

Intel[®] Pentium[®] M/ Celeron[®] M processor ULV Intel[®] Celeron[®] M processor Embedded Engine Board • CompactFlash • DDR • PCI Slot •

CRT/LVDS Panel • LAN • Audio •

• ATA/33/66/100 • RS-232/422/485 • 6 COM • • USB2.0 • WDT • H/W Monitor •

Industrial Embedded Engine Board •

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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 handling the HS-7250 to protect yourself from the discharge of 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 COMPONENT WITHOUT ALL NECESSARY ANTI-STATIC PROTECTION.

Chapter 1

General Description



The HS-4706/HS-4706M is an Intel[®] 852GME GMCH/ICH4 chipset-based and HS-4706/HS-4706M is and Intel[®] 852GM GMCH/ICH4 chipset-based board designed embedded engine board. HS-4706/HS-4706M provides Intel[®] Pentium[®] M/Celeron[®] M processor 1.3~2.8GHz, and HS-4706/HS-4706M provides ULV Intel[®] Celeron[®] M processor 600MHz. The combination of these features makes the HS-4706/HS-4706M an ideal all-in-one industrial embedded engine board. Additional features include an enhanced I/O with CF reader, CRT/LVDS Panel, LAN, audio, 6 COM and USB2.0 port interface.

Its onboard ATA/33/66/100 connected to IDE drive interface architecture allows the HS-4706/HS-4706M to support data transfers of 33, 66 or 100MB/sec. for each IDE drive connection. The display controller is Intel[®] 82852GME (HS-4706)/852GM (HS-4706M) for CRT display supporting up to 1600 x 1200. It also provides 18-bit single channel/36-bit dual channel LVDS Panel display interface.

System memory is also sufficient with the one DDR socket that can support up to 1GB. It also provides one IDE interface Type II CompactFlash card adapter connector.

Additional onboard connectors include two internal and two external USB2.0 ports providing faster data transmission, and one external RJ-45 connector for use of one 10/100 Base-TX Ethernet interfaces.



1.1 Major Features



Front Side



Solder Side

The HS-4706/HS-4706M comes with the following features:

- HS-4706 provides Intel[®] Pentium[®] M/Celeron[®] M processor 1.3~2.0GHz HS-4706M provides ULV Intel Celeron M processor 600MHz/512K L2 cache
- HS-4706 provides 400/533MHz FSB
- > One DDR socket with a max. capacity of 1GB
- HS-4706 use Intel[®] 852GME GMCH/ICH4 system chipset HS-4706M use Intel[®] 852GM GMCH/ICH4 system chipset
- 2

- ▶ Winbond W83627HF super I/O chipset
- HS-4706 use Intel[®] 852GME GMCH/ICH4 system chipset HS-4706M use Intel[®] 852GM GMCH/ICH4 system chipset
- LVDS Panel display interface
- Intel[®] 82551QM fast Ethernet controller
- AC97 3D audio controller
- Fast PCI ATA/33/66/100 IDE controller
- > CompactFlash card adapter, six COM, four USB2.0 ports
- > Hardware Monitor function

1.2 Specifications

CPU:

HS-4706 provides: Intel[®] Pentium[®] M processor 760 2.0GHz Intel[®] Pentium[®] M processor 745 1.8GHz Intel[®] Celeron[®] M processor 370 1.5GHz Intel[®] Celeron[®] M processor 320 1.3GHz HS-4706M provides ULV Intel[®] Celeron[®] M processor 600MHz/512K L2 cache Front Side Pure Currents 400/5232M in FCP. (anim. 10, 4700)

- Front Side Bus: Supports 400/533MHz FSB (only HS-4706)
- Memory: One DDR socket supporting up to 1GB
- Chipset: Intel[®] 852GME GMCH/ICH4 (HS-4706), Intel[®] 852GM GMCH/ICH4 (HS-4706M)
- I/O Chipset: Winbond W83627HF
- CompactFlash: One, Type II IDE interface adapter
- PCI Slot: One standard PCI slot
- VGA: Intel[®] 82852GME (HS-4706) / Intel[®] 82852GM (HS-4706M) supporting CRT display up to 1600 x 1200
- LVDS Panel: Supports 18-bit single channel/36-bit dual channel LVDS interface
- Ethernet: Intel[®] 82551QM 10/100 Based LAN
- Audio: AC97 3D audio controller
- IDE: Four IDE disk drives supporting ATA/33/66/100 with transfer rates of up to 33/66/100MB/sec.
- FDD: Supports one slim floppy disk drive
- Parallel: One enhanced bi-directional parallel port supporting SPP/ECP/EPP
- Serial Port: 16C550 UART-compatible RS-232/485 x 1 and RS-232 x 5 serial ports with 16-byte FIFO
- USB: Four USB2.0 ports, two internal and two external



- Keyboard: PS/2 6-pin Mini DIN
- Mouse: PS/2 6-pin Mini DIN
- BIOS: AMI PnP Flash BIOS
- Watchdog Timer: Software programmable time-out intervals from 1~256 sec.
- **CMOS:** Battery backup
- **Temperature:** 0~+60°C (operating)
- Hardware Monitor: Winbond W83627HF
- Board Size: 20.3(L) x 14.6(W) x 3.3(H) cm

1.3 Board Dimensions



Chapter 2

Unpacking

5

2.1 Opening the Delivery Package

The HS-4706/HS-4706M 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. Make sure all integrated circuits, particularly the BIOS, processor, memory modules, ROM-Disk, and keyboard controller chip are firmly seated. The HS-4706/HS-4706M delivery package contains the following items:

- HS-4706/HS-4706M Board x 1
- Utility CD Disk x 1
- Cables Package x 1
- Cooling Fan & Heat Sink x 1
- Jumper Bag x 1
- User's Manual



Cables Package					
NO.	Description				
1	Four COM flat cable x 1				
2	ATA/100 IDE flat cable x 2				
3	Two USB flat cable with bracket x 1				
4	MIC/Audio flat cable with bracket x 1				
5	Floppy cable x 1				
6	Printer flat cable with bracket x 1				

Chapter 3

Hardware Installation

This chapter provides the information on how to install the hardware using the HS-4706/HS-4706M. This chapter also contains information related to jumper settings of switch, watchdog timer 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. (Set JP1 1-2)
- 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 on 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	Default Setting	Setting	Page
JP1	Clear CMOS: Normal Operation	Short 1-2	19
JP2	Onboard LAN Function Enabled/Disabled Select: Enabled	Short 1-2	18
JP3	COM 4 Use RS-232 or RS-422/485 Select: RS-232	Open	17
JP4	Panel Voltage Select: +3.3V	Short 2-3	11
JP5	CPU FSB Frequency Select: 400MHz FSB	Short 3-4	10

3.4 Connector List

Connector	Definition	Page
CN1	COM 1/COM 2 Connector (DB9)	17
CN2 (1-15)	15-pin CRT Connector	11
CN2 (17-32)	External Audio Connector	23
CN3 (1-14)	RJ-45 Connector	18
CN3 (23-30)	Dual USB2.0 Ports	19
CN4	COM 3~COM 6 Connector (5x2 header)	17
CN6	RS-422/485 Connector (3x2 header)	17
CN7	2-pin ATX Power Switch	20
CN8 (1-16)	Control Panel Connector	21
CN8 (17-22)	LAN LED Connector	18
CN8 (25-32)	MIC In/Audio Out Connector	23
CN8 (33-40)	Internal USB2.0 Ports	19
CN9	CompactFlash Connector	23
DM1	DDR Socket	10
FD1	Floppy Connector	15
FAN1 / FAN2	Fan Power In Connector	20
ID1 / ID2	Primary/Secondary IDE Connector	13
J1	Inverter Power In Connector	11
KR1	PS/2 6-pin Mini DIN KB and MS Connector	21
LP1	Parallel Port	16
PA1 / PA2	LVDS Panel Connector	11
PC1	Standard PCI Slot	
PW1	20-pin ATX Power In Connector	20

3.5 Configuring the CPU

The HS-4706 provides Intel[®] Pentium[®] M/Celeron[®] M processor 1.3~2.0GHz, and HS-4706M provides ULV Intel[®] Celeron[®] M processor 600MHz/512K L2 cache. It offers the convenience in CPU installation with its auto-detect feature. HS-4706 provides 400/533MHz FSB, if you want use 533MHz FSB, please setting *JP5* as follow table.

• JP5: CPU FSB Frequency Select (for HS-4706 only)

Options	JP5(1-2)	JP5(3-4)	1	2
400MHz (default)	Open	Short	3	4
533MHz	Open	Open	Ĭ	l '

Heat Sink Installation



Please smear the heat sink paste over CPU and 852GM GMCH chipset uniformly. Then secure the heat sink as the picture above

3.6 System Memory

The HS-4706/HS-4706M provides one DDR socket at location *DM1*. The maximum capacity of the onboard memory is 1GB.



3.7 VGA Controller

The display controller is Intel[®] 82852GME (HS-4706)/82852GM (HS-4706M) for CRT display supporting up to 1600 x 1200. HS-4706/HS-4706M also provides 18-bit single channel/36-bit dual channel LVDS display interface. The HS-4706/HS-4706M provides two methods of connecting VGA device. *CN2(1-15)* offers a single standard CRT connector (DB15), or *PA1/PA2* offer 18-bit/36-bit LVDS panel connectors.

• CN2 (1-15): 15-pin CRT Connector (DB15)

PIN	Description	PIN	Description	
1	RED	2	GREEN	6
3	BLUE	4	N/C	
5	GND	6	GND	000
7	GND	8	GND	000
9	N/C	10	GND	000
11	N/C	12	SDA	5 O 10 O 15
13	HSYNC	14	VSYNC	
15	SCL			

• J1: Inverter Power In Connector

PIN Description

1	+12V	
2	+12V	1 6
3	+5V	
4	BackLight Enabled	
5	LCD Enabled	
6	GND	

JP4: Panel Voltage Select

Options	Settings	
+5V	Short 1-2	+3.3V
+3.3V (default)	Short 2-3	V _{LCD}



• PA1: LVDS Panel Connector

PIN	Description	PIN	Description	
1	VCC3	2	VCC3	
3	GND	4	GND	
5	A0-	6	A0+	
7	A1-	8	A1+	
9	A2-	10	A2+	
11	CLK1-	12	CLK1+	
13	N/C	14	N/C	

• PA2: LVDS Panel Connector

PIN	Description	PIN	Description	
1	VCC3	2	VCC3	
3	GND	4	GND	2
5	A4-	6	A4+	[² 000000 ⁴
7	A5-	8	A5+	
9	A6-	10	A6+	
11	CLK2-	12	CLK2+	
13	N/C	14	N/C	

NOTE: If using PA1 only, it just supports 18-bit single channel LVDS Panel; If you want to use 36-bit dual channel LVDS Panel, please using PA1 and PA2 combined.

3.8 PCI E-IDE Drive Connector

ID1 and *ID2* are standard 40-pin daisy-chain driver connector that serves the PCI E-IDE drive provisions onboard the HS-4706/HS-4706M. A maximum of four ATA/33/66/100 IDE drives can be connected to the HS-4706/HS-4706M via *IDE1* and *IDE2*.

• ID1: Primary IDE Connector

PIN	Description	PIN	Description
1	RESET	2	GND
3	PDATA 7	4	PDATA 8
5	PDATA 6	6	PDATA 9
7	PDATA 5	8	PDATA 10
9	PDATA 4	10	PDATA 11
11	PDATA 3	12	PDATA 12
13	PDATA 2	14	PDATA 13
15	PDATA 1	16	PDATA 14
17	PDATA 0	18	PDATA 15
19	GND	20	N/C
21	PDREQ	22	GND
23	PIOW#	24	GND
25	PIOR#	26	GND
27	PIORDY	28	PD1-
29	PDACK-	30	GND
31	Interrupt	32	N/C
33	PDA1-	34	PATA66
35	PDA0-	36	PDA2-
37	PCS1-	38	PCS3-
39	HDD Active	40	GND

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

PIN	Description	PIN	Description
1	RESET	2	GND
3	SDATA 7	4	SDATA 8
5	SDATA 6	6	SDATA 9
7	SDATA 5	8	SDATA 10
9	SDATA 4	10	SDATA 11
11	SDATA 3	12	SDATA 12
13	SDATA 2	14	SDATA 13
15	SDATA 1	16	SDATA 14
17	SDATA 0	18	SDATA 15
19	GND	20	N/C
21	SDREQ	22	GND
23	SIOW#	24	GND
25	SIOR#	26	GND
27	SIORDY	28	SD1-
29	SDACK-	30	GND
31	Interrupt	32	N/C
33	SDA1-	34	SATA66
35	SDA0-	36	SDA2
37	SCS1-	38	SCS3-
39	HDD Active	40	GND

• ID2: Secondary IDE Connector

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-4706/HS-4706M uses a 26-pin connector, FD1, for one slim floppy disk drive connection.

• FD1: FDD Connector

PIN	Description	PIN	Description
1	Disk Select 1	14	N/C
2	GND	15	Direction #
3	Read Data #	16	N/C
4	GND	17	Motor Enable 0
5	Write Protect #	18	N/C
6	N/C	19	N/C
7	Track0 #	20	N/C
8	N/C	21	Disk Change #
9	Wgate #	22	VCC
10	GND	23	Driver 0
11	Write Data #	24	VCC
12	GND	25	Index #
13	Step #	26	VCC

3.10 Parallel Connector

LP1 is a standard 26-pin flat cable connector designed to accommodate parallel port connection onboard the HS-4706/HS-4706M.

• LP1: Parallel Connector

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



3.11 Serial Port Connectors

The HS-4706/HS-4706M offers NS16C550 compatible UARTs with Read/Receive 16-byte FIFO serial ports.

CN1: COM 1/COM 2 Connector (DB9)

PIN	Descriptio	PIN	Description	
	n			
1	DCD1	10	DCD2	
2	DSR1	11	DSR2	
3	RXD1	12	RXD2	
4	RTS1	13	RTS2	
5	TXD1	14	TXD2	
6	CTS1	15	CTS2	5
7	DTR1	16	DTR2	
8	RI1	17	RI2	
9	GND	18	GND	

CN4: COM 3~COM 6 Connector (5x2 header) PIN Description PIN Description DCD3 2 DSR3 1 3 RXD3 4 RTS3 TXD3 CTS3 5 6 7 DTR3 8 RI3 9 GND 10 N/C DSR4 11 DCD4 12 RXD4 RTS4 13 14 TXD4 15 16 CTS4 17 DTR4 18 RI4 19 GND 20 N/C 21 DCD5 22 DSR5 23 RXD5 24 RTS5 25 TXD5 26 CTS5 27 DTR5 28 RI5 29 GND 30 N/C 31 DCD6 32 DSR6 RXD6 33 34 RTS6 35 TXD6 36 CTS6 39 37 38 DTR6 RI6 GND N/C 39 40

• CN6: RS-422/485 Connector (3x2 header)

PIN	Description	PIN	Description	
1	TX-	2	TX+	
3	RX+	4	RX-	
5	GND	6	VCC	

• JP3: COM 4 use RS-232 or RS-422/485 Select

Options	Settings	1 2
RS-232 (default)	All Open	
RS-485 by AUTO	Short 5-7, 8-10	00
RS-485 by –RTS	Short 7-9, 8-10	
RS-422 Full Deplex	Short 6-8	
		9 10

3.12 Ethernet Connector

The HS-4706/HS-4706M provides one 10/100 Base-TX LAN interface connector. Please refer to the following for its pin information.

• CN3(1-14): RJ-45 Connector

PIN	Description	PIN	Description		
1	RCT	2	TX+	1	0 9
3	TX-	4	RX+		010
5	RX-	6	N/C	ě o	-
7	N/C	8	N/C	Ö	
9	N/C	10	RCT	ŏŎ	011
11	Link LED	12	330 Ω pull 3VSB	8	012
13	330Ω pull 3VSB	14	ACT LED		

• JP2: Onboard LAN Function Enabled/Disabled Select

Options	Settings	
Enabled (default)	Short 1-2	
Disabled	Short 2-3	

• CN8(17-22): LAN LED Connector

PIN	Description	PIN	Description		
17	Link LED	18	330 Ω pull 3VSB		
19	ACT LED	20	330 Ω pull 3VSB		
21	Speed LED	22	330 Ω pull 3VSB		

3.13 USB Connector

The HS-4706/HS-4706M provides one 8-pin internal connector at location *CN8(33-40)* and two 4-pin external connector, at locations *CN3(23-30)*, for four USB2.0 connections to the HS-4706/HS-4706M.

• CN8(33-40): Internal USB2.0 Connector

PIN	Description	PIN	Description		
33	VCC	34	VCC		
35	BD3-	36	BD4-		
37	BD3+	38	BD4+		
39	GND	40	GND		

• CN3(23-30): External USB2.0 Connector

PIN	Description	PIN	Description	
23	VCC	24	VCC	
25	BD1-	26	BD2-	
27	BD1+	28	BD2+	
29	GND	30	GND	

3.14 CMOS Data Clear

The HS-4706/HS-4706M has a Clear CMOS jumper on JP1.

• JP1: Clear CMOS

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

IMPORTANT: Before you turn on the power of your system, please set JP1 to short 1-2 for normal operation.

3.15 Power and Fan Connectors

HS-4706/HS-4706M provides one 20-pin ATX power in connector at *PW1*, 2-pin ATX power switch at *CN7*.

• PW1: 20-pin ATX Power In Connector

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



• CN7: 2-pin ATX Power Switch

PIN	Description	1 2
1	Pull 220 Ω to VCCSTBY	
2	PS_ON	

FAN1/FAN2 onboard HS-4706/HS-4706M is 3-pin fan power connector.

• FAN1/FAN2: Fan Power Connector

PIN	Description	1
1	GND	
2	VCC12V	
3	FAN Speed In	llŏ

3.16 Keyboard/Mouse Connector

The HS-4706/HS-4706M offers one method for keyboard/mouse connections. The connections are done via *KR1* for an external PS/2 type keyboard/mouse connection.

• KR1: PS/2 6-pin Mini DIN Keyboard and Mouse Connector

PIN	Description	PIN	Description	
1	Keyboard Data	7	Mouse Data	
2	N/C	8	N/C	
3	GND	9	GND	
4	+5V	10	+5V	
5	Keyboard Clock	11	Mouse Clock	
6	N/C	12	N/C	



3.17 System Front Panel Connectors

The HS-4706/HS-4706M has one system front panel at location CN8(1-16) that indicates the system front panel status.

• CN8(1-16): System Front Panel Connector

PIN	Description	PIN	Description			
1	VCC	2	330 Ω Pull VCC			
3	GND	4	GND			
5	5 GND		GND			
7	Speaker	8	N/C			
9	GND	10	100 Ω Pull +5Vsb			
11	Reset Button	12	N/C			
13	330 Ω Pull VCC	14	330 Ω Pull +5Vsb			
15	15 HDD LED		N/C			

Connector CN8(1-16) Orientation



3.18 Watchdog Timer

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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 will re-start when such error happens.

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

; Enter the V	VDT function mode,	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	
; Exit extend	led function mode	
, 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 to FFH = 255sec.



3.19 Audio Connectors

The HS-4706/HS-4706M has an onboard AC97 3D audio interface. The following tables list the pin assignments of the MIC In/Line Out connectors.

• CN2(17-32): Primary MIC In/Audio Out Connector

PIN	Description	PIN	Description	
17	GND	25	GND	
18	LINE_IN R	26	GND	\frown
19	GND	27	LINE_OUT L	
20	GND	28	GND	Line Out Line In Mic In
21	GND	29	GND	
22	LINE_IN L	30	GND	
23	LINE_OUT R	31	GND	
24	GND	32	MIC_IN 1	

• CN8(25-32): Secondary MIC In/Audio Out Connector

PIN	Description	PIN	Description
25	Font LINE_OUT L	26	Font LINE_OUT R
27	GND	28	GND
29	MIC_IN 2	30	N/C
31	GND	32	GND
39 40	0000		

3.20 CompactFlash™ Connector

The HS-4706/HS-4706M also offers an optional CompactFlash[™] connector which is IDE interface located at the solder side of the board. The designated *CN9* connector, once soldered with an adapter, can hold CompactFlash[™] cards of various sizes. Please turn off the power before inserting the CF card. 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 below for the traditional way of inserting the card.



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Chapter 4

AMI BIOS Setup

The HS-4706/HS-4706M 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 Main Menu

BIOS SETUP UTILTIY

Main Ao	dvanced	PCIPnP	Boot	Security	Chipset	t	Power Exit	
System (Overview					Use	[ENTER], [TAB]	
AMIBIOS	5		or	[SHIFT-TAB] to				
Version	:08.00.	11				sele	a neid.	
Build Date	e :03/09/	'06				Heo	[1] or [] to	
ID	:HS470	600				conf	igure system	
Processo	or					11110	5.	
Туер	:Intel(R) Celeron	(R) M pr	ocessor				
Speed	:1499M	Hz						
Count	:1							
System M	Memory					$\leftarrow \rightarrow$	Select Screen	
Size	:248MB					↑ ↓	Select Item	
						+ -	Change Field	
System T	ime	[00:09:	44]			Tab	Select Field	
System D	ate	[Tue 01	/01/200)2]		F1	General Help	
						F10	Save and Exit	
						ESC	Exit	
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4.3 Advanced Settings

	BIOS SETUP UTILTIY								
Mair	n Advanced	PCIPnP	Boot	Security	Chipset	: _F	ower	Exit	
Adva	dvanced Settings Configure CPU.								
WAF	RNING: Settin	g wrong v	values	in below					
sect	ions may cau	se system	n to ma	lfunction.					
* * * * * * * * *	CPU Configura IDE Configura Floppy Configura SuperIO Confi Hardware Hea ACPI Configura MPS Configura Smbios Config USB Configura	tion tion uration guration Ith Configu ation ation uration tion	ration			$\leftarrow \rightarrow$ + - Tab F1 F10 ESC	Sele Sele Chai Sele Gen Savi Exit	ect Screen ct Item nge Field ct Field eral Help e and Exit	
	v02.57 (C)	Copyright	: 1985-	2004, Ame	erican M	egatre	ends, I	nc.	



BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset		Power	Exit		
Config	Configure advanced CPU settings When disabled, force									
Modul	Module Version –12.00 the XD feature flag to									
						aiway	s return	10.		
Manufa Brand S	icturer String	:Intel :Intel(R) C	eleron(l	R) M proces	ssor					
Freque	ncy	:1.49GHz								
FSB Sp	eed	:400MHz								
Cache	L1	:32 KB								
Cache	L2	:1024 KB								
						$\leftarrow \rightarrow$	Sele	ct Screen		
Execut	e Disable Bit		[Enable	ed]		↑ ↓	Sele	ct Item		
CPU TN	I function:		[Enable	ed]		+ -	Cha	nge Field		
						Tab F1	Sele Gen	ct Field eral Help		
Hyper ⁻	Threading Te	chnology	[Enable	ed]		F10 FSC	Save Exit	e and Exit		
						200				

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BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	:]F	Power	Exit
OnBoar OnBoar ▶ Prin ▶ Prin ▶ Sec ▶ Sec	onfiguration rd PCI IDE C rd PCI IDE O mary IDE Ma mary IDE Sla condary IDE condary IDE	n perate Moo ster ve Master Slave	de [L : : :	Both] .egacy Mod [Not Detect [ATAPI CDF [Not Detect [Not Detect	e] ROM] ted] ted]	Disab the in Contr PRIM, only t Contr SECO only t IDE C Both: IDE C	led: dis ntegrate oller. ARY: en the Prim oller. NDARY: the Seco Controlle controlle	ables d IDE ables ary IDE enables ondary er. s both ers.
Hard D IDE De ATA(PI	bisk Write Pro etect Time Ou) 80Pin Cable	tect it (Sec) e Detectior	[Dis [35] n [Hos	abled] st & Device]	$\leftarrow \rightarrow$ $\uparrow \downarrow$ + - Tab F1 F10 ESC	Sele Sele Chai Sele Gen Save Exit	ct Screen ct Item nge Field ct Field eral Help ∋ and Exit
	v02.57 (C)	Copyright	: <u>19</u> 85-:	2004, Ame	erican M	egatro	ends, I	nc.

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	i Po	ower Exit
Flopp	y Configura	tion				Select	the type of
Floppy Floppy	A B		[1.44 MB 3.5 Disabled]	5″]	connect system	arive sted to the n.
						$\begin{array}{c} \leftarrow \rightarrow \\ \uparrow \downarrow \\ + - \\ Tab \\ F1 \\ F10 \\ ESC \end{array}$	Select Screen Select Item Change Field Select Field General Help Save and Exit Exit
	v02.57 (C)	Copyright	t 1985-	2004, Ame	erican M	egatre	nds, Inc.

BIOS SETUP UTILTIY

Main Advanced	PCIPnP	Boot	Security	Chipset	i F	Power	Exit
Configure Win62	Allows BIOS to						
					Enabl	e of Di	sable
OnBoard Floppy Co	ntroller	ſΕ	Enabled]		Flopp	y Cont	roller.
Floppy Drive Swap		[[Disabled]				
Serial Port1 Addres	S	[3	3F8/IRQ4]				
Serial Port2 Addres	S	[2	2F8/IRQ3]				
Serial Port2 Mod	е	۱]	lormal]				
OnBoard CIR Port		[[Disabled]				
Parallel Port Addres	S	[3	378]				
Parallel Port Mod	le	[E	ECP]				
ECP Mode DM	A Channel	[[DMA3]		$\leftarrow \rightarrow$	Sel	ect Screen
Parallel Port IRQ		[]	RQ7]		↑ ↓	Sel	ect Item
OnBoard Game Por	t	[[Disabled]		+ -	Cha	ange Field
OnBoard MIDI Port		[[Disabled]		Tab	Sel	ect Field
Serial Port3 Addres	S	[3	3E8]		F1	Ger	neral Help
Serial Port3 IRQ		[1	0]		F10	Sav	/e and Exit
Serial Port4 Addres	S	[2	2E8]		ESC	Exi	t
Serial Port4 IRQ		[1	1]				
Serial Port5 Addres	S	[2	2F0]				
Serial Port5 IRQ		[1	1]				
Serial Port6 Addres	S	[2	2E0]				
Serial Port6 IRQ		[1	1]				
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BIOS SETUP UTILTIY

Main Advanced	PCIPnP	Boot	Security	Chipset	: Po	ower Exit			
Hardware Health Configuration					Enables Hardware				
H/W Health Function Chassis Intrusion		[Ena [Dis	[Enabled] [Disabled]			Health Monitoring Device.			
Hardware Health Event Monitoring									
CPU Temperature		:21	°C/69°F						
System Temperatu	re	:18	°C/64°F		$\leftarrow \rightarrow \uparrow \downarrow$	Select Screen Select Item			
System Fan		:52	73RPM		+ - Tab	Change Field Select Field			
VcoreA		:1.2	258 V		F1	General Help			
+3.3Vin		:3.4	19 V		F10	Save and Exit			
+5Vin		:5.1	07 V		ESC	Exit			
+12Vin		:12	160 V						
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BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	: Po	ower Exit			
ACPI	Settings					Enable	/ Disable ACPI			
ACPI A	Aware O/S		[`	Yes]		suppor Systen ENABL	t for Operating n. E: If OS			
 General ACPI Configuration Advanced ACPI Configuration Chipset ACPI Configuration 		onfiguratio Configurat onfiguratio	า ion า			supports ACPI. DISABLE: If OS does not support ACPI.				
						$\begin{array}{c} \leftarrow \rightarrow \\ \uparrow \downarrow \\ + - \\ Tab \\ F1 \\ F10 \\ ESC \end{array}$	Select Screen Select Item Change Field Select Field General Help Save and Exit Exit			
	v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.									
Main	Advanced	PCIPnP	Boot	Security	Chipse	t	Power	Exit		
--------	---------------	------------	------	--------------	----------	---	---	--	--	--
Gener	al ACPI Con	figuration	n			Select the ACPI state				
Susper	nd mode		[[Auto]		used Susp	used for System Suspend.			
кероз	l video on 53	Resume	l	<u>.</u> NO]		$\leftarrow \rightarrow$ $\uparrow \downarrow$ + - Tab F1 F10 ESC	Sele Sele Cha Sele Ger Sav Exit	ect Screen ect Item inge Field ect Field heral Help re and Exit		
	v02.57 (C)	Copyright	1985	-2004. Ame	erican M	egatr	ends.	nc.		

BIOS SETUP UTILTIY

Main Advanced	PCIPnP	Boot	Security	Chipset	t Po	wer Exit		
Advanced ACPI	Configurat	ion			Enable RSDP pointers			
ACPI 2.0 Features		[No] [Enabled]			to 64-bi System Tables.	t Fixed Description		
AMI OEMB table Headless mode		[Enabled] Disabled]					
					$\begin{array}{c} \leftarrow \rightarrow \\ \uparrow \downarrow \\ + - \\ Tab \\ F1 \\ F10 \\ ESC \end{array}$	Select Screen Select Item Change Field Select Field General Help Save and Exit Exit		
v02.57 (C)Copyright	t 1985	-2004, Ame	erican M	egatren	ds, Inc.		

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
APIC A	CPI SCI IRQ		[[Disabled]			
USB De	evice Wakeup	From S3	[[Disabled]			
					$\leftarrow \rightarrow$	· Sele	ct Screen
					↑ ↓	Sele	ct Item
					+ -	Cha	nge Field
					Tab	Sele	ct Field
					F1	Gen	eral Help
					F10	Save	e and Exit
					ESC	Exit	
	v02.57 (C)	Copyright	1985-2	2004, Ame	rican Megat	rends, I	nc.

Main Advanced	PCIPnP	Boot	Security	Chipse	et	Power Exit		
MPS Configuration	IPS Configuration							
MPS Revision		[1.4]					
					← → ↑ ↓ + - Tab F1 F10 ESC	Select Screen Select Item Change Field Select Field General Help Save and Exit Exit		
v02.57 (C)	Copyrigh	t 1985-	2004, Ame	erican N	Negatr	ends, Inc.		

BIOS SETUP UTILTIY

Main Advanced PCIPn	P Boot Security	Chipset Power Exit						
Smbios Configuration	Smbios Configuration							
Smbios Smi Support	[Enabled]	support for PhP Func 50h-54h						
		$\begin{array}{llllllllllllllllllllllllllllllllllll$						
v02.57 (C)Copyrid	ht 1985-2004 Ame	rican Megatrends Inc						

Main Advanced	PCIPnF	Boot	Security	Chipset	i I	Power	Exit
USB Configuration	on				Enab	les USB	host
Module Version	-2.24.0-1	0.4			contr	ollers.	
USB Devices Enab None	le	:					
USB Function Legacy USB Suppo USB 2.0 Controller USB 2.0 Controller BIOS EHCI Hand-0	ort - Mode Dff	[4 USB P [Enabled [Enabled [HiSpeed [Enabled]	orts]]]]		$\leftarrow \rightarrow$ + - Tab F1 F10 ESC	Sele Sele Cha Sele Ger Sav Exit	ect Screen ect Item nge Field ect Field leeral Help e and Exit
v02.57 (C)Copyrial	nt 1985-	2004, Ame	erican M	egatr	ends, I	nc.

4.4 Advanced PCI/PnP Settings

BIOS SETUP UTILTIY										
Main Advanced PCIPnP E	Boot Security Chipse	et Po	wer Exit							
Advanced PCI/PnP Settings		Clear N	IVRAM during							
WARNING: Setting wrong va	lues in below	System	Boot.							
sections may cause system t	o malfunction.									
Clear NVRAM	[No]									
Plug & Play O/S	[No]									
PCI Latency Timer	[64]									
Allocate IRQ to PCI VGA	[Yes]									
Palette Snooping	[Disabled]									
PCI IDE BusMaster	[Enabled]									
OffBoard PCI/ISA IDE Card	[Auto]									
IRQ3	[Available]	$\leftarrow \rightarrow$	Select Screen							
IRQ4	[Available]	↑ ↓	Select Item							
IRQ5	[Available]	+ -	Change Field							
IRQ7	[Available]	Tab	Select Field							
IRQ9	[Available]	F1	General Help							
IRQ10	[Available]	F10	Save and Exit							
IRQ11	[Available]	ESC	Exit							
IRQ14	[Available]									
IRQ15	[Available]									
DMA Channel 0	[Available]									
DMA Channel 1	[Available]									
DMA Channel 3	[Available]									
DMA Channel 5	[Available]									
DMA Channel 6	[Available]									
DMA Channel 7	[Available]									
Reserved Memory Size	[Disabled]									
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4.5 Boot Settings

BIOS SETUP UTILTIY											
Main Advanced	PCIPnP Boot	Security	Chipset F	Power Exit							
Boot Settings ▶ Boot Settings C	onfiguration		Config during	gure Settings g System Boot.							
 Boot Device Priv Removable Driv CD/DVD Drives 	ority /es										
			←→ +- Tab F1 F10 ESC	Select Screen Select Item Change Field Select Field General Help Save and Exit Exit							
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BIOS SETUP UTILTIY

Main Advan	ced	PCIPnP	Boot	Security	Chipset	t	Pow	er	Exit
Boot Setting	s Con	figuratio	n			Allov	vs Bl	OS 1	to skip
Quick Boot Quiet Boot AddOn ROM Display Mode Bootup Num-Lock PS/2 Mouse Support Wait For 'F1' If Error Hit 'DEL' Message Display Interrupt 19 Capture		ו 		certain tests while booting. This will decrease the time needed to boot the system.		while will time ot the			
Interrupt 19 Capture		Į,	Journal J		$\begin{array}{c} \leftarrow \rightarrow \\ \uparrow \downarrow \\ + - \\ Tab \\ F1 \\ F10 \\ ESC \end{array}$		Sele Sele Char Sele Sene Save Exit	ct Screen ct Item nge Field ct Field eral Help e and Exit	
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Main	Advanced	PCIPnP	Boot	Security	Chipset	t 🔤	Power	Exit
Boot I	Device Prior	ity				Speci	ifies the	e boot
1st Bo 2nd Bo	Boot Device [1st FLOPPY DF Boot Device [CD/DVD:PS-A		PY DRIVE] PS-ASUS C	G-ASUS CRW]		available devices. A device enclosed in parenthesis has been disabled in the corresponding type menu.		
					← → ↑ ↓ + - Tab F1 F10 ESC		Sele Sele Cha Sele Ger Sav Exit	ect Screen ect Item inge Field ect Field ieral Help e and Exit
	v02.57 (C)	Copyright	t 1985-2	2004, Ame	erican M	egatr	ends, l	nc.

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	i Po	ower	Exit	
Remo	vable Drives	5			Specifies the boot				
1st Dr	ive	[1st FLOPPY DRIVE]				available devices.		m the ices.	
						$\begin{array}{c} \leftarrow \rightarrow \\ \uparrow \downarrow \\ + - \\ Tab \\ F1 \\ F10 \\ ESC \end{array}$	Sele Sele Char Sele Gene Save Exit	ct Screen ct Item nge Field ct Field eral Help e and Exit	
	v02.57 (C)	Copyriaht	t 1985-	2004, Ame	erican M	eaatrer	nds, li	nc.	

Main	Advance	d PCIPnP	Boot	Securi	ty Chips	et P	ower Exit
CD/D	VD Drives					Specif	ies the boot
1st De	evice	[CI	D/DVD:	PS-ASUS	G CRW]	seque availa	nce from the ble devices.
						 ← → ↑ ↓ + - Tab F1 F10 ESC 	Select Screen Select Item Change Field Select Field General Help Save and Exit Exit
	v02.57 (C)Copyright	1985-	-2004, A	merican	Megatre	nds, Inc.

4.6 Security Settings

BIOS SETUP UTILTIY							
Main Advanced PCIPnP	Boot	Security	Chipset	P	ower	Exit	l
Security Settings				Install	or Cha	ange the	
Supervisor Password Jser Password	: Not : Not	Installed Installed		passw	ord.		
Change Supervisor Password Change User Password							
3oot Sector Virus Protection	[Disa	bled]		 <!--</td--><td>Sele Sele Char Sele Gene Save Exit</td><td>ct Screen ct Item nge Field ct Field eral Help e and Exit</td><td></td>	Sele Sele Char Sele Gene Save Exit	ct Screen ct Item nge Field ct Field eral Help e and Exit	
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							1

4.7 Advanced Chipset Settings

BIOS SETUP UTILTIY						
Main Advanced PCIPnP Boo	ot Security Chips	set Po	ower Exit			
Advanced Chipset Settings		Option	s for NB			
WARNING: Setting wrong valu	ies in below	_				
sections may cause system to	malfunction.					
NorthBridge Configuration						
 SouthBridge Configuration 						
		$\leftarrow \rightarrow$	Select Screen			
		↑ ↓	Select Item			
		+ - Tab	Change Field			
		12D	Select Field			
		Г I F10	Save and Exit			
		FSC	Fyit			
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BIOS	SETUP UTILTIY					
Main Advanced PCIPnP Bo	ot Security Chips	set Po	<u>owe</u> r Exit			
			Options			
DRAM Frequency	[Auto]					
Configure DRAM Timing by SPD	[Enabled]	200Mh	Z			
		266Mh	Z			
Memory Hole	[Disabled]	333Mh	Z			
Init. Graphic Adapter Priority	[Internal VGA]	Auto				
Internal Graphics Mode Select	[Enabled, 8MB]					
Graphics Aperture Size	[64MB]	$\leftarrow \rightarrow$	Select Screen			
Deet Dianlas Davian		î ↓	Select Item			
Boot Display Device		+ - Tab	Change Field			
Flat Parler Type		1 du E 1	Select Fleiu			
	[Auto]	F10	Save and Exit			
		110				

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Main	Advanced	PCIPnP	Boot	Security	Chipset	P	ower	Exit
					E	nable	e/Disab	le
OnBoa	rd AC'97 Aud	io	[A	uto]	C)nBoa	ard AC	97
					A	udio.		
Restore	e on AC Powe	er Loss	[L	ast State]				
					~	\rightarrow	Sele	ct Screen
					↑	`↓	Sele	ct Item
					+		Chai	nge Field
					Т	ab	Sele	ct Field
					F	1	Gen	eral Help
					F	10	Save	e and Exit
					E	SC	Exit	
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4.8 APM Configuration

BIOS	SETUP	UTI	ITIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	t	Power	Exit
АРМ (Configuratio	n				Disal	ble/Enab	ole RTC
Power	Management	/APM	[Enak	oled]		to ge	enerate	a wake
Video	Power Down	Mode	[Susp	pend]		even	it.	
Hard [Disk Power Do	own Mode	[Susp	pend]				
Stand	by Time Out		[Disa	bled]				
Suspe	nd Time Out		[Disa	bled]				
Thrott	le Slow Clock	Ratio	[50%	5]				
Keybo	ard & PS/2 M	ouse	[Mon	itor]				
FDC/L	PT/COM Ports	5	[Mon	itor]				
Primar	ry master IDE	-	[Mon	itor]		$\leftarrow \rightarrow$	Sele	et Screen
Primar	ry slave IDE		[Mon	itor]		↑ ↓	Sele	et Item
Secon	dary master I	IDE	[Mon	itor]		+ -	Cha	nge Field
Secon	dary slave ID	E	[Mon	itor]		Tab	Sele	ct Field
						F1	Gen	eral Help
Syster	n Thermal		[Disa	bled]		F10	Sav	e and Exit
						ESC	Exit	
Power	Button Mode		[On/0	Off]				
Resum	ne On Ring		[Disa	bled]				
Resum	ne On LAN		[Disa	bled]				
Resum	ne On PME#		[Disa	bled]				
Resum	ne On RTC Ala	arm	[Disa	bled]				
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4.9 Exit Options

Ы	OS	SE	TUP	UTIL	TIY	

Main Advanced PCI	PnP Boot	t Secu	rity Ch	ipset	Power	Exit
EXIT Options Save Changes and Exit Discard Changes and Exit Discard Changes Load Optimal Defaults Load Failsafe Defaults	t			Exit after char F10 for t	system s r saving nges. key can his opera	setup the be used ation.
				← → ↑ ↓ + - Tab F1 F10 ESC	Sele Sele Cha Sele Gen Save Exit	ect Screen ect Item nge Field ect Field eral Help e and Exit
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Chapter 5

Software Utilities

This chapter contains the detailed information of IDE, VGA, LAN, audio and USB2.0 driver installation procedures. The utility disk that comes 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.

The drivers are located in the following directories of the utility disk:

- Chipset driver: \INF
- VGA driver: \VGA\852GME
- LAN driver: \LAN\182551QM
- Audio driver: \Audio\AC97_ALC201
- USB2.0 driver: \USB20

5.1 IDE Driver Installation

1. Insert Utility CD Disk to your CD ROM drive. The main menu will pop up as shown below. Select on the **HS-4706** button to launch the installation program.



2. Click on the INF Driver button to continue.





3. Click on the appropriate OS button to continue.



 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.

Setup	×
	Welcome to the InstallShield(R) Wizard for Intel(R) Chipset Software Installation Utility Welcome to the Intel(R) Chipset Software Installation Utility. This utility will enable Plug & Play INF support for Intel(R) chipset components.
	< <u>B</u> ack. Next> Cancel



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



 When the Readme Information dialog box pops up, just click on the <u>Next></u> button to proceed.

Setup	×
Readme Information	
Readme.txt	
* Product: Intel(R) Chipset Software Installation Utility * Release. Production Version * Version: 51.1.1002 * Target Chipsetti: ICH4L * Date: December 5, 2003 Note: For the list of supported chipsets, please refer to the Release Notes	× ×
	Cancel

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 Once the Install Shield 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 Finish button to reboot. Only after your computer boots will the new settings take effect.

Setup	
	InstallShield(R) Wizard Complete The InstallShield(R) Wizard has successfully installed Intel(R) Chipset Software Installation Utility. Before you can use the program, you must restart your computer. (* Yes, I want to restart my computer now. (* No, I will restart my computer later. Remove any disks from their drives, and then click Finish to complete setup.
	< Back Finish Cancel



5.2 VGA Driver Installation

5.2.1 Win 98

1. Insert Utility CD Disk into your CD ROM drive. The main menu will pop up as shown below. Select on the **HS-4706** button to launch the installation program.



2. Click on the VGA Driver button to continue.



3. Click on the **WIN9X** button to continue.



 When the dialog box below appears, make sure you close all other Windows applications then click on the <u>Next</u> > button to proceed.





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



6. 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	0
-	-

5.2.2 Win NT

- **NOTE:** Please make sure you have already installed Service Pack 6.0.
- Insert Utility CD Disk into your CD ROM drive. The main menu will pop up as shown below. Select on the HS-4706 button to launch the installation program.



- 2. Click on the VGA Driver button to continue.
- 3. Click on the **WINNT** button to continue.



 When the dialog box below appears, make sure you close all other Windows applications then click on the <u>Next</u> > button to proceed.



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

Intel(R) Extreme Graphics 2			×
License Agreement Please read the following license agreement ca	refully.		
Press the PAGE DOW/N key to see the rest of t	he agreement.		
INTEL SOFTWARE LICENSE AGREEMENT I IMPORTANT - READ BEFORE COPYING, IN: Do not use or load this software and any assoc until you have carefully read the following term: Software, you agree to the terms of this Agreen install or use the Software. Please Also Note:	OEM / IHV / IS STALLING OR viated materials s and conditions nent. If you do r	V Distribution & USING. (collectively, the s. By loading or u lot wish to so agr	Single User)
* If you are an Original Equipment Manufacture Do you accept all the terms of the preceding Li setup will close. To install Intel(R) Extreme Graj	r (OEM), Indepe cense Agreeme phics 2, you mu	endent Hardware nt? If you choos st accept this ag	Vendor 💽 e No, the reement.
InstaliShield	< <u>B</u> ack	Yes	No



 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.



5.2.3 Win 2000

1. Insert Utility CD Disk into your CD ROM drive. The main menu will pop up as shown below. Select on the **HS-4706** button to launch the installation program.



- BOSER Driver Version L3 Welcome to BOSER driver initialiter Audio Driver LAN Driver LAN Driver BNT Driver CNTDR Back 1993 Driver Back 1993
- 2. Click on the VGA Driver button to continue.

3. Click on the **WIN2K** button to continue.





 When the dialog box below appears, make sure you close all other Windows applications then click on the <u>Next</u> > button to proceed.



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

Intel(R) Extreme Graphics 2	×
License Agreement Please read the following license agreement carefully.	
Press the PAGE DOWN key to see the rest of the agreement.	
INTEL SOFTWARE LICENSE AGREEMENT (DEM / IHV / ISV Distribution & S IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING. Do not use or load this software and any associated materials (collectively, the ' unit) you have carefully read the following terms and conditions. By loading or us Software, you agree to the terms of this Agreement. If you do not wish to so agr install or use the Software. Please Also Note: "If you are an Original Equipment Manufacturer (DEM), Independent Hardware	Software") sing the se, do not Vendor
Do you accept all the terms of the preceding License Agreement? If you choose setup will close. To install Intel(R) Extreme Graphics 2, you must accept this agr InstallShield	e No, the eement.
< Back Yes	No



 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.

Intel(R) Extreme Graphics 2	
	InstallShield(R) Wizard Complete The InstallShield(R) Wizard has successfully installed Intel(R) Extreme Graphics 2. Before you can use the program, you must restart your computer. C Yes, I want to restart my computer now. C No, I will restart my computer later. Remove any disks from their drives, and then click Finish to complete setup.
	K Back. Finish Cancel

NOTE: *WINXP driver installation is the same as WIN2K.*

5.3 LAN Driver Installation

5.3.1 Win 98

1. Insert Utility CD Disk into your CD ROM drive. The main menu will pop up as shown below. Select on the **HS-4706** button to launch the installation program.



2. Click on the LAN Driver button to continue.



3. Click on the **WIN9X** button to continue.



 When the dialog box below appears, make sure you close all other Windows applications then click on the Install Base Driver button to proceed.





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



6. Choose the drivers install location. (ex: c:\IntelPRO)

DriverInstaller - InstallShield Wizard			×
Location to Save Files Where would you like to save your files?			
Please enter the folder where you want the will be created for you. To continue, click	se files saved. II Next.	f the folder does i	not exist, it
<u>S</u> ave files in folder:			
C:VintelPR0			
		<u>0</u>	nange
	< <u>B</u> ack	<u>N</u> ext>	Cancel

 Once the setup program finishes copying files into your system, it will prompt you to restart the computer. Tick on the **Restart now** to reboot. Only after your computer boots will the new settings take effect.

Installing	
You must shutdown and restart your comp The computer will automatically shutdown	uter before the new settings will take effect. in 16 seconds
Restart now	Restart later

5.3.2 Win NT

NOTE: *Please make sure you have already installed Service Pack 6.0.*

1. The system automatically detects the absence of Windows NT Networking. Click on the $\underline{Y}es$ button to start installation.

Network	Configuration 🛛 🔀
	Windows NT Networking is not installed.
<u>•</u>	Do you want to install it now?
	Yes No

 Tick on the <u>Wired to the network</u> once the following screen appears. Click on the <u>Next></u> to proceed.





3. Click on the **Start Search** button for the program to locate the Network Adapter.



4. Once setup finishes the search, it will list a number of adapters for you to choose from. Press on the **<u>Have Disk</u>** button to assign the driver path location.

Select Ne	etwork Adapter 🔹 👔	<
ШЩ)	Click the Network Adapter that matches your hardware, and then click OK. If you have an installation disk for this component, click Have Disk.	
<u>N</u> etwork	Adapter:	
■ 3Cor ■ 3Cor ■ 3Cor ■ 3Cor ■ 3Cor ■ 3Cor	m 3C508 ISA 16-bit Ethernet Adapter m Etherlink II Adapter (also II/16 and II/16 TP) m Etherlink III ISA/PCMCIA Adapter m EtherLink III PCI Bus-Master Adapter (3C590) m Etherlink16/EtherLink16 TP Adapter m East Etherd ink PCI 10/1008ASE T Adapter (3C595)	
	Have Disk	
	OK Cancel	



5. Setup now asks you for the location of the driver. When you have entered the new driver path, press on the **OK** button to continue.



6. When Setup finds the information it needs about the new driver, it will display the device it found on the following screen. Please choose "Intel(R) PRO/100 Family Adapter". Press on the OK button to accept and proceed.

Select OEM Option			×
Choose a software suppor	ted by this hardwa	re manufacturer's disk.	
Intel(R) PR0/100 Family, Intel(R) PR0/1000 Family	Adapter / Adapter		
ОК	Cancel	Help	

 Setup then returns to Network Setup Wizard screen and displays your new Network Adapter. Click on <u>Next</u> to continue.



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8. The Network Setup Wizard then allows you to set the Network Protocols on your network. Select the appropriate protocol and then click on Next to continue.



 Before Setup starts installing the components found and the settings you made, it will give you the option to proceed or go back for changes from the following screen. Click on the <u>Next</u> button once you are sure of your devices.



10. Windows NT Setup will then need to copy files necessary to update the system information. Specify the path then press **Continue**.



 When Setup asks if you wish to change the TCP/IP settings of your system, select them appropriately. The default choice is <u>No</u>.



- 12. Setup then starts the Networking installation and copies the files.
- 13. When the screen below appears, click on \underline{Next} to continue.





Setup then prompts you that it is ready to start the network. You
may complete the installation thereafter. Click on <u>Next></u> to
continue.



15. Assign the workgroup or domain setting of your computer. Click on Next to continue.

Network Setup Wizard	
	Select whether your computer will be participating in a workgroup or domain. If you are not sure which one to select or what name to enter, contact your Network Administrator. Computer Name: H Make this computer a member of Workgroup: BOSER Domain: Create a Computer Account in the Domain
	< <u>B</u> ack <u>N</u> ext > Cancel



16. When the dialog box below appears, it means your driver is install completed. Click Finish button to proceed.



17. Click on the **Yes** button to restart your computer. The LAN driver installation for WIN NT4.0 is now complete.

NELWOIK	Settings Change
	You must shut down and restart your computer before the new settings will take effect.
<u> </u>	Do you want to restart your computer now?


5.3.3 WIN2K

1. Insert utility CD disk into your CD ROM drive. The main menu will pop up as shown below. Select on the **HS-4706** button to launch the installation program.



2. Click on the LAN Driver button to continue.



3. Click on the **WIN2K** button to continue.



 When the dialog box below appears, make sure you close all other Windows applications then click on the Install Base Driver button to proceed.





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

	DriverInstaller - InstallShield Wizard
	License Agreement Please read the following license agreement carefully.
	INTEL SOFTWARE LICENSE AGREEMENT IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING. Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not wish to so agree, do not install or use the Software.
	I accept the terms in the license agreement I do not accept the terms in the license agreement InstallShield InstallShield < Back
6. Cho	oose driver install location. (ex: c:\IntelPRO)
	📇 DriverInstaller - InstallShield Wizard 🛛 🔀
	Location to Save Files Where would you like to save your files?
	Please enter the folder where you want these files saved. If the folder does not exist, it will be created for you. To continue, click Next.
	Save files in folder:
	Change

7. When setup is finished, please reboot your computer to complete.

<<u>B</u>ack <u>N</u>ext > Cancel

NOTE: WINXP driver installation is the same with WIN2K.

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5.4 Audio Driver Installation

1. Insert Utility CD Disk into your CD ROM drive. The main menu will pop up as shown below. Select on the **HS-4706** button to launch the installation program.



2. Click on the Audio Driver button to continue.





3. Choose on the OS button to continue.



 When the dialog box below appears, make sure you close all other Windows applications then click on the <u>Next</u> > button to proceed.

Avance AC'97 Audio Setup	(4.68)
	Welcome to the InstallShield Wizard for Avance AC'97 Audio The InstallShield® Wizard will install Avance AC'97 Audio on your computer. To continue, click Next.
	< Back Next > Cancel

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>**Finish**</u> button to complete the installation process. The system changes you made will take effect after the system restarts.







5.5 USB2.0 Driver Installation

5.5.1 Win 98

 With the Utility CD Disk still in your CD ROM drive, right click on "My Computer" icon from the Windows menu. Select on System Properties and then proceed to the Device Manager from the main menu.





2. Select on Other Devices from the list of devices then double-click on PCI Universal Serial Bus.



3. The PCI Universal Serial Bus Properties screen then appears, allowing you to re-install the driver. Select Driver from the main menu to proceed.





 When the dialog box below appears, make sure you close all other Windows applications then click on the <u>Next</u> > button to proceed.

Update Device Driver Wizard		
Update Device Driver W	izard This wizard searches for updated drivers for: PCI Universal Serial Bus A device driver is a software program that makes a hardware device work. Upgrading to a newer version of a device driver may improve the performance of your hardware device or add functionality.	
	< Back Next > Cancel	

5. Tick on the "Search for a better driver" once the following screen appears. Click on the $\underline{N}ext$ to proceed.

Update Device Driver Wizard		
	 What do you want Windows to do? Search for a better driver than the one your device is using now. (Recommended) Display a list of all the drivers in a specific location, so you can select the driver you want. 	
	< <u>B</u> ack Next > Cancel	



 Once the program returns to the Add New Hardware Wizard screen, your specified location will appear. Press on the <u>Next</u> button to continue





 When Setup finds the information it needs about the new driver, it will display the device it found on the following screen. Press on the <u>Next</u> button to accept and proceed.





8. Once the InstallShield Wizard completes the operation and update of your USB2.0 driver. Click on the **<u>F</u>inish** button to complete the installation process.



5.5.2 Win 2000

- With the Utility CD Disk still in your CD ROM drive, right click on "My Computer" icon from the Windows menu. Select on System Properties and then proceed to the Device Manager from the main menu.
- 2. Select on Other Devices from the list of devices then double-click on PCI Universal Serial Bus.





3. The PCI Universal Serial Bus Properties screen then appears, allowing you to re-install the driver. Select Driver from the main menu to proceed.

Universal Serial Bus (I	JSB) Controller Properties	? ×	
General Driver Res	General Driver Resources		
Universal Se	rial Bus (USB) Controller		
Device type	: Other devices		
Manufacture	er: Unknown		
Location:	PCI bus 0, device 29, function	7	
Device status The drivers for this device are not installed. (Code 28) To reinstall the drivers for this device, click Reinstall Driver.			
	Tomotairt		
Device usage:			
Use this device (ena	ole)		
	ОК	Cancel	

 When the dialog box below appears, make sure you close all other Windows applications then click on the <u>Next</u> > button to proceed.

opgrade bevice briver mizard	
	Welcome to the Upgrade Device Driver Wizard This wizard helps you upgrade a device driver for a hardware device.
	< Back Next > Cancel



5. Tick on the "Search for a suitable driver" once the following screen appears. Click on the **Next** to proceed.



 Once the program returns to the Add New Hardware Wizard screen, your specified location will appear. Press on the <u>Next</u> button to continue



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7. Choose the driver disk location.



8. Once the InstallShield Wizard completes the operation and update of your USB2.0 driver. Click on the **<u>F</u>inish** button to complete the installation process.

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5.5.3 Win XP

1. Insert Utility CD Disk into your CD ROM drive. The main menu will pop up as shown below. Select on the **HS-4706** button to launch the installation program.



2. Click on the USB2.0 Driver button to continue.





3. Click on the **WINXP** button to continue.



 When the dialog box below appears, make sure you close all other Windows applications then click on the <u>Next</u> > button to proceed.

🜆 Install Driver	
	Install Driver
	The wizard has finished searching for driver files for your hardware device.
	The wizard found driver for the following device:
	USB 2.0 Root Hub
	The wizard found the following driver for the device:
Setup Driver	Installing driver wizard found, please wait
	K Back Next > Cancel Finish



5. Once the InstallShield Wizard completes the operation and update of your USB2.0 driver. Click on the **<u>F</u>inish** button to complete the installation process.



