uses the Award PCI/ISA BIOS for the system configuration. The Award BIOS setup program is designed to provide the maximum flexibility in configuring the system by offering various options which could be selected for end-user requirements. This chapter is written to assist you in the proper usage of these features.

To access AWARD PCI/ISA BIOS Setup program, press <Del> key. The Main Menu will be displayed at this time.

---

## 4.1 Main Menu

Once you enter the Award BIOS CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and two exit choices. Use the arrow keys to select among the items and press <Enter> to enter the sub-menu.

ROM PCI/ISA BIOS (2A69KD2L)  
CMOS SETUP UTILITY  
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	PASSWORD SETTING
CHIPSET FEATURES SETUP	IDE HDD AUTO DETECTION
POWER MANGEMENT SETUP	SAVE & EXIT SETUP
PNP/PCI CONFIGURATION	EXIT WITHOUT SAVING
LOAD BIOS DEFAULTS	
LOAD SETUP DEFAULTS	
Esc : Quit	↑↓→← : Select Item
F10 : Save & Exit	(Shift)F2 : Change Color

Note that a brief description of each highlighted selection appears at the bottom of the screen.



## 4.2 Standard CMOS Setup

The Standard Setup is used for the basic hardware system configuration. The main function is for Data/Time and Floppy/Hard Disk Drive settings. Please refer to the following screen for the setup. When the IDE hard disk drive you are using is larger than 528MB, please set the HDD mode to **LBA** mode. Please use the IDE Setup Utility in BIOS SETUP to install the HDD correctly.

ROM PCI/ISA BIOS (2A69KD2L)  
STANDARD CMOS SETUP  
AWARD SOFTWARE, INC.

Data (mm:dd:yy) : Wed, May 9 2001								
Time (hh:mm:ss) : 20: 7: 47								
	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master	: Auto	0M	0	0	0	0	0	Auto
Primary Slave	: Auto	0M	0	0	0	0	0	Auto
Secondary Master	: Auto	0M	0	0	0	0	0	Auto
Secondary Slave	: Auto	0M	0	0	0	0	0	Auto
Drive A	: 1.44M , 3.5 in.							
Drive B	: None							
				Base	Memory	: 640K		
				Extended	Memory	: 785408K		
LCD&CRT	: CRT							
Halt On	: All, But Keyboard							
				Other	Memory	: 384K		
				Total	Memory	: 786432K		
ESC : Quit			↑↓→← : Select Item			PU/PD/ + / - : Modify		
F1 : Help			(Shift) F2: Change Color					

## 4.3 BIOS Features Setup

This section allows you to configure your system for the basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation, shadowing and security.

ROM PCI/ISA BIOS (2A69KD2L)  
 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-CFFF	Shadow	: Disabled
CPU L2 Cache ECC Checking	: Enabled	D0000-D3FFF	Shadow	: Disabled
Processor Number Feature	: Enabled	D4000-D7FFF	Shadow	: Disabled
Quick Power On Self Test	: Disabled	D8000-DBFFF	Shadow	: Disabled
Boot From LAN First	: Disabled	DC000-DFFFF	Shadow	: Disabled
Boot Sequence	: A,C,SCSI			
Swap Floppy Drive	: Disabled			
Boot Up Floppy Seek	: 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	ESC	: Quit	↑↓→←: Select Item
OS Select For DRAM > 64MB	: Non-OS2	F1	: Help	PU/PD/+/-: Modify
Report No FDD For WIN 95	: Yes	F5	: Old Values	(Shift) F2 : Color
		G6	: Load BIOS Defaults	
		G7	: Load Setup Defaults	

## 4.4 Chipset Features Setup

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and the access to the system memory resources, such as DRAM and the external cache. It also coordinates the communications between the conventional ISA and PCI buses. It must be stated that these items should never be altered. The default settings have been chosen because they provide the best operating conditions for your system. You might consider and make any changes only if you discover that the data has been lost while using your system.

ROM PCI/ISA BIOS (2A69KD2L)  
 CHIPSET FEATURES SETUP  
 AWARD SOFTWARE, INC.

Auto Configuration	: Enabled	Power-Supply Type	: Auto
EDO DRAM Speed Selection	: 60NS	Auto Detect DIMM/PCI Clk	: Enabled
EDO CAS# MA Wait State	: 2	CPU Clock/Spread Spectrum	: Default
EDO RAS# Wait State	: 2	CPU Warning Temperature	: Disabled
SDRAM RAS-to-CAS Delay	: 3	Current System Temp.	:
SDRAM RAS Precharge Time	: 3	Current CPU1 Temperature	:
SDRAM CAS latency Time	: 3	Current CPUFAN1 Speed	:
SDRAM Precharge Control	: Enabled	Vcore	: +3.3V
DRAM Date Integrity Mode	: Non-ECC	+5V	: +12V
System BIOS Cacheable	: Enabled	-12V	:
Video BIOS Cacheable	: Enabled	Shutdown Temperature	: Disabled
Video RAM Cacheable	: Enabled		
8 Bit I/O Recovery Time	: 3		
16 Bit I/O Recovery Time	: 2		
Memory Hole At 15M-16M	: Disabled		
Passive Release	: Enabled	ESC	: Quit
Delayed Transation	: Disabled	F1	: Help
AGP Aperture Size	: 64	F5	: Old Values
		F6	: Load BIOS Defaults
		F7	: Load Setup Defaults
			↑↓→←: Select Item
			PU/PD+/-: Modify
			(Shift) F2 : Color

---

## 4.5 Integrated Peripherals

The IDE hard drive controllers can support up to two separate hard drives. These drives have a master/slave relationship which is determined by the cabling configuration used to attach them to the controller. Your system supports two IDE controllers--a primary and a secondary--so you can install up to four separate hard disks.

PIO means Programmed Input /Output. Rather than having the BIOS issue a series of commands to affect the transfer to or from the disk drive, PIO allows the BIOS to tell the controller what it wants and then let the controller and the CPU perform the complete task by them. This is much simpler and more efficient (also faster).

ROM PCI/ISA BIOS (2A69KD2L)  
 INTEGRATED PERIPHERALS  
 AWARD SOFTWARE, INC.

IDE HDD Block Mode	: Enabled	Onboard Serial Port 2	: 2F8/IRQ3
IDE Primary Master PIO	: Auto	UART Mode Select	: Normal
IDE Primary Slave PIO	: Auto		
IDE Secondary Master PIO	: Auto		
IDE Secondary Slave PIO	: Auto		
IDE Primary Master UDMA	: Auto	Onboard Parallel Port	: 378/IRQ7
IDE Primary Slave UDMA	: Auto	Parallel Mode	: SPP
IDE Secondary Master UDMA	: Auto		
IDE Secondary Slave UDMA	: Auto		
On-Chip Primary PCI IDE	: Enabled	LCD Panel Type	: Panel 5 *
On-Chip Secondary PCI IDE	: Enabled		
USB Keyboard Support	: Disabled		
Init Display First	: PCI Slot		
Power ON Function	: Button Only		
KBC input clock	: 8MHz	ESC	: Quit      ↑↓→←: Select Item
		F1	: Help      PU/PD/+/: Modify
		F5	: Old Values (Shift) F2 : Color
Onboard FDC Controller	: Enabled	F6	: Load BIOS Defaults
Onboard Serial Port 1	: 3F8/IRQ4	F7	: Load Setup Defaults

\*It allows the system BIOS to select one of sixteen LCD panel types upon power up.

Panel#	Panel Type
0	1024*768 Dual Scan STN Color Panel
1	128*1024 TFT Color Panel
2	640*480 Dual Scan STN Color Panel
3	800*600 Dual Scan STN Color Panel
4	640*480 Sharp TFT Color Panel
5	640*480 18-bit TFT Color Panel
6	1024*768 TFT Color Panel
7	800*600 TFT Color Panel
8	800*600 TFT Color Panel
9	800*600 TFT Color Panel
10	800*600 Dual Scan STN Color Panel
11	800*600 Dual Scan STN Color Panel
12	1024*768 TFT Color Panel
13	1280*1024 Dual Scan STN Color Panel
14	1024*600 Dual Scan STN Color Panel
15	1024*600 TFT Color Panel

## 4.6 Power Management Setup

The Power Management Setup allows user to configure the system for saving energy in a most effective way while operating in a manner consistent with his own style of computer use.

ROM PCI/ISA BIOS (2A69KD2L)  
POWER MANAGEMENT SETUP  
AWARD SOFTWARE, INC.

ACPI Management	: Disabled	** Reload Global Timer Events **	
Power Management	: User Define	IRQ3 [3-7, 9-15], NMI	: Disabled
PM Control by APM	: Yes	Primary IDE0	: Disabled
Video Off Method	: V/H Sync + Blank	Primary IDE1	: Disabled
Video Off After	: Standby	Secondary IDE0	: Disabled
MODEM Use IRQ	: 3	Secondary IDE1	: 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 Act-Monitor	: Disabled		
Soft-off by PWR-BTTN	: Instant-off		
CPUFAN Off In Suspend	: Enabled		
Power On by Ring	: Enabled		
Resume by Alarm	: Disabled		
Wake Up On LAN	: Enabled	ESC	: Quit
IRQ8 Break Suspend	: Disabled	F1	: Help
		F5	: Old Values
		F6	: Load BIOS Defaults
		F7	: Load Setup Defaults
			↑↓→←: Select Item
			PU/PD/+/-: Modify
			(Shift) F2 : Color

---

## 4.7 PnP/PCI Configuration Setup

In this section, the PnP/PCI configuration setup allows you to configure the ISA and PCI devices installed in your system by manually or auto.

ROM PCI/ISA BIOS (2A69KD2L)  
PNP/PCI CONFIGURATION  
AWARD SOFTWARE, INC.

PnP OS Installed	: Yes	Assign IRQ For VGA	: Enabled
Resources Controlled by	: Auto	Slot 1 Use IRQ No.	: Auto
Reset Configuration Data	: Disabled	Slot 2 Use IRQ No.	: Auto
		Slot 3 Use IRQ No.	: Auto
		Slot 4 Use IRQ No.	: Auto
		Assign IRQ For USB	: Enabled
		ESC : Quit	↑↓→←: Select Item
		F1 : Help	PU/PD/+/-: Modify
		F5 : Old Values	(Shift) F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

# Chapter-5

---

## Software Utilities

This chapter provides the detailed information of VGA , LAN and SCSI function. How to install the configuration is also included.

Section include:

- VGA DRIVER INSTALLATION
- NETWORK DRIVER INSTALLATION
- SCSI DRIVER INSTALLATION

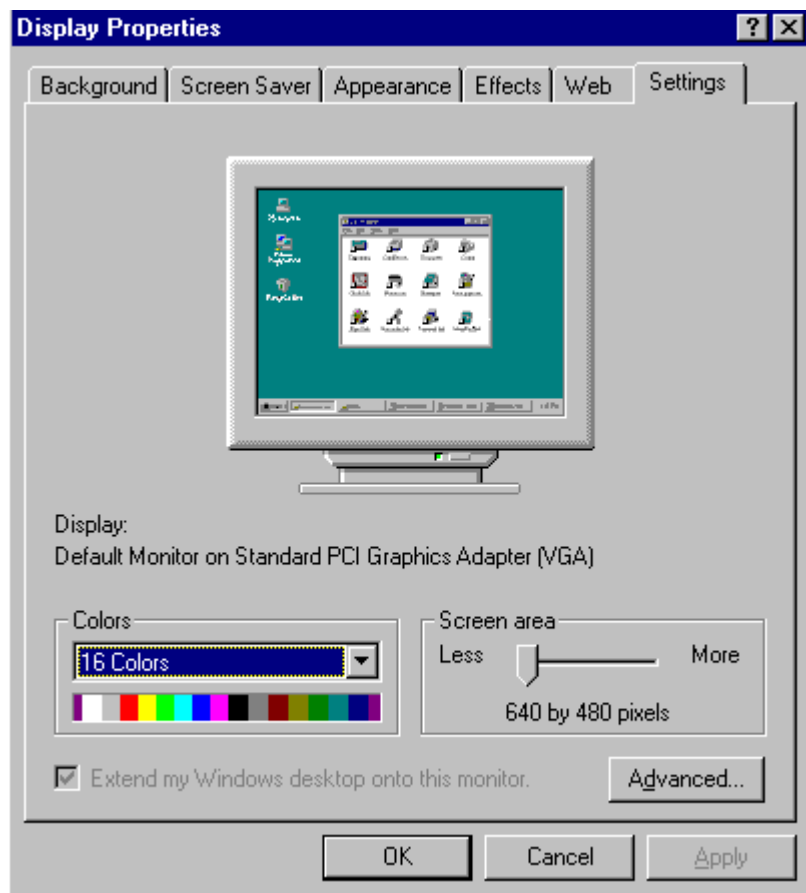


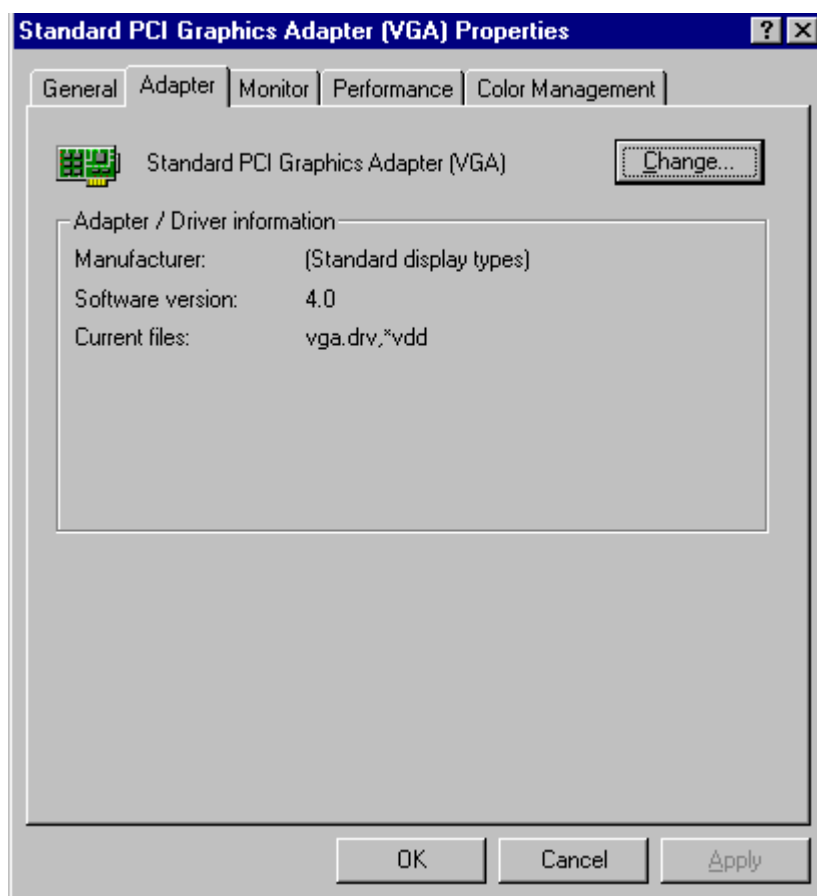
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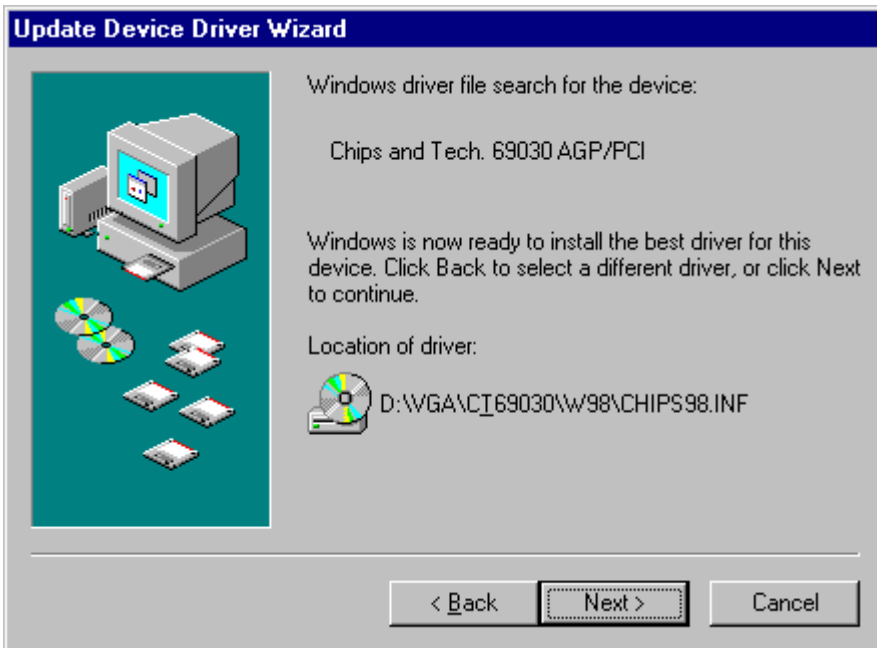
## 5.1 VGA DRIVER INSTALL FOR WIN95&98

1. Click Start, then Setting, then Control Panel, start the Display applet program.
2. Select the setting page, push the advanced properties button. Push the change button in the adapter area.
3. Continue to click "Next". Select Display a list of all drivers in a specific location, so you can select the drivers you want.
4. Click "Next". Select the Specify a location checkbox and click "Browse".
5. Specify the path to the new driver and press the <ENTER> key.  
(if in driver A:, select a:\win98)
6. The Select device dialog box will appear.  
**Select Chips and Tech. 69030 PCI**
7. Continue choosing close until asked to restart machine.
8. After the system has restarted, you can go back into the display applet and select alternate screen resolutions and color depths.

Note: Installation procedure for Windows 95 is similar to Windows98.



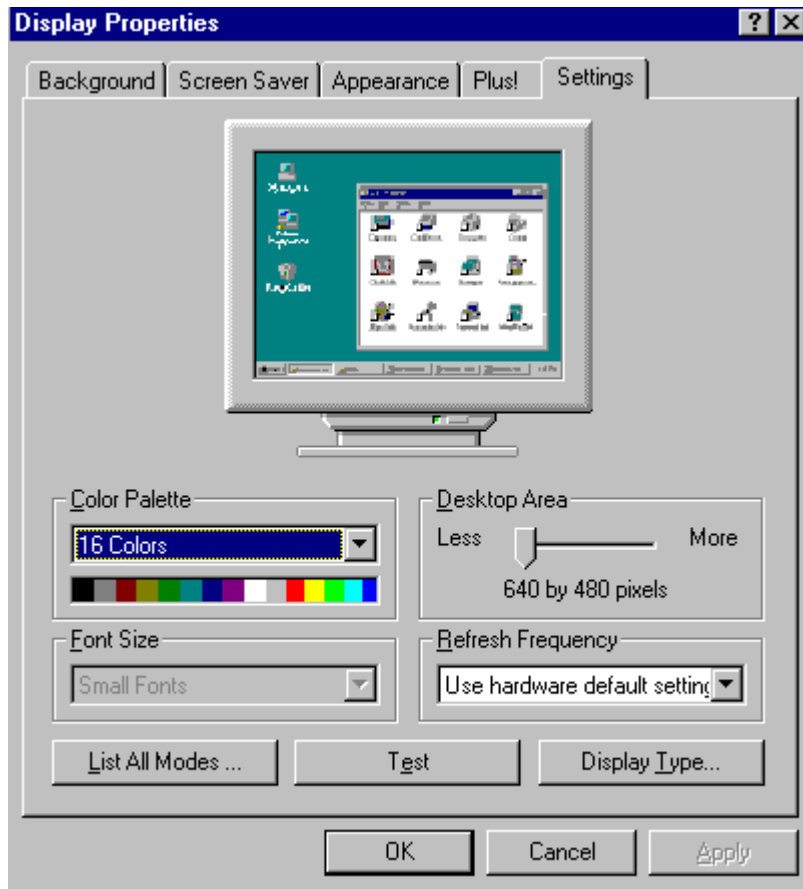


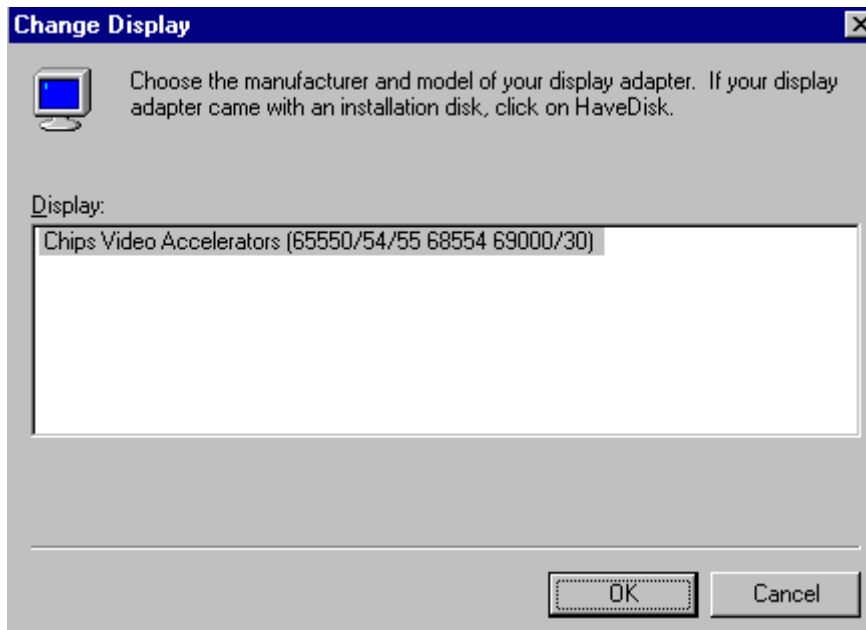


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## 5.2 VGA DRIVER INSTALL FOR WIN NT4.0

1. Click the Start button, then go to Setting and click on Control Panel.
2. Click on Display icon to start the Display Properties Window.
3. Click on the Settings tab, and then click on Display Type.
4. In the Change Display Type window, click on "Have Disk".
5. Specify the path to the new driver and press the <ENTER>key.  
(if in driver A:, type a:\nt40)  
  
Select Chips Video Accelerator (655545/54/55/68554  
69000/69030)
6. Click OK or press Enter
7. You will see warning panel about Third Party Drivers. Click on Yes to finish the installation.
8. Once the installation is completed, the system must shut down and restart for the new driver to take effect.
9. After restart, checking on the VGA driver, the properties of the driver should look similar to the following figure.





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## 5.3 NETWORK DRIVER INSTALL FOR WIN98&95

### **Win98**

Windows 98 will detect the network driver automatically.

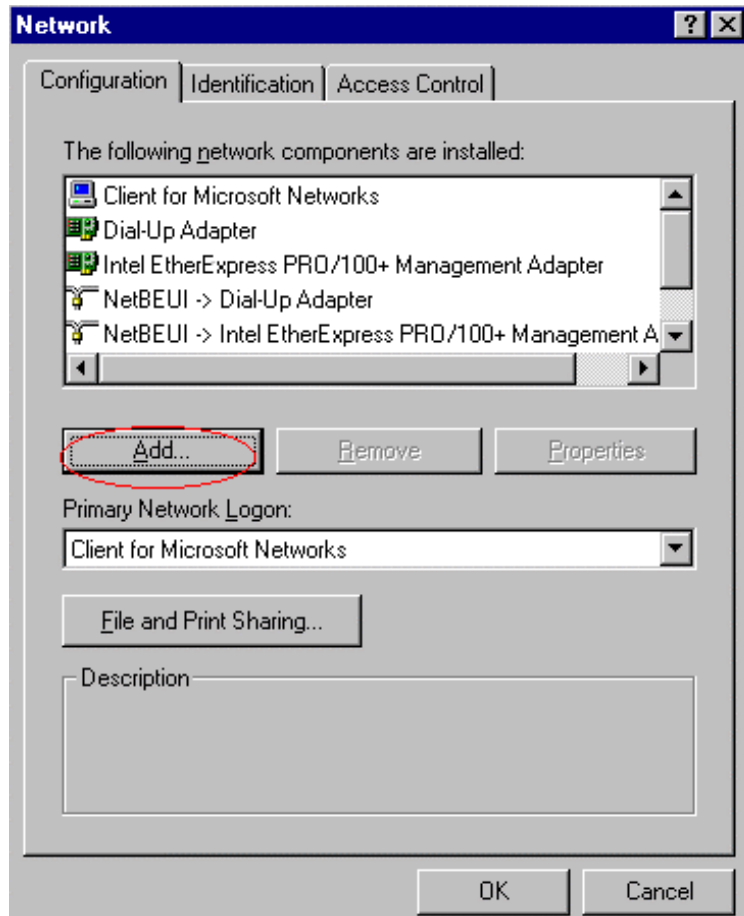
### **Win95**

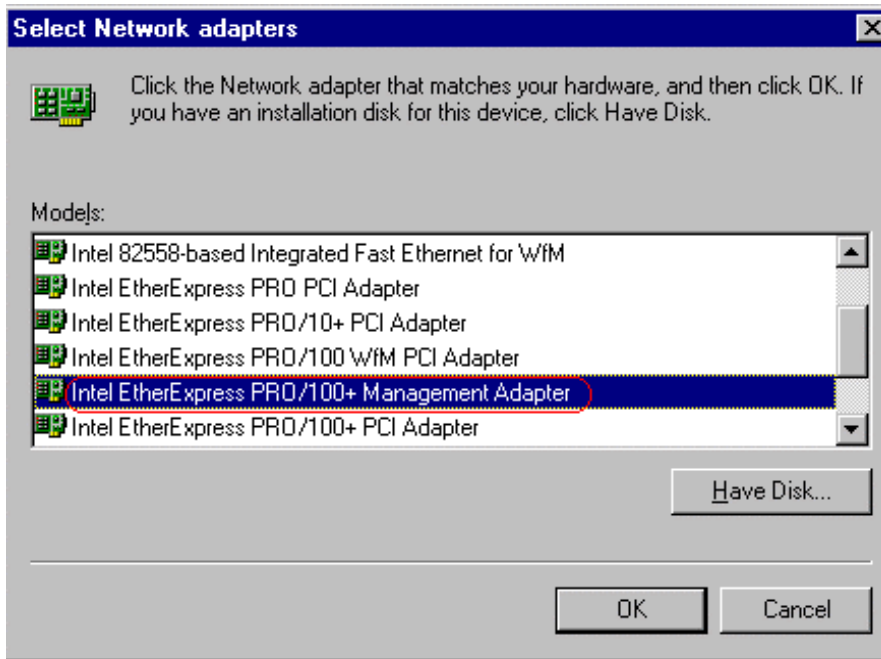
1. Click Start, then Setting, in the "Setting" select Control panel.
2. Start the network applet program.
3. In the Network window, click "Add".
4. In the Select Network Component Type, select Adapter then click "Add".
5. When the Select Network Component Type, Select Adapter, then click "Add".
6. Specify the path the new driver and press <ENTER> key.(If in driver a:, type a:\)  
(If you're not sure exactly where the drivers are, choose the "Browse" button and find it)

#### **Select Intel EtherExpress PRO/100+ Management Adapter**

7. Click OK.
8. Windows 95 will copy the network drivers to the proper directories on your system.
9. Continue choosing "OK", until asked to restart your system.
10. After restart, checking on the network driver, the Properties of the driver should look similar to the following figure.







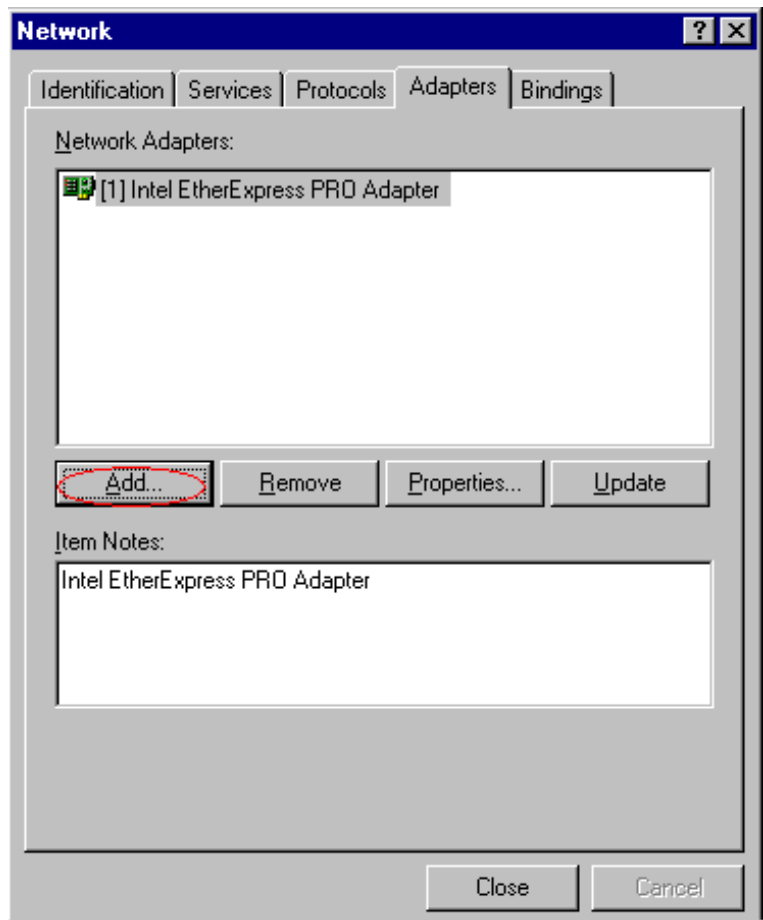
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## 5.4 NETWORK DRIVER INSTALL FOR WIN NT4.0

1. Click the Start button, then go to Setting and click on Control Panel.
2. Click on the Network icon to start the Network Window.
3. Click on the Adapters tab, and then click "Add".
4. In the Select Network Adapter window, click "Have Disk". This will bring up the Insert Disk window.
5. Supply the directory where the Windows NT driver files are located.  
(If in driver a: , type a:\)
6. The Select OEM Option window will show up.

### **Select Intel EtherExpress PRO Adapter**

7. Click OK to finish the installation.
8. Once the installation is completed, the system must be shut down and restarted for the new driver to take effect.
9. After restart, checking on the Network driver, the Properties of the driver should look similar to the following figure.



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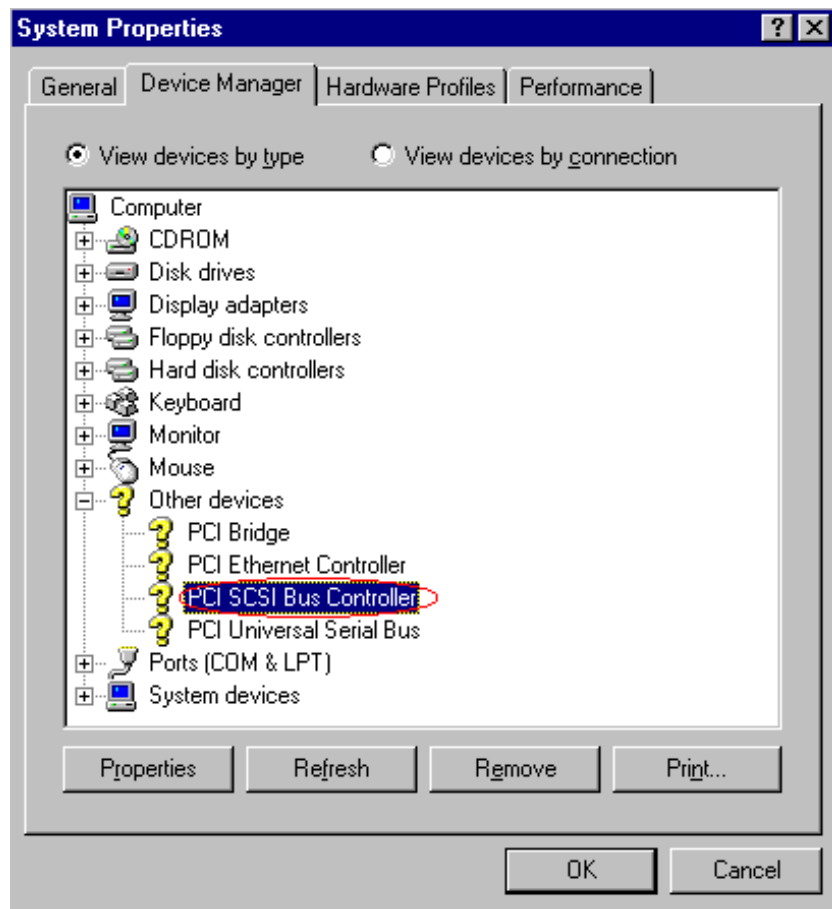
## 5.5 ULTRA II SCSI INSTALL FOR WIN95 & 98

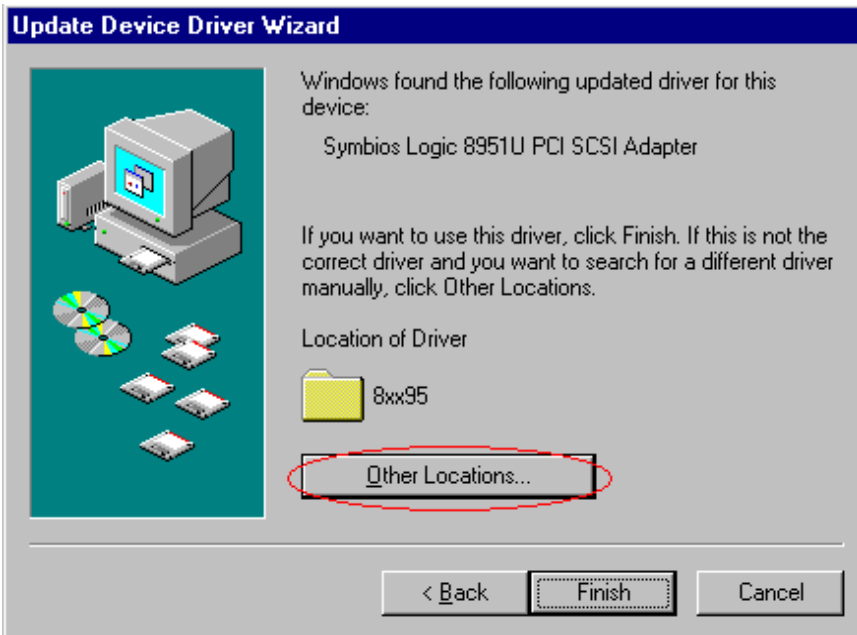
### **WINDOWS 98**

WINDOWS 98 will detect the SYMBIOS LOGIC 895 Ultra II SCSI driver

### **WINDOWS 95**

1. Click Start, then Setting, in the "Setting" select Control panel.
2. Start the System applet program. Select Device Manager page.
3. In the "Other Device" double click left button, select PCI SCSI Bus Controller, then click Properties.
4. In the PCI SCSI Bus Controller Window, select Driver page.
5. Click Update Driver. In Update Driver Wizard select YES, then click NEXT.
6. Specify the path to the new driver and press <ENTER>  
(If in driver a: , click Finish.)  
(If you want to search for a different driver manually, click "Other Location" and click "Browse".)
7. Windows 95 will copy the SCSI drivers to the proper directories on your system.
8. Continue choosing "OK", until asked to restart your system.
9. After restart, checking on the SCSI driver, the properties of the driver should look similar to the following figure.





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## 5.6 ULTRA II SCSI INSTALL FOR WINDOWS NT 4.0

1. Change Boot sequence in CMOS Setup Utility select CDROM.
2. Boot from CDROM (WINDOWS NT 4.0)
3. When WINDOWS NT SETUP start, press "F6".
4. To specify additional SYMBIOS SCSI adapter, press "S".
5. In square windows select "Other".
6. Insert SCSI driver disk into Driver A: , press "ENTER" when ready.
7. WINDOWS NT 4.0 will continue to setup until finish.