HS-6237/6637

BX Celeron™/ Coppermine™ VGA LAN

・Half Size・All-in-one・LAN・VGA CRT-LCD Interface・
・Supports DMA33・WDT・DOC・LAN・USB・IrDA・
・PISA Bus Industrial Single Board Computer・

HS-6237L/6637L

BX Celeron™/ Coppermine™ LAN

・Half Size・All-in-one・
・Supports DMA33・WDT・DOC・LAN・USB・IrDA・
・PISA Bus Industrial Single Board Computer・

HS-6237V/6637V

BX Celeron™ / Coppermine™VGA

・Half Size・All-in-one・VGA CRT-LCD Interface・
・Supports DMA33・WDT・DOC・USB・IrDA・
・PISA Bus Industrial Single Board Computer・

HS-6237P/6637P

BX Celeron™/ Coppermine™

・Half Size・All-in-one・
・Supports DMA33・WDT・DOC・USB・IrDA・
・PISA Bus Industrial Single Board Computer・

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Chapter-1

General Information

The HS-6237/6637 is a bus-100MHz Intel® BX chipset design PISA bus Celeron™/Coppermine™(Coppermine™ only for Ver2.1 PCB)Industrial Single Board (I.S.B.) 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 VGA CRT-LCD interface.

With onboard DMA33 of mode 4 to IDE drive interface architecture, the HS-6237/6637 supports with maximum 33.3 MB/sec in data transfer rating to 2 pieces IDE drive connection. Design with Intel®82443 BX core logic chipset supports all series Celeron™/Coppermine™ operating at 266MHz, 300MHz, 366MHz, 433MHz, The on-board Intel® 69000 VGA chipset supports up to 1280 x 1024 256 colors display resolution. And it also provides one internal 50-pin connector for various type of the LCD Panel connection.

The advanced PISA bus add-on connection of HS-6237/6637 allows user could easily obtain both ISA's 16-bit and PCI's 32-bit full set signals from a half size PISA slot for suitable plug into a any size system with 8/16/32-bit ISA and-or PCI slots operating. The HS-6237/6637 provides with two pieces 168-pin 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-6237/6637 features include one Intel® 82558B 10/100-Based LAN design on-board. With one external RJ-45 connector provides an easily for user's LAN application.

If a non-expect program cause halts, the onboard watchdog timer will automatically reset the CPU or generate an interrupt. The watchdog 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 supported.(HS-6237)
- ✓ ISA Bus supported.(HS-6637)
- ✓ One axial-horizontal type socket 370 for Intel® Celeron™/Coppermine™ 266～700 MHz Processors.
- ✓ Intel® 82443 BX chipset.
- ✓ Two pieces DIMM sockets supports DRAM up to 512 MB.
- ✓ Fast PCI DMA33 controller supports two IDE drives include large hard disks, CD-ROM and tape backup etc.
- ✓ PnP I/O address & IRQ selection
- ✓ On-board Intel® 82558B 10/100-Based LAN chipset.
- ✓ Two high-speed RS-232 serial ports with 16C550 UART 16-byte FIFO.
- ✓ One enhanced bi-directional parallel port supports SPP/EPP/ECP.
- ✓ On-board PS/2 Keyboard and PS/2 Mouse connector.
- ✓ On-board Intel® 69000 SVGA adapter.
- ✓ On-board one 50-pin for various types LCD Panel connection.
- ✓ DiskOnChip™ Socket supports memory size up to 144 MB.
- ✓ On-board two USB ports and one IrDA port.
- ✓ Build-in one industrial WDT Watch-Dog-Timer.
- ✓ AWARD PnP Y2K Flash BIOS.
- ✓ Hardware Temperature Alarm*

*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:** One piece Intel® Celeron™/Coppermine™ 266-700 MHz.
- ✧ **Bus interface:** PISA bus for HS-6237 (ISA bus for HS-6637).
- ✧ **Chipset:** Intel® 82443 BX with bus-100MHz facility.
- ✧ **Data bus:** 64-bit
- ✧ **Processing ability:** 64-bit
- ✧ **CRT-LCD SVGA Controller:** Intel® 69000 chipset with on-chip 2MB memory supports CRT up to 1280x1024 256 colors. Provides internal 50-pin LCD connector.
- ✧ **LAN Interface:** Intel® 82558B 10/100-Based LAN provides 10-Based or 100-Based ability.
- ✧ **PCI Enhanced IDE Interfaces:** Two IDE drives supports modes 3&4 with DMA33 function provide data transfer rate up to 33MB/Sec.
- ✧ **RAM memory:** Two pieces 168-pin DIMM sockets provide up to 512 MB.
- ✧ **Cache memory:** socket 370 supports Intel's Celeron™/Coppermine™ CPU with build-in 256KB Pipeline burst cache memory.
- ✧ **Floppy disk drive interface:** Supports up to two floppy disk drives.
- ✧ **Parallel port:** One bi-directional parallel port. Supports SPP/ECP/EPP.
- ✧ **Serial ports:** Two RS-232 ports. Both use 16C550 UART with 16-byte FIFO.
- ✧ **BIOS:** AWARD PnP Y2K Flash BIOS.
- ✧ **Watchdog timer:** Hardware circuit can be set by 1, 2, 10, 20, 110, or 220 seconds period Reset or NMI were generated when CPU did not periodically trigger the timer.
- ✧ **DMA channels:** 7
- ✧ **Temperature Alarm:** Hardware monitoring.

- **Interrupt levels:** 15
- **Keyboard:** 6-pin mini DIN connector or 5-pin header supports standard PC/AT keyboard.
- **Mouse:** 6-pin mini DIN connector support PS/2 type mouse.
- **USB:** Supports 2 USB header.
- **IR interface:** Supports one IrDA TX/RX header.
- **Flash memory Disk:** Socket for DiskOnChip™ (DOC), support up to 144MB Flash memory disk.
- **Extra Power Connector:** Provides one 5-PIN extra DC +5V/+12V power connector.
- **CMOS:** Real-time clock/calendar and battery backup by DS12B887 or equivalent device.
- **Power supply voltage:** +5V (4.75 to 5.25V), +12V.
- **Max. Power requirement:** +5V @5A(300MHz), +12V@20mA.
- **Operating temperature:** 0-55°C (CPU need cooler)
- **Board size:** 7.3"(L) x 5" (W) (158mm x 127mm)

The HS-6237/6637 provides with VGA CRT-LCD Interface, supports DMA33, WDT, DOC, LAN, USB and IrDA.

The HS-6237V/6637V provides with VGA CRT-LCD Interface, supports DMA33, WDT, DOC, USB and IrDA. (A version without LAN of HS-6237/6637).

The HS-6237L/6637L provides with support DMA33, WDT, DOC, LAN, USB and IrDA. (A version without VGA CRT-LCD on-board of HS-6237/6637).

The HS-6237P provides with support DMA33, WDT, DOC, USB and IrDA. (A version without LAN and VGA CRT-LCD on-board of HS-6237/6637).

1.3 Delivery Package

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

- One HS-6237/6637 Industrial Single Board
- 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 DIN type Keyboard Transfer Cable
- Utility Diskette
- 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:

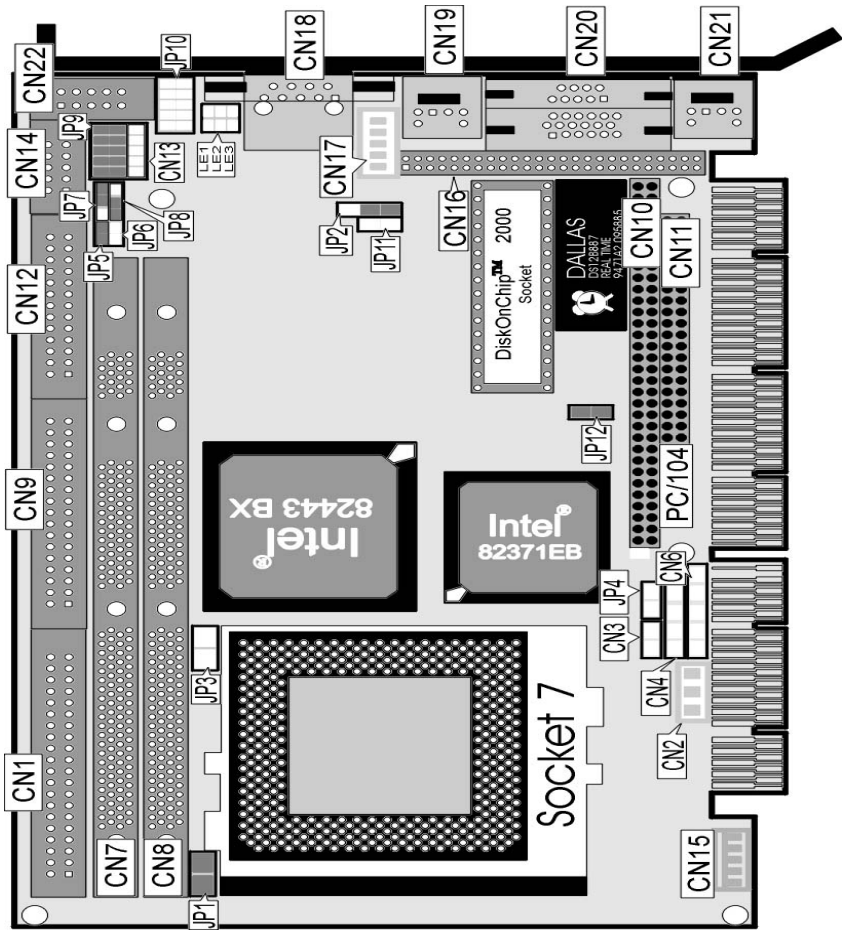
1. Please use a grounding wrist strap on whoever needs to handle the HS-6237/6637. Well clip the ALLIGATOR clip of the strap to the end of the shielded wire lead from a grounded object. Please put on and connect the strap before handle the HS-6237/6637 for harmlessly discharge any static electricity 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-6237/6637's Layout



2.4 Quick Listing of Jumpers

JP1,JP5	—	CPU Clock-in Select
JP2	—	JP2 VGA Hardware disable/enable
JP4	—	Reset pin
JP6	—	RTC Clear Jumper (If DS12C887 version the JP6 is nonuse.)
JP7	—	WATCHDOG Active Select
JP8	—	Panel Voltage Select
JP9	—	Watch timer & DOC address select
JP10	—	USB0, USB1
JP11	—	LAN select
JP12	—	Hardware Temperature Alarm Select

2.5 Quick Listing of Connectors

CN1: HDD (IDE) CONNECTOR
CN2: FAN CONNECTOR
CN3: HDD LED
CN4: SPEAKER
CN6: KEYLOCK CONNECTOR
CN7: DIMM SOCKET 1
CN8: DIMM SOCKET 2
CN9: FDD CONNECTOR
CN10: PC104-64
CN11: PC104-40
CN12: PARALLEL PORT CONNECTOR
CN13: IR CONNECTOR (5-PIN)
CN14: COM1 (HEADER 5x2)
CN15: POWER CONNECTOR
CN16: PANEL CONNECTOR
CN17: KEYBOARD CONNECTOR 5PIN (HEADER 1x5)
CN18: RJ-45 LAN CONNECTOR
CN19: MINI-DIN PS2 MOUSE CONNECTOR
CN20: EXTERNAL VGA CONNECTOR (DB15)
CN21: MINI-DIN 6-PINS KEYBOARD CONNECTOR
CN22: COM2 (HEADER 5x2)
CN23: COM1 (DB9)
CN24: COM2 (DB9)

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.

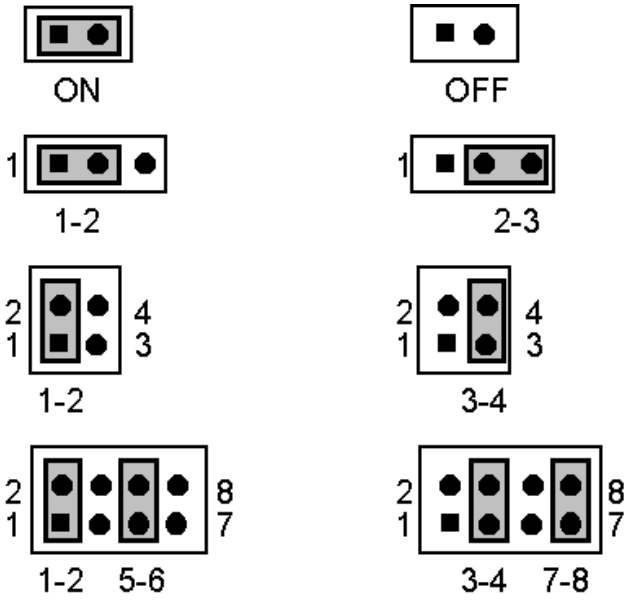


Figure 2.2

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 Bus-Clock Frequency

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

- **Bus-Clock Frequency Setting of JP1 and JP5 :**

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

2.8 Setting the RTC Configuration

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

- **CMOS Setting of JP6:**

CMOS Clear Jumper	JP6
Normal	*** OFF**
Clear CMOS	ON

2.9 System Memory DRAM

The HS-6237/6637 provides a wide SDRAM memory by two pieces DIMM sockets (DIMM-1, DIMM-2) request the access time should meet PC-100 standard. The maximum capacity of the on board memory is 1GBytes.

2.10 Setting the Flat Panel Voltage

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

- **Flat Panel Voltage Selecting of JP8:**

Panel's Working Voltage	JP8
5.0 V	*** 2-3**
3.3 V	1-2

Please contact with your flat panel supplier for make sure a correct Panel's Working Voltage. Any mistake will cause defect to your flat panel.

2.11 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 Timer's period. Otherwise, it will assume that the program operation is abnormal when the time counting over the period preset of WDT Timer. 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 Active Type Setting**

JP7	DESCRIPTION
***1-2**	**System Reset**
2-3	Active NMI
OFF	disable Watch-dog timer

- **JP9 : 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 120 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 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
```

2.12PCI VGA Controller

The HS-6237/6637 has built-in a Intel® 69000 VGA Controller with on-chip 2 MB memory, support resolutions up to 1280 x 1024 256 colors, reserved internal 50-pin LCD Panel connector.

To get more VGA drivers information, please refer to the Intel® Internet address: **www.intel.com**

- **JP2 : VGA Hareware Slect**

VGA	Select
Enable	1-2
Disable	3-4

2.13 DiskOnChip™ Address Setting

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

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

- **JP9 : DiskOnChip™ Address**

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

*) : 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-6237/6637 provides one 5-pin DC-Power connector as following CN15 pin information. And also provides one 3-pin fan out connector as following CN2 pin information.

- **CN15 : 5-PIN POWER CONNECTOR**

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

- **CN2 : 3-PIN FAN OUT CONNECTOR**

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

3.2 IDE's LED, Key-Lock and Reset Button

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

- **CN3 : IDE LED connector**

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

- **CN6 : POWER LED & KEYLOCK**

PIN NO.	DESCRIPTION
1	POWER LED ANODE
2	NC
3	GROUND
4	KEYLOCK
5	GROUND

- **JP4 : RESET BUTTON**

PIN NO.	DESCRIPTION
1	GROUND
2	EXTERNAL RESET

3.3 External Speaker

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

- **CN4 : Speaker Connector**

PIN NO.	DESCRIPTION
1	SPEAKER SIGNAL
2	NC
3	GROUND

4	+5V

3.4 PCI E-IDE Drive Connector

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

CN1: Primary IDE Connector

- **CN1: 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

3.5Parallel Port Connector

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

- **CN12: 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 34-pin 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	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-6237/6637 offers two high speed NS16C550 compatible UARTs with Read/Receive 16 byte FIFO serial ports with two internal 10-pin header. The HS-6237P/6637PP which is with two external DB-9 connectors without VGA nor LAN on-board. All pin-assignment are listing at below:

- **CN23/24 : Serial Port DB-9 Connector (COM1/COM2)**

PIN NO.	DESCRIPTION
1	DATA CARRIER DETECT (DCD)
2	RECEIVE DATA (RXD)
3	TRANSMIT DATA (TXD)
4	DATA TERMINAL READY (DTR)
5	GROUND (GND)
6	DATA SET READY (DSR)
7	REQUEST TO SEND (RTS)
8	CLEAR TO SEND (CTS)
9	RING INDICATOR (RI)

- **CN14/22 : Serial Port 10-pin 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-6237/6637 offers two possibilities for keyboard connections to external PS/2 type keyboard at CN21, or an internal 5-pin header at CN17.

- **CN17: 5-pin Header Keyboard Connector**

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

- **CN21 : 6-pin Mini-DIN Keyboard Connector**

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

3.9 PS/2 Mouse 6-pin Mini-DIN Connector

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

- **CN19 : PS/2 Mouse Connector**

PIN NO.	DESCRIPTION
1	DATA
2	NC
3	GROUND
4	+5V
5	CLK
6	NC

3.10 VGA CRT and LCD Connectors

The HS-6237/6637 provides two possible connectives of VGA connections. One standard DB-15 external VGA connector as following CN20 pin information. Another internal 50-pin header for LCD Panel connection as following CN16 pin information.

- **CN16 : 50-pin Internal LCD Panel Connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+12V	2	+12V
3	Ground	4	Ground
5	3.3V / 5V Note-1	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 JP8.

Flat Panel Display Interface (continued)

HS-6237/ HS-6637		Mono SS	Mono DD	Mono DD	Color TFT	Color TFT	Color TFT	Color TFT	Color STN-HR	Color STN-SS	Color STN-SS	Color STN-DD	Color STN-DD	Color STN-DD
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)													

- **CN20 : 15-pin 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		

3.11 IR Connector

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

- **CN13 : 5-PIN IR CONNECTOR**

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

3.12 USB Ports Connector

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

- **JP10: 8-pin Header USB Connector**

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

3.13 LAN Interface Connector

The HS-6237/6637 provides one external RJ-45 100-based LAN interface connector. Please refer to the following detail of pin information.

- **CN18 : RJ-45 9-pin LAN Connector**

PIN NO.	JP9
1	TX+
2	TX-
3	RX+
4	N/C
5	N/C
6	RX-
7	N/C
8	N/C
9	Ground

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

- **JP11: LAN Interface Select**

JP11	Disable	Enable
LAN	ON	OFF

Chapter-4

AWARD BIOS Setup

The HS-6200 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 (xxxxxxxx)

CMOS SETUP UTILITY

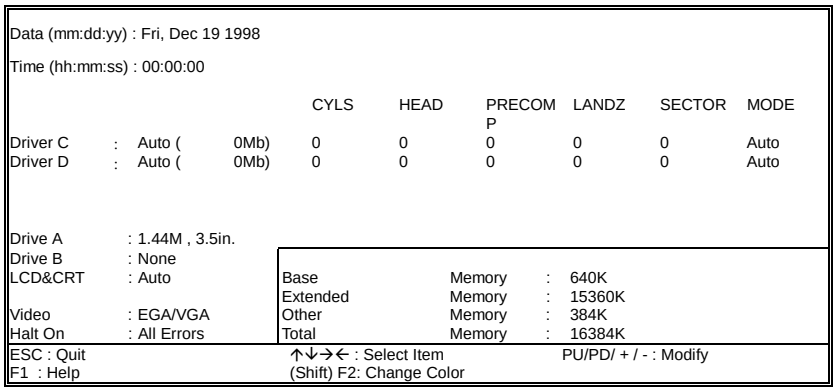
AWARD SOFTWARE, INC.

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.



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
		D4000-D7FFF	Shadow	:	Disabled
Quick Power On Self Test	: Disabled	D8000-DBFFF	Shadow	:	Disabled
Boot Sequence	: A,C,SCSI	DC000-DFFFF	Shadow	:	Disabled
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				
PS/2 mouse function conltrol	: Enabled	ESC	: Quit	↑↓→←: 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	
		G6	: Load BIOS Defaults		
Report No FDD For WIN 95	: Yes	G7	: Load Setup Defaults		

4.4 Chipset Features Setup

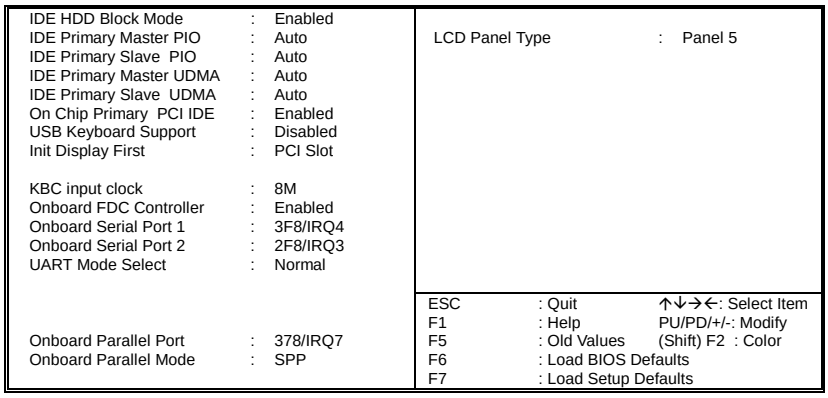
This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and the access to the system memory resources, such as DRAM and the external cache. It also coordinates the communications between the conventional ISA and PCI buses. 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 CASx# MA Wait State	:	2			
EDO RASx# 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	↑↓→←: 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).



*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 (Lange BIOS ONLY)
15	1024*600 TFT Color Panel (Lange 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			
Standby Mode	:	Disabled	Floppy Disk	:	Disabled
Suspend Mode	:	Disabled	Serial Port	:	Enabled
HDD Power Down	:	Disabled	Parallel Port	:	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	↑↓→←: Select Item
F1	: Help	PU/PD/+/-: Modify
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		↑↓→←: Select Item
			F1 : Help		PU/PD/+/-: Modify
			F5 : Old Values		(Shift) F2 : Color
			F6 : Load BIOS Defaults		
			F7 : Load Setup Defaults		

Chapter-5

A Brief Information of 10/100 based-T LAN

The HS-6200 provides an on board 32-bit PCI 10/100 based-T Intel® 82558A Ethernet LAN interface RJ-45 connection for easy using the HS-6200 half size all-in-one Pentium® VGA CRT-LCD interface with 100-based network industrial single board in connection to-with Novell NE2000 compatible LAN network system.

The HS-6200's design that is basing on Intel® 82558A chipset with provides a RJ-45 100 base-T NE2000 compatible interfaces. For more information, please contact with your supplier.

For completed information, please visit Intel® Web and Internet Sites:

Support: http://support.intel.com

News: news://cs.intel.com

Network Products: http://www.intel.com/comm-net.sns

Corporate: http://www.intel.com

FTP Host: ftp.intel.com

FTP Directory:

/pub/support/enduser_reseller/etherexpress_lan_adapters

Chapter-6

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

6.1 VGA DRIVER INSTALL FOR WIN95&98

1. Click Start, then Setting, then Control Panel.
2. Start the Display applet program.
3. Select the setting page, push the Advanced properties button.
4. Push the change button in the adapter area.
5. Continue to click “Next”. Select

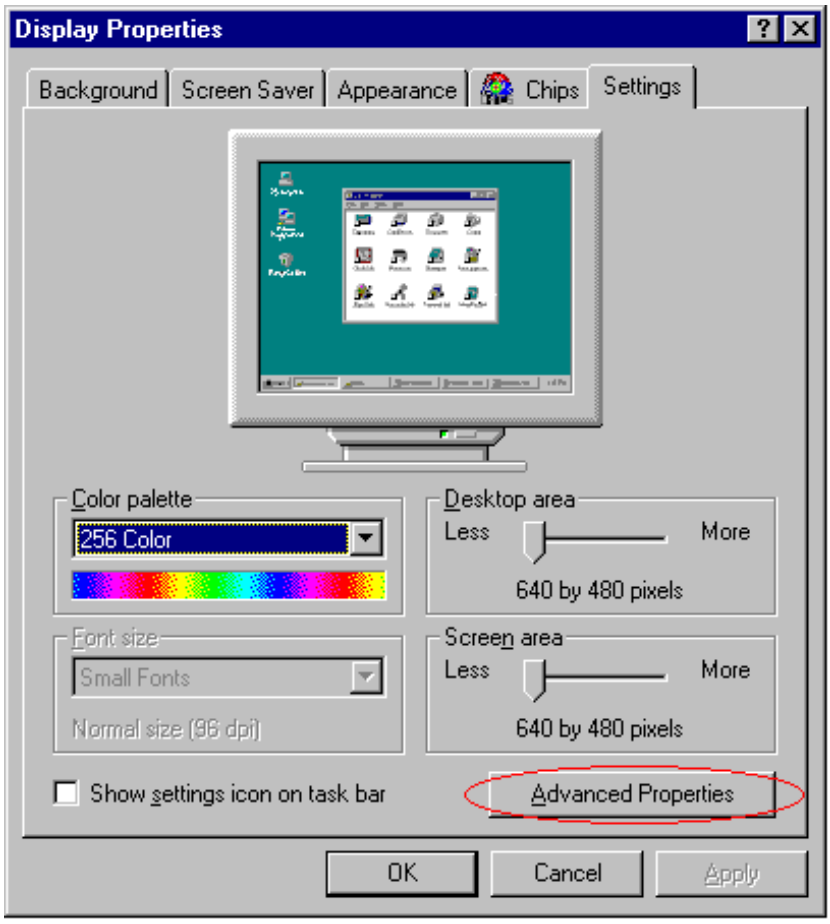
   Display a list of all drivers in a specific location,

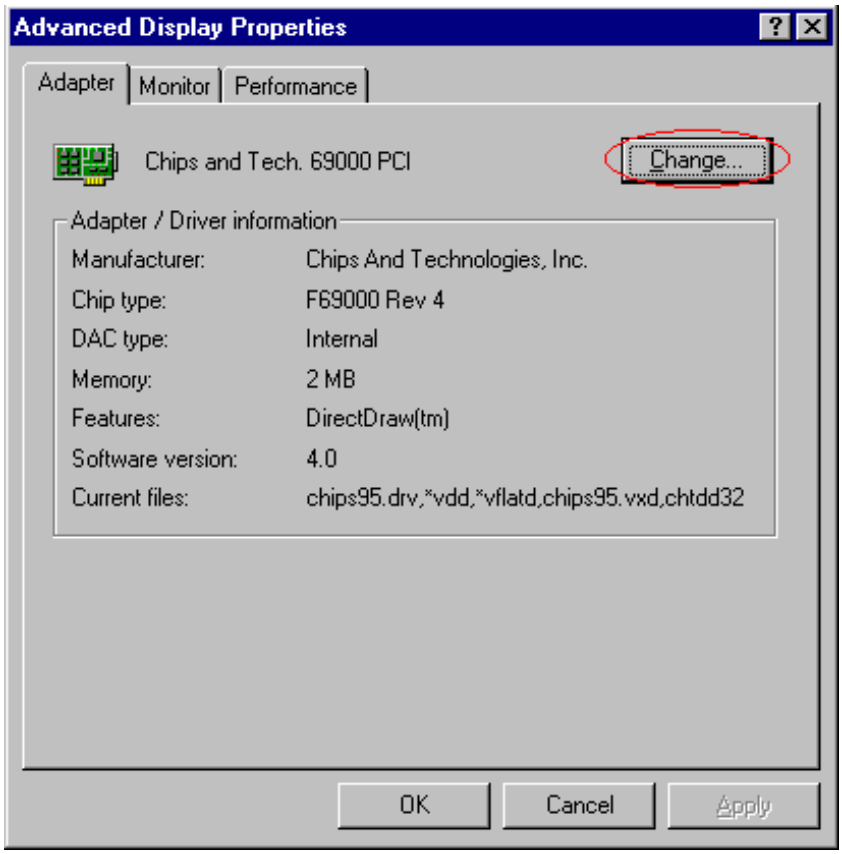
   so you can select the drivers you want.
6. Click “Next”.
7. Select the Specify a location checkbox and click “Browse”.
8. Specify the path to the new driver and press the ,<ENTER> key.

   (if in driver A:, select a:\win95)
9. The Select device dialog box will appear.

   Select Chips and Tech. 69000 PCI
10. Continue choosing close until asked to restart machine.
11. 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.


Display Properties
Background
Screen Saver
Appearance
Chips
Settings
Color palette
256 Color
Desktop area
Less
More
640 by 480 pixels
Font size
Small Fonts
Normal size (96 dpi)
Screen area
Less
More
640 by 480 pixels
Show settings icon on task bar
Advanced Properties
OK
Cancel
Apply

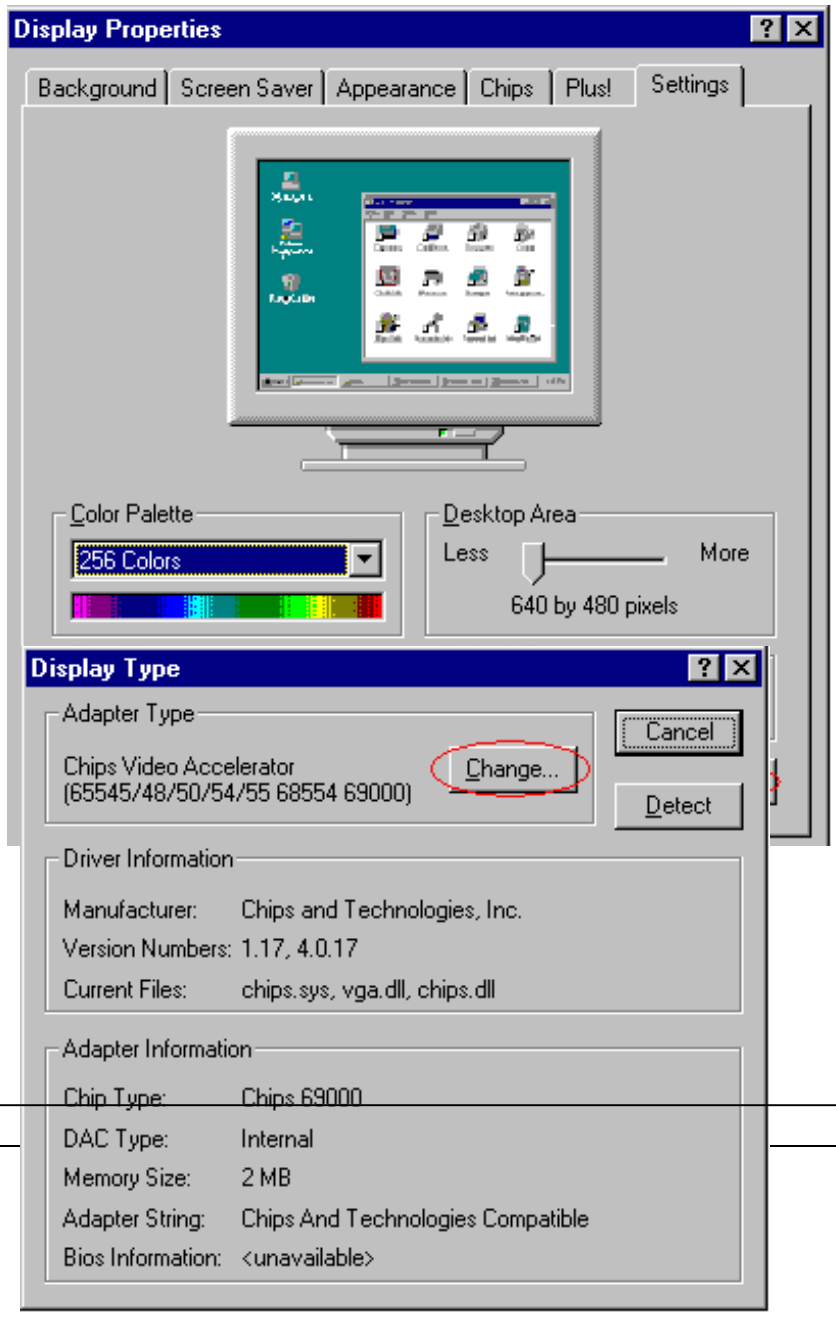


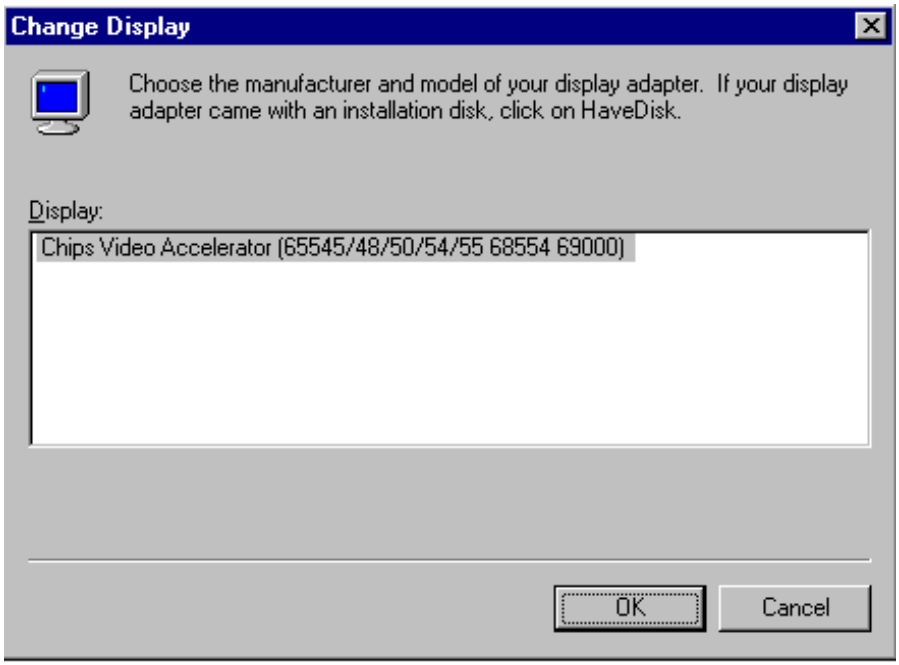
6.2 VGA DRIVER INSTALL FOR WIN NT4.0

1. Click the Start button, then go to Settings 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 (655545/48/50/54/55/68554 69000)
6. click OK or press Enter
7. You will then see warning panel about Third Party Drivers. Click on Yes to finish the install.
8. Once the installation is complete, 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.


Display Properties
Background
Screen Saver
Appearance
Chips
Plus!
Settings
Color Palette
256 Colors
Desktop Area
Less
More
640 by 480 pixels
Display Type
Adapter Type
Chips Video Accelerator
(65545/48/50/54/55 68554 69000)
Change...
Cancel
Detect
Driver Information
Manufacturer: Chips and Technologies, Inc.
Version Numbers: 1.17, 4.0.17
Current Files: chips.sys, vga.dll, chips.dll
Adapter Information
Chip Type: Chips 69000
DAC Type: Internal
Memory Size: 2 MB
Adapter String: Chips And Technologies Compatible
Bios Information: <unavailable>


Change Display
Choose the manufacturer and model of your display adapter. If your display adapter came with an installation disk, click on HaveDisk.
Display:
Chips Video Accelerator (65545/48/50/54/55 68554 69000)
OK
Cancel

6.3 NETWORK DRIVER INSTALL FOR WIN98&95

Win98

Windows 98 will detect the network driver automatically.

Win95

1. Click Start, then Settings, 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)

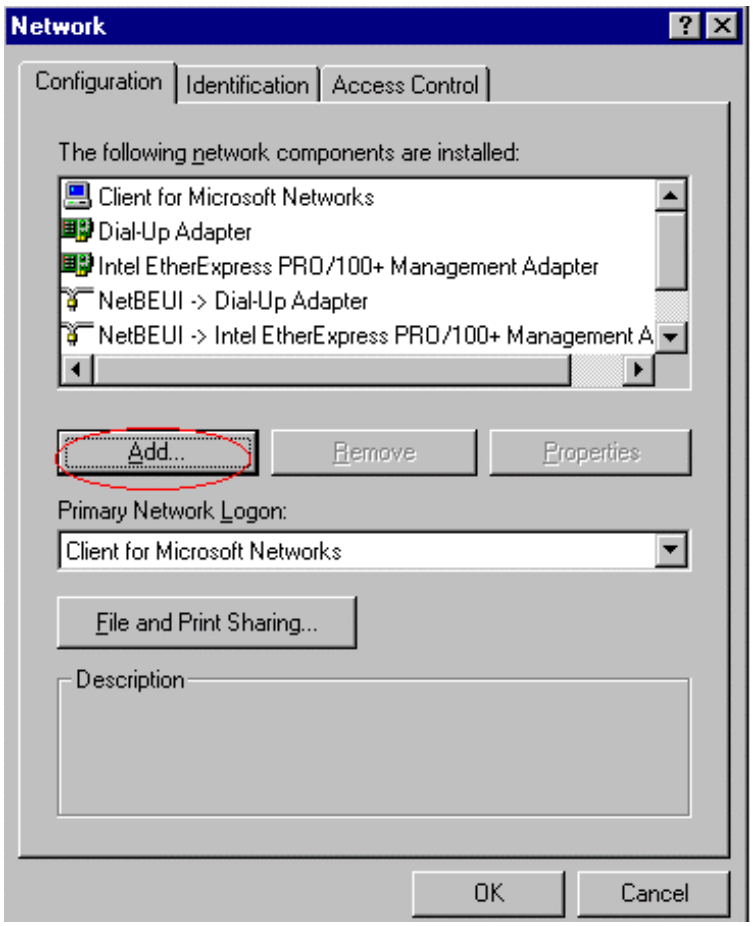
Select Intel EtherExpress PRO/100+ Management Adapter

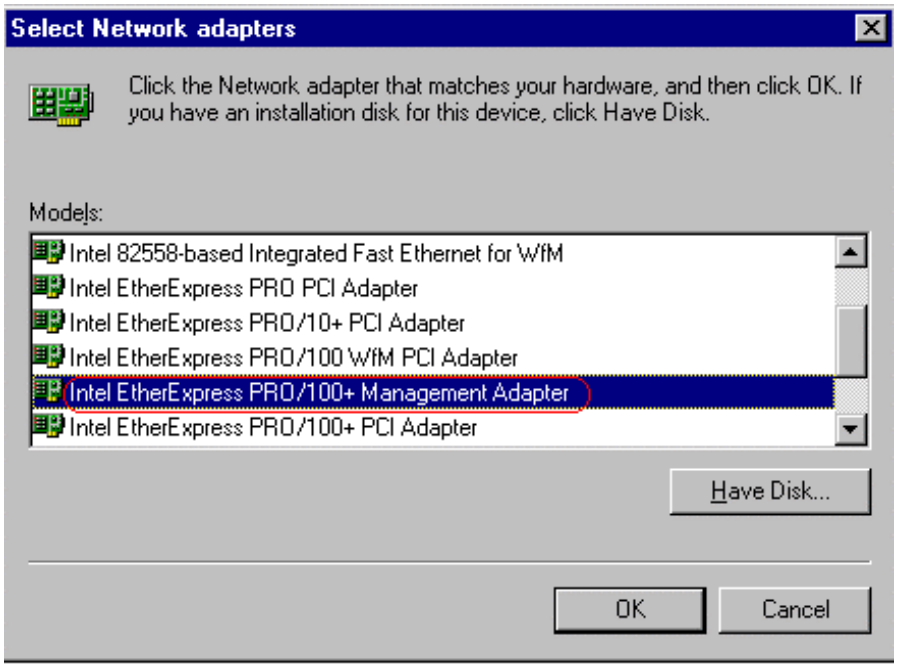
7. Click OK.

8. Windows 95 will copy the network drivers to the proper directories on your system.

9. Continue choosing “OK”, util 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.


Network
Configuration
Identification
Access Control
The following network components are installed:
Client for Microsoft Networks
Dial-Up Adapter
Intel EtherExpress PRO/100+ Management Adapter
NetBEUI -> Dial-Up Adapter
NetBEUI -> Intel EtherExpress PRO/100+ Management A
Add...
Remove
Properties
Primary Network Logon:
Client for Microsoft Networks
File and Print Sharing...
Description
OK
Cancel

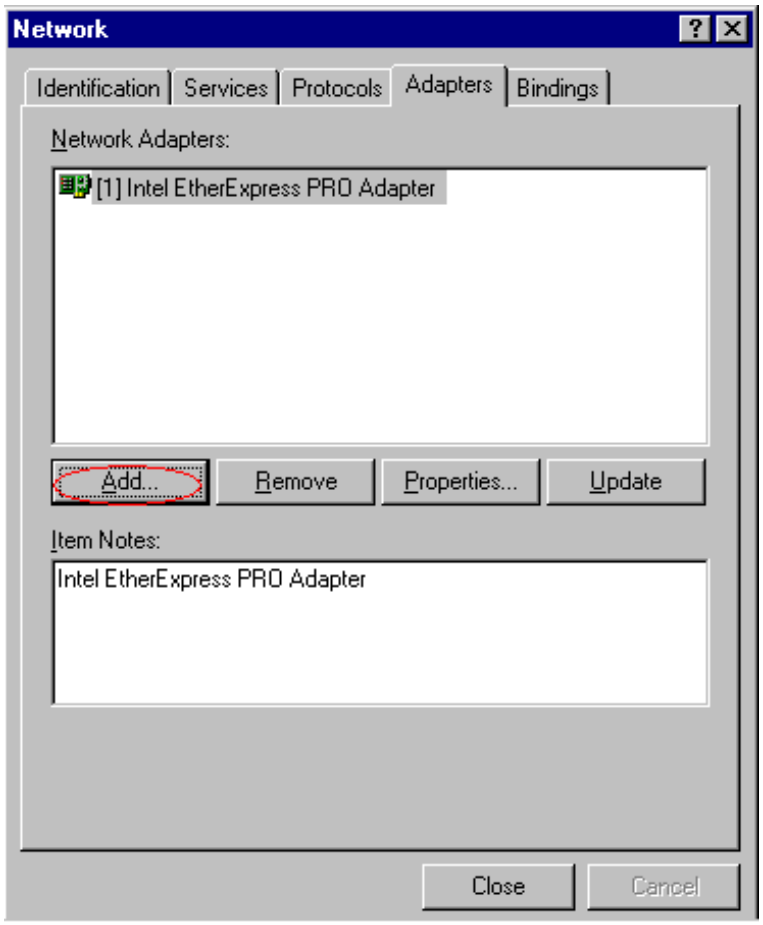

Select Network adapters
Click the Network adapter that matches your hardware, and then click OK. If you have an installation disk for this device, click Have Disk.
Models:
Intel 82558-based Integrated Fast Ethernet for WfM
Intel EtherExpress PRO PCI Adapter
Intel EtherExpress PRO/10+ PCI Adapter
Intel EtherExpress PRO/100 WfM PCI Adapter
Intel EtherExpress PRO/100+ Management Adapter
Intel EtherExpress PRO/100+ PCI Adapter
Have Disk...
OK
Cancel

6.4 NETWORK DRIVER INSTALL FOR WIN NT4.0

1. Click the Start button, then go to Settings 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 on Add.
4. In the Select Network Adapter window, click on Have Disk.
5. This will bring up the Insert Disk window.
6. Supply the directory where the Windows NT driver file are located.

   (If in driver a:, type a:\)
7. The Select OEM Option window will show up.

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


Network
Identification
Services
Protocols
Adapters
Bindings
Network Adapters:
[1] Intel EtherExpress PRO Adapter
Add...
Remove
Properties...
Update
Item Notes:
Intel EtherExpress PRO Adapter
Close
Cancel