HSB-811P

Onboard Intel® Celeron® M
600/ non-cache Processors
Half-size CPU Card
With DDR, Ethernet,
CompactFlash™ & Mini PCI

HSB-811P Manual Rev. A 2nd Ed.
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Packing List

Before you begin installing HSB-811P, please make sure that the following items have been shipped:

- 1 HSB-811P CPU Card
- 1 Floppy Cable
- 1 ATA-100 Cable
- 1 USB Cable
- 1 PS/2 Keyboard & Mouse Cable
- 1 Serial + Parallel Cable
- 1 Serial Cable
- 1 ATX Cable
- 1 Quick Installation Guide
- 1 CD-ROM for manual (in PDF format) and drivers

If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

Contents

Chapter 3   Award BIOS Setup

Chapter 4   Driver Installation

Appendix A   Programming The Watchdog Timer

Appendix B   I/O Information

Appendix C   Mating Connector

Chapter

1

General Information

1.1 Introduction

Introducing AAEON's new HSB-811P, powered by Intel®
Celeron®M 600/non-cache processor on board, mini PCI half-size
form factor single board computer (SBC) with an onboard VGA,
10/100/1000Mb LAN optional and five USB 2.0 ports, support
LVDS.

The target market of HSB-811P will focus on Shoe-box application
and Digital Video Recorder (DVR).   Releasing the HSB-811P will
complete AAEON's product line in Penitum® 4 level short card
series and provide customers higher performance and better quality
product.

HSB-811P is a high performance with low power consumption SBC
which deployed Intel® 82852GM chipset.   The chipset supports
CPU frequency up to 1.8GHz with front side bus running at 400MHz.
In addition, HSB-811P is integrated on Intel® 852GM AGP 4X,
supported dual display and AC97 Codec Audio for optional Audio
daughter board.   The lower height and power consumption the
HSB-811P has, the more AAEON can satisfy industrial customers
needs.

HSB-811P also provides high memory capacity up to 2GB DDR

DRAM (DDR 266) and support Ultra ATA100 & CompactFlash™ Type II storage.　In addition to its powerful computing engine, one Mini PCI socket Type III provides flexible application on wireless LAN, Blue tooth…etc.

Five USB 2.0 ports provide an expandable, Plug and Play serial interface that ensures a standard low-cost connection for peripheral devices.　Industrial applications will benefit from the five USB 2.0 ports by three pin-headers and on Type A connector onboard, offering 480 Mbps high-speed efficiency and value without compromising performance.

Moreover, HSB-811P is also equipped with Intel$^®$ Ethernet controllers.　One of these provides superior 1GB Mbps networking access ability for high speed networking applications such as gateway, VPN and Mini server.

The HSB-811P is a versatile onboard Intel$^®$ Celeron$^®$ M 600/non-cache CPU compact board with the best cost-performance for CTI, networking and mini-server markets.

1.2 Feature

- Onboard Intel$^®$ Celeron$^®$M 600/non-cache CPU

- DDR266 Memory Supports Up to 2GB

- Integrated AGP 4X 2D/3D Graphics Accelerator, LVDS Support

- Integrated AC97 Codec Audio (Daughter Board Optional)

- Supports One 10/100/1000Base-T Ethernet (10/100&GbE Optional)

- Supports Ultra ATA100 & CompactFlash^{TM}Type-II Storage

- Supports Mini-PCI Type III Socket

- 5 USB2.0/ 1 RS-232, 1 RS-232/422/485/ 1 Parallel/ 1 IrDA Port

- Watchdog Function 1~255 Sec.

1.3 Specification

System

- CPU: Support onboard Intel® Celeron® M 600/non-cache CPU
- Chipset: Intel® 82852GM+82801DB (ICH4)
- I/O Chipset: Intel® 82801DB(ICH4)+ITE 8712F/HX
- Ethernet: 10/100Mb or 10/100/1000Mb LAN optional, RJ-45 x 1; Intel® 82562EZ or 82541GI controller
- System Memory: 200 pins 2.5V DDR SODIMM Socket x 2, total up 2GB, support DDR memory (DDR266)
- BIOS: Award Plug & Play BIOS – 4Mb ROM
- Watchdog Timer: 1~255 step, can be set with software on Super I/O
- Compact Flash: CFD type II connector (Hot swappable)
- Expansion Interface: PICMG/PCI;

mini-PCI Type III socket

- Battery: Lithium battery (BR2335)

- Power Supply Voltage: +12V ATX, Standard ATX Power Connector

- VGA Controller: Integrated on Intel$^{®}$82852GM, AGP 4X, supports dual display

- LCD Controller: Integrated on Intel$^{®}$82852GM,LVDS output, supports dual display

- Floppy Drive Interface: Standard FDDx1, supports up to two floppy devices

- Audio Daughter Board: Realtek ALC655 AC97 Codec, MIC-in/ Line-in/ Line-out/ CD-in

- IDE Interface: ATA-100 x 2 channels (Supports two ATAPI devices)

- Universal Serial Bus: USB 2.0 Port x 5 5 x 2 pin header for internal x1; Type-A connector onboard x 3

- IR Interface: Supports IrDA header x 1

- RTC: Internal RTC

- Operation Temp: 0℃~60℃

Display

- Chip: Intel® 82852GM
- Memory size: Shared memory up to 64MB

I/O

- Enhanced IDE Interface：ATA100 x 2 channels

         (supports two ATAPI

         devices for each channel)

- FDD Interface: Standard FDD port x 1

         (support up to 2 floppy

         devices)

- Serial Ports: Two COM ports: Internal Pin

         Header, External D-sub x2

         COM 1: RS-232

         COM 2: RS-232/422/485

- Parallel Port: Support SPP/EPP/ECP

         mode

- K/B & Mouse connector: Mini-DIN for PS/2 K/B and

         Mouse connector x 1

         Internal keyboard pin

         header x 1

- IrDA：   IrDA Tx/Rx header x 1
- USB：   5 x 2 pin header x 1;

         USB 2.0 ports x 5;

         Type-A connector

         onboard x 3

OS Support Request

- Windows® 98SE
- Windows® 2000 Pro
- Windows® XP Pro
- Linux Red Hat
- Windows® CE.net (By demand)
- Windows® XP Embedded (By demand)

Chapter

2

Quick Installation Guide

Notice:
The Quick Installation Guide is derived from Chapter 2 of user manual. For other chapters and further installation instructions, please refer to the user manual CD-ROM that came with the product.

OZONE SAFE

RECYCLABLE

2.1 Safety Precaution

Warning!

Always completely disconnect the power cord from your board whenever you are working on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.

Caution!

Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not in the chassis

2.2 Location of Connectors and Jumpers

Component Side
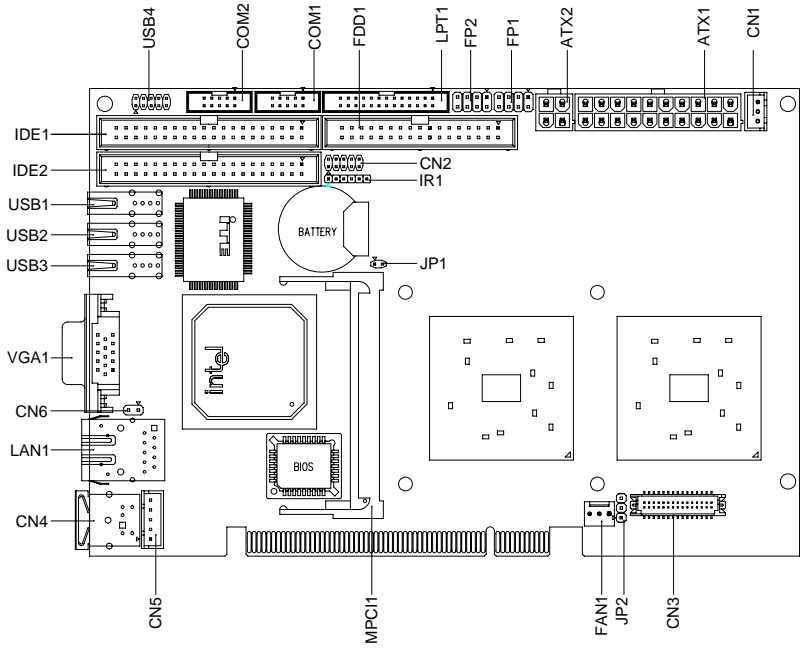
Solder Side
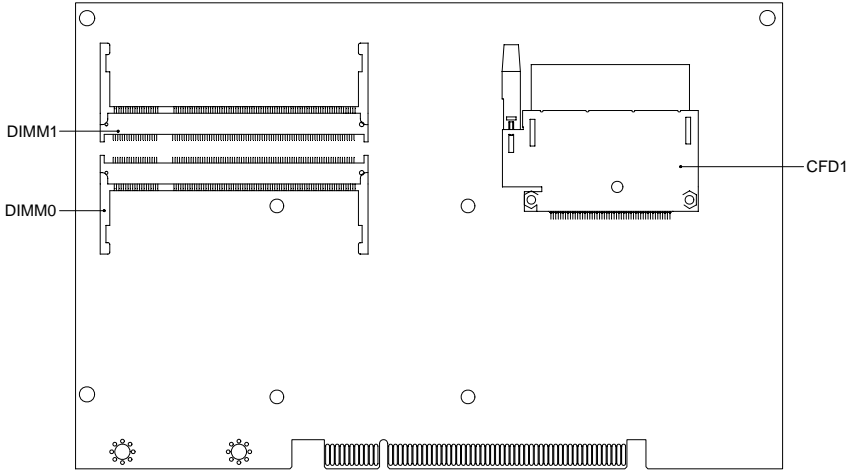
2.3 Mechanical Drawings

Component Side

Solder Side

Chapter 2 Quick Installation Guide   2-6
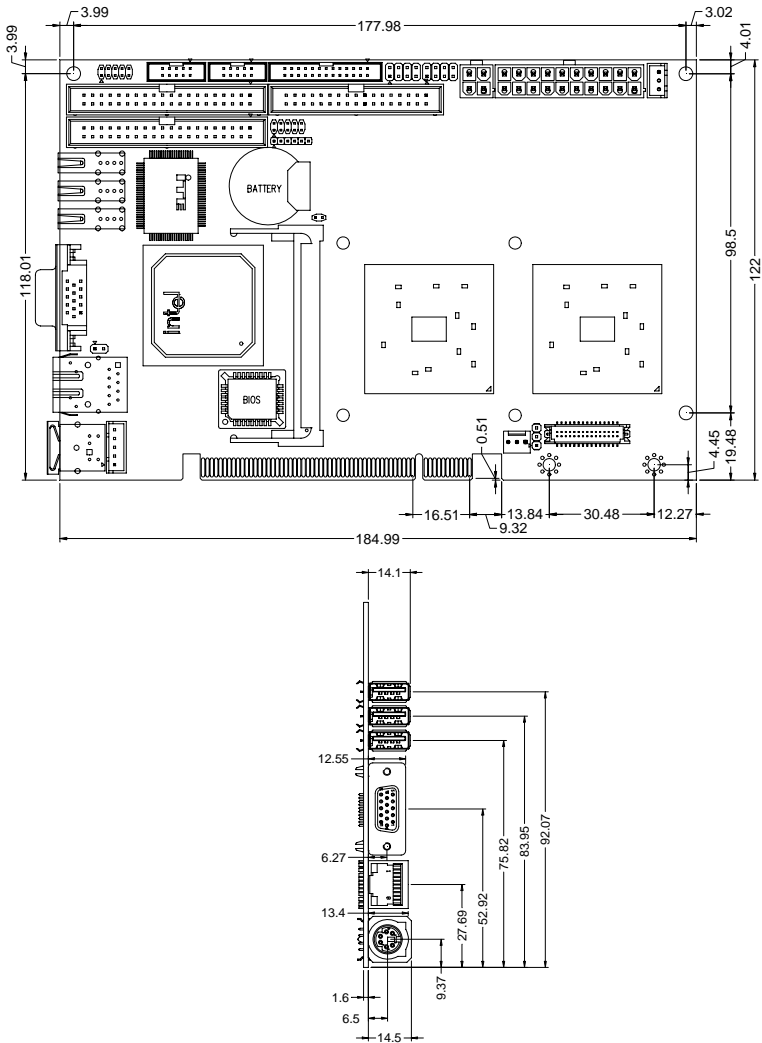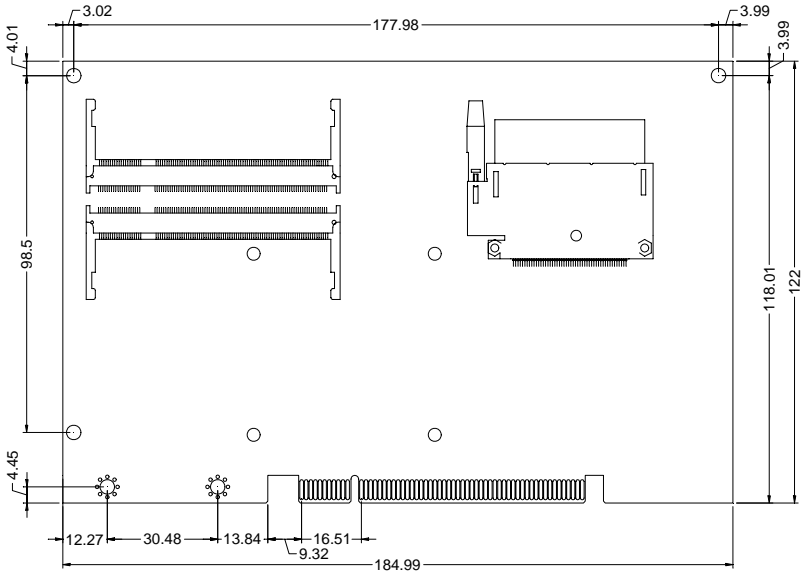
2.4 List of Jumpers

The board has a number of jumpers that allow you to configure your system to suit your application.

The table below shows the function of each of the board's jumpers:

Jumpers

Label	Function
JP1	Clear CMOS
JP2	LCD Voltage Selection

2.5 List of Connectors

The board has a number of connectors that allow you to configure your system to suit your application. The table below shows the function of each board's connectors:

Connectors

Label	Function
FP1	Front Panel Connector 1
FP2	Front Panel Connector 2
ATX1	ATX Power Connector
ATX2	ATX Power_12V Connector
VGA1	VGA Display Connector
FDD1	Floppy Connector
IDE1~2	EIDE Connector
CFD1	Compact Flash Slot
COM1	RS-232 Serial Port Connector
COM2	RS-232/422/485 Serial Port Connector

IR1	IrDA Connector
LPT1	LPT Port Connector
USB1~3	USB Connector (Type-A)
USB4	USB Connector (5x2 pin header)
LAN1	10/100 or 100/1000 Base-TX Ethernet Connector
MPCI1	Mini PCI Slot
DIMM0~1	DIMM Slot
FAN1	Fan Connector
CN1	ATX Power Control Connector
CN2	AC97 Connector
CN4	PS2 Keyboard/Mouse Connector
CN5	Internal Keyboard Connector
CN3	LVDS Channel Connector
CN6	LAN 1 Active LED Connector

2.6 Setting Jumpers

You configure your card to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To "close" a jumper you connect the pins with the clip.

To "open" a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2 and 3. In this case you would connect either pins 1 and 2 or 2 and 3.

Open   **Closed**   **Closed 2-3**
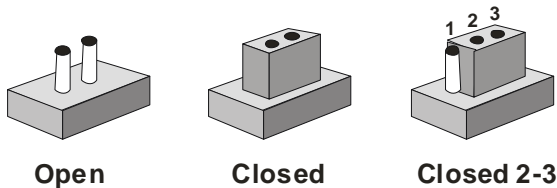
A pair of needle-nose pliers may be helpful when working with jumpers.

If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any change.

Generally, you simply need a standard cable to make most connections.

2.7 Clear CMOS (JP1)

JP1	Function
Close	Clear
Open	Protected (Default)

2.8 LCD Voltage Selection (JP2)

JP2	Function
1-2	+5V
2-3	+3.3 V (Default)

2.9 Front Panel Connector (FP1)

Pin	Signal	Pin	Signal
1	Power On Button (+)	2	Reset Switch (+)
3	Power On Button (-)	4	Reset Switch (-)
5	IDE LED (+)	6	Power LED (+)
7	IDE LED (-)	8	Power LED (-)

2.10 Front Panel Connector (FP2)

Close Pin 5-7: Internal Buzzer Enable

Pin	Signal	Pin	Signal
1	External Speaker (+)	2	Keyboard Lock (+)
3	N.C.	4	GND
5	Internal Buzzer (-)	6	I2C Bus SMB Clock
7	External Speaker (-)	8	I2C Bus SMB DATA

2.11 RS-232 Serial Port Connector (COM1)

Pin	Signal	Pin	Signal
1	DCD	2	RXD

3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	N.C.

2.12 RS-232/422/485 Serial Port Connector (COM2)

Pin	Signal	Pin	Signal
1	DCD (422TXD-/485DATA-)	2	RXD (422RXD+)
3	TXD (422TXD+/485DATA+)	4	DTR (422RXD-)
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	N.C.

2.13 IrDA Connector (IR1)

Pin	Signal
1	+5V
2	N.C.
3	IRRX
4	GND
5	IRTX
6	N.C.

2.14 LPT Port Connector (LPT1)

Pin	Signal	Pin	Signal
1	#STROBE	2	#AFD
3	DATA0	4	#ERROR
5	DATA1	6	#INIT
7	DATA2	8	#SLIN

9	DATA3	10	GND
11	DATA4	12	GND
13	DATA5	14	GND
15	DATA6	16	GND
17	DATA7	18	GND
19	#ACK	20	GND
21	BUSY	22	GND
23	PE	24	GND
25	SELECT	26	N.C.

2.15 USB Connector (USB4)

Pin	Signal	Pin	Signal
1	+5V	2	GND
3	USBD1-	4	GND
5	USBD1+	6	USBD2+
7	GND	8	USBD2-
9	GND	10	+5V

2.16 Fan Connector (FAN1)

Pin	Signal
1	GND
2	+12V
3	Speed Sense

2.17 ATX Power Control Connector (CN1)

Pin	Signal
1	PS-ON
2	+5V

3	5VSB

2.18 AC97 Connector (CN2)

Pin	Signal	Pin	Signal
1	AC_RST-	2	AC_SYNC
3	AC_DAIN2	4	AC_DAOUT
5	GND	6	AC_BCLK
7	GND	8	+5V
9	LOCK	10	+3.3V

2.19 LVDS Channel Connector (CN3)

Pin	Signal	Pin	Signal
1	BKLEN	2	BKLCTL
3	PPVCC	4	GND
5	CH1_CLK#	6	CH1_CLK
7	PPVCC	8	GND
9	CH1_TX0#	10	CH1_TX0
11	CH1_TX1#	12	CH1_TX1
13	CH1_TX2#	14	CH1_TX2
15	CH1_TX3#	16	CH1_TX3
17	I2C_DATA	18	I2C_CLK
19	CH2_TX0#	20	CH2_TX0
21	CH2_TX1#	22	CH2_TX1
23	CH2_TX2#	24	CH2_TX2
25	CH2_TX3#	26	CH2_TX3
27	PPVCC	28	GND
29	CH2_CLK#	30	CH2_CLK

2.20 PS/2 Keyboard & Mouse Connector (CN4)

Pin	Signal
1	KB_DATA
2	MS_DATA
3	GND
4	+5V
5	KB_CLK
6	MS_CLK

2.21 Internal Keyboard Connector (CN5)

Pin	Signal
1	KB_CLK
2	KB_DATA
3	N.C.
4	GND
5	+5V

2.22 LAN LED Connector (CN6)

Pin	Signal	Pin	Signal
1	Link_LED (-)	2	Active_LED (+)

Below Table for China RoHS Requirements
产品中有毒有害物质或元素名称及含量

AAEON Main Board/ Daughter Board/ Backplane

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板 及其电子组件	×	○	○	○	○	○
外部信号 连接器及线材	×	○	○	○	○	○
O：表示该有毒有害物质在该部件所有均质材料中的含量均在 　　**SJ/T 11363-2006** 标准规定的限量要求以下。 **X**：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 　　**SJ/T 11363-2006** 标准规定的限量要求。 备注：此产品所标示之环保使用期限，系指在一般正常使用状况下。						

Chapter

3

Award BIOS Setup

3.1 System Test and Initialization

These routines test and initialize board hardware. If the routines encounter an error during the tests, you will either hear a few short beeps or see an error message on the screen. There are two kinds of errors: fatal and non-fatal. The system can usually continue the boot up sequence with non-fatal errors. Non-fatal error messages usually appear on the screen along with the following instructions:

Press <F1> to RESUME

Write down the message and press the F1 key to continue the boot up sequence.

System configuration verification

These routines check the current system configuration against the values stored in the CMOS memory. If they do not match, the program outputs an error message. You will then need to run the BIOS setup program to set the configuration information in memory.

There are three situations in which you will need to change the CMOS settings:

1. You are starting your system for the first time

2. You have changed the hardware attached to your system

3. The CMOS memory has lost power and the configuration information has been erased.

The HSB-811P CMOS memory has an integral lithium battery backup for data retention. However, you will need to replace the complete unit when it runs down.

3.2 Award BIOS Setup

Awards BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in CMOS RAM so that it retains the Setup information when the power is turned off.

Entering setup

Power on the computer and press <Del> immediately. This will allow you to enter Setup.

Standard CMOS Features

Use this menu for basic system configuration. (Date, time, IDE, etc.)

Advanced BIOS Features

Use this menu to set available advanced features in your system.

Advanced Chipset Features

Use this menu to change the values in the chipset registers and optimize the system performance.

Integrated Peripherals

Use this menu to specify the settings for integrated peripherals. (Primary slave, secondary slave, keyboard, mouse etc.)

Power Management Setup

Use this menu to specify the settings for power management. (HDD power down, power on by ring etc.)

PnP/PCI Configurations

This entry appears if the system supports PnP/PCI.

PC Health Status

This menu shows you the status of PC.

Frequency/Voltage Control

This menu shows you the display of Frequency/Voltage Control.

Load Fail-Safe Defaults

Use this menu to load the BIOS defaults for the minimal/stable performance for the system to operate.

Load Optimized Defaults

Use this menu to load the BIOS factory defaults for optimal performance system operations. While AWARD has designated the custom BIOS to maximize performance, the factory has the rights to change these defaults to meet their needs.

Set Supervisor/User Password

Use this menu to set Supervisor/User Passwords.

Save and Exit Setup

Save CMOS changes to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS changes and exit setup.

For more detailed information, you can refer to the "AAEON BIOS Item Description.pdf" file in the CD for the meaning of each setting in this chapter.

Chapter

4

Driver
Installation

The HSB-811P comes with a CD-ROM that contains all drivers your need.

Follow the sequence below to install the drivers:

Step 1 – Intel® Chipset Software Installation Utility

Step 2 – Intel® Extreme Graphics Driver

Step 3 –Intel® LAN Driver

Step 4 –Realtek AC97 Codec Driver

Step 5 –USB to CF Controller Driver for Win9x

Please read following instructions for detailed installations.

4.1 Installation:

Insert the HSB-811P CD-ROM into the CD-ROM Drive. And install the drivers from Step 1 to Step 4 in order.

Step 1 - Intel® Chipset Software Installation Utility

1. Click on the Intel® Chipset Software Installation Utility folder and then double click on the *infinst_autol.exe.*

2. Follow the instructions that the window shows.

3. The system will help you install the driver automatically.

4. Please re-start your computer.

Step 2 - Intel® Extreme Graphics Driver

1. Click on the Intel® Extreme Graphics Driver folder.

2. Choose the OS your system is

   For the OS of Win 2000/XP or Win 9X:

   a. Double click on the folders of *WIN2K_XP or WIN 9X.* Click on the *setup.exe*. Follow the instructions that the window shows.

   b. The system will help you install the driver automatically.

   c. Please re-start your computer.

Step 3 - Intel® LAN Driver

   For the OS of Windows 9X:

1. Double click on the *WIN_9X* folder before you key in the path

2. Click on **Start** button → **Settings** → **Control Panel** →

System

3. Select **Device Manager** under the **Hardware** category.

4. Double click on the **Ethernet controller** and select **reinstall Driver** button under the **General** category.

5. Click **Next** twice and tick the **Specify a location** option.

6. Click **Next** and choose a route where you want place the folders on before you click on **open**.

7. Click **Next** → **Yes** → **Finish** and the window will show you how to finish the installation process.

For the OS of Windows 2000/XP:

1. Click on the Intel® *WIN2K_XP* folder

2. Double click on the *pro2kxp.exe*

3. The system will help you install the driver automatically

Step 4 - Realtek AC97 Audio CODECs Driver (For Audio Daughter Board Only)

1. Click on the Realtek AC97 Audio CODECs Driver folder.

2. Choose the OS your system is.

    For the OS of Win 2000/XP:

    a. Double click on the *WDM_A368.exe*

    Follow the instructions that the window shows.

    b. The system will help you install the driver automatically.

    c. Please re-start your computer.

Step 5- USB to CF Controller Driver for Win9x

1. Click on the USB to CF Controller Driver for Win9x folder.

2. Follow the instructions that the window shows.

3. The system will help you install the driver automatically.

Appendix

A

Programming the Watchdog Timer

A.1 Programming

HSB-811P utilizes ITE 8712 chipset as its watchdog timer controller.

Below are the procedures to complete its configuration and the AAEON intial watchdog timer program is also attached based on which you can develop customized program to fit your application.

Configuring Sequence Description

After the hardware reset or power-on reset, the ITE 8712 enters the normal mode with all logical devices disabled except KBC. The initial state (enable bit) of this logical device (KBC) is determined by the state of pin 121 (DTR1#) at the falling edge of the system reset during power-on reset.
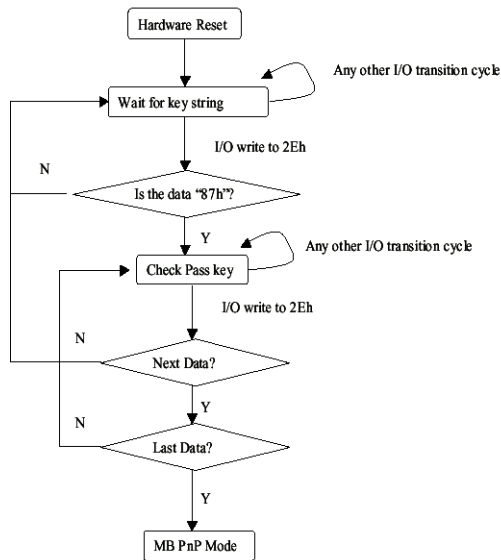
There are three steps to complete the configuration setup: (1) Enter the MB PnP Mode; (2) Modify the data of configuration registers; (3) Exit the MB PnP Mode. Undesired result may occur if the MB PnP Mode is not exited normally.

(1) Enter the MB PnP Mode

To enter the MB PnP Mode, four special I/O write operations are to be performed during Wait for Key state. To ensure the initial state of the key-check logic, it is necessary to perform four write opera-tions to the Special Address port (2EH). Two different enter keys are provided to select configuration ports (2Eh/2Fh) of the next step.

	Address Port	Data Port
87h, 01h, 55h, 55h:	2Eh	2Fh

(2) Modify the Data of the Registers

All configuration registers can be accessed after entering the MB PnP Mode. Before accessing a selected register, the content of Index 07h must be changed to the LDN to which the register belongs, except some Global registers.

(3) Exit the MB PnP Mode

Set bit 1 of the configure control register (Index=02h) to 1 to exit the MB PnP Mode.

WatchDog Timer Configuration Registers

LDN	Index	R/W	Reset	Configuration Register or Action
All	02H	W	N/A	Configure Control
07H	71H	R/W	00H	WatchDog Timer Control Register
07H	72H	R/W	00H	WatchDog Timer Configuration Register
07H	73H	R/W	00H	WatchDog Timer Time-out Value Register

Configure Control (Index=02h)

This register is write only. Its values are not sticky; that is to say, a hardware reset will automatically clear the bits, and does not require the software to clear them.

Bit	Description
7-2	Reserved
1	Returns to the Wait for Key state. This bit is used when the configuration sequence is completed
0	Resets all logical devices and restores configuration registers to their power-on states.

WatchDog Timer Control Register (Index=71h, Default=00h)

Bit	Description
7	WDT is reset upon a CIR interrupt
6	WDT is reset upon a KBC (mouse) interrupt
5	WDT is reset upon a KBC (keyboard) interrupt
4	WDT is reset upon a read or a write to the Game Port base address
3-2	Reserved
1	Force Time-out. This bit is self-clearing
0	WDT Status
	1: WDT value reaches 0.
	0: WDT value is not 0

WatchDog Timer Configuration Register (Index=72h, Default=00h)

Bit	Description
7	WDT Time-out value select
	1: Second
	0: Minute
6	WDT output through KRST (pulse) enable
5-4	Reserved
3-0	Select the interrupt level[Note] for WDT

WatchDog Timer Time-out Value Register (Index=73h, Default=00h)

Bit	Description
7-0	WDT Time-out value 7-0

B.2 ITE8712F/HX Watchdog Timer Initial Program

```
        .MODEL SMALL
        .CODE
Main:
        CALL Enter_Configuration_mode
        CALL Check_Chip
        mov cl, 7
        call Set_Logic_Device
        ;time setting
        mov cl, 10 ; 10 Sec
        dec al
Watch_Dog_Setting:
        ;Timer setting
        mov al, cl
        mov cl, 73h
        call Superio_Set_Reg
        ;Clear by keyboard or mouse interrupt
        mov al, 0f0h
        mov cl, 71h
        call Superio_Set_Reg
        ;unit is second.
        mov al, 0C0H
        mov cl, 72h
        call Superio_Set_Reg
```

```
; game port enable
mov cl, 9
call Set_Logic_Device


Initial_OK:
CALL Exit_Configuration_mode
MOV AH,4Ch
INT 21h


Enter_Configuration_Mode PROC NEAR
MOV SI,WORD PTR CS:[Offset Cfg_Port]


MOV DX,02Eh
MOV CX,04h
Init_1:
MOV AL,BYTE PTR CS:[SI]
OUT DX,AL
INC SI
LOOP Init_1
RET
Enter_Configuration_Mode ENDP


Exit_Configuration_Mode PROC NEAR
MOV AX,0202h
CALL Write_Configuration_Data
```

RET

Exit_Configuration_Mode ENDP

Check_Chip PROC NEAR

MOV AL,20h

CALL Read_Configuration_Data

CMP AL,87h

JNE Not_Initial

MOV AL,21h

CALL Read_Configuration_Data

CMP AL,12h

JNE Not_Initial

Need_Initial:

STC

RET

Not_Initial:

CLC

RET

Check_Chip ENDP

Read_Configuration_Data PROC NEAR

MOV DX,WORD PTR CS:[Cfg_Port+04h]

OUT DX,AL

```
MOV DX,WORD PTR CS:[Cfg_Port+06h]
IN AL,DX
RET
Read_Configuration_Data ENDP


Write_Configuration_Data PROC NEAR
MOV DX,WORD PTR CS:[Cfg_Port+04h]
OUT DX,AL
XCHG AL,AH
MOV DX,WORD PTR CS:[Cfg_Port+06h]
OUT DX,AL
RET
Write_Configuration_Data ENDP


Superio_Set_Reg proc near
push ax
MOV DX,WORD PTR CS:[Cfg_Port+04h]
mov al,cl
out dx,al
pop ax
inc dx
out dx,al
ret
Superio_Set_Reg endp.Set_Logic_Device proc near
Set_Logic_Device   proc   near
```

push ax

push cx

xchg al,cl

mov cl,07h

call Superio_Set_Reg

pop cx

pop ax

ret

Set_Logic_Device endp

;Select 02Eh->Index Port, 02Fh->Data Port

Cfg_Port DB 087h,001h,055h,055h

DW 02Eh,02Fh

END Main

Note: Interrupt level mapping

0Fh-Dh: not valid

0Ch: IRQ12

.

.

03h: IRQ3

02h: not valid

01h: IRQ1

00h: no interrupt selected

Appendix

B

I/O Information

B.1 I/O Address Map

- Input/output (IO)
  - [00000000 - 0000000F] Direct memory access controller
  - [00000000 - 00000CF7] PCI bus
  - [00000010 - 0000001F] Motherboard resources
  - [00000020 - 00000021] Programmable interrupt controller
  - [00000022 - 0000003F] Motherboard resources
  - [00000040 - 00000043] System timer
  - [00000044 - 0000005F] Motherboard resources
  - [00000060 - 00000060] Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
  - [00000061 - 00000061] System speaker
  - [00000062 - 00000063] Motherboard resources
  - [00000064 - 00000064] Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
  - [00000065 - 0000006F] Motherboard resources
  - [00000070 - 00000073] System CMOS/real time clock
  - [00000074 - 0000007F] Motherboard resources
  - [00000080 - 00000090] Direct memory access controller
  - [00000091 - 00000093] Motherboard resources
  - [00000094 - 0000009F] Direct memory access controller
  - [000000A0 - 000000A1] Programmable interrupt controller
  - [000000A2 - 000000BF] Motherboard resources
  - [000000C0 - 000000DF] Direct memory access controller
  - [000000E0 - 000000EF] Motherboard resources
  - [000000F0 - 000000FF] Numeric data processor
  - [00000170 - 00000177] Secondary IDE Channel
  - [000001F0 - 000001F7] Primary IDE Channel
  - [00000274 - 00000277] ISAPNP Read Data Port
  - [00000279 - 00000279] ISAPNP Read Data Port
  - [00000290 - 0000029F] Motherboard resources
  - [000002F8 - 000002FF] Communications Port (COM2)
  - [00000376 - 00000376] Secondary IDE Channel
  - [00000378 - 0000037F] Printer Port (LPT1)
  - [000003B0 - 000003BB] Intel(R) 82852/82855 GM/GME Graphics Controller
  - [000003C0 - 000003DF] Intel(R) 82852/82855 GM/GME Graphics Controller
  - [000003F0 - 000003F5] Standard floppy disk controller
  - [000003F6 - 000003F6] Primary IDE Channel
  - [000003F7 - 000003F7] Standard floppy disk controller
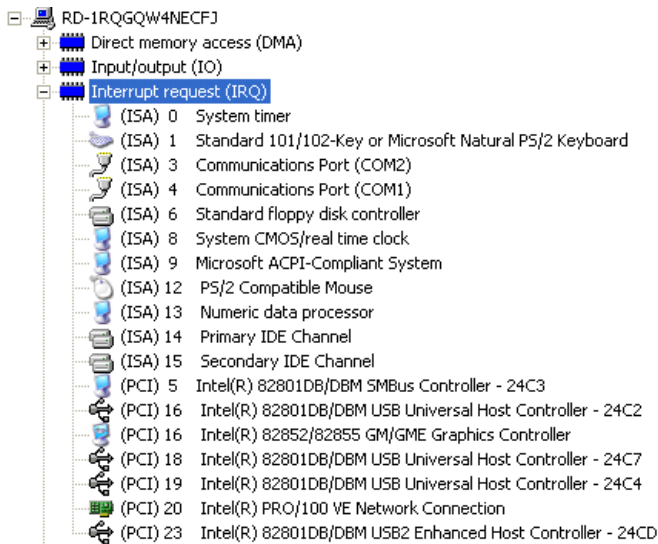 - [000003F8 - 000003FF] Communications Port (COM1)
  - [00000400 - 000004BF] Motherboard resources
  - [000004D0 - 000004D1] Motherboard resources
  - [00000500 - 0000051F] Intel(R) 82801DB/DBM SMBus Controller - 24C3
  - [00000800 - 0000087F] Motherboard resources
  - [00000A79 - 00000A79] ISAPNP Read Data Port
  - [00000D00 - 0000FFFF] PCI bus
  - [0000D000 - 0000D03F] Intel(R) PRO/100 VE Network Connection
  - [0000E000 - 0000E01F] Intel(R) 82801DB/DBM USB Universal Host Controller - 24C2
  - [0000E100 - 0000E11F] Intel(R) 82801DB/DBM USB Universal Host Controller - 24C4
  - [0000E200 - 0000E21F] Intel(R) 82801DB/DBM USB Universal Host Controller - 24C7
  - [0000E300 - 0000E307] Intel(R) 82852/82855 GM/GME Graphics Controller
  - [0000F000 - 0000F00F] Intel(R) 82801DB Ultra ATA Storage Controller - 24CB

B.2 Memory Address Map

```
RD-1RQGQW4NECFJ
├── Direct memory access (DMA)
├── Input/output (IO)
├── Interrupt request (IRQ)
└── Memory
    ├── [00000000 - 0009FFFF]  System board
    ├── [000A0000 - 000BFFFF]  Intel(R) 82852/82855 GM/GME Graphics Controller
    ├── [000A0000 - 000BFFFF]  PCI bus
    ├── [000C0000 - 000DFFFF]  PCI bus
    ├── [000D1800 - 000D3FFF]  System board
    ├── [000E0000 - 000EFFFF]  System board
    ├── [000F0000 - 000F7FFF]  System board
    ├── [000F8000 - 000FBFFF]  System board
    ├── [000FC000 - 000FFFFF]  System board
    ├── [00100000 - 1DFEFFFF]  System board
    ├── [1DFF0000 - 1DFFFFFF]  System board
    ├── [1E000000 - FEBFFFFF]  PCI bus
    ├── [D8000000 - DFFFFFFF]  Intel(R) 82852/82855 GM/GME Graphics Controller
    ├── [E0000000 - E7FFFFFF]  Intel(R) 82852/82855 GM/GME Graphics Controller
    ├── [EC000000 - EC000FFF]  Intel(R) PRO/100 VE Network Connection
    ├── [EC100000 - EC17FFFF]  Intel(R) 82852/82855 GM/GME Graphics Controller
    ├── [EC180000 - EC1FFFFF]  Intel(R) 82852/82855 GM/GME Graphics Controller
    ├── [EC200000 - EC2003FF]  Intel(R) 82801DB/DBM USB2 Enhanced Host Controller - 24CD
    ├── [FEBFFC00 - FEBFFFFF]  Intel(R) 82801DB Ultra ATA Storage Controller - 24CB
    ├── [FEC00000 - FECFFFFF]  System board
    ├── [FEE00000 - FEEFFFFF]  System board
    ├── [FFB00000 - FFB7FFFF]  System board
    ├── [FFB80000 - FFBFFFFF]  Intel(r) 82802 Firmware Hub Device
    └── [FFF00000 - FFFFFFFF]  System board
```

B.3 IRQ Mapping Chart

```
□ 🖳 RD-1RQGQW4NECFJ
   ⊞ ▦ Direct memory access (DMA)
   ⊞ ▦ Input/output (IO)
   □ ▦ Interrupt request (IRQ)
      💡 (ISA)  0    System timer
      🖱 (ISA)  1    Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
      🖊 (ISA)  3    Communications Port (COM2)
      🖊 (ISA)  4    Communications Port (COM1)
      🖴 (ISA)  6    Standard floppy disk controller
      💡 (ISA)  8    System CMOS/real time clock
      💡 (ISA)  9    Microsoft ACPI-Compliant System
      🕐 (ISA)  12   PS/2 Compatible Mouse
      💡 (ISA)  13   Numeric data processor
      🖴 (ISA)  14   Primary IDE Channel
      🖴 (ISA)  15   Secondary IDE Channel
      💡 (PCI)  5    Intel(R) 82801DB/DBM SMBus Controller - 24C3
      🔌 (PCI)  16   Intel(R) 82801DB/DBM USB Universal Host Controller - 24C2
      🖥 (PCI)  16   Intel(R) 82852/82855 GM/GME Graphics Controller
      🔌 (PCI)  18   Intel(R) 82801DB/DBM USB Universal Host Controller - 24C7
      🔌 (PCI)  19   Intel(R) 82801DB/DBM USB Universal Host Controller - 24C4
      🖧 (PCI)  20   Intel(R) PRO/100 VE Network Connection
      🔌 (PCI)  23   Intel(R) 82801DB/DBM USB2 Enhanced Host Controller - 24CD
```

B.4 DMA Channel Assignments

```
□ 🖳 RD-1RQGQW4NECFJ
   □ ▦ Direct memory access (DMA)
      🖴    2    Standard floppy disk controller
      💡    4    Direct memory access controller
   ⊞ ▦ Input/output (IO)
   ⊞ ▦ Interrupt request (IRQ)
   ⊞ ▦ Memory
```

Appendix

C

Mating Connector

C.1 List of Mating Connectors and Cables

The table notes mating connectors and available cables.

Connector Label	Function	Mating Connector		Available Cable	Cable P/N
		Vendor	**Model no**		
IDE1	IDE Connector	Catch Electronics	1137-020-40SA	IDE Cable	1701400453
IDE2	IDE Connector	Catch Electronics	1137-020-40SA	IDE Cable	1701400453
FDD1	Floppy Connector	Catch Electronics	1137-000-34SA	Floppy Disk Drive Cable	1701340704
LPT1	Parallel Port Connector	Catch Electronics	1147-000-26S	LPT Cable	1701260307
FP1	Front Panel Connector	JIH VEI Electronics	21B22564-XXS 10B-01G-6/3-V XX		N/A
FP2	Front Panel Connector	JIH VEI Electronics	21B22564-XXS 10B-01G-6/3-V XX		N/A
USB1	USB Connector	HO-BASE	KS-001V-ANW		N/A
USB2	USB Connector	HO-BASE	KS-001V-ANW		N/A
USB3	USB Connector	HO-BASE	KS-001V-ANW		N/A
USB4	USB Pin Header	JIH VEI Electronics	21B22050-XXS 10B-01G-4/2.8	USB Cable	1709100201
ATX1	4P Power Connector	Catch Electronics	1121-700-04S	AT big 4P to ATX+12V Cable	1702040351
LAN1	Ethernet Connector	BOTHHAND	LA1T109D-A-D 43 LF		N/A
VGA1	CRT Display	Catch Electronics	3125-000-15SB		N/A

	Connector				
IR1	IrDA Connector	JIH VEI Electronics	21B12050-XXS 10B-01G-4/2.8		N/A
CFD1	Compact Flash Header	SPEED TECH	1. N003 @ 0011-100 2. N016@014 0-104+N01 P4011-009 9		N/A
CN1	PS_ON CONNECT	Catch Electronics	1191-700-03S	PS_ON CABLE	1703030501
CN2	Audio Pin Header	JIH VEI Electronics	21N22050-10S 10B-01G-4/2 .8 -V1-G	Audio cable	1703100302
CN3	LVDS Channel Connector	W/Reinforce m	E-call.0110-01- 553-300		N/A
CN4	PS2 Keyboard/ Mouse Connector	CONTEK	MAN3061F1G4 01	KB/MS Cable	1700060192
CN5	KB Pin Header	HO-BASE	2503-WS-5		N/A
CN6	LAN Active LED Connector	JIH VEI Electronics			N/A
COM1	Serial Port Box Header	Catch Electronics	1147-000-10S	Serial Port Cable	1701100305
COM2	Serial Port Box Header	Catch Electronics	1147-000-10S	Serial Port Cable	1701100305