

# HS-6237/6637

**BX Celeron™ / Coppermine™ VGA LAN**

Half Size All in one CRT/Panel LAN  
WDT DOC USB IrDA CTA PC/104  
PISA/ISA Bus Industrial Single Board computer

# HS-6237V/6637V

**BX Celeron™ / Coppermine™ VGA**

Half Size All in one CRT/Panel  
WDT DOC USB IrDA CTA PC/104  
PISA/ISA Bus Industrial Single Board computer

---

## **Copyrights**

This manual is copyrighted and all rights are reserved. Any kind of reproduction in whole or in part without prior written consent from the manufacturer is prohibited.

In general, the manufacturer will not be liable for any direct, indirect, special, incidental or consequential damages arising from the use of inability to use the product or documentation, even if advised of the possibility of such damages.

The manufacturer reserves the right to change the contents of this manual without prior notice in order to improve the function design, performance, quality and reliability. The author assumes no responsibility for any errors or omissions, which may appear in this manual, nor does it make a commitment to update the information contained herein.

## **Trademarks**

BOSER is a registered trademark of BOSER Technology Co., Ltd.

ISB is a registered trademark of BOSER Technology Co., Ltd.

Intel is a registered trademark of Intel Corporation.

AWARD is a registered trademark of AWARD International Inc.

All other trademarks, products and or product's name mentioned herein are mentioned for identification purposes only, and may be trademarks and/or registered trademarks of their respective companies or owners.

©Copyright 2000

All Rights Reserved.

User Manual edition 2.3, Aug.24 2001

---

---

# Contents

<i>HS-6237/6637</i> .....	<i>1</i>
<i>HS-6237V/6637V</i> .....	<i>1</i>
<b>GENERAL INFORMATION</b> .....	<b>3</b>
1.1 MAJOR FEATURES .....	4
1.2 SPECIFICATIONS .....	5
1.3 DELIVERY PACKAGE.....	7
<b>HARDWARE INSTALLATION</b> .....	<b>8</b>
2.1 CAUTION OF STATIC ELECTRICITY .....	8
2.2 CAUTION ON UNPACKING AND BEFORE INSTALLATION.....	9
2.3 HS-6237/HS-6637'S LAYOUT .....	10
2.4 QUICK LISTING OF JUMPERS .....	11
2.5 QUICK LISTING OF CONNECTORS.....	12
2.6 JUMPER SETTING DESCRIPTION .....	13
2.7 SETTING THE BUS-CLOCK FREQUENCY.....	14
2.8 SETTING THE RTC CONFIGURATION.....	14
2.9 SYSTEM MEMORY DRAM.....	14
2.10 WATCH-DOG TIMER.....	15
2.11 DISKONCHIP? ADDRESS SETTING.....	17
<b>CONNECTION</b> .....	<b>18</b>
3.1 POWER AND FAN CONNECTORS .....	18
3.2 IDE'S LED, KEYLOCK AND RESET BUTTON .....	19
3.3 EXTERNAL SPEAKER.....	20
3.4 PCI E-IDE DRIVE CONNECTOR.....	21
3.5 PARALLEL CONNECTOR.....	22
3.6 THE FLOPPY DISK DRIVE CONNECTOR.....	23
3.7 SERIAL PORTS CONNECTORS .....	24
3.8 KEYBOARD CONNECTORS .....	25
3.9 PS/2 6PIN MINI DIN MOUSE CONNECTOR.....	25
3.10 VGA CONTROLLER .....	26
3.11 IR CONNECTOR.....	29
3.12 USB CONNECTOR.....	29
3.13 LAN INTERFACE CONNECTOR.....	30
3.14 PC/104 BUS CONNECTOR .....	31

<b>AWARD BIOS SETUP .....</b>	<b>33</b>
4.1 MAIN MENU .....	34
4.2 STANDARD CMOS SETUP.....	35
4.3 BIOS FEATURES SETUP.....	36
4.4 CHIPSET FEATURES SETUP.....	37
4.5 INTEGRATED PERIPHERALS .....	38
4.6 POWER MANAGEMENT SETUP.....	40
4.7 PNP/PCI CONFIGURATION SETUP.....	41
<b>SOFTWARE UTILITIES .....</b>	<b>42</b>
5.1 VGA DRIVER INSTALL FOR WIN95 & WIN98.....	43
5.2 VGA DRIVER INSTALL FOR WIN NT4.0.....	46
5.3 LAN DRIVER INSTALL FOR WIN95 & WIN98.....	50
5.4 LAN DRIVER INSTALL FOR WIN NT4.0.....	53

# Chapter-1

---

## General Information

The HS-6237/HS-6637 is a 100MHz Bus Intel® BX chipset design PISA/ISA Bus Celeron™/Coppermine™(Coppermine™ only for Ver2.1 PCB) Industrial Single Board Computer 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.

With on board DMA33 of mode 4 to IDE drive interface architecture, the HS-6237/HS-6637 supports with maximum 33.3 MB/sec in data transfer rating to one IDE drive connection. Design with Intel® 82443 BX core logic chipset supports all series Celeron™/Coppermine™ operating at 266MHz to 800MHz. The on board 69000 CRT/Panel display controller supports up to 1280x1024x256 colors display resolution. And it also provides one internal 50pin connector for various type of the Panel connection.

The advanced PISA bus add-on connection of HS-6237 allows user could easily obtain both ISA's 16bit and PCI's 32bit full set signals from a half size PISA slot for suitable plug into any size system with 8/16/32bit ISA and-or PCI slots operating. The HS-6237/HS-6637 provides with two DIMM sockets support up to 512 MB 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-6237/HS-6637 features include one Intel® 82558 10/100 Based LAN design on board. With one external RJ45 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 CPU or generate an interrupt. The Watch-Dog Timer 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.

---

## 1.1 Major Features

- ✂✂ PISA Bus (HS-6237) and ISA Bus (HS-6637) supported
- ✂✂ Socket 370 for Intel® Celeron™/Coppermine™ 266~800MHz CPU
- ✂✂ Two DIMM sockets provides up to 512MB
- ✂✂ Fast PCI DMA33 controller supports two IDE disk drives
- ✂✂ PnP I/O address & IRQ selection
- ✂✂ 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 69000 CRT/Panel display controller
- ✂✂ On board Intel® 82558 10/100 Based LAN
- ✂✂ DiskOnChip memory size up to 144MB
- ✂✂ PC/104 Bus connector
- ✂✂ CPU Temperature Alarm support

\*It will be a Warning “beep” come out if the CPU' s temperature reached 60 . And it will stop as the CPU' s temperature going down below 60 again.

---

## 1.2 Specifications

- ✂ ✂ **CPU** : Socket 370 for Intel® Celeron™/Coppermine™ 266~800MHz CPU
- ✂ ✂ **Bus Interface** : PISA Bus (HS-6237) / ISA Bus (HS-6637)
- ✂ ✂ **Memory** : Two DIMM sockets provides up to 512MB
- ✂ ✂ **Chipset** : Intel® 82443BX
- ✂ ✂ **I/O Chipset** : Winbond W83977
- ✂ ✂ **VGA** : 69000 with 2MB memory support CRT/Panel display up to 1280x1024x256colors
- ✂ ✂ **IDE** : Two 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
- ✂ ✂ **LAN** : Intel® 82558 10/100 Based LAN
- ✂ ✂ **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
- ✂ ✂ **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
  - ✂ **Extra Power** : One 10pin +5V/+12V connector
  - ✂ **Maximum Power Consumption** : +5V@5A、[+12V@120mA](#)
  - ✂ **Operating Temperature** : 0~60 °C
  - ✂ **CPU Temperature Alarm** : Beeping alarm when CPU' s temperature over heating limited
  - ✂ **Board Size** : 7.3" (L) x 4.8" (W)



---

## 1.3 Delivery Package

The delivery package of HS-6237/HS-6637 includes all following items:

- ~~///~~ One HS-6237/HS6637 Industrial Single Board Computer
- ~~///~~ One Printer Ports Bracketed Flat Cable
- ~~///~~ One COM port Bracketed Flat Cable
- ~~///~~ One IDE port Flat Cable
- ~~///~~ One FDD port Flat Cable
- ~~///~~ One PS/2 to Standard type Keyboard Transfer Cable
- ~~///~~ Utility CD-ROM
- ~~///~~ 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

---

## Hardware Installation

This chapter provides the information on how to install the hardware of HS-6237/6637. 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, watchdog timer and the DiskOnChip? address selection etc.

---

### 2.1 Caution of Static Electricity

The HS-6237/6637 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-6237/6637. 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-6237/6637 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.

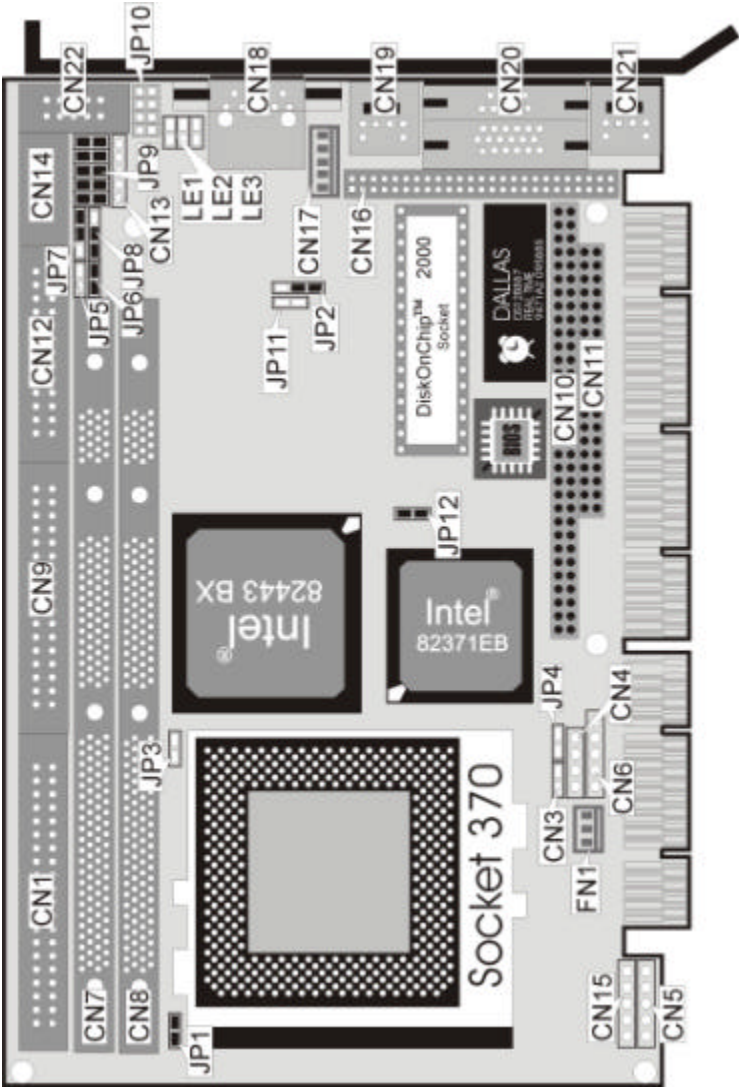
---

## 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-6237/6637 from electricity discharge. With refer to section 1.3, please check the delivery package again with following steps:

1. Unpacking the HS-6237/6637, 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-6237/HS-6637's Layout



---

## 2.4 Quick Listing of Jumpers

JP1	BUS CLOCK FREQUENCY SETTING.....	P.14
JP2	VGA ENABLE / DISABLE SELECT .....	P.26
JP4	RESET .....	P.19
JP5	BUS CLOCK FREQUENCY SETTING.....	P.14
JP6	CLEAR CMOS .....	P.14
JP7	WATCH-DOG TIMER ACTIVE TYPE SETTING.....	P.15
JP8	PANEL VOLTAGE SELECT.....	P.27
JP9(1-4)	DISKONCHIP? ADDRESS SELECT.....	P.17
JP9(5-10)	TIME OF WATCH-DOG SELECT .....	P.15
JP10	USB CONNECTOR .....	P.29
JP11	LAN ENABLE / DISABLE SELECT .....	P.30
JP12	CPU TEMPERATURE ALARM ENABLE / DISABLE SELECT	

---

## 2.5 Quick Listing of Connectors

CN1	PRIMARY IDE CONNECTOR.....	P.21
CN2	3PIN FAN POWER CONNECTOR .....	P.18
CN3	IDE LED.....	P.19
CN4	SPEAKER.....	P.20
CN5	5PIN POWER CONNECTOR .....	P.18
CN6	POWER LED & KEYLOCK .....	P.19
CN7	DIMM 1.....	P.14
CN8	DIMM 2.....	P.14
CN9	FDD CONNECTOR.....	P.23
CN10	PC/104 64PIN CONNECTOR .....	P.31
CN11	PC/104 40PIN CONNECTOR.....	P.31
CN12	PARALLEL CONNECTOR.....	P.22
CN13	IRDA.....	P.29
CN14	COM1 CONNECTOR (5X2 HEADER).....	P.24
CN15	5PIN POWER CONNECTOR .....	P.18
CN16	50PIN PANEL CONNECTOR.....	P.26
CN17	5PIN KEYBOARD CONNECTOR .....	P.25
CN18	RJ45 CONNECTOR .....	P.30
CN19	PS/2 6PIN MINI DIN MOUSE CONNECTOR.....	P.25
CN20	15PIN CRT CONNECTOR (DB15) .....	P.26
CN21	PS/2 6PIN MINI DIN KEYBOARD CONNECTOR.....	P.25
CN22	COM2 CONNECTOR (5X2 HEADER).....	P.24
CN23	COM1 CONNECTOR (DB9).....	P.24
CN24	COM2 CONNECTOR (DB9).....	P.24

---

## 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 an 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.

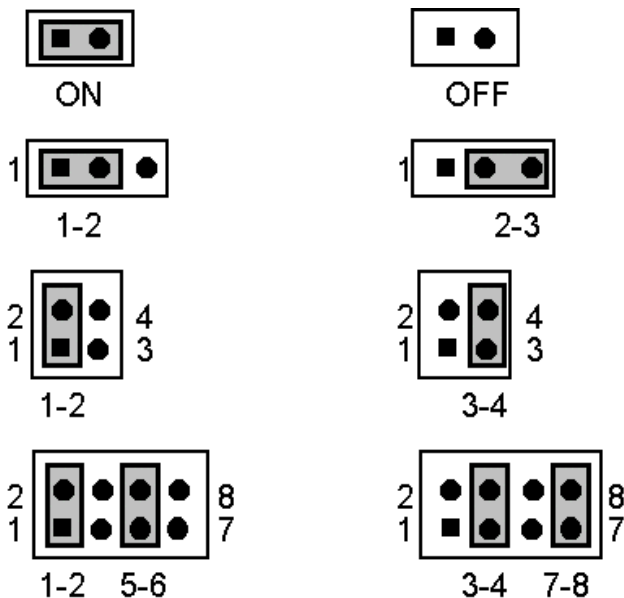


Figure 2.2

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 Bus Clock Frequency

The HS-6237/HS-6637 provides all necessary by jumper setting in using Bus Clock frequency as the system bus clocking with JP1 and JP5 setting as following:

*☞* **JP1, JP5 : Bus Clock Frequency Setting**

Bus Clock Frequency	JP1	JP5
*66MHz	ON	ON
100MHz	OFF	OFF

---

## 2.8 Setting the RTC Configuration

The HS-6237/HS-6637 provides a setting for the selection of the RTC Clear Jumper by JP6 setting as following:

*☞* **JP6 : CMOS Clear**

CMOS Clear Jumper	JP6
Normal	* OFF
Clear CMOS	ON

---

## 2.9 System Memory DRAM

The HS-6237/HS-6637 provides a wide SDRAM memory by two DIMM sockets (DIMM1, DIMM2) request the access time should meet PC100 standard. The maximum capacity of the on board memory is 512MBytes.



---

## 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 WDT's period. Otherwise, it will assume that the program operation is abnormal when the time counting over the period preset of WDT. A System Reset signal to start again or a NMI cycle to the CPU comes if over.

The JP7 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.

### ☞ JP7 : Watch-Dog Timer Active Type Setting

JP7	Description
*2-3	System Reset
1-2	Active NMI
OFF	Disable Watch-Dog Timer

### ☞ JP9(5-10) : WDT Time - 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 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 WDT, user must constantly proceed a Refresh cycle to WDT before its period setting comes ending of every 1, 2, 10, 20, 110 or 220 seconds which pre-setting by JP4. If the Refresh cycle does not active before WDT period cycle, the on board WDT architecture will issue a Reset or NMI cycle to the system.

The Watch-Dog Timer is controlled 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 WDT
    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 WDT
    IN     AL,DX
    POP     DX          ; get back AX, DX
    POP     AX
    RET
WT_DISABLE
    PUSH    AX
    PUSH    DX
    MOV     DX,WDT_DIS   ; disable the WDT
    IN     AL,DX
    POP     DX          ; get back AX, DX
    POP     AX
    RET

```

---

## 2.11 DiskOnChip? Address Setting

The HS-6237/HS-6637 provides a U9 socket for install the DiskOnChip? module.

A JP9(1-4) 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-6237/HS-6637 nor the extra memory devices will function normally. Please setting both at different memory address mapping.

### ~~MEM~~ JP9(1-4) : DiskOnChip? Address

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

# Chapter-3

---

## Connection

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

---

### 3.1 Power and FAN Connectors

The HS-6237/HS-6637 provides one 5pin DC-Power connector as following CN15 pin information. And also provides one 3pin FAN out connector as following CN2 pin information.

#### ☞ CN5 : 5pin Power Connector

PIN NO.	Description	PIN NO.	Description
1	VCC	2	GND
3	GND	4	+12V
5	-12V		

#### ☞ CN2 : 3pin FAN Power Connector

PIN NO.	Description	PIN NO.	Description
1	GND	2	VCC
3	N/C		

#### ☞ CN15 : 5pin Power Connector

PIN NO.	Description	PIN NO.	Description
1	VCC	2	GND
3	GND	4	VCC
5	VCC		

---

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

The HS-6237/HS-6637 has one LED ( D1 ) indicates out power-on status. And the following provides the pin information for IDE's LED indicator, Keylock and Reset Button connections from CN3, CN6 and JP4.

### *☞* CN3 : IDE LED

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

### *☞* CN6 : Power LED & Keylock

PIN NO.	Description
1	Power LED Anode
2	NC
3	GND
4	Keylock
5	GND

### *☞* JP4 : Reset

PIN NO.	Description
1	GND
2	External Reset

---

### 3.3 External Speaker

The HS-6237/HS-6637 has an on board buzzer ( BZ1 ). And it also provides the CN4 in allows user to connecting to the external speaker.

**CN4 : Speaker**

PIN NO.	Description
1	Speaker Signal
2	NC
3	GND
4	+5V

---

## 3.4 PCI E-IDE Drive Connector

One standard 40pin header daisy-chain driver connector provides as CN6 with following pin assignment. Total two IDE (Integrated Device Electronics) drivers may connect.

### *2/2* CN1: Primary IDE Connector

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

---

## 3.5 Parallel Connector

A standard 26pin flat cable driver connector provides as CN12 with following pin assignment for connection to parallel printer.

*26* **CN12: Parallel 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	GND
19	GND	20	GND
21	GND	22	GND
23	GND	24	GND
25	GND	26	GND



---

## 3.6 The Floppy Disk Drive Connector

A standard 34pin header daisy-chain driver connector provides as CN9 with following pin assignment. Total two FDD drivers may connect.

### **CN9 : FDD Connector**

PIN NO.	Description	PIN NO.	Description
1	GND	2	Reduce Write
3	GND	4	NC
5	GND	6	NC
7	GND	8	Index#
9	GND	10	Motor Enable A#
11	GND	12	Drive Select B#
13	GND	14	Drive Select A#
15	GND	16	Motor Enable B#
17	GND	18	Direction#
19	GND	20	Step#
21	GND	22	Write Data#
23	GND	24	Write Data#
25	GND	26	Track 0#
27	GND	28	Write Protect#
29	GND	30	Read Data#
31	GND	32	Side 1 Select
33	GND	34	Disk Change#

---

## 3.7 Serial Ports Connectors

The HS-6237/HS-6637 offers two NS16C550 compatible UARTs with Read/Receive 16byte FIFO serial ports with two internal 10pin header.

### **CN23/24 : COM1/COM2 Connector (DB9)**

PIN NO.	Description
1	DCD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

### **CN14/22 : COM1/COM2 Connector (5x2 Header)**

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-6237/HS-6637 offers two possibilities for keyboard connections to external PS/2 type keyboard at CN21, or an internal 5pin header at CN17.

### *☞* CN17: 5pin Keyboard Connector

PIN NO.	Description
1	Keyboard Clock
2	Keyboard Data
3	NC
4	GND
5	+5V

### *☞* CN21 : PS/2 6pin Mini Din Keyboard Connector

PIN NO.	Description
1	Keyboard Data
2	NC
3	GND
4	+5V
5	Keyboard Clock
6	NC

---

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

The HS-6237/HS-6637 provides an external PS/2 mouse connector at CN19 with following pin information.

### *☞* CN19 : PS/2 6pin Mini Din Mouse Connector

PIN NO.	Description
1	Data
2	NC
3	GND
4	+5V
5	CLK
6	NC

---

## 3.10 VGA Controller

The HS-6237/HS-6637 provides a setting for the selection of the working voltage of individual flat panel by JP8 setting as following.

### ☞ JP8 : Panel Voltage Select

Panel Voltage	JP8
*5.0 V	2-3
3.3 V	1-2

Please contact with your Panel supplier for make sure a correct Panel Voltage. Any mistake will cause defect to your Panel.

The HS-6237/HS-6637 has built in a 69000 CRT/Panel display controller with 2MB memory, support resolutions up to 1280x1024x256 colors, reserved internal 50pin Panel connector.

### ☞ JP2 : VGA Enable / Disable Select

VGA	Description
1-2	Enable
3-4	Disable

### ☞ CN20 : 15pin CRT Connector (DB15)

PIN NO.	Description	PIN NO.	Description
1	Red	2	Green
3	Blue	4	NC
5	GND	6	GND
7	GND	8	GND
9	NC	10	GND
11	NC	12	NC
13	Hsync	14	Vsync
15	NC		

The HS-6237/HS-6637 provides two possible connectives of VGA connections. One standard CRT connector as following CN20 pin information. Another internal 50pin header for Panel connection as following CN16 pin information.

**CN16 : 50pin Panel Connector**

PIN NO.	Description	PIN NO.	Description
1	+12V	2	+12V
3	GND	4	GND
5	3.3V / 5V <sup>Note-1</sup>	6	Enavdd
7	Enavee	8	GND
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	GND	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 JP8.

HS-6237/ HS-6637		Mon o	Mono	Mono	Color	Color	Color	Color	Color	Color	Color	Color	Color	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: Panel AC driver control													
38	LP,DE,HSYNC: Latch pulse													
40	ENABKL: Power sequencing control for enabling the backlight.(high active)													

---

## 3.11 IR Connector

The HS-6237/HS-6637 provides a 5pin internal IR communication connector as following CN13 pin information.

### *㉘* **CN13 : IR Connector**

PIN NO.	Description
1	VCC
2	FIRRX
3	IRRX
4	GND
5	IRTX

---

## 3.12 USB Connector

The HS-6237/HS-6637 provides two 8pin USB connectors. Please refer to the following detail pin information.

### *㉘* **JP10: USB Connector**

PIN NO.	JP10	PIN NO.	JP10
1	VCC	2	VCC
3	BD0-	4	BD1-
5	BD0+	6	BD1+
7	GND	8	GND

---

### 3.13 LAN Connector

The HS-6237/HS-6637 provides one external RJ45 10/100 Based LAN interface connector. Please refer to the following detail of pin information.

*2/2* **CN18 : RJ45 Connector**

PIN NO.	CN18
1	TX+
2	TX-
3	RX+
4	N/C
5	N/C
6	RX-
7	N/C
8	N/C
9	GND

There are three LED indicators provide the running conditions of the LAN with LE1, LE2 and LE3:

- LE1: 10T speed running
- LE2: 100T speed running
- LE3: LAN active

*2/2* **JP11: LAN Interface Select**

JP11	Description
ON	Disable
OFF	Enable



---

## 3.14 PC/104 Bus Connection

The HS-6237/HS-6637'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 CN10 and CN11 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.*

**CN10&CN11 : PC/104 Expansion Bus**

(CN10 = 64pin female connector; CN11 = 40pin female connector.)

Pin No.	CN10 Row A	Pin No.	CN10 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

Pin No.	CN11 Row D	Pin No.	CN11 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)

31	SA0	63	0V
32	0V	64	0V

## ***Chapter-4***

---

### **AWARD BIOS Setup**

The HS-6237/HS-6637 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.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANGEMENT SETUP	IDE HDD AUTO DETECTION
PCI CONFIGURATION SETUP	SAVE & EXIT SETUP
LOAD BIOS DEFAULTS	EXIT WITHOUT SAVING
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.

Data (mm:dd:yy) : Fri, Dec 19 1998										
Time (hh:mm:ss) : 00:00:00										
					CYLS	HEAD	PRECO	LANDZ	SECTO	MODE
							MP		R	
Driver C	?	Auto	( 0Mb)	0	0	0	0	0	0	Auto
Driver D	?	Auto	( 0Mb)	0	0	0	0	0	0	Auto
Drive A	: 1.44M , 3.5in.									
Drive B	: None									
LCD&CRT	: Auto			Base	Memory : 640K					
				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						

## 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.

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
Quick Power On Self Test	: Disabled	D4000-D7FFF Shadow	: Disabled
Boot Sequence	: A,C,SCSI	D8000-DBFFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	DC000-DFFFF Shadow	: 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		
PS/2 mouse function control	: Enabled	ESC : Quit	<del>ESC</del> <del>ESC</del> <del>ESC</del> : Select Item
PCI/VGA Palette Snoop	: Disabled	F1 : Help	PU/PD/+/- : Modify
OS Select For DRAM > 64MB	: Non-OS2	F5 : Old Values	(Shift) F2 : Color
Report No FDD For WIN 95	: Yes	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.

Auto Configuration	: Enabled	Auto Detect DIMM/PCI Clk	: Enabled
EDO DRAM Speed Selection	: 60ns	Spread Spectrum	: Disabled
EDO CAS# MA Wait State	: 2		
EDO RAS# Wait State	: 2		
SDRAM RAS-to-CAS Delay	: 3		
SDRAM RAS Precharge Time	: 3		
SDRAM CAS latency Time	: 3		
SDRAM Precharge Control	: Disabled		
DRAM Date Integrity Mode	: Non-ECC		
System BIOS Cacheable	: Enabled		
Video BIOS Cacheable	: Enabled		
Video RAM Cacheable	: Enabled		
8 Bit I/O Recovery	: 1		
16 Bit I/O Recovery	: 1		
Memory Hole At 15M-16M	: Disabled		
Passive Release	: Enabled	ESC	: Quit <i>Esc Esc Esc</i> : Select Item
Delayed Transation	: Disabled	F1	: Help PU/PD+/-: Modify
AGP Aperture Size	: 64M	F5	: Old Values (Shift) F2 : Color
		F6	: Load BIOS Defaults
		F7	: Load Setup Defaults

## 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).

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

\*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 (Large BIOS ONLY)
9	800*600 TFT Color Panel (Large BIOS ONLY)
10	800*600 Dual Scan STN Color Panel (Large BIOS ONLY)
11	800*600 Dual Scan STN Color Panel (Large BIOS ONLY)
12	1024*768 TFT Color Panel (Large BIOS ONLY)
13	1280*1024 Dual Scan STN Color Panel (Large BIOS ONLY)
14	1024*600 Dual Scan STN Color Panel (Large BIOS ONLY)
15	1024*600 TFT Color Panel (Large BIOS ONLY)

## 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.

Power Management	: User Define	** Reload Global Timer Events **	
PM Control by APM	: Yes	IRQ3 [3-7, 9-15], NMI	: Enabled
Video Off Method	: V/H Sync + Blank	Primary IDE0	: Disabled
Video Off After	: Standby	Primary IDE1	: Disabled
MODEM Use IRQ	: 3		
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		
Power On by Ring	: Enabled		
CPU fan on temp high	: Enabled		
IRQ8 Break Suspend	: Disabled		
		ESC	: Quit
		F1	: Help
		F5	: Old Values (Shift) F2 : Color
		F6	: Load BIOS Defaults
		F7	: Load Setup Defaults

---

## 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.

PnP OS Installed : No	Assign IRQ For VGA : Enabled
Resources Controlled by : Auto	
Reset Configuration Data : Disabled	Assign IRQ For USB : Enabled
	ESC : Quit <del>/<del>/<del>/<del> : Select Item</del></del></del></del>
	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 the detailed information of VGA and LAN function. How to install the configuration is also included.

Section include:

- VGA DRIVER INSTALLATION
- NETWORK DRIVER INSTALLATION

---

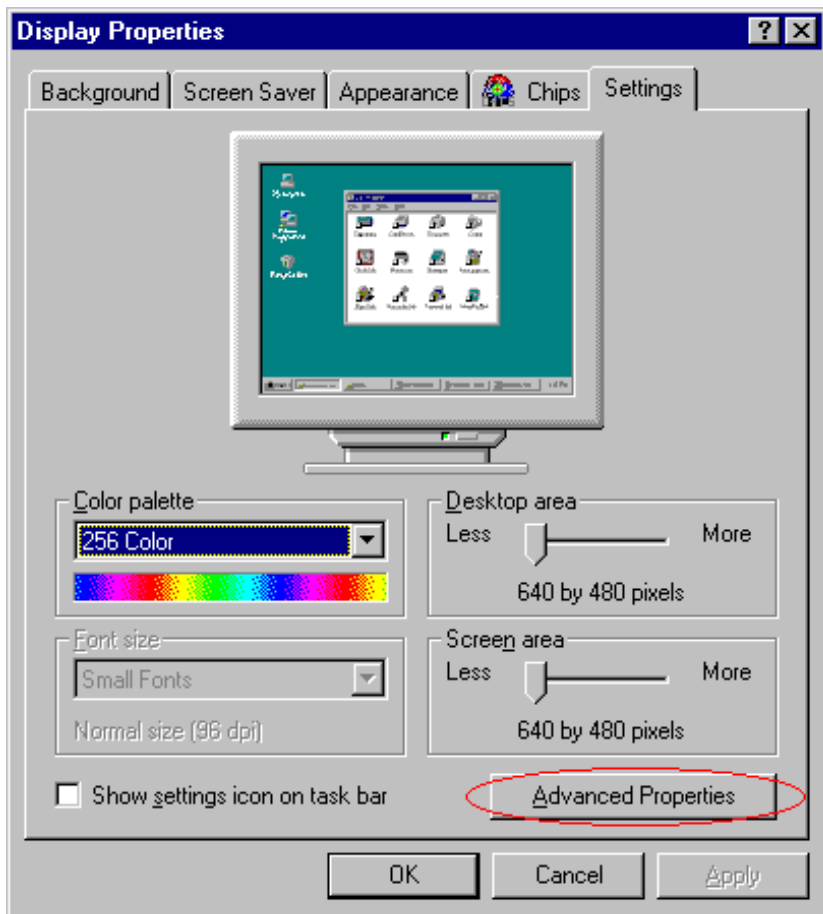
## 5.1 VGA DRIVER INSTALL FOR WIN95 & WIN98

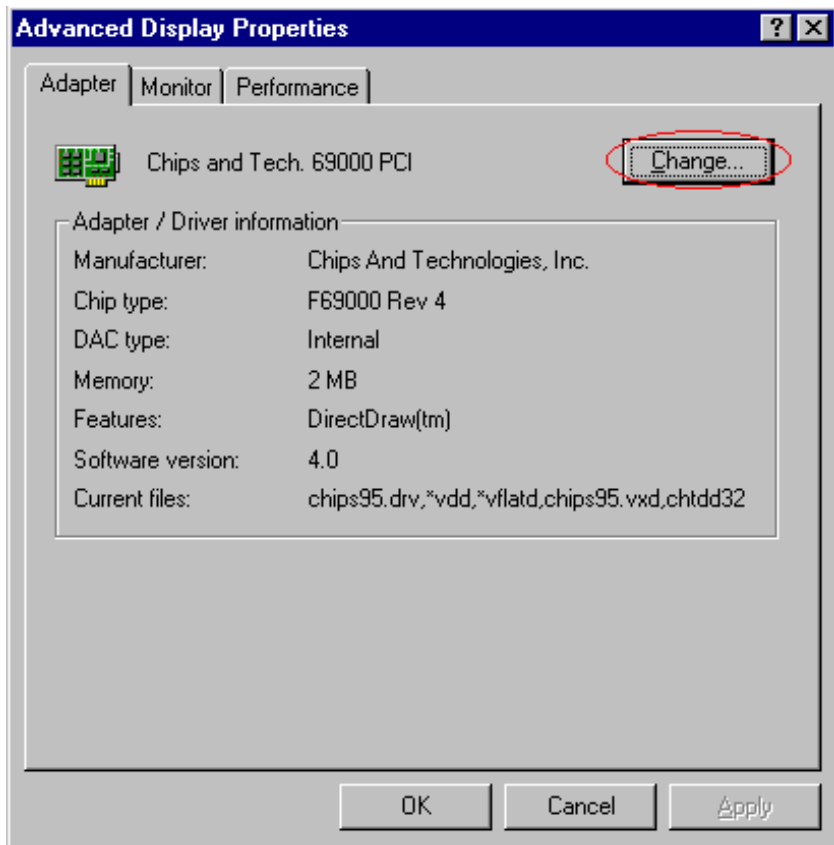
1. Click Start, then Setting, then Control Panel. Start the Display applet program.
2. Select the setting page, push the Advanced properties button. Push the change button in the adapter area.
3. Continue to click "Next". Select display a list of all drivers in a specific location, so you can select 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:\win95)
6. The Select device dialog box will appear.

Select **Chips and Tech. 69000 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 98 is similar to Windows95.





---

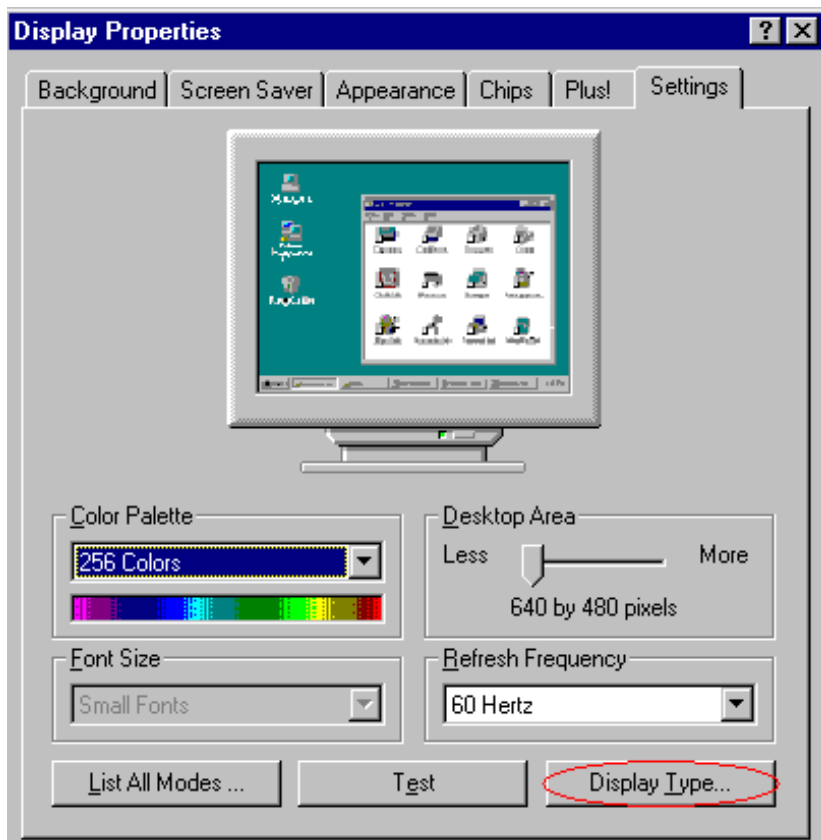
## 5.2 VGA DRIVER INSTALL FOR WIN NT4.0

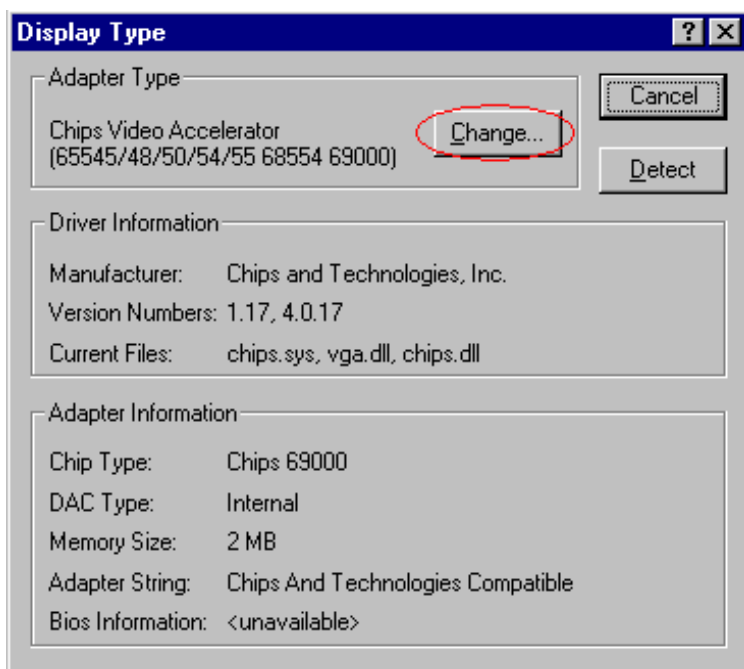
1. Click the Start button, then go to Settings and click on Control Panel. Click on Display icon to start the Display Properties window.
2. Click on the Settings tab, and then click on Display Type.
3. In the Change Display Type window, click on "Have Disk".
4. Specify the path to the new driver and press the <ENTER>key. (if in driver A:, type a:\nt40)

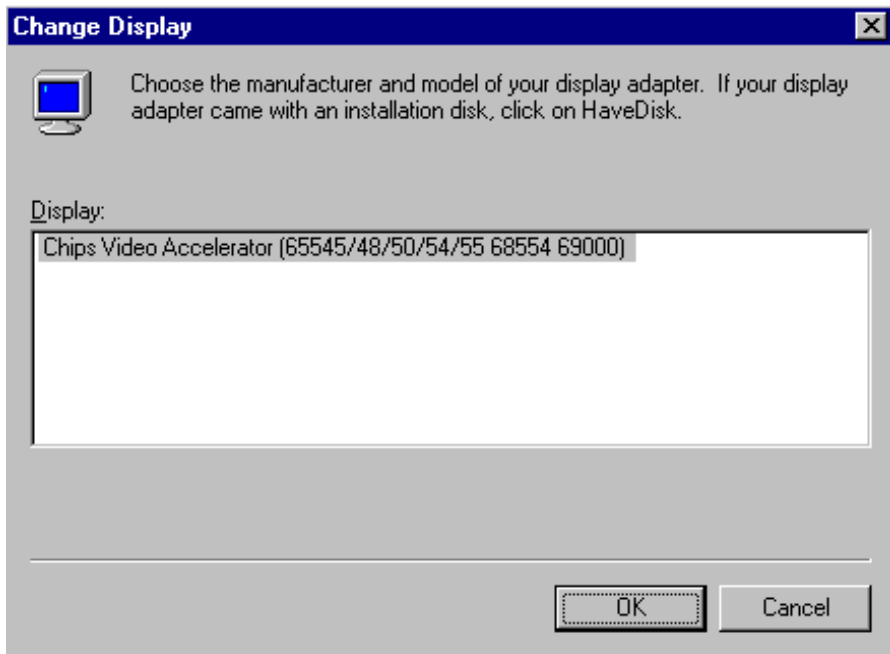
select **Chips Video Accelerator  
(655545/48/50/54/55/68554 69000)**

5. click OK or press Enter
6. You will then see warning panel about Third Party Drivers. Click on Yes to finish the install.
7. Once the installation is complete, the system must shut down and restart for the new driver to take effect.
8. After restart, checking on the VGA driver, the properties of the driver should look similar to the following figure.









---

## 5.3 NETWORK DRIVER INSTALL FOR WIN98 & WIN95

### **Win98**

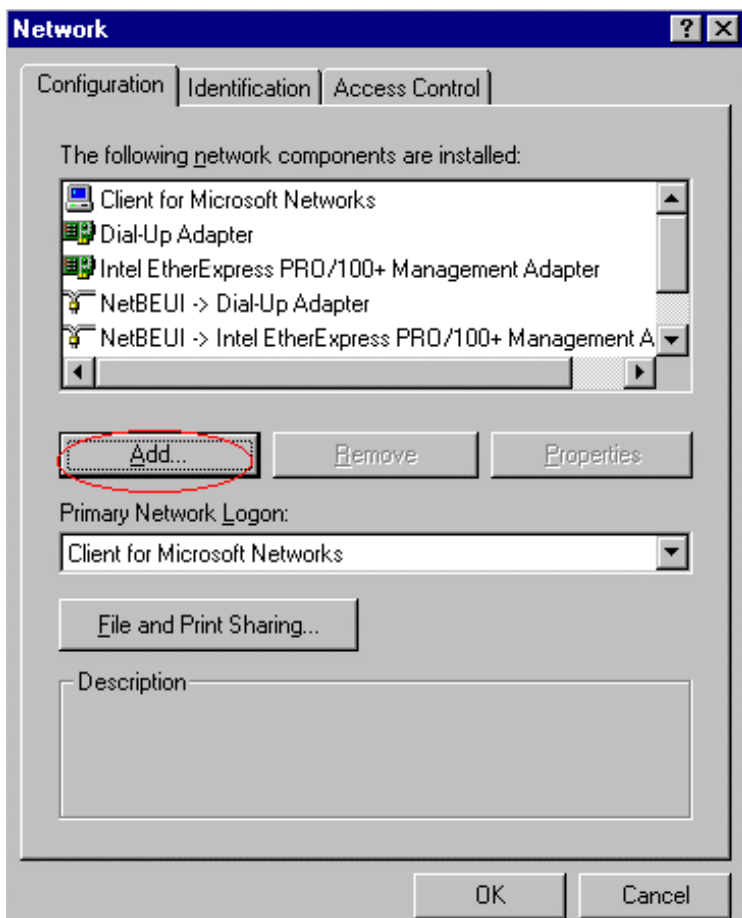
Windows 98 will detect the network driver automatically.

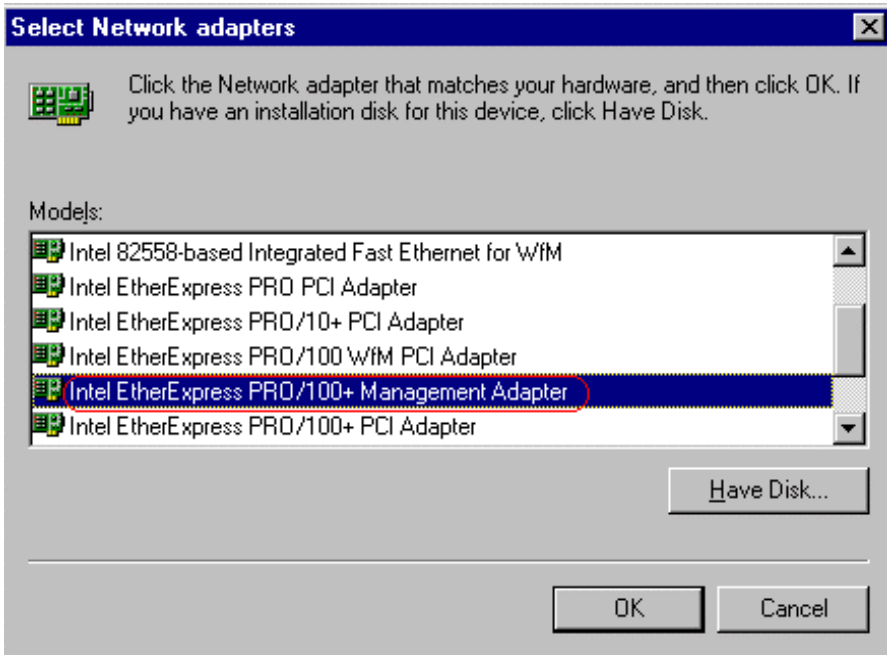
### **Win95**

1. Click Start, then Settings, in the “Setting” select Control panel. Start the network applet program.
2. In the Network window, click Add. In the Select Network Component Type, select Adapter then click Add.
3. When the Select Network Component Type, Select Adapter, then click Add.
4. 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**

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





---

## 5.4 NETWORK DRIVER INSTALL FOR WIN NT4.0

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

Select **Intel EtherExpress PRO Adapter**

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

