HS-6038

Socket 370 133MHz FSB Industrial Single Board Computer • Full-size • All-in-One • CompactFlash • • 133MHz FSB • CRT • Dual LAN • Audio • • ATA/33/66/100 • RS-232/422/485 • PC/104 • • IrDA • USB • DOC • WDT • H/W Monitor • • PICMG Bus Industrial Single Board Computer •

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Safety Instructions

Integrated circuits on computer boards are sensitive to static electricity. To avoid damaging chips from electrostatic discharge, observe the following precautions:

- Do not remove boards or integrated circuits from their anti-static packaging until you are ready to install them.
- Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This helps to discharge any static electricity on your body.
- Wear a wrist-grounding strap, available from most electronic component stores, when handling boards and components. Fasten the ALLIGATOR clip of the strap to the end of the shielded wire lead from a grounded object. Please wear and connect the strap before handle the HS-6038 to ensure harmlessly discharge any static electricity through the strap.
- Please use an anti-static pad when putting down any components or parts or tools outside the computer. You may also use an anti-static bag instead of the pad. Please inquire from your local supplier for additional assistance in finding the necessary anti-static gadgets.
- **NOTE:** DO NOT TOUCH THE BOARD OR ANY OTHER SENSITIVE COMPONENTS WITHOUT ALL NECESSARY ANTI-STATIC PROTECTION.

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Chapter 1

General Description



The HS-6038 is a 133MHz FSB Intel[®] 82815/82801BA chipset-based board designed for PICMG Bus Celeron[™]/Coppermine[™]/Tualatin[™] 800MHz~1.2GHz CPU compatibility. These features combine and make the HS-6038 an ideal all-in-one industrial single board computer. Additional features include an enhanced I/O with CompactFlash, VGA, dual LAN, audio, and two COM interfaces.

Its onboard ATA/33/66/100 to connected IDE drive interface architecture allows the HS-6038 to support data transfers of 33, 66 or 100MB/sec. for each IDE drive connection. Designed with the Intel[®] 82815/82801BA core logic chipset, the board supports all Celeron[™]/Coppermine[™]/Tualatin[™] CPU series operating at 800MHz to 1.2GHz. The 82815 integrated CRT display controller supports up to 1280 x 1024 at 16 color resolution.

A single Flash chip holds the system BIOS, and you can change the Flash BIOS by the Utility Update. Advanced IrDA port also provides a faster data transmission. You can also use the DOS version of the "DiskOnChipTM" socket by issuing commands from the DOS prompt without the necessity of other software supports up to 288MB. System memory is also sufficient with the two DIMM sockets that can support up to 512MB.



Additional onboard connectors include an advanced USB and IrDA ports providing faster data transmission, and a dual RJ-45 connector for 10/100 Based Ethernet use.

To ensure the reliability in an unmanned or standalone system, the Watchdog Timer (WDT) onboard HS-6038 is designed with pure hardware that does not need the arithmetical functions of a real-time clock chip. If any program causes unexpected halts to the system, the onboard Watchdog Timer (WDT) will automatically reset the CPU or generate an interrupt to resolve such condition.

The HS-6038 also has a CompactFlashTM connector that accommodates standard of memory cards available in the market.

1.1 Major Features

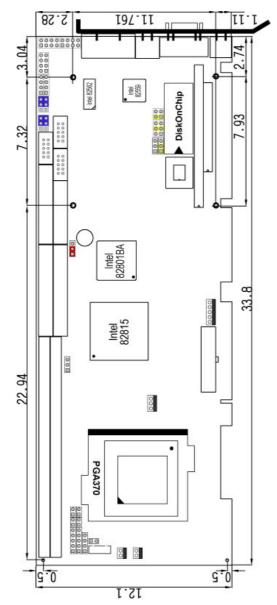
The HS-6038 comes with the following features:

- Socket 370 for Intel[®] Celeron[™]/Coppermine[™]/Tualatin[™] 800MHz ~1.2GHz CPU
- Supports 66/100/133MHz FSB
- Two DIMM sockets with a max. capacity of 512MB
- Intel[®] 82815/82801BA system chipset
- Winbond W83627 super I/O chipset
- ➢ Intel[®] 82815 CRT display controller
- Intel[®] 82559 and ICHII 10/100 Based LAN
- AC97 3D audio controller
- > Two COM, four USB connectors
- PC/104 Bus connector
- ▶ DiskOnChipTM socket supporting memory sizes of up to 288MB
- Supports Hardware Monitor
- Supports CompactFlash[™] card reader (optional)

1.2 Specifications

- **CPU:** Socket 370 for Intel[®] Celeron[™]/Coppermine[™]/Tualatin[™] 800MHz ~1.2GHz CPU
- Bus Interface: PICMG Bus
- Memory: Two DIMM sockets supporting up to 512MB
- Chipset: Intel[®] 82815/82801BA
- I/O Chipset: Winbond W83627
- CompactFlash™: One, IDE interface adapter (optional)
- VGA: Intel[®] 82815 supporting CRT display up to 1280 x 1024 at 16 colors
- LAN: Intel[®] 82559 and Intel[®] ICHII 10/100 Based LAN
- Audio: AC97 3D audio controller
- IDE: Four IDE disk drives supporting ATA/33/66/100 and with transfer rates of up to 33/66/100MB/sec.
- FDD: Supports up to two floppy disk drives
- Parallel: One enhanced bi-directional parallel port supporting SPP/ECP/EPP
- Serial Port: 16C550 UART-compatible RS-232/422/485 x 1 and RS-232 x 1 serial ports with 16-byte FIFO
- PC/104: PC/104 connector for 8-bit ISA Bus
- IrDA: One TX/RX IrDA header
- USB: Four USB connectors
- Keyboard/Mouse: PS/2 6-pin Mini DIN
- DiskOnChip: DiskOnChip socket supporting memory sizes of up to 288MB
- BIOS: AMI PnP Flash BIOS
- Watchdog Timer: Software programmable time-out intervals from 1~256 sec.
- CMOS: Battery backup
- Power Consumption: +5V/7.5A (1GHz CPU), +12V/120mA
- **Operating Temperature:** 0~60°C
- Hardware Monitor: Winbond W83627
- Board Size: 33.8 x 12.1 cm





1.3 Board Dimensions

Chapter 2

Unpacking

2.1 Opening the Delivery Package

The HS-6038 is packed in an anti-static bag. The board has components that are easily damaged by static electricity. Do not remove the anti-static wrapping until proper precautions have been taken. Safety Instructions in front of this manual describe anti-static precautions and procedures.

2.2 Inspection

After unpacking the board, place it on a raised surface and carefully inspect the board for any damage that might have occurred during shipment. Ground the board and exercise extreme care to prevent damage to the board from static electricity.

Integrated circuits will sometimes come out of their sockets during shipment. Examine all integrated circuits, particularly the BIOS, processor, memory modules, ROM-Disk, and keyboard controller chip to ensure that they are firmly seated. The HS-6038 delivery package contains the following items:

- HS-6038 Industrial Single Board Computer
- ATA/100 IDE flat cable x 2
- FDD flat cable x 1
- Printer cable with bracket x 1
- KB/MS transfer cable x 1
- 8-pin USB split type cable with bracket x 1
- Speaker connector flat cable with bracket x 1
- Two RS-232 cable with bracket x 1
- 5-pin ATX cable x 1
- Jumper Bag
- Utility CD-ROM
- User's Manual

It is recommended that you keep all the parts of the delivery package intact and store them in a safe/dry place for any unforeseen event requiring the return shipment of the product. In case you discover any missing and/or damaged items from the list of items, please contact your dealer immediately.

Chapter 3

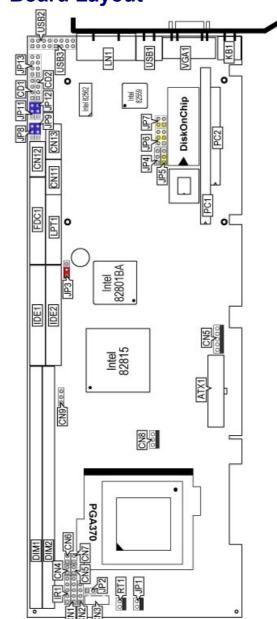
Hardware Installation

This chapter provides the information on how to install the hardware using the HS-6038. This chapter also contains information related to jumper settings of switch, watchdog timer, and the DiskOnChip[™] address selection etc.

3.1 Before Installation

After confirming your package contents, you are now ready to install your hardware. The following are important reminders and steps to take before you begin with your installation process.

- 1. Make sure that all jumper settings match their default settings and CMOS setup correctly. Refer to the sections on this chapter for the default settings of each jumper.
- 2. Go through the connections of all external devices and make sure that they are installed properly and configured correctly within the CMOS setup. Refer to the sections in this chapter for the detailed information on the connectors.
- 3. Keep the manual and diskette in good condition for future reference and use.



3.2 Board Layout

3.3 Jumper List

Jumper	Definition	Setting	Page
JP2	Host Bus Clock Rate Select: 133MHz FSB	Open	10
JP3	Clear CMOS: Normal Operation	Short 1-2	15
JP4	LAN2 Enabled/Disabled Select: Enabled	Short 1-2	14
JP5	WDT Active Type Setting: System Reset	Short 2-3	20
JP6	DiskOnChip Address Select: 0D000H~	Short 3-4	25
JP7	0D1FFH	Short 1-2	25
JP8 / JP9 /	COM 2 Use RS-232 or RS-422/485 Select:	Short 2-3	12
JP11 / JP12	RS-232	311011 2-3	

3.4 Connector List

Connector	Definition	Page
ATX1	20-pin ATX Power In Connector	16
CD1	CD-ROM Analog Input Connector	19
CD2	Line In Connector	19
CN1	Keylock Connector	17
CN2	Speaker Connector	18
CN3	5-pin Keyboard Connector	17
CN4	HDD LED Connector	17
CN5	SMI Signal Input Connector	19
CN6	2-pin ATX Power On Switch	16
CN7	2-pin Reset Button Connector	17
CN8	Fan Power In Connector	16
CN9	I ² C Bus Connector	10
CN10	5-pin ATX Power In Connector	16
CN11	COM 1 Connector (5x2 header)	12
CN12	RS-422/485 Connector (5x2 header)	12
CN13	COM 2 Connector (5x2 header)	12
CF1	CompactFlash [™] Connector	21
DIM1/DIM2	168-pin DIMM Sockets	10
FDC1	Floppy Connector	12
IDE1/IDE2	Primary/Secondary IDE Connectors	11
IR1	IrDA Connector	14
JP1	System Sensing Connector	18
JP13	MIC In / Audio Out Connector	19
KB1	PS/2 6-pin Mini DIN KB/MS Connector	17
LAN1	Dual RJ-45 Connector	14
LPT1	Parallel Connector	13

...More on next page...

Connector	Definition	Page
PC1 / PC2	PC/104 Bus 64-pin/40-pin Connectors	22
USB1	External USB Connector	15
USB2/USB3	Internal USB Connectors	15
RT1/RT2	Power Sensing Connectors	18
VGA1	15-pin VGA Connector	10

3.5 Configuring the CPU

JP2 is used to set the Host Bus Clock Rate. The setting of internal Host Bus Clock Rate is for defining the operating clock base rate of the internal bus of core logic.

• JP2: Host Bus Clock Rate Select

Setting	1
Short	
Open	
	Short

3.6 System Memory

The HS-6038 provides two 168-pin DIMM sockets at locations *DIM1* and *DIM2*. The maximum capacity of the onboard memory is 512MB.

3.7 VGA Controller

The HS-6038 provides one connection for VGA device. *VGA1* offers a single standard 15-pin CRT connector.

• VGA1: 15-pin CRT Connector

PIN	Description	PIN	Description	
1	Red	2	Green	6
3	Blue	4	VCC	
5	GND	6	GND	000
7	GND	8	GND	
9	VCC	10	GND	
11	VCC	12	DDCDA	5 0 10 0 15
13	HSYNC	14	VSYNC	0 - 10
15	DDCCL			

An Inter-IC connector *CN9*, also offers the flexibility of installing an I^2C digital signal-based device.



• CN9: I²C Bus Connector

PIN	Description	1	2	3
1	SMBDATA		_	Ť
2	SMBCLK		Ο	
3	GND			

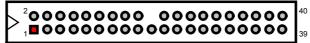
3.8 IDE Drive Connector

IDE1/IDE2 are standard 40-pin connector daisy-chain driver connectors serving the PCI E-IDE drive provisions onboard the HS-6038. A maximum of four IDE drives can be connected to the HS-6038 via *IDE1/IDE2*.

PIN	Description	PIN	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	N/C
21	PDREQ	22	GND
23	PDIOW#	24	GND
25	PDIOR#	26	GND
27	PIORDY	28	GND
29	RPDACK-	30	GND
31	IRQ14	32	N/C
33	RPDA1-	34	PATA66DET
35	RPDA0-	36	RPDA2-
37	RPCS1-	38	RPCS3-
39	HDD ACTIVE	40	GND

• IDE1/IDE2: Primary/Secondary IDE Connectors

4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38



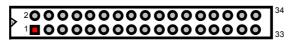
3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37

3.9 Floppy Disk Drive Connector

The HS-6038 uses a standard 34-pin header connector, *FDC1*, for floppy disk drive connection. A total of two floppy drives may be connected to *FDC1* at any given time.

• FDC1: Floppy Connector

PIN	Description	PIN	Description
1	GND	2	RWC-
3	GND	4	N/C
5	GND	6	DS1-
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	WD-
23	GND	24	WE-
25	GND	26	Track 0#
27	GND	28	WP-
29	N/C	30	RDATA-
31	GND	32	HEAD-
33	N/C	34	DSKCHG-

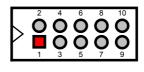


3.10 Serial Port Connectors

The HS-6038 offers one NS16C550 compatible UARTs with Read/Receive 16-byte FIFO serial ports.

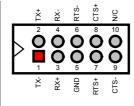
• CN11, CN13: COM1/COM2 Connectors (5x2 header)

PIN	Description	PIN	Description
1	DCD	2	DSR
3	RXD	4	RTX
5	TXD	6	CTX
7	DTR	8	RI
9	GND	10	N/C



	CN12:	RS-422/485	Connector ((5x2 header))
--	--------------	-------------------	--------------------	--------------	---

PIN	Descriptio	PIN	Description
	n		
1	TX-	2	TX+
3	RX+	4	RX-
5	GND	6	RTS-
7	RTS+	8	CTS+
9	CTS-	10	N/C



3

• JP8/JP9/JP11/JP12: COM2 Use RS-232 or RS-422/485 Select

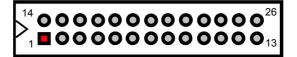
Options	Settings		
RS-232 (default)	Short 2-3	1	
RS-422/485	Short 1-2		

3.11 Parallel Connector

LPT1 is a standard 26-pin flat cable connector designed to accommodate parallel port connection onboard the HS-6038.

• LPT1: Parallel Connector

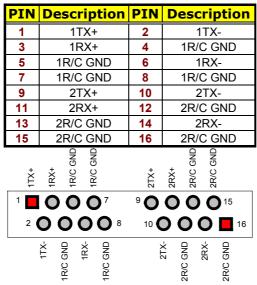
PIN	Description	PIN	Description
1	Strobe	2	DATA 0
3	DATA 1	4	DATA 2
5	DATA 3	6	DATA 4
7	DATA 5	8	DATA 6
9	DATA 7	10	Acknowledge
11	Busy	12	Paper Empty
13	Printer Select	14	Auto Form Feed
15	ERROR#	16	Initialize
17	Printer Select LN#	18	GND
19	GND	20	GND
21	GND	22	GND
23	GND	24	GND
25	GND	26	GND



3.12 Ethernet Connector

The HS-6038 provides one dual RJ-45 10/100 Based LAN interface connectors. Please refer to the following table for their identical pin assignments.

• LAN1: Dual RJ-45 Connector



• JP4: LAN2 Enable/Disable Select

Options	Settings	1	2	3
Enabled (default)	Short 1-2		0	
Disabled	Short 2-3		<u> </u>	

3.13 IrDA Connector

IR1 is a 5-pin internal IR communication connector for connection of an IrDA device.

• IR1: IrDA Connector

PIN	Description	
1	VCC	1 2 3 4 5
2	N/C	
3	IRRX	
4	GND	
5	IRTX	

3.14 USB Connector

The HS-6038 provides one 4-pin external USB connector at location USB1, and two 8-pin connectors at locations USB2 and USB3.

• USB1: External USB Connector

		-		
PIN	Description	Ι.		
1	VCC	1		0
2	BD0-		0	4
3	BD0+		VCC	BD(
4	GND			

USB2: Internal USB Connector

1 2	Description	PIN	Description	PIN
	VCC	2	VCC	1
	BD1-	4	BD0-	3
lõõ	BD1+	6	BD0+	5
	GND	8	GND	7

USB3: Internal USB Connector

PIN	Description	PIN	Description	1 2
1	VCC	2	VCC	
3	BD02-	4	BD3-	
5	BD02+	6	BD3+	lõõ
7	GND	8	GND	

3.15 CMOS Data Clear

The HS-6038 has a Clear CMOS jumper on JP3.

• JP3: Clear CMOS

Options	Settings	
Normal Operation (default)	Short 1-2	
Clear CMOS	Short 2-3	

NOTE: The default setting of JP3 is Short 1-2 in storage. Before you turn on the power of your system, please set JP3 to Short 1-2 for normal operation.



3.16 Power and Fan Connectors

The HS-6038 provides one 5-pin ATX Power On connector at *CN10*, one 2-pin ATX Power ON switch at *CN6*, and a single 3-pin FAN out connector at *CN8*.

• CN10: 5-pin ATX Power In Connector

PIN	Description		-					
1	GND	5	0	0	0	0		1
2	PS_ON							
3	VCC13		vcc	/sb	13	NO	Ŋ	•
4	5Vsb		Š	5	/CC13	s'	G	
5	VCC				2	д.		

• ATX1: 20-pin ATX Power In Connector

PIN	Description	PIN	Description		1 1	1
1	+3.3V	11	+3.3V	+3.3V		+3.3V
2	+3.3V	12	-12V	+3.3V	00	-12V
3	GND	13	GND	GND	00	GND
4	+5V	14	PS_ON	+5V	00	PS_ON
5	GND	15	GND	GND	00	
6	+5V	16	GND	+5V GND		
7	GND	17	GND	PWORK	õč	
8	PWORK	18	-5V	+5Vsb	ŏč	
9	+5Vsb	19	+5V	+12V	õč	+5V
10	+12V	20	+5V		10 2	0

If the system is not using the ATX power function, you may SHORT pins 4 and 5 of *CN10* so that the ATX power supply can be used as an AT power unit. If not, *CN2* must be connected to a corresponding connector on a PICMG Bus backplane in order to use the ATX Power function.

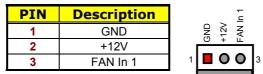
When using the ATX Power, *CN6* is used to turn on the power. In this case, a BOSER PICMG Bus backplane must complement the HS-6038 for proper operation.

• CN6: 2-pin ATX Power On Switch

PIN	Description	1 2
1	5VSBY	
2	PANSWIN	

CN8 onboard HS-6038 is a 3-pin fan power output connector.

• CN8: Fan Power In Connector



3.17 Keyboard/Mouse Connectors

The HS-6038 offers two possibilities for keyboard connection. The connections are via *KB1* for an external PS/2 type keyboard/mouse or via *CN3* for an internal 5-pin cable converter to an AT keyboard.

• CN3: 5-pin Keyboard Connector

PIN	Description	
1	Keyboard Clock	1 2 3 4 5
2	Keyboard Data	
3	N/C	
4	GND	l
5	+5V	

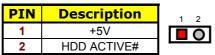
• KB1: PS/2 6-pin Mini DIN Keyboard/Mouse Connector

PIN	Description	
1	Keyboard Data	Keyboard Clock 5 0 3 GND 1 Keyboard Data
2	Mouse Data	5
3	GND	
4	+5V	6 2 Mouse Data
5	Keyboard Clock	Mouse Clock O O 4 +5V
6	Mouse Clock	

3.18 System Front Panel Connectors

The HS-6038 has one LED at location D1 that indicates the power-on status. This visual feature of the IDE LED may also be connected to an external IDE LED via connector CN4.

• CN4: IDE LED Connector



CN1 and CN7 are the Keylock and Reset Button connectors onboard.

• CN1: Keylock Connector

•		-				
PIN	Description					
1	VCC					
2	N/C	1	2	3	4	5
3	GND	_		-		Ō
4	Keylock		0	0	0	U
5	GND					

• CN7: 2-pin Reset Button Connector

PIN	Description	1 2
1	GND	
2	H/W Reset	

3.19 External Speaker

Aside from the buzzer at location BZ1 onboard, the HS-6038 also offers a connector (CN2) for an external speaker connection. The table below lists the pin assignments of CN2.

• CN2: Speaker Connector

PIN	Description	
1	Speaker Signal	1 2 3 4
2	GND	
3	GND	
4	+5V	

3.20 Thermal Input Connectors

In relevance to the Hardware Monitoring feature provided by the onboard Winbond W83627, the board allows the installation of a thermal sensor via connectors RT1/RT2 and JP1. The thermal connector JP1 monitors and displays the current system temperature whereas RT2 monitors the temperature conditions along the area where the power supply system sits. The displayed values are read-only figures and may not be altered.

1

• RT1, RT2, JP1: System/Power Sensing Connectors

PIN	Description		
1	Sensing	Ľ v	1
2	GND	2	1

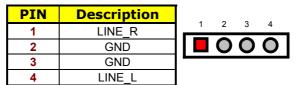
3.21 Audio Connectors

The HS-6038 has an onboard AC97 3D audio interface. The following tables list the pin assignments of the CD-ROM Analog Input, the Line In and the MIC In/Audio Out connectors.

• CD1: CD-ROM Analog Input Connector

PIN	Description	I	0	3	
1	CD IN_R		2		4
2	CD REF		Ο	0	Ο
3	CD REF				
4	CD IN_L				

• CD2: Line In Connector



• JP13: MIC In/Audio Out Connector

PIN	Description	PIN	Description		
1	OUT_L	2	OUT_R	l. r	
3	GND	4	GND	2	0000
5	MIC IN	6	N/C	1	
7	GND	8	GND	╏┖	

3.22 SMI Signal Input Switch

The HS-6038 has an SMI connector at location CN5. If there is an external SMI Signal Input Switch, this input switch will be able to receive signals.

• CN5: SMI Signal Input Switch

PIN	Description	1 2
1	GND	
2	EXTSMI	

3.23 Watchdog Timer

Once the Enable cycle is active, a Refresh cycle is requested before the time-out period. This restarts counting of the WDT period. When the time counting goes over the period preset of WDT, it will assume that the program operation is abnormal. A System Reset signal is to re-start when such error happens.

• JP5: WDT Active Type Setting

Options	Settings	1	2	3
Active NMI	Short 1-2		0	0
System Reset (default)	Short 2-3		<u> </u>	U
Disabled Watchdog Timer	Open			

The following sample programs show how to Enable, Disable and Refresh the Watchdog Timer:

	NDT function mod	le, interruptible double-write
MOV	DX, 2EH	
MOV	AL, 87H	
OUT	DX, AL	
OUT	DX, AL	
MOV	DX, 2EH	
MOV	AL, 07H	
OUT	DX, AL	
MOV	DX, 2FH	
MOV	AL, 08H	
OUT	DX, AL	
MOV	DX, 2EH	
MOV	AL, F5H	
OUT	DX, AL	; select CRF0
MOV	DX, 2FH	
MOV	AL, 80H	
OUT	DX, AL	
MOV	DX, 2EH	
MOV	AL, F7H	
OUT	DX, AL	
MOV	DX, 2FH	
MOV	AL, 00H	
OUT	DX, AL	
MOV	DX, 2EH	
MOV	AL, F6H	
OUT	DX, AL	
MOV	DX, 2FH	
MOV	AL, 00H	; * 00H=Disabled
OUT	DX, AL	
	ded function mode	e

MOV	DX, 2EH
MOV	AL, AAH
OUT	DX, AL

* User can also use AL, 00H's defined time for reset purposes, e.g.00H for Disable, 01H = 1sec, 02H = 2sec.....FFH = 255sec

3.24 CompactFlash™ Connector

The HS-6038 also offers an optional CompactFlashTM connector which is IDE interface located at the solder side of the board. The designated *IDE2* connector, once soldered with an adapter, can hold CompactFlashTM cards of various sizes. Please turn off the power before inserting the CF card. Inserting a CompactFlashTM card into the adapter is not a difficult task. The socket and card are both keyed and there is only one direction for the card to be completely inserted. Refer to the diagram below for the traditional way of inserting the card.

PIN	Description	PIN	Description
1	GND	2	DATA 3
3	DATA 4	4	DATA 5
5 7	DATA 6	6	DATA 7
	SDCS1#	8	GND
9	GND	10	GND
11	GND	12	GND
13	+5V	14	GND
15	GND	16	GND
17	GND	18	SDA2
19	SDA1	20	SDA0
21	DATA 0	22	DATA 1
23	DATA 2	24	470 Ω pull to GND
25	N/C	26	N/C
27	DATA 11	28	DATA 12
29	DATA 13	30	DATA 14
31	DATA 15	32	SDCS3#
33	N/C	34	IOR
35	IOW	36	EWE0
37	IRQ	38	+5V
39	N/C	40	N/C
41	Reset	42	IORDY
43	N/C	44	REQ 0
45	IDE LED	46	PDIAG
47	DATA 8	48	DATA 9
49	DATA 10	50	GND

• **CF1:** CompactFlashTM Connector

Inserting a CompactFlash[™] card into the adapter is not a difficult task. The socket and card are both keyed and there is only one direction for the card to be completely inserted. Refer to the diagram on the following page for the traditional way of inserting the card.



3.25 PC/104 Connectors

The PC/104 expansion bus offers provisions to connect all types of PC/104 modules. With the PC/104 bus being known as the new generation of industrial embedded 16bit PC standard bus, thousands of PC/104 modules from multiple venders can be easily installed onboard. The detailed pin assignment of the PC/104 expansion bus connectors *PC1* and *PC2* are listed in the following tables:

NOTE : The PC/104 connector allows direct plugging or stack-through piling of PC/104 modules without requiring the PC/104 mounting kit.

PIN	Description	PIN	Description	Connector diagram
1	GND	21	GND	rotated 90 degrees
2	MEMCS16*	22	SBHE*	clockwise from
3	IOSC16*	23	LA23	original position
4	IRQ10	24	LA22	1 🗖 🔿 21
5	IRQ11	25	LA21	00
6	IRQ12	26	LA20	00
7	IRQ15	27	LA19	00
8	IRQ14	28	LA18	
9	DACK0*	29	LA17	
10	DRQ0	30	MEMR*	l ŏŏ l
11	DACK5*	31	MEMW*	00
12	DRQ5	32	SD8	00
13	DACK6*	33	SD9	
14	DRQ6	34	SD10	
15	DACK7*	35	SD11	ŏŏ
16	DRQ7	36	SD12	00
17	+5V	37	SD13	00
18	MASTER*	38	SD14	
19	GND	39	SD15	
20	GND	40	GND	20 00 40

• PC2: PC/104 Bus 40-pin Connector

1 IOCHECK* 33 GND rotated 90 degree clockwise from original position 3 SD6 35 +5V 4 SD5 36 IRQ9 5 SD4 37 N/C 6 SD3 38 DRQ2 7 SD2 39 -12V 8 SD1 40 OWS 9 SD0 41 +12V 10 IOCHRDY 42 GND 11 AEN 43 SMEMW* 12 SA19 44 SMEMR* 13 SA18 45 IOW* 14 SA17 46 IOR* 15 SA16 47 DACK1* 18 SA13 50 DRQ1 19 SA12 51 REFRESH* 20 SA11 52 SYSCLK 21 SA6 57 IRQ3 26 SA5 58 DACK2* 27 SA4 59 TC 28 SA3 60 <td< th=""><th></th><th></th><th>Compostor diagram</th></td<>			Compostor diagram		
1 ICOLLECK 34 RESETDRV 2 SD7 34 RESETDRV 3 SD6 35 +5V 4 SD5 36 IRQ9 5 SD4 37 N/C 6 SD3 38 DRQ2 7 SD2 39 -12V 8 SD1 40 OWS 9 SD0 41 +12V 10 IOCHRDY 42 GND 11 AEN 43 SMEMW* 12 SA19 44 SMEMR* 13 SA18 45 IOW* 14 SA17 46 IOR* 15 SA16 47 DACK1* 18 SA13 50 DRQ1 19 SA12 51 REFRESH* 20 SA11 52 SYSCLK 21 SA10 53 IRQ7 22 SA9 54	PIN	Description	PIN	Description	Connector diagram
2 SD7 34 RESEIDRV original position 3 SD6 35 +5V original position 4 SD5 36 IRQ9 Image: stress of the	-				
3 30 33 73 33 33 34 37 34 35 36 IRQ9 35 36 IRQ9 35 36 IRQ9 37 N/C 36 38 DRQ2 37 N/C 37 N/C 38 DRQ2 39 33 <th></th> <th></th> <th>-</th> <th></th> <th></th>			-		
5 SD4 37 N/C 6 SD3 38 DRQ2 7 SD2 39 -12V 8 SD1 40 OWS 9 SD0 41 +12V 10 IOCHRDY 42 GND 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 SA6 57 IRQ3 26 SA5 58 DACK2* 27 SA4 59 TC 28 SA3				-	
6 SD3 38 DRQ2 7 SD2 39 -12V 8 SD1 40 OWS 9 SD0 41 +12V 10 IOCHRDY 42 GND 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 SA6 57 IRQ3 26 SA5 58 DACK2* 27 SA4 59 TC 28 SA3 60 BALE 29 S	-	SD5	36		
0 000 010 010 010 010 000		SD4	37		
7 SD2 35 -12V 8 SD1 40 OWS 9 SD0 41 +12V 10 IOCHRDY 42 GND 11 AEN 43 SMEMW* 12 SA19 44 SMEMW* 12 SA19 44 SMEMW* 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 SA6 57 IRQ3 26 SA5 58 DACK2* 27 SA4 59 TC 28 SA3 60 BALE 29 <			38		
9 SD0 41 +12V 10 IOCHRDY 42 GND 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 IRQ3 26 SA5 58 DACK2* 27 SA4 59 TC 28 SA3 60 BALE 29 SA2 61 +5V 30 SA1 62 OSC 31 SA0 63 GND		SD2	39	-12V	
9 SD0 41 +12V 10 IOCHRDY 42 GND 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 IRQ3 26 SA5 58 DACK2* 27 SA4 59 TC 28 SA3 60 BALE 29 SA2 61 +5V 30 SA1 62 OSC 31 SA0 63 GND		SD1	40		ŏŏ
11 AEN 43 SMEMW* 12 SA19 44 SMEMW* 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 IRQ3 26 SA5 58 DACK2* 27 SA4 59 TC 28 SA3 60 BALE 29 SA2 61 +5V 30 SA1 62 OSC 31 SA0 63 GND			41		
11 AEN 43 SMENW 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 GND	10	IOCHRDY	42		
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 SA12 51 REFRESH* 20 SA11 52 SYSCLK 21 SA10 53 IRQ7 22 SA9 54 IRQ6 23 SA8 55 IRQ3 26 SA5 58 DACK2* 27 SA4 59 TC 28 SA3 60 BALE 29 SA2 61 +5V 30 SA1 62 OSC 31 SA0 63 GND	11	AEN	43	SMEMW*	
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 GND	12	SA19	44	SMEMR*	
18 OR 10 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 GND	13	SA18	45	IOW*	
13 3A10 47 DACKS 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 GND	14	SA17	46	IOR*	
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 GND	15	SA16	47	DACK3*	
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 GND	16	SA15	48	DRQ3	
10 0.110 0.0 0.110 0.110 0.110 0.110 0.110 0.110 0.110 0.110 0.110 0.00 <th>17</th> <th>SA14</th> <th>49</th> <th>DACK1*</th> <th></th>	17	SA14	49	DACK1*	
19 SA12 31 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 GND	18	SA13	50	DRQ1	
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 GND	19	SA12	51	REFRESH*	
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 GND	20	SA11	52	SYSCLK	
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 GND	21	SA10	53	IRQ7	ŎŎ
23 SA6 35 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 GND	22	SA9	54	IRQ6	
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 GND	23	SA8	55	IRQ5	
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 GND	24	SA7	56	IRQ4	
20 30 30 50 DACK2 27 SA4 59 TC 28 SA3 60 BALE 29 SA2 61 +5V 30 SA1 62 OSC 31 SA0 63 GND	25	SA6	57	IRQ3	
27 SA4 59 IC 28 SA3 60 BALE 29 SA2 61 +5V 30 SA1 62 OSC 31 SA0 63 GND	26	SA5	58	DACK2*	
28 SA3 60 BALE 29 SA2 61 +5V 30 SA1 62 OSC 31 SA0 63 GND	27	SA4	59	TC	
29 SA2 61 +5V 30 SA1 62 OSC 32 00 64 31 SA0 63 GND 64 64	28	SA3	60	BALE	l ŏŏ l
30 31 SA0 63 GND	29	SA2	61	+5V	
31 SA0 63 GND	30	SA1	62	OSC	32 00 64
	31		63		
32 GND 64 GND	32	GND	64	GND	

• PC1: PC/104 Bus 64-pin Connector

3.26 DiskOnChip[™] Address Setting

The DiskOnChip[™] function allows the system to boot or operate without a FDD or a HDD. DiskOnChip[™] modules may be formatted as drive C. With DiskOnChip[™], user may also execute DOS commands such as FORMAT, SYS, COPY, XCOPY, DISCOPY, DISKCOMP, etc.

The *U31* location onboard the HS-6038 is the DiskOnChipTM module socket. If you have another memory device that has a similar memory capacity with that of the DOC in your system, please set both at different memory address mapping to avoid mapping area conflicts. Failing to do so will not make the HS-6038 and the additional memory device function properly. *JP6/JP7* selects the starting memory address of the DiskOnChipTM (D.O.C.) to avoid the mapping area with any other memory devices.

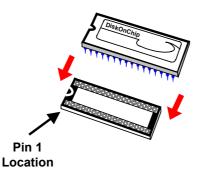
	1		_				
Address	JP6	JP7	2	4	6	2	4
0C800H~0C9FFH	Short 1-2	Short 1-2					
0CC00H~0CDFFH	Short 1-2	Short 3-4	0				
0D000H~0D1FFH (default)	Short 3-4	Short 1-2		0	0		O
0D400H~0D5FFH	Short 3-4	Short 3-4			_		-
0D800H~0D9FFH	Short 5-6	Short 1-2	1	3	5	1	3
0DC00H~0DDFFH	Short 5-6	Short 3-4		JP6		J	P7

● JP6 and JP7: DiskOnChip[™] Address Select

3.26.1 Installing DiskOnChip[™] Modules

When installing a DiskOnChip[™] module onto your board, please take note of the following:

- Orient yourself properly with the location of the DiskOnChip[™] socket. Try to locate the pin 1 location on your socket. Pin numbers are usually printed on either the component side or the solder side of your board.
- Locate the Pin 1 location on your DiskOnChip[™] module. More often than not, Pin 1 can be found on the lower right corner of the chip. Please refer to the diagram for the exact location.
- 3. Once you have figured out where the pin 1 locations are (on both chip and socket), align the module's pins on an upright angle against the socket. Using both thumbs, gently press the module into the socket until all the pins are secured to their designations.



- 4. The installation is now complete and your module is now ready for use.
- **NOTE:** If you encounter difficulty installing your DiskOnChip[™] module, please consult a qualified technician or engineer to perform the installation.

3.26.2 Removing DiskOnChip™ Modules

When removing a DiskOnChip[™] module from its socket, please take note of the following:

- 1. Loosen the contact of the module from its socket using a screwdriver.
- Insert the screwdriver's flat head into a gap on either end of the socket. Do not insert the screwdriver head on either side where the pins are located. Doing so might damage the pins in the process.
- 3. Slowly lift the screwdriver handle upwards. This will disengage the module from its socket.
- **NOTE:** If you encounter difficulty removing your DiskOnChip[™] module, please consult a qualified technician or engineer to remove it for you.

Chapter 4

AMI BIOS Setup

The HS-6038 uses AMI BIOS for the system configuration. The AMI BIOS setup program is designed to provide the maximum flexibility in configuring the system by offering various options that could be selected for end-user requirements. This chapter is written to assist you in the proper usage of these features.

4.1 Starting Setup

The AMI BIOS is immediately activated when you first power on the computer. The BIOS reads the system information contained in the CMOS and begins the process of checking out the system and configuring it. When it finishes, the BIOS will seek an operating system on one of the disks and then launch and turn control over to the operating system.

While the BIOS is in control, the Setup program can be activated in one of two ways:

- 1. By pressing immediately after switching the system on, or
- 2. By pressing the key when the following message appears briefly at the bottom of the screen during the POST (Power On Self Test).

Press DEL to enter SETUP.

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF, then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to...

PRESS F1 TO CONTINUE, DEL TO ENTER SETUP

4.2 Using Setup

In general, you use the arrow keys to highlight items, press <Enter> to select, use the <PageUp> and <PageDown> keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more details about how to navigate in the Setup program using the keyboard.

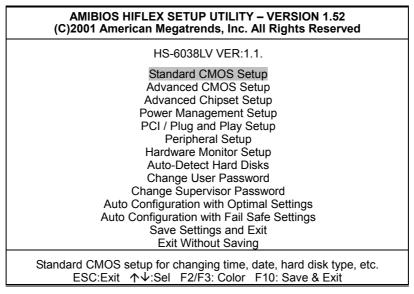
Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item in the left hand
Right arrow	Move to the item in the right hand
Esc key	Main Menu Quit and not save changes into CMOS
	Status Page Setup Menu and Option Page Setup Menu
	Exit current page and return to Main Menu
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option
	Page Setup Menu
(Shift)F2 key	Change color from total 16 colors. F2 to select color
	forward, (Shift) F2 to select color backward
F3 key	Calendar, only for Status Page Setup Menu
F4 key	Reserved
F5 key	Restore the previous CMOS value from CMOS, only for
	Option Page Setup Menu
F6 key	Load the default CMOS value from BIOS default table, only
	for Option Page Setup Menu
F7 key	Load the default
F8 key	Reserved
F9 key	Reserved
F10 key	Save all the CMOS changes, only for Main Menu

4.2.1 Getting Help

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc> or the F1 key again.

4.3 Main Menu

Once you enter the AMI 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.



NOTE: A brief description of the highlighted choice appears at the bottom of the screen.

4.4 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, you must set the HDD mode to **LBA** mode. Please use the IDE Setup Utility in BIOS SETUP to install the HDD correctly.

AMIBIOS SETUP – STANDARD CMOS SETUP (C)2001 American Megatrends, Inc. All Rights Reserved				
Date (mm/dd/yyyy) : Fri Oct 24, 2003	Base Memory : 639 KB			
Time (hh/mm/ss) : 19:04:12	Extd Memory : 126 MB			
Floppy Drive A: Not Installed				
Floppy Drive B: Not Installed				
	LBA Blk PIO 32Bit			
Type Size Cyln Head WPcom Sec	Mode Mode Mode Mode			
Pri Master : Not Installed				
Pri Slave : Not Installed				
Sec Master : Not Installed				
Sec Slave : Not Installed				
Boot Sector Virus Protection : Disabled				
Month: Jan - Dec	ESC:Exit ↑↓:Sel			
Day: 01 - 30	PgUp/PgDn: Modify			
Year: 1980 - 2099	F1:Help F2/F3:Color			

4.5 Advanced CMOS 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.

AMIBIOS SETUP (C)2001 American Meg		
Quick Boot	Enabled	Available Options:
Pri Master ARMD Emulated as	Auto	Disabled
Pri Slave ARMD Emulated as	Auto	Enabled
Sec Master ARMD Emulated as	Auto	
Sec Slave ARMD Emulated as	Auto	
USB ARMD Emulated as	Auto	
1st Boot Device	Disabled	
2nd Boot Device	Disabled	
3rd Boot Device	Disabled	
Try Other Boot Devices	Yes	
Initial Display Mode	BIOS	
Display Mode at Add-On ROM Init	Force BIOS	
Floppy Access Control	Read-Write	
S.M.A.R.T. for Hard Disks	Disabled	
BootUp Num-Lock	On	
Floppy Drive Seek	Disabled	
PS/2 Mouse Support	Enabled	
Primary Display	VGA/EGA	
Password Check	Setup	
Boot To OS/2	No	
CPU Serial Number	Disabled	
L1 Cache	Writeback	
L2 Cache	Writeback	
System BIOS Cacheable	Disabled	
C000,16k Shadow	Enabled	
C400,16k Shadow	Enabled	
C800,16k Shadow	Enabled	
CC00,16k Shadow	Disabled	
D000,16k Shadow	Disabled	
D400,16k Shadow	Disabled	ESC:Exit ↑↓:Sel
D800,16k Shadow	Disabled	PgUp/PgDn: Modify
DC00,16k Shadow	Disabled	F1:Help F2/F3:Color

4.6 Advanced Chipset 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.

AMIBIOS SETUP - (C)2001 American Me		
CPU Ratio Selection	Safe Mode	Available Options:
CPU BIST Enable	Disabled	Safe Mode
ICH Delayed Transaction	Disabled	5.5x
DMA Collection Buffer Enable	Disabled	6.0x
DRAM Page Closing Policy	Open	6.5x
Memory Hole	Disabled	7.0x
MPS Revision	1.1	7.5x
System memory Frequency	100MHz	8.0x
SDRAM Timing by SPD	Disabled	8.5x
DRAM Refresh	15.6us	9.0x
DRAM Cycle time (SCLKs)	7/9	9.5x
CAS# Latency (SCLKs)	3	10.0x
RAS to CAS delay (SCLKs)	3	10.5x
SDRAM RAS# Precharge (SCLKs)	3	11.0x
Internal Graphics Mode Select	1MB	11.5x
Display Cache Window Size	64MB	12.0x
AGP Aperture Window	64MB	
Local memory Frequency	100MHz	
Initialize Display Cache Memory	Enabled	
Paging Mode Control	Closed	
RAS – to CAS	Default	
CAS Latency	Slow	
RAS Timing	Slow	
RAS Precharge Timing	Slow	
CPU Latency Timer	Disabled	
USB Function	All USB Port	ESC:Exit ↑↓:Sel
USB Device Legacy Support	Disabled	PgUp/PgDn: Modify
Port 64/60 Emulation	Disabled	F1:Help F2/F3:Color

4.7 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.

AMIBIOS SETUP (C)2001 American N	– POWER MANAGE legatrends, Inc. All	
ACPI Aware O/S	No	Available Options:
APIC Interrupt Mode	Disabled	► No
Sleep State	S1/POS	Yes
USB KB/MS Wake Up From S3	Disabled	
Power Management/APM	Enabled	
Suspend Time Out	Disabled	
Keyboard & PS/2 Mouse	Monitor	
FDC/LPT/COM Ports	Monitor	
SB & NSS Audio Ports	Ignore	
MIDI Ports	Ignore	
ADLIB Ports	Ignore	
Primary Master IDE	Monitor	
Primary Slave IDE	Ignore	
Secondary Master IDE	Monitor	
Secondary Slave IDE	Ignore	
System Thermal	Ignore	
Power Button Function	On/Off	
Restore on AC/Power Loss	Power On	
Wake Up On Ring	Disabled	
Wake Up On LAN	Disabled	
Wake Up On PME	Disabled	
Resume By Alarm	Disabled	
Alarm Date	15	
Alarm Hour	12	ESC:Exit ↑↓:Sel
Alarm Minute	30	PgUp/PgDn: Modify
Alarm Second	30	F1:Help F2/F3:Color

4.8 PCI / Plug and Play Setup

This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system that allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

AMIBIOS SETUP (C)2001 American M	– PCI / PLUG AND legatrends, Inc. All	
Plug and Play Aware O/S	No	Available Options:
Clear NVRAM on Every Boot	No	▶ No
PCT Latency Timer (PCI Clocks)	64	Yes
Primary Graphics Adapter	Auto	
Allocate IRQ to PCI VGA	Yes	
PCI IDE BusMaster	Disabled	
DMA Channel 0	PnP	
DMA Channel 1	PnP	
DMA Channel 3	PnP	
DMA Channel 5	PnP	
DMA Channel 6	PnP	
DMA Channel 7	PnP	
IRQ3	PCI/PnP	
IRQ4	PCI/PnP	
IRQ5	PCI/PnP	
IRQ7	PCI/PnP	
IRQ9	PCI/PnP	
IRQ10	PCI/PnP	
IRQ11	PCI/PnP	ESC:Exit ↑↓:Sel
IRQ14	PCI/PnP	PgUp/PgDn: Modify
IRQ15	PCI/PnP	F1:Help F2/F3:Color

4.9 Peripheral Setup

The IDE hard drive controllers can support up to two separate hard drives. These drives have a master/slave relationship that 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).

	ETUP – PERIPHERA legatrends, Inc. All	
OnBoard FDC	Enabled	Available Options:
OnBoard Serial Port A	3F8/COM1	Disabled
OnBoard Serial Port B	2F8/COM2	Enabled
Serial Port B Mode	Normal	
IR Duplex Mode	Half Duplex	
IR Pin Select	IRRX/IRTX	
OnBoard Parallel Port	378	
Parallel Port Mode	Normal	
EPP Version	N/A	
Parallel Port IRQ	7	
Parallel Port DMA Channel	N/A	
Keyboard Power On Function	Disabled	
Specific Key for Power On	N/A	
Mouse Power On Function	Disabled	
On-Chip IDE	Both	ESC:Exit ↑↓:Sel
OnBoard Lan	Enabled	PgUp/PgDn: Modify
		F1:Help F2/F3:Color

4.10 Hardware Monitor Setup

AMIBIOS SETUP (C)2001 American M	P – HARDWARE MO legatrends, Inc. A	
CPU Temperature Detected by	CPU	Available Options:
CPU Temperature		► CPU
System Temperature		Thermistor
Power Temperature		
CPU Fan Speed		
Chassis Fan Speed		
Power Fan Speed		
CPU VID		
Vcore		
Vtt		
Vio		
+ 5.000V		
+12.000V		
-12.000V		
- 5.000V		ESC:Exit ↑↓:Sel
Battery		PgUp/PgDn: Modify
+5V SB		F1:Help F2/F3:Color

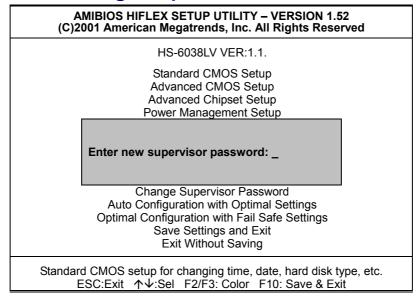
4.11 Auto-Detect Hard Disks

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

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

AMIBIOS HIFLEX SETUP UTILITY – VERSION 1.52 (C)2001 American Megatrends, Inc. All Rights Reserved
HS-6038LV VER:1.1.
Standard CMOS Setup Advanced CMOS Setup Advanced Chipset Setup Power Management Setup PCI / Plug and Play Setup Peripheral Setup Hardware Monitor Setup Auto-Detect Hard Disks Change User Password Change Supervisor Password Auto Configuration with Optimal Settings Optimal Configuration with Fail Safe Settings Save Settings and Exit Exit Without Saving
Standard CMOS setup for changing time, date, hard disk type, etc. ESC:Exit ↑↓:Sel F2/F3: Color F10: Save & Exit

4.12 Change Supervisor/User Password



You can set either supervisor or user password, or both of then. The differences between are:

- **supervisor password:** can enter and change the options of the setup menus.
- **user password:** just can only enter but do not have the right to change the options of the setup menus.

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

ENTER PASSWORD:

Type the password, up to eight characters in length, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

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

PASSWORD DISABLED.

When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.

You determine when the password is required within the BIOS Features Setup Menu and its Security option (see Section 3). If the Security option is set to "System", the password will be required both at boot and at entry to Setup. If set to "Setup", prompting only occurs when trying to enter Setup.

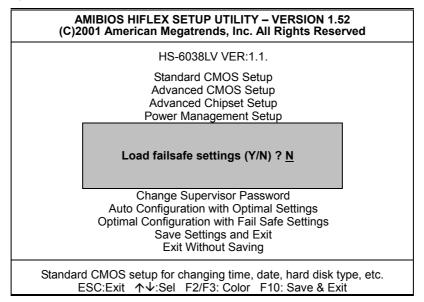
4.13 Auto Configuration with Optimal Settings

When you press <Enter> on this item you will get a confirmation dialog box with a message shown below. This option allows you to load/restore the BIOS default values permanently stored in the BIOS ROM. Pressing 'Y' loads the BIOS default values for the most stable, minimal-performance system operations.

AMIBIOS HIFLEX SETUP UTILITY – VERSION 1.52 (C)2001 American Megatrends, Inc. All Rights Reserved
HS-6038LV VER:1.1.
Standard CMOS Setup Advanced CMOS Setup Advanced Chipset Setup Power Management Setup
Load high performance settings (Y/N) ? <u>N</u>
Change Supervisor Password Auto Configuration with Optimal Settings Optimal Configuration with Fail Safe Settings Save Settings and Exit Exit Without Saving
Standard CMOS setup for changing time, date, hard disk type, etc. ESC:Exit ↑↓:Sel F2/F3: Color F10: Save & Exit

4.14 Optimal Configuration with Fail Safe Settings

When you press <Enter> on this item you get a confirmation dialog box with a message similar to the figure below. This option allows you to load/restore the default values to your system configuration, optimizing and enabling all high performance features. Pressing 'Y' loads the default values that are factory settings for optimal performance system operations.



4.15 Save Settings and Exit

Pressing <Enter> on this item asks for confirmation:

AMIBIOS HIFLEX SETUP UTILITY – VERSION 1.52 (C)2001 American Megatrends, Inc. All Rights Reserved
HS-6038LV VER:1.1.
Standard CMOS Setup Advanced CMOS Setup Advanced Chipset Setup Power Management Setup
Save current settings and exit (Y/N) ? <u>Y</u>
Change Supervisor Password Auto Configuration with Optimal Settings Optimal Configuration with Fail Safe Settings Save Settings and Exit Exit Without Saving
Standard CMOS setup for changing time, date, hard disk type, etc. ESC:Exit ↑↓:Sel F2/F3: Color F10: Save & Exit

Pressing "Y" stores the selections made in the menus in CMOS – a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS. After saving the values, the system will restart.

4.16 Exit Without Saving

Pressing <Enter> on this item asks for confirmation:

Quit without saving (Y/N)?

This allows you to exit Setup without storing and having any change in CMOS. The previous selections remain in effect. This exits the Setup utility and restarts your computer.

AMIBIOS HIFLEX SETUP UTILITY – VERSION 1.52 (C)2001 American Megatrends, Inc. All Rights Reserved
HS-6038LV VER:1.1.
Standard CMOS Setup Advanced CMOS Setup Advanced Chipset Setup Power Management Setup
Quit without saving (Y/N) ? <u>N</u>
Change Supervisor Password Auto Configuration with Optimal Settings Optimal Configuration with Fail Safe Settings Save Settings and Exit Exit Without Saving
Standard CMOS setup for changing time, date, hard disk type, etc.

Chapter 5

Software Utilities

This chapter contains the detailed information of IDE, VGA, LAN and Audio driver installation procedures. The utility disk that came with the delivery package contains an auto-run program that invokes the installation programs for the IDE, VGA, LAN and Audio drivers. The following sections describe the installation procedures of each driver based on Win 95/98, Win 2000 and Win NT operating systems. It is recommended that you install the drivers matching the sections listed in this chapter.

5.1 IDE Driver Installation

5.1.1 Installing Intel 815 Chipset Software

1. Insert Utility CD Disk into your CD ROM drive. The main menu will pop up as shown below. Select on the **IDE** button to launch the installation program.





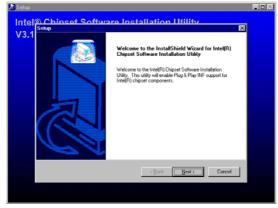


2. Click on the **INTEL_ICH2** button to continue.

3. When the **IDE \ INTEL_ICH2** box appears on your screen, click on the **INTEL_R&HIPSET_SOFTWARE_INS** to install the IDE plug and play information files into your system.



 Immediately after clicking the IDE button in Step 1, the program launches the InstallShield Wizard that will assist you in the installation process. Click on the <u>Next</u> > button to proceed.



5. The Intel OEM Software License Agreement dialog box then appears on the screen. Choose $\underline{\textbf{Yes}}$ to proceed.





6. When the Readme Information dialog box pops up, just click on the $\underline{\textbf{Next}}$ button to proceed.

🔊 Setup Intel	Chinset Software Installation Litility	
V3.1	Readme Information	
	Readme bit	1000000
	ENU Find Piper Software Installation Utility Installation Readme	
	Cancel	

7. Once the InstallShield Wizard finishes updating your system, it will prompt you to restart the computer. Tick on the Yes, I want to restart my computer now followed by a click on the <u>Finish</u> button to reboot. Only after your computer boots will the new settings take effect.

C No, I will restart my computer bler. Remore any disk from their drives, and then click Finish to complete solup.
--



5.1.2 Installing Intel Security Driver

 Following Steps 1 ~ 3 of the Intel 815 chipset software (from the preceding section), click on the INTEL_SECURITY_ DRIVER button. When the dialog box below appears, make sure you close all other Windows applications then click on the <u>Next</u> > button to proceed.



2. The Intel OEM Software License Agreement dialog box then appears on the screen. Choose **Yes** to proceed.





 When the **Release Notes** box pops up on the screen, read through any important information listed before clicking the <u>Next</u> > button.

🚰 Intel Secu	ity Driver Setup					_ 🗆 ×
Intel S	Security Dr	iver				
Varei	Release Notes				×	
1 6134		Release N	lotes for OEMs.ts	2		
					E.	
		Ŧ			×	
			< <u>B</u> ack	Next>	Cancel	
-						

 Setup will then prompt you to specify the path where you would like the Security driver installed. Select the <u>Next</u> > button after you have made your path/installation choice.

TSL Choose Destine	ation Location
	Setup will install Intel Security Driver in the following folder.
	To install to this folder, click Next.
	To install to a different folder, click Browse and select another folder.
	You can choose not to instal Intel Security Driver by cicking Cancel to eail Setup.
	Destination Folder
	C:\Vintel/Unitel Security DriverBrowse
	<back next=""> Cancel</back>



IX.

 Once the setup program finishes copying files into your system, it will prompt you to restart the computer. Tick on the Yes, I want to restart my computer now followed by a click on the <u>Finish</u> button to reboot. Only after your computer boots will the new settings take effect.



5.2 VGA Driver Installation

5.2.1 Win 95/98

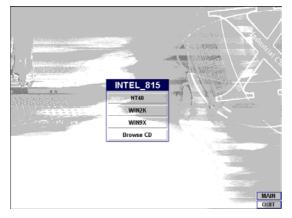
1. After loading the Utility CD-ROM, the program automatically runs the utility. Press **Enter** to proceed installing. When the main utilities window pops up on the screen, select the **VGA** button.





2. When the VGA main utility window is displayed. Select **INTEL_815** to continue.

3. The INTEL_815 window shows up next. Select **WIN9X** to invoke the corresponding installation program.



 The program launches an introduction screen of what graphics driver it will install. Close all other running Windows applications then click on the **Next** > button to proceed.



 Immediately after clicking on the Next > button, the Intel OEM Software License Agreement pops up on the screen. Choose <u>Yes</u> to proceed.

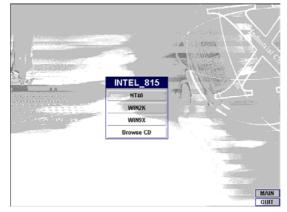
restrice(FI) UTX Family Unipset Graphics Driver Software Setup	
Intel(R) 81x Family Chipset Graphics	Driver
Please read the following Licence Agreement. Press the PAGE DOWN key to : the rest of the agreement.	.00
INTEL SOFTWARE LICENSE AGREEMENT (DEM / IRV / ISV Dishbution & Single User) INTEL SOFTWARE LICENSE AGREEMENT (DEM / IRV / ISV Dishbution & Single User) Don rot use or load this othware and any associated material (colective), the "Software" (unit) so how concelly and the following terms and conditions. By loading o using the Software, sou agree to the terms of this Agreement. If you do not with to so agree, do not imated or use the Software (DEM), Independent Hardware Vendon "It you are an Dispital Equipment Manufacture (DEM), Independent Hardware Vendon (HV), or Independent Software Vendor (ISV), this concellet LICENSE AGREEMENT	
De year anoopt all the terms of the preceding License Agreement? If your choices No. So will close. To install intel®(191x Family Chipset Graphics Driver Software, you must accep this agreement.	

6. The VGA driver utility program starts copying files needed by your Win98 to invoke the VGA capabilities. Once finishes, the system will prompt you to restart your computer. Tick on the **Yes, I want to restart my computer now** followed by a click on the **Finish** button to complete the installation.

Softw	etup Complete	nily Chipset Graphics Dr	
~		Setup has finished copying files to your computer.	
	9	Before you can use the program, you must restart Windows or your computer.	
		[ries, I want to restart my computer now.] [No, I will restart my computer later.	
	3	Remove any disks from their drives, and then click Finish to complete setup.	
		< Back Finish	

5.2.2 Win 2000

1. Follow steps 1 and 2 from the Win9x installation procedure. When the INTEL_815 window shows up, select WIN2K to invoke the installation program to your Win 2000 OS.





 The program launches the InstallShield Wizard for Intel 810/810E/815/815E/815EM chipset graphics. Close all other running Windows applications then click on the Next > button.



 Immediately after clicking the Next > button, the Intel OEM Software License Agreement pops up on the screen. Choose <u>Yes</u>.



4. Once the utility program finishes copying and installing all the necessary files into your system, it will prompt you to restart your computer. Tick on the **Yes, I want to restart my computer now** followed by a click on the **Finish** button to complete the installation.



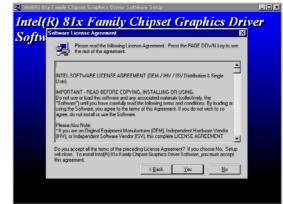
5.2.3 Win NT4.0

No 111

- 1. Follow steps 1 and 2 from the Win9x installation procedure. When the INTEL_815 window shows up, select **NT40** to invoke the installation program to your Win 2000 OS.
- 2. The program launches an introduction screen of the graphics it will install. Close all other running Windows applications and then click on the **Next >** button to proceed.

oftw	Welcome	<u>mily Chipset Graphics Drive</u> ⊠
		Welcome to the Intel[9] 81x Family Dispate Geophics Driver Software Seep program. The program will inter[9] 81x Family Opherd Supplet Children Software on your computer. It is strong traceomendial that you will all Windows program before narring this Setup program. Disk: Cancel Io gait Setup and then close any programs you have puring. Dick Next to contraw with the Setup program.
		WARNING: This program is protected by copyright law and international beates:
		parties of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.

 Immediately after clicking on the Next > button, the Intel OEM Software License Agreement pops on the screen. Choose <u>Yes</u>.

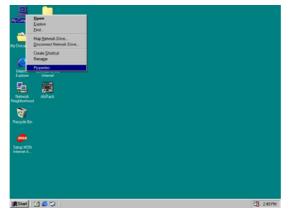


 Once the utility program finishes copying and installing all the necessary files into your system, it will prompt you to restart your computer. Tick on the Yes, I want to restart my computer now followed by a click on the Finish button to complete the installation.

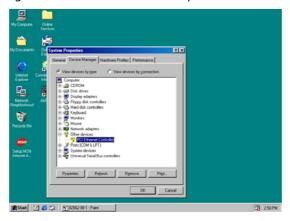
5.3 LAN Driver Installation

5.3.1 Win 95/98

1. Right click on **My Computer** icon then scroll to the **Properties** item from the pop-up menu.



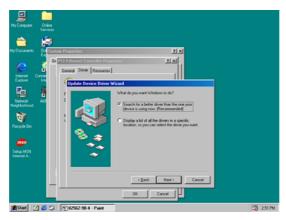
2. Select **Device Manager** from the top menu bar. A list of all devices installed appears, scroll down to the **Other devices** and then select on **PCI Ethernet Controller**. Select the Properties button to access the details of this *unknown* device. Refer to the following screen shot for a clearer explanation of this step.



3. Once the **PCI Ethernet Controller Properties** screen pops up on the screen, click on the **Update Driver** ... button to launch the **Update Device Driver Wizard** screen.

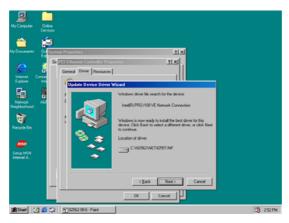
My Computer	Online Services	
~		
My Documents	Ou System Properties	
6	Gr PCI Ethernet Controller Properties R 20 General Diver Resources	
Internet (Correct	
	PCI Ethernet Controller	
Network	Provider: Date:	
Neighborhood		
ন্ত	No driver files are required or have been loaded for this device. To update the driver files for this device, click Update Driver.	
Recycle Bin		
1050		
Setup MSN Internet A		
	DriverFile Details	
	OK Cancel	
Start 2	<u> 설 중 위</u> 왕2562-98-2 - Paint	250 PM
ा		
My Computer	Criter	
	Online Services	
My Documents	System Properties	
1	Gt PEI Ethernet Lootzeller Properties	
Internet (Explorer	General Driver Resources	
	Update Device Driver Wizard	
驺	P This wizard searches for updated drivers for	
Network Neighborhood	Add C PCI Ethernet Controller	
জ		
Recycle Bin	A device driver is a software program that makes a hardware device work.	
	Upgrading to a newer version of a device driver may inprove the performance of your hardware device or add	
msn	functionally.	
Setup MSN Internet A		
	<pre></pre>	
	OK Cancel	
second in	<u> 4</u> (1) 82562-98-3 - Paint	251 PM

4. The succeeding screen then lets you choose whether to search for a better driver for the LAN or display the available list of drivers. Select **Search for a better driver than the one your device is using now** followed by a click on the **Next >** button.



 The wizard program will then require you to specify the location of the driver file. Tick on the **Specify a location:** and type or select the path where the driver files exist (c:\i82562). Click on the **Next >** button to proceed.

My Conjuners My Documents Dramets Dramets Response Respon	G	President C (Change (2005-2017 Page Create Text) (Page (2005-2017 Page (Page 1 Page 1 Page 1 Page (Page 1	1	
		S/18262-58-5 - Paint	(Back Next) Cancel	P3 202PM

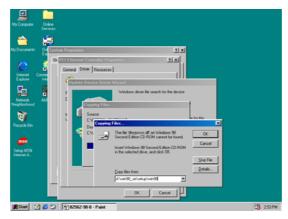


6. The program now starts copying the file(s) needed by your Win98. When the program fails to seek for 8255xDel.exe file from your specified location, it will prompt you to specify the path where the Intel Pro Adapter exists.

				-				
My Computer	Online Services							
(My Documents	(a)	n Properties			<u> </u>	1		
-	Gel	PCI Ethernel	Controller Pr	operties	1×			
internet 0 Explorer		_	iver Resource					
		Update	Device Drive	n Wizərd				
鹄	5			Windows driver	file search for the device:			
Network Neighborhood	AH	6	Copying File	_		-		
Recycle Bin		1	Source: Scanning Copying I			er for this , or click Next		
(MSD)			-	The file 10255xDeLexe CD-ROM or floppy disk	on Intel PRO Adapter cannot be found.	0K.		
Setup MSN Internet A				Insert Intel PRO Adapt disk in the selected dri		Cancel		
						Skip File		
				Copy files from:		Detais		
			- 1	CM0503	×			
						,	J	
State 1	16 2	19/182562	98.7 - Paint	-				252 PM

 With the Utility CD Disk on your CD drive, key in d:\win98_se\setup\win98 on the blank space below <u>Copy files</u> from: then press the OK button.

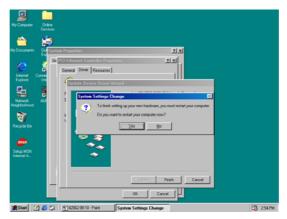




8. When the program finishes updating and copying files for the Intel Pro/100VE Network Connection, click on the **Finish** button to proceed.

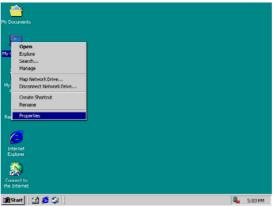
Leeu.				
My Computer	Online Services			
My Documents Internet Internet Network Network Network Recycle Bin Signer Min Steamed A.	0.6	The Development of the Developme	El X	
			Carcel	
😹 Start 🛛 🧭) 🚳 😂	82562-98-9 - Paint		254 P

 For the new hardware settings to take effect and to complete the installation process, you must restart your computer when the System Settings Change window below pops up. Click on the Yes button to complete the installation.



5.3.2 Win 2000

1. Right click on **My Computer** icon and then scroll to the **Properties** item from the pop-up menu.



2. When the System Properties window pops up on the screen, click on the **Device Manager** button.

System Properties ? 🗴	
General Network Identification Hardware User Profiles Advanced	
- Hardware Wizard	
The Hardware witzerd helps you install, uninstall, repair, unplug, eject, and configure your hardware.	
Hardware Wizard	
- Device Manager	
The Device Manager lists all the hardware devices installed on your computer. Use the Device Manager to change the properties of any device.	
Driver Signing Device Managet	
Hardware Profiles	
Hardware profiles provide a way for you to set up and store different hardware configurations.	
Hardware Profiles	
OK Cancel Apply	
😹 Start 🔄 🥵 😂 🛛 🖓 825622k-1 - Paint	S:04 PM

3. A list of all devices installed appears, scroll down to the **Other devices** and then right click on **Ethernet Controller** to select the Properties button. Refer to the following screen shot for a clearer explanation of this step.

Device Manager	_ 0 ×
Action Yow ← → 📾 🖬 😭 😯 🕺 😹 🐹	
→ 2011 TU-OPPYWY35WC3Z 10 20 10 10 20 10 10 10 10 10 10 10 10 10 10 10 10 10	
표 근 Folgery Gas Convers 표 근 IDE ATA(ATAPI controllers 문 - 생활 Keyboards	
B:-{① Mice and other pointing devices 用 ■ Network adapters 日- ② Other devices	
Postable Posts (CC Uninstall	
E QC Sound, M Scan for hardware changes H ■ System of G QC Interest Properties	
🖁 Start 🔯 🚑 🖓 825622k-2 - Paint 📕 Device Manager	S:04 PM

4. Once the **Ethernet Controller Properties** screen pops on the screen, click on the **Update Driver** ... button to launch up the **Update Device Driver Wizard** screen. Once the **Upgrade Device Driver Wizard** screen pops up on the screen, click **Update Driver** ... to launch the Win 2000 driver installation program.

Device	Ethernet Controller Properties	
Action	General Driver Resources	
0- 2 Π-4 8 2 -	Chernet Controller	
	Driver Plovider: Unknown	
	Driver Date: Not available	
B-63	Driver Version: Not available	
0-51	Digital Signer: Not digitally signed	
	No driver files are required or have been loaded for this device. To uninstall the driver files to this device, cick Unrential. To update the driver files for this device, click Update Driver.	
	Driver Detolfs Uninstal Update Driver OK Cancel	
#Start	🙆 🥵 🧊 灯 825622k-3 - Paint 🗐 🕮 Device Manager	S:04 PM

5. Click on **Next >** button to proceed with the installation.

Device L	themet Controller Properties	?1×11	_ D ×
Action	Upgrade Device Driver Wizar	d	
		Welcome to the Upgrade Device Driver Wizard This weard helps you upgrade a device driver for a hardware device.	
		CERK. Next > Cancel	
		OK Cancel	
#Start	🖞 🥵 🧊 🗍 🎦 825622k-4 - Pa	int 📕 Device Manager 🔍	5:05 PM



6. The wizard will then inform you the unknown device it detected from the system. Since the Win2000 driver list does not include Intel chip driver onboard HS-6038, tick **Search for a better driver than the one your device is using now** followed by a click on the **Next >** button to continue.



 The wizard program will then prompt you to specify the location where it will start searching for the driver. Tick on the **Specify a location:** and then click on the **Next >** button to proceed.



8. The wizard program will then require you to insert the manufacturer disk at your specified location (entered at the Copy manufacturer's files from: space) of the driver file. With your Utility CD disk inserted in the drive, type d:lan\i82562 then click on the OK button to proceed.

	Upgrade Device Driver Wizard	
My Document	Locate Driver Files Where do you want Windows to search for driver files?	
My Computer	Upgrade Device Driver Wizard	
My Network Places	Inset the manufacture's installation disk into the drive OK Selected, and then click OK Cancel	
C Recycle Bin	Copy monufacture/s lines from: D-VLANV02592	
Jinternet Explorer	0-14AV02562 Bromes	
	Carcel	
Connect to the Internet	DK Cancel	M

9. The wizard program will start to scan and search for the driver(s) located at your specified location; after which, the wizard program will show the result of its search. When it finds a more suitable driver fitting your device, it will list the driver name and path. Just click on the **Next** > button to continue installing.



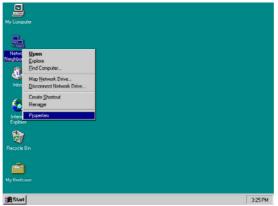
10. When the program finishes updating and copying files for the Intel Pro/100VE Network Connection, click **Finish** to proceed.



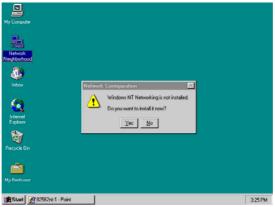
11. For the new hardware settings to take effect and to complete the installation process, you must restart your computer when the **System Settings Change** window below pops up. Click on the **Yes** button to complete the installation.

5.3.3 Win NT

1. Right click on **Network Neighborhood** icon and then scroll to the **Properties** item from the pop-up menu.



2. The Network Configuration dialog box then appears, notifying the user that there is no Windows NT Networking available. Click on the **Yes** button to start the installation process.



 The Network Setup Wizard will then ask you to identify the network connection of your computer. Select <u>Wired to the</u> network and click on the Next > to continue.

	My Network Setup Wizard	Windows NT needs to know how this computer should participate on a network.	
		P Meed to the network You computer is connected to the network by an ISDN Adgeter of Network Adgeter. P Benche access to the network: You computer use a Modem to remotely connect to the network.	
	Re My Briefcase	Click <u>Next</u> Carcel	
I	🏦 Start 🖉 82562ni-2 - Paini	Network Setup Wizard	3:26 PM



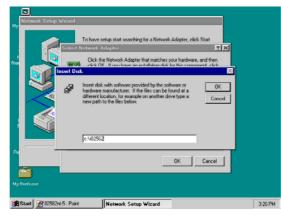
4. The succeeding screen then indicated that the wizard will initially search for Network Adapter from the available list of drivers. Select on **Start Search**.

My Network Setup Wizar		
	To have setup start searching for a Network Adapter, click Start Search button. Start Search Network @dapters:	
	Select from Fet	
Re	Carcel	
My Brefcase		,
😹 Start 📝 82562nt-3 - Pr	int Network Setup Wizard	3:26 P

5. When it is done searching for available network drivers, the wizard will show a list and allow you to locate and choose the appropriate Network Adapter. Since the LAN device driver is in the Utility CD Disk, select on Have Disk ... to proceed.



6. The wizard program will then require you to insert the manufacturer disk and specify the location of the driver file (i.e., c:\i82562). Click on the **OK** button to proceed.



7. The Select OEM Option then appears, prompting you to select the software supported by the network hardware device you will install. Select Intel(R) PRO Adapter and click on the **OK** button to continue installing.

Network Setup Wizard	
To have setup stat searching for a Network Adapter, click Stat Sector Vertwork Adapter Vertwork Adapter that matches your hardware, and then Click the Network Adapter that matches your hardware, and then Sector UN Option	
Orocose a software supported by this hardware manufacturer's disk Install PERD Advocer	
ReOKOKP	
Ny Birthoan Start 127 82552x6 - Paint Network Setup Wizard	3:27 PM



8. The wizard program now displays on the screen that it has detected the Intel() PRO Adapter. Click on the **Next >** button to continue installing.

Network Setup Wizard	
	shing for a Network Adapter, click Start
	Select from list
Re 🛛	ack Newl> Cancel
My Briefcase	
Start 2562nt-7 - Paint Network Se	stup Wizard 3:27 P

 The wizard program now prompts you to specify the networking protocols used on your network structure. Tick on the TCP/IP Protocol and click on the **Next** > button to proceed.

Network Setup Wizard	Select the networking protocols that are used on your network. If you are unsure, contract your system administrator.	
	Network Enterode: > T (CPUP Braced) > Tweeter, BPXOSPX Compatible Transport > TweeterUP Protocol	
	Select from list	
	< <u>Back</u> <u>Next</u> > Cancel	



10. The next screen will allow you to customize the Network Services the wizard program intends to install. Tick services as needed and then click on the **Next >** button to continue.

Net	work Setup Wizard	
Ny Nee	Little below are the anvices that will be installed by the system. You may add to this list by clicking the Select from fire button. Network Synces: Reliable Treatman Reliable Treatman Reliable Treatman Server	
	Select from list	
Re	≺ <u>B</u> ack. <u>N</u> ext > Cancel	
My Briefs) June	
📆 Star	t 282562nt-9 - Paint Network Setup Wizard	3:27 Pt

 The Network Setup Wizard then prompts you that it is ready to install the network components based on your selection. You may start installing by clicking on he <u>Next</u> > button or make modifications on your choices using the < <u>Back</u> button.

Cick Next to initial selected components. Cick Back to make changes to your selections.	Network Setup Wizar	Windows NT is now ready to initial networking components that you selected and others required by the system. This process will allow individual components to initial thempelves and save dialoge so that they may initial connectly.	
Re <u>{Rack [Next]</u> Cancel			
	Re	< <u>B</u> ack Next> Cancel	
My Biełcose	My Briefcase		

12. The Network Setup Wizard will then need to copy the drive file(s). Specify the path of your device driver(s) (i.e., d:\i386) and click the **Continue** button.

Network Setu	as We and	
*	Windows NT is now ready to install networking components that INT Setup	
	Setup needs to copy some Windows NT Her. Continue. Setup will look for the Bis in the location specified below. Cancel Inguo ward Share I look in a different place, type Bis new location. When the location is correct, click. dt v.stel dt v.stel	
Re My Biefcase	skeds Herto Cercel	
😹 Start 📝 825	62nt-11 - Paint Network Setup Wizard	3:28 PM

13. Choose the default entry, $\underline{\mathbf{No}},$ when the following screen pops up on the screen.

_	S	
Nes	Windows NT is now ready to initial networking components that you selected and others required by the system. This process will allow individual components to initial themselves and raise dialogs to that they may initial correctly.	
E	CEPTE Setup Configured Configured	
Re	Garde, Nector Genoel	
	ant @18550x412-Paint Network Setup Wizard	3:29 P

 If you need to disable network bindings on the network services installed, select the service and then click on the <u>D</u>isable button. Otherwise, proceed by clicking on the <u>Next</u> > button.

Network Setup Wiza	You may use this page to disable network bindings or amongs the order in which this conjuster finds information on the network. Show Bindings for: Discusses	
	H- S Server B ■ Workstotion	
	Enable Disable Move Up Move Opm	
Re	< <u>B</u> ack <u>N</u> ext > Carcel	
My Bnelcase		
😤 Start 🛛 🔊 82562nt-13	Paint Network Setup Wizard	329 P

 Select which member (Workgroup or Domain) you belong to. Click on the <u>Next</u> > button after identifying the network group installed on your computer.

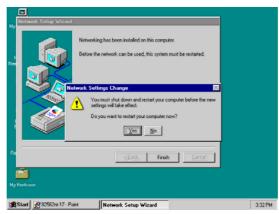
	or a domain and en/	r computer will be participating in a workgroup ter the name of the workgroup or domain. If ish one to select or what name to enter, ik Adminstrator.	
	Computer Name:	000	
	Make this comput	er a member of	
Annos		BOSER	
1 des	C Domain:		
	Create a Com	outer Account in the Domain	
	[KBack Next> Garcel	
29			



16. The wizard program then informs you that Networking is now installed on your system. You must restart your computer to make the setting changes take effect. Click on the **<u>F</u>inish** button to close the wizard program.

Network Setup Wizard		
	Networking has been installed on this computer.	
	Before the network can be used, this system must be restarted.	
	oßesk. Freih Cercel	
My Bielcase		
🚼 Start 🛛 🛷 82562ni-16 - P.	aint Network Setup Wizard	33

17. When the following dialog box pops up on your screen, click on the \underline{Yes} button to restart your computer and make the setting changes take effect.





5.4 Audio Driver Installation

5.4.1 Win 95/98

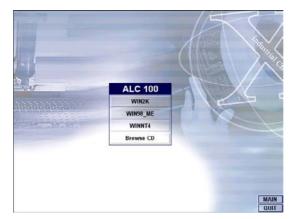
1. After loading the Utility CD-ROM, the program automatically runs the utility. Press **Enter** to proceed installing. When the main utilities window pops up on the screen, select **SOUND&AC7**.



 The succeeding screen will then show you the SOUND&AC97 main menu. Select on ALC 100 to continue installation. When the ALC100 dialog box appears, pick on WIN98_ME and it will take you to the ALC 100 menu. Refer to the following screen shots for a graphical description of this step.







3. Select the language you intend to use for the installation. The default is **English**. After making your choice, press on the **OK** button to proceed.

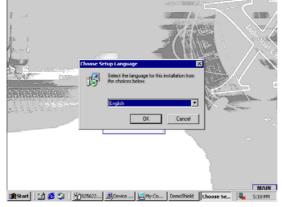


4. Once the InstallShield Wizard completes the operation and update of your AC'97 driver, it will ask you to remove disks from their drives, and prompt you to restart your system. Tick on the Yes, I want to restart my computer now. Afterwards, click on the **<u>F</u>inish** button to complete the installation process. The system changes you made will take effect after the system restarts.



5.4.2 Win 2000

- 1. Following steps 1 and 2 of the Win95/98 AC97 installation, select **WIN2K** button when the ALC100 dialog box appears on the screen.
- Select the language you intend to use for the installation. The default is **English**. After making your choice, press on the <u>OK</u> button to proceed.



 Immediately after clicking on the <u>OK</u> button from the preceding step, the Advance AC'97 Audio Drivers and Applications Setup dialog box will appear on the screen. Just click on the <u>Next</u> > button to continue.



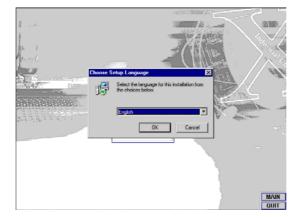


4. Once the InstallShield Wizard completes the operation and update of your AC'97 driver, it will ask you to remove any disks from their drives, and prompt you to restart your system. Tick on the **Yes**, I want to restart my computer now. Afterwards, click on the **Finish** button to complete the installation process. The system changes you made will take effect after the system restarts.



5.4.3 Win NT

- 1. Following steps 1 and 2 of the Win95/98 OR step 1 of Win 2000 AC97 installation, select **WINNT** button when the ALC100 dialog box appears on the screen.
- Select the language you intend to use for the installation. The default is **English**. After making your choice, press on the <u>OK</u> button to proceed.



 Immediately after clicking on the <u>OK</u> button from the preceding step, the Advance AC'97 Audio Drivers and Applications Setup dialog box will appear on the screen. Just click on the <u>Next</u> > button to continue.





4. Once the InstallShield Wizard completes the operation and update of your AC'97 driver, it will ask you to remove any disks from their drives, and prompt you to restart your system. Tick on the **Yes**, I want to restart my computer now. Afterwards, click on the **Einish** button to complete the installation process. The system changes you made will take effect after the system restarts.



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