

PFM-LNP

Intel® Atom™ N450 Processor

Intel® N450+ICH8M

18-bit Single Channel LVDS LCD

1 SATA 2, 1 CompactFlash™

4 COM, 4 USB

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Packing List

Before you begin installing your card, please make sure that the following materials have been shipped:

- PFM-LNP
- CD-ROM for manual (in PDF format) and drivers
- Jumper cap

Note:

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

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Chapter

1

**General
Information**

1.1 Introduction

AAEON Technology, a leading company in embedded boards manufacturing with a full range of PC/104 CPU Modules, launches a brand new PC/104 CPU Module-PFM-LNP. Its compact size and rich functionality ensures the most cost effective and compatible module to coincide with your existing system planning devices.

PFM-LNP adopts an Intel® Atom N450 Processor onboard that is more cost effective compared to other PC/104 CPU modules on the market. Although PFM-LNP is a small board, it offers the full functions for customers demand. The chipset of PFM-LNP deploys Intel® N450 and ICH8M that makes this board achieve high performance. It features one 10/100/1000Base-TX Ethernet port, four USB 2.0 ports, four serial ports. In addition, the PFM-LNP equips PCI-104 and Mini-Card for flexible expansions.

1.2 Features

- Intel® Atom™ N450 1.66 GHz Processor
- Intel® N450 + ICH8M
- Onboard DDRII 667 Memory, Max.1 GB
- Gigabit Ethernet x 1
- CRT, 18-bit Single Channel LVDS LCD
- SATA x 1, CompactFlash™ x 1
- USB2.0 x 4, COM x 4
- PCI-104, Mini-Card Expansion Interfaces

1.3 Specifications

System

- Processor Intel® Atom™N450 1.66 GHz processor
- System Memory Onboard DDRII 667, Max. 1GB
- Chipset Intel® N450+ICH8M
- I/O Chipset SMSC3114
- Ethernet Intel® 82567V for 10/100/1000Base-TX
- BIOS AMI BIOS – 4MB ROM
- Wake on LAN Yes
- Watchdog Timer Generates a time-out system reset
- H/W Status Monitoring Supports Power Supply Voltage, Fan Speed and Temperature Monitoring
- Expansion Interface PCI -104 & Mini-Card
- Power Requirement 12V
- Battery Lithium battery
- Board Size 3.55" x 3.77" (90mm x 96mm)
- Gross Weight 0.33 lb (0.15 Kg)
- Operating Temperature 32°F ~ 140°F (0°C ~ 60°C)

- Storage Temperature -40°F ~ 176°F (-40°C ~ 80°C)
- Operating Humidity 0%~90% relative humidity, non-condensing

Display: Supports CRT/LCD simultaneous/ dual view displays

- Chipset Intel® Atom™ N450 processor integrated;
CRT: up to 1400x1050 (SXGA) @ 60 Hz
LCD: up to 1366x768
Includes MPEG2 decoder
- Memory Shared system memory up to 384 MB/ DVMT 4.0
- Resolutions Up to 1400x1050 for CRT; up to 1366x768 for LCD
- LCD Interface 18-bit Single Channel LVDS

I/O

- Storage SATA II x 1, Type I
CompactFlash™ x 1
- Serial Port RS-232 x 3,
RS-232/422/485 x 1
- Universal Serial Bus USB 2.0 x 4
- PS/2 Port Keyboard + Mouse x 1

Chapter

2

**Quick
Installation
Guide**

2.1 Safety Precautions

Warning!

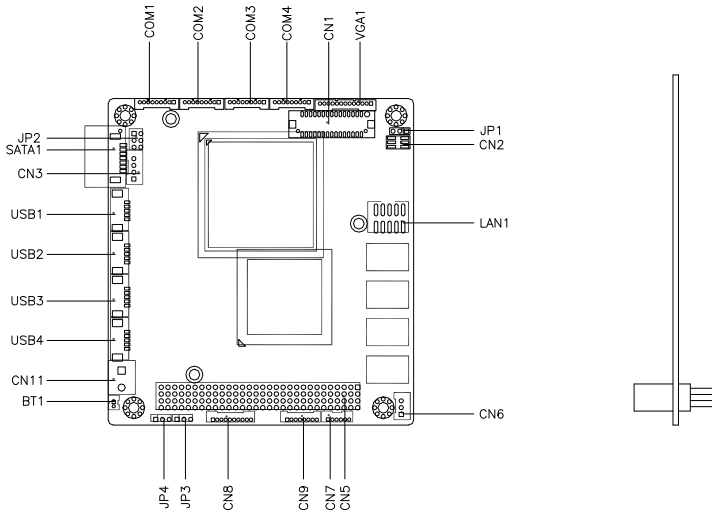
Always completely disconnect the power cord from your board whenever you are working on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.

Caution!

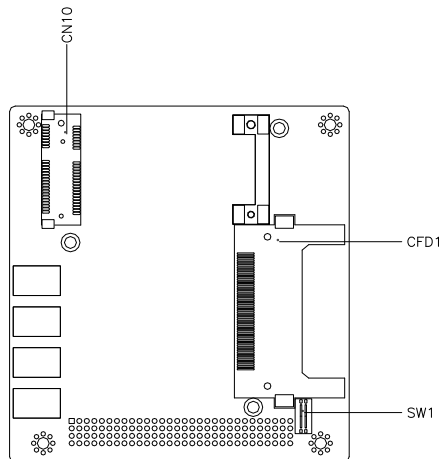
Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not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

2.2 Location of Connectors and Jumpers

Component Side

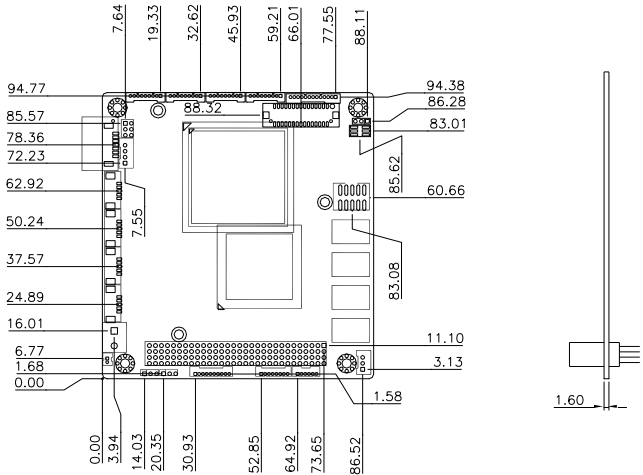


Solder Side

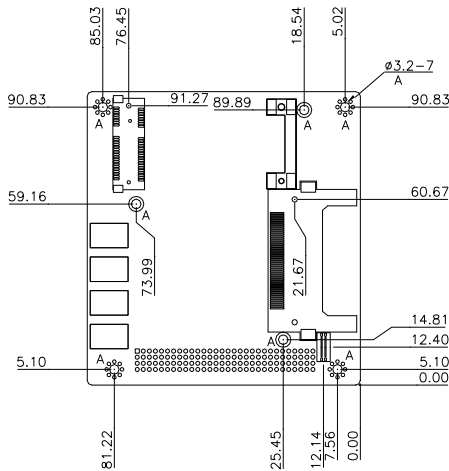


2.3 Mechanical Drawing

Component Side



Solder Side



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	LCD Voltage Selection
JP2	COM2 Ring/+5V/+12V Selection
JP3	PC/104+(PCI-104) I/O Voltage Selection
JP4	Clear CMOS
SW1	AT/ATX Selection

2.5 List of Connectors

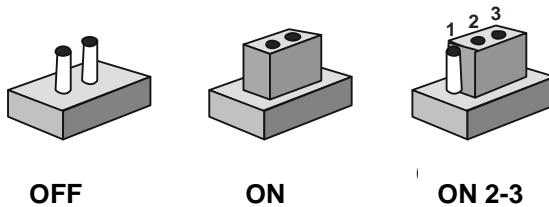
The board has a number of connectors that allow you to configure your system to suit your application. The table below shows the function of each board's connectors:

Label	Function
CN1	LVDS Connector
CN2	SIM Card Connector
CN3	SATA Power Connector
CN4	2P Power Connector
CN5	PCI-104 Connector
CN6	Fan Connector
CN7	PS2 Keyboard/Mouse Connector
CN8	Front Panel Connector
CN9	LAN LED Connector
CN10	Mini Card Connector
COM1	RS-232 Serial Port Connector
COM2	RS-232/422/485 Serial Port Connector
COM3	RS-232 Serial Port Connector
COM4	RS-232 Serial Port Connector
CFD1	CompactFlash Slot
LAN1	1000Base-TX Ethernet Connector
SATA1	Serial ATA Connector
USB1	USB Connector
USB2	USB Connector
USB3	USB Connector
USB4	USB Connector
VGA1	VGA Display Connector
BT1	Battery 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.



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 LVDS Voltage Selection (JP1)

JP1	Function
1-2	+5V
2-3	+3.3V (Default)

2.8 COM2 Ring/+5V/+12V Selection (JP2)

JP2	Function
1-2	+12V
3-4	RI2#_SEL (Default)
5-6	+5V

2.9 PC/104+ (PCI-104) I/O Voltage Selection (JP3)

JP3	Function
1-2	+5V
2-3	+3.3V(Default)

2.10 Clear CMOS (JP4)

JP4	Function
1-2	Protected (Default)
2-3	Clear

2.11 AT/ATX Selection (SW1)

SW1	Function
1 (on), 2 (off)	ATX (Default)
1 (off), 2 (on)	AT

2.12 LVDS Connector (CN1)

Pin	Signal	Pin	Signal
1	LVDS_BKLEN	2	LVDS_BKLCTL
3	PPVCC	4	GND
5	LVDS_TXLCLK#	6	LVDS_TXLCLK
7	PPVCC	8	GND
9	LVDS_TXL0#	10	LVDS_TXL0
11	LVDS_TXL1#	12	LVDS_TXL1
13	LVDS_TXL2#	14	LVDS_TXL2
15	N.C	16	N.C
17	LVDS_DDCPDATA	18	LVDS_DDCPCLK
19	N.C	20	N.C
21	N.C	22	N.C
23	N.C	24	N.C
25	N.C	26	N.C
27	PPVCC	28	GND
29	N.C	30	N.C

2.13 SIM Card Connector (CN2)

Pin	Signal	Pin	Signal
1	UIM Power	2	UIM DATA
3	UIM RESET	4	UIM Vpp
5	UIM CLK	6	GND

2.14 SATA Power Connector (CN3)

Pin	Signal
1	+12V

2	GND
3	GND
4	+5V

2.15 2P Power Connector (CN4)

Pin	Signal
1	+12V
2	GND

2.16 Fan Connector (CN6)

Pin	Signal
1	Speed Sense
2	+5V
3	Power Control

2.17 PS2 Keyboard and Mouse Connector (CN7)

Pin	Signal
1	KBDATA
2	KBCLK
3	GND
4	+5V
5	MSDATA
6	MSCLK

2.18 Front Panel Connector (CN8)

Pin	Signal
1	Power Button(+)
2	Power Button(-)

3	External Buzzer(+)
4	External Buzzer(-)
5	IDE LED(+)
6	IDE LED(-)
7	Power LED(+)
8	Power LED(-)
9	Reset Switch(+)
10	Reset Switch(-)

2.19 LAN LED Connector (CN9)

Pin	Signal
1	Lan1 Speed LED(+)
2	Lan1 Speed LED(-)
3	Lan1 Active LED(+)
4	Lan1 Active LED(-)
5	N.C
6	N.C
7	N.C
8	N.C

2.20 RS-232 Serial Port Connector (COM1)

Pin	Signal
1	DCD#1
2	DSR#1
3	RXD1
4	RTS#1
5	TXD1
6	CTS#1

7	DTR#1
8	RI#1
9	GND

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

Pin	Signal
1	DCD#2(422TXD-/485DATA-)
2	DSR#2
3	RXD2(422RXD+)
4	RTS#2
5	TXD2(422TXD+/485DATA+)
6	CTS#2
7	DTR#2(422RXD-)
8	RI#2/12V/5V
9	GND

2.22 RS-232 Serial Port Connector (COM3)

Pin	Signal
1	DCD#3
2	DSR#3
3	RXD3
4	RTS#3
5	TXD3
6	CTS#3
7	DTR#3
8	RI#3
9	GND

2.23 RS-232 Serial Port Connector (COM4)

Pin	Signal
1	DCD#4
2	DSR#4
3	RXD4
4	RTS#4
5	TXD4
6	CTS#4
7	DTR#4
8	RI#4
9	GND

2.24 1000Base-TX Ethernet Connector (LAN1)

Pin	Signal	Pin	Signal
1	TX1+	2	TX1-
3	RX1+	4	RX1-
5	Temp_GND	6	Temp_GND
7	TX2+	8	TX2-
9	RX2+	10	RX2-

2.25 USB Connector (USB1)

Pin	Signal
1	+5V
2	USBD1-
3	USBD1+
4	GND
5	GND

2.26 USB Connector (USB2)

Pin	Signal
1	+5V
2	USBD2-
3	USBD2+
4	GND
5	GND

2.27 USB Connector (USB3)

Pin	Signal
1	+5V
2	USBD3-
3	USBD3+
4	GND
5	GND

2.28 USB Connector (USB4)

Pin	Signal
1	+5V
2	USBD4-
3	USBD4+
4	GND
5	GND

2.29 VGA Display Connector (VGA1)

Pin	Signal
1	VSYNC
2	HSYNC

3	GND
4	SCL
5	SDA
6	GND
7	BLUE
8	GND
9	GREEN
10	GND
11	RED
12	GND
13	+5V

2.30 Battery Connector (BAT1)

Pin	Signal
1	RTCBAT
2	GND

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	×	○	○	○	○	○
<p>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。</p> <p>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。</p> <p>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。</p>						

Chapter

3

AMI 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.

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 PFM-LNP CMOS memory has an integral lithium battery backup for data retention. However, you will need to replace the complete unit when it finally runs down.

3.2 AMI BIOS Setup

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

Entering Setup

Power on the computer and press or <F2> immediately. This will allow you to enter Setup.

Main

Set the date, use tab to switch between date elements.

Advanced

Enable/disable boot option for legacy network devices.

Chipset

host bridge parameters.

Boot

Enables/disables quiet boot option.

Security

Set setup administrator password.

Save&Exit

Exit system setup after saving the changes.

Chapter

4

**Driver
Installation**

The PFM-LNP comes with a CD-ROM that contains all drivers and utilities that you need for setup the system.

Follow the sequence below to install the drivers:

Step 1 – Install Chipset Driver

Step 2 – Install VGA Driver

Step 3 – Install LAN Driver

Insert the PFM-LNP CD-ROM into the CD-ROM Drive. And install the drivers from Step 1 to Step 3 in order.

Please read instructions below for further detailed installations.

4.1 Installation:

Insert the PFM-LNP CD-ROM into the CD-ROM Drive. The Autorun program will run automatically. You also can choose the drivers to install from step 1 to step 3 in order as following instructions.

Step 1 – Install Chipset Driver

1. Click on the **Step 1- Chipset** folder and double click on the **Setup.exe**
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Step 2 –Install VGA Driver

1. Click on the **Step 2- VGA** folder and select the OS folder your system is
2. Double click on the **.exe** file located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Step 3 – Install LAN Driver

1. Click on the **Step 3- LAN** folder and select the OS folder your system is

Note: If the OS is Windows 7, please select the **Win7** folder. If others, please select **lan** folder

2. Double click on the **.exe** file located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Appendix

A

Programming the Watchdog Timer

A.1 Programming

PFM-LNP utilizes SCH3114-NU chipset as its watchdog timer controller.

The SCH311X WDT (Watch Dog Timer) has a programmable time-out ranging from 1 to 255 minutes with one minute resolution, or 1 to 255 second resolution. The unit of the WDT timeout value are selected via bit[7] of the WDT_TIMEOUT register. The WDT time-out value is set through the WDT_VAL Runtime register. Setting The WDT_VAL register to 0x00 disables the WDT function (this is its power on default).

Setting the WDT_VAL to any other non-zero value will cause the WDT to reload and begin counting down from the value loaded. When the WDT count value reaches zero the counter stops and sets the Watchdog time-out status bit in the WDT_CTRL Runtime register. Note: Regardless of the current state of the WDT, the WDT time-out status bit can be directly set or cleared by the Host CPU.

The related register for configuring WDT is list as follows:

NAME	REG OFFSET (HEX)	DESCRIPTION
GP60 Default = 0x01 on VTR POR	47 (R/W)	General Purpose I/O bit 6.0 Bit[0] In/Out : =1 Input, =0 Output Bit[1] Polarity : =1 Invert, =0 No Invert Bit[3:2] Alternate Function Select 11=WDT 10=Either Edge Triggered Interrupt Input 4 (Note 26.20) 01=LED1 00=GPIO Bits[6:4] Reserved Bit[7] Output Type Select 1=Open Drain 0=Push Pull

WDT_TIME_OUT Default = 0x00 on VCC POR, VTR POR, and PCI Reset	65 (R/W)	Watch-dog Timeout Bit[0] Reserved Bit[1] Reserved Bits[6:2] Reserved, = 00000 Bit[7] WDT Time-out Value Units Select = 0 Minutes (default) = 1 Seconds
WDT_VAL Default = 0x00 on VCC POR, VTR POR, and PCI Reset	66 (R/W)	Watch-dog Timer Time-out Value Binary coded, units = minutes (default) or seconds, selectable via Bit[7] of WDT_TIME_OUT register (0x52). 0x00 Time out disabled 0x01 Time-out = 1 minute (second) 0xFF Time-out = 255 minutes (seconds)

NAME	REG OFFSET (HEX)	DESCRIPTION
WDT_CFG Default = 0x00 on VCC POR, VTR POR, and PCI Reset	67 (R/W)	Watch-dog timer Configuration Bit[0] Reserved Bit[1] Keyboard Enable =1 WDT is reset upon a Keyboard interrupt. =0 WDT is not affected by Keyboard interrupts. Bit[2] Mouse Enable =1 WDT is reset upon a Mouse interrupt. =0 WDT is not affected by Mouse interrupts. Bit[3] Reserved Bits[7:4] WDT Interrupt Mapping 1111 = IRQ15 0011 = IRQ3 0010 = IRQ2 (Note) 0001 = IRQ1 0000 = Disable Note: IRQ2 is used for generating SMI events via the serial IRQ's stream. The WDT should not be configured for IRQ2 if the IRQ2 slot is enabled for generating an SMI event.
WDT_CTRL Default = 0x00 on VCC POR and VTR POR Default = 0000000xb on PCI Reset Note: Bit[0] is not cleared by PCI Reset	68 (R/W) Bit[2] is Write-Only	Watch-dog timer Control Bit[0] Watch-dog Status Bit, R/W =1 WD timeout occurred =0 WD timer counting Bit[1] Reserved Bit[2] Force Timeout, W =1 Forces WD timeout event; this bit is self-clearing =0 P20 Force Timeout Enable, R/W = 1 Allows rising edge of P20, from the Keyboard Controller, to force the WD timeout event. A WD timeout event may still be forced by setting the Force Timeout Bit, bit 2. Note: If the P20 signal is high when the enable bit is set a WD timeout event will be generated. = 0 P20 activity does not generate the WD timeout event. Note: The P20 signal will remain high for a minimum of 1us and can remain high indefinitely. Therefore, when P20 forced timeouts are enabled, a self- clearing edge-detect circuit is used to generate a signal which is OR'ed with the signal generated by the Force Timeout Bit. Bit[7:4] Reserved. Set to 0

The following is a sample code to set WDT for 3 seconds.

```
;Runtime register I/O base address
SUPERIO_GPIO_PORT    EQU    600h
.MODEL    SMALL
.CODE

begin:
    ;enable WDT
        mov dx, SUPERIO_GPIO_PORT + 47h
        mov al, 0Ch
        out dx, al
    ;WDT_TIME_OUT register
        mov dx, SUPERIO_GPIO_PORT + 65h
        mov al, 80h                ;unit is second
        out dx, al
    ;WDT_VAL register
        mov dx, SUPERIO_GPIO_PORT + 66h
        mov al, 03h                ;3 seconds
        out dx, al
    ;exit
        mov ah,4ch
        int 21h

    END begin
```

Appendix

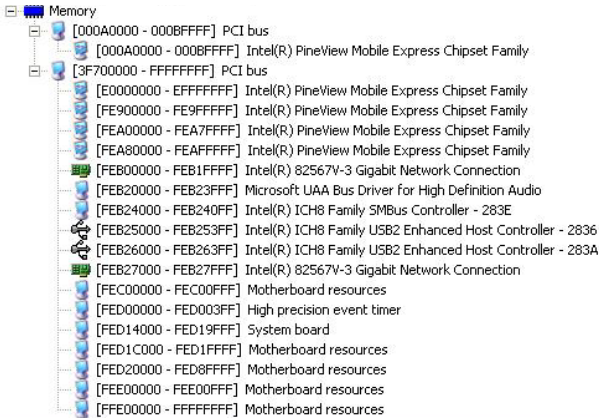
B

I/O Information

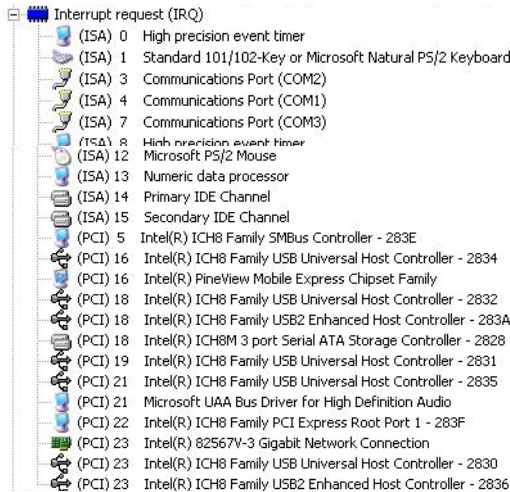
B.1 I/O Address Map

Address Range	Device Name
[00000000 - 0000CF7]	PCI bus
[00000000 - 0000000F]	Direct memory access controller
[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 - 00000071]	System CMOS/real time clock
[00000072 - 0000007F]	Motherboard resources
[00000080 - 00000080]	Motherboard resources
[00000081 - 00000083]	Direct memory access controller
[00000084 - 00000086]	Motherboard resources
[00000087 - 00000087]	Direct memory access controller
[00000088 - 00000088]	Motherboard resources
[00000089 - 0000008B]	Direct memory access controller
[0000008C - 0000008E]	Motherboard resources
[0000008F - 0000008F]	Direct memory access controller
[00000090 - 0000009F]	Motherboard resources
[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
[000002E8 - 000002EF]	Communications Port (COM4)
[000002F8 - 000002FF]	Communications Port (COM2)
[00000376 - 00000376]	Secondary IDE Channel
[000003B0 - 000003B8]	Intel(R) PineView Mobile Express Chipset Family
[000003C0 - 000003DF]	Intel(R) PineView Mobile Express Chipset Family
[000003E8 - 000003EF]	Communications Port (COM3)
[000003F6 - 000003F6]	Primary IDE Channel
[000003F8 - 000003FF]	Communications Port (COM1)
[00000480 - 000004BF]	Motherboard resources
[000004D0 - 000004D1]	Motherboard resources
[00000600 - 0000067F]	Motherboard resources
[00000800 - 0000087F]	Motherboard resources
[00000A79 - 00000A79]	ISAPNP Read Data Port
[00000D00 - 0000FFFF]	PCI bus
[0000F000 - 0000F01F]	Intel(R) ICH8 Family SMBus Controller - 283E
[0000F020 - 0000F03F]	Intel(R) ICH8 Family USB Universal Host Controller - 2832
[0000F040 - 0000F05F]	Intel(R) ICH8 Family USB Universal Host Controller - 2831
[0000F060 - 0000F07F]	Intel(R) ICH8 Family USB Universal Host Controller - 2830
[0000F080 - 0000F09F]	Intel(R) ICH8 Family USB Universal Host Controller - 2835
[0000F0A0 - 0000F0BF]	Intel(R) ICH8 Family USB Universal Host Controller - 2834
[0000F0C0 - 0000F0DF]	Intel(R) 82567V-3 Gigabit Network Connection
[0000F0E0 - 0000F0EF]	Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828
[0000F0F0 - 0000F0FF]	Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828
[0000F100 - 0000F103]	Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828
[0000F110 - 0000F117]	Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828
[0000F120 - 0000F123]	Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828
[0000F130 - 0000F137]	Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828
[0000F140 - 0000F14F]	Intel(R) ICH8M Ultra ATA Storage Controllers - 2850
[0000F190 - 0000F197]	Intel(R) PineView Mobile Express Chipset Family

B.2 1st MB Memory Address Map



B.3 IRQ Mapping Chart



B.4 DMA Channel Assignments



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	AAEON Cable P/N
		Vendor	Model no		
CN1	LVDS Connector	Hirose	1.25mm Pitch 30 Pins DF13-30DS-1.25 C	N/A	N/A
CN2	SIM Card Connector	Molex	Molex 51021-0800	N/A	N/A
CN3	SATA Power Connector	Molex	2.0mm Pitch 4 Pins (Molex 87369-040X)	SATA Power Cable	1702150121
CN4	2P Power Connector	N/A	N/A	Power Cable	1702002010 *
CN5	PCI/104 Connector	N/A	N/A	N/A	N/A
CN6	Fan Connector	Molex	2.0mm Pitch 3 Pins Molex 87369-030X)	N/A	N/A
CN7	PS2 Keyboard/ Mouse Connector	Molex	1.25mm Pitch 6 Pins (Molex 51021-0600)	Keyboard & Mouse Cable	1700060155
CN8	Front Panel Connector	Molex	1.25mm Pitch 10 Pins (Molex 51021-1000)	Front Panel cable	1701010150
CN9	LAN LED Connector	Molex	1.25mm Pitch 8 Pins (Molex 51021-0800)	LAN LED Cable	1701080150
CN10	Mini Card Connector	N/A	N/A	N/A	N/A
COM1	RS-232 Serial Port Connector	Molex	1.25mm Pitch 9 Pins (Molex 51021-0900)	Serial port Cable	1701090150
COM2	RS-232/ 422/485 Serial Port	Molex	1.25mm Pitch 9 Pins (Molex 51021-0900)	Serial port Cable	1701090150

	Connector				
COM3	RS-232 Serial Port Connector	Molex	1.25mm Pitch 9 Pins (Molex 51021-0900)	Serial port Cable	1701090150
COM4	RS-232 Serial Port Connector	Molex	1.25mm Pitch 9 Pins (Molex 51021-0900)	Serial port Cable	1701090150
CFD1	Compact Flash Connector	N/A	N/A	N/A	N/A
LAN1	Ethernet Connector	Molex	2.0mm Pitch 8 Pins (Molex 51353-0801)	Ethernet Cable	1700100201
SATA1	SATA singal Connector	Molex	1.27mm Pitch 7 Pins (Molex 67582-0000)	SATA singal Cable	1709070200
USB1	USB Connector	Molex	1.25mm Pitch 5 Pins (Molex 51021-0500)	USB Cable	1700050207
USB2	USB Connector	Molex	1.25mm Pitch 5 Pins (Molex 51021-0500)	USB Cable	1700050207
USB3	USB Connector	Molex	1.25mm Pitch 5 Pins (Molex 51021-0500)	USB Cable	1700050207
USB4	USB Connector	Molex	1.25mm Pitch 5 Pins (Molex 51021-0500)	USB Cable	1700050207
VGA1	VGA Connector	Molex	1.25mm Pitch 13 Pins (Molex 51021-1300)	VGA Cable	1709150151

Note:

The AAEON Cable P/N with “*” sign is for WITAS series products.