

GENE-6315

Onboard VIA Mark

533/800MHz Processors

Up to 36-bit TTL/LVDS TFT LCD

144-pin SDRAM SODIMM Memory

AC-97 2.0 Codec with S/P DIF

2USB 2.0 / 2 USB1.1 / 4 COM

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Packing List

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

- **1 GENE-6315 CPU Card**
- **1 Quick Installation Guide**
- **1 CD-ROM for manual (in PDF format) and drivers**
- **1 9681631500 Cable Kit**

1701440500 IDE Cable

1701100206 COM Port Cable

1701260200 Parallel Port Cable

1700080180 TV-Out Cable

1700060152 Keyboard/Mouse Cable

1701340080 Floppy Disk Drive Cable

1709100201 USB Cable

1709030150 SPDIF Cable

1700140510 Audio Cable

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, a leading professional embedded boards manufacturer, launches a new SubCompact Board which adopts a VIA Mark Low Power processor. To complete the product line of SubCompact Boards, AAEON is pleased to announce GENE-6315 which provides a total solution to our customers.

GENE-6315 adopts onboard a VIA Mark 533/800MHZ processor and the front side bus is 100/133MHz. The system memory of the GENE-6315 features 144-pin SDRAM SODIMM, which supports PC-133 module up to 512MB. In addition, Realtek RTL 8139DL supports one 10/100Base-TX for network connection.

GENE-6315 implements Type II CompactFlash and PCI-104 socket for expansion. Moreover, GENE-6315 configures 2 USB 2.0, 2USB 1.1, 8-bit Digital I/O and 4 COM ports. These multiplex functions offered by GENE-6315 provide an excellent advantage to customers who have system expansion limitations.

For multimedia applications, GENE-6315's display supports CRT/LCD, CRT/TV & LCD/TV simultaneous display. The display memory shares system memory up to 32MB and LCD interface is up to 36-bit TTL/LVDS TFT LCD. The audio of GENE-6315 features MIC-in/ Line-in/ Line-out, and S/P DIF function supporting AC97 2.0. GENE-6315 has greatly

improved the performance of thermal spreading. AAEON has a thorough solution for it and customers need not worry about the heat spreading system when utilizing the GENE-6315.

1.2 Features

- Onboard VIA Mark Series Processors
- Supports Up to 36-bit TTL/LVDS TFT LCD
- Supports SODIMM SDRAM PC-133 Memory Up to 512MB
- Supports CompactFlash Type II
- 2 USB 2.0/ 2 USB 1.1/ 8-bit Digital I/O/ 4 COM
- Supports PCI-104
- AC97 2.0 Codec With S/P DIF Function

1.3 Specifications

System

- CPU Onboard VIA Mark 533/800 MHz Processor (FSB 100/133MHz)
- System Memory 1 x 144-pin SDRAM SODIMM, Max. 512MB (PC-133)
- Chipset VIA Mark + VT82C686B
- I/O Chipset VT82C686B + Winbond W83977EF
- Ethernet Realtek RTL 8100BL, 10/100Base-TX, RJ-45 x 1
- BIOS Award Plug & Play BIOS – 256KB ROM
- Watchdog Timer Generates a time-out system reset
- H/W status monitoring Supports power supply voltages and temperature monitoring functions
- SSD One Type II Compact Flash Card
- Expansion Interface PCI-104 socket x 1
- Battery Lithium battery
- Power Requirement +5V only, AT/ ATX
- Board Size 5.75”(L) x4” (W) (146mm x 101.6mm)
- Gross Weight 0.8 lb (0.4 kg)

Display: Supports CRT/LCD, CRT/TV & LCD/TV Simultaneous display

- Chipset VIA Mark + TI SN75LVDS83
- Memory Shared system memory up to 32MB
- Resolutions Up to 1600x1200@24bpp for CRT;
Up to 1280x1024@18bpp for LCD
- LCD Interface Up to 36-bit TTL/LVDS TFT LCD
- TV-Out Supports NTSC/PAL standard;
S-terminal & Composite Video

I/O

- MIO EIDEx1(UDMA-33 x 1), Floppy Disk Drive x 1; RS-232 x 3, RS-232/422/485 x 1, Keyboard + Mouse x 1, Parallel x 1
- IrDA One IrDA Tx/Rx header
- Audio MIC-in/ Line-in/ Line-out/ S/P DIF in/out
- USB Two 5x2 pin headers support two USB 2.0 & Two USB1.1 Ports
- Digital I/O Supports 8-bit (Programmable)

Chapter

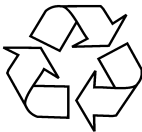
2

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 Precautions

Warning!

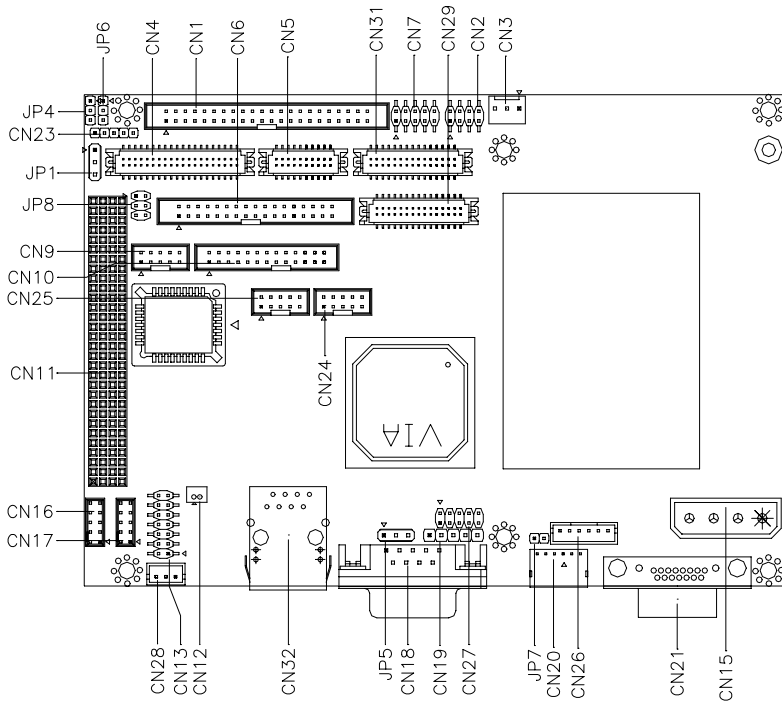
Always completely disconnect the power cord from your board whenever you are working on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.

Caution!

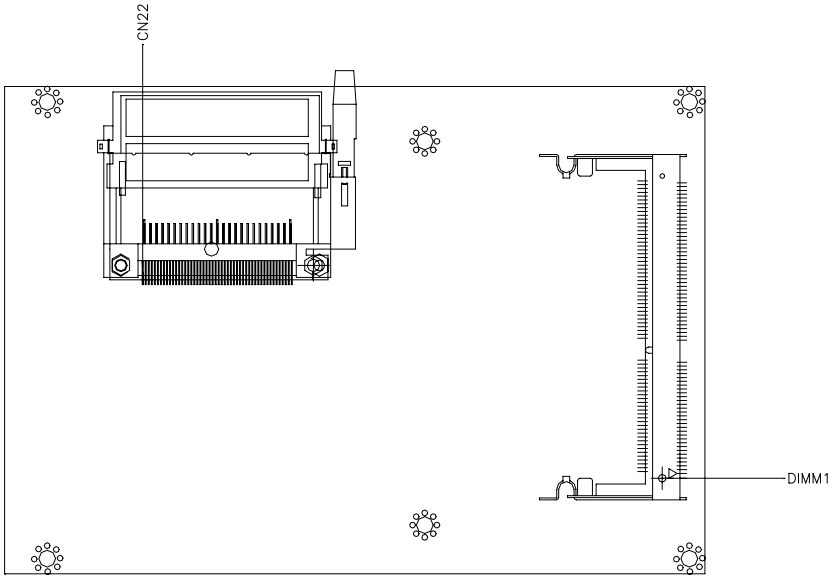
Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not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

2.2 Location of Connectors and Jumpers

Component Side

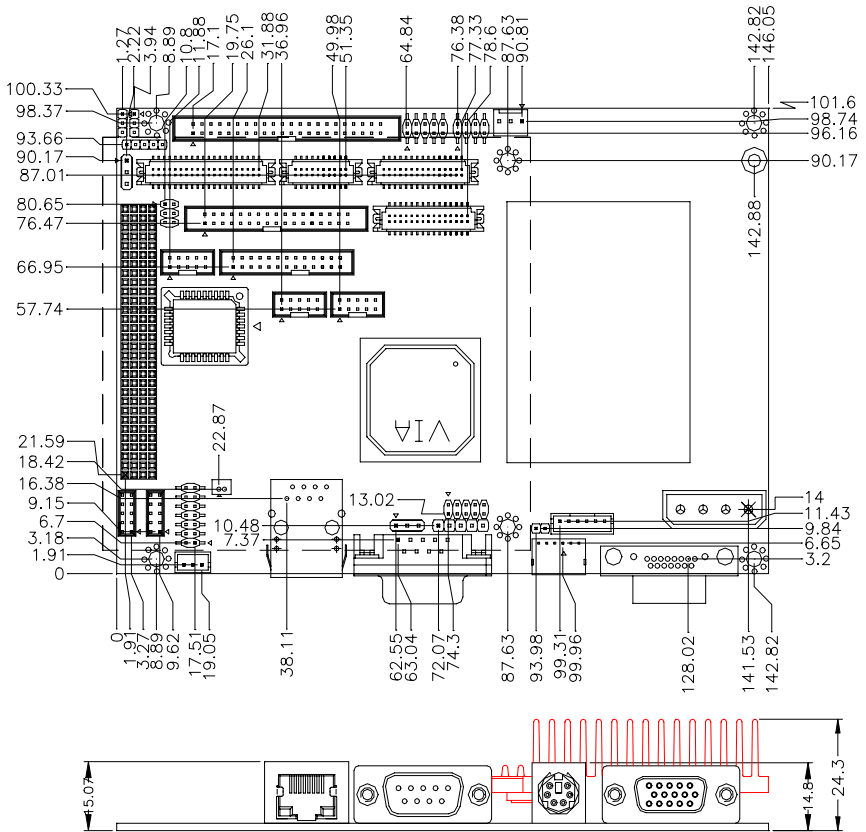


Solder Side

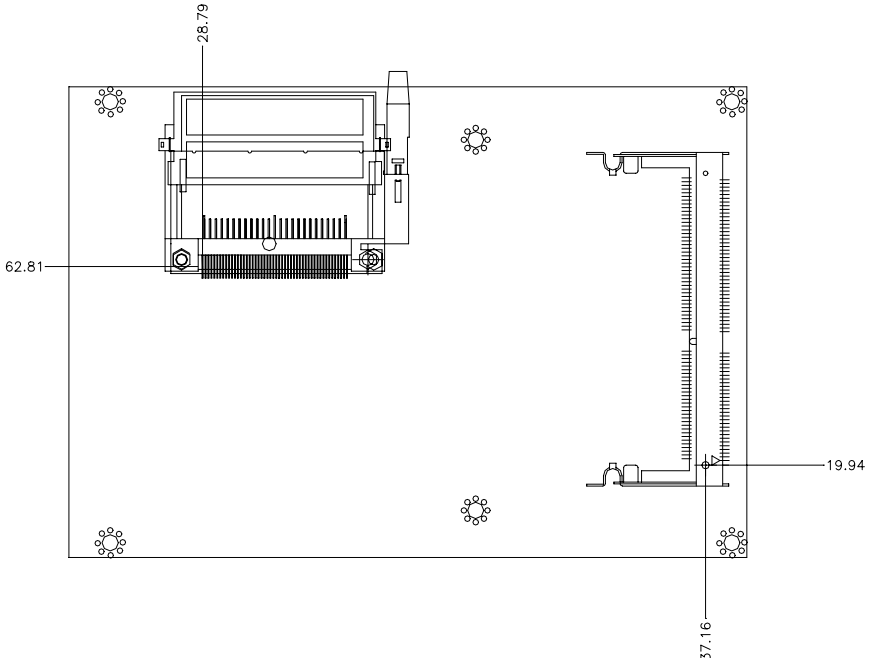


2.3 Mechanical Drawing

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	LVDS Power Select
JP4	PCI Signaling Voltage (VI/O) Select
JP5	Clear CMOS
JP6	Clock shift of TFT LCD
JP7	ATX Power/ AT Power
JP8	COM2 Ring/+5V/+12V Select

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

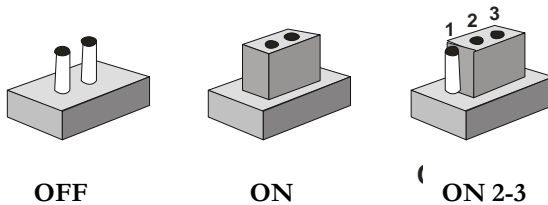
Label	Function
CN1	EIDE Connector
CN2	TV_Out Connector
CN3	Fan Connector
CN4	TTL-LCD Connector 1
CN5	TTL-LCD Connector 2
CN6	Floppy Connector
CN7	Front Panel Connector
CN9	COM2 RS-232/422/485 Serial Port Connector
CN10	LPT Port Connector
CN11	PCI-104 Connector
CN12	Battery Connector
CN13	Audio Connector
CN15	AT Power Connector
CN16	USB Connector (Supports USB 2.0/ USB 1.1)
CN17	USB Connector (Supports USB1.1)
CN18	COM1 RS-232 Serial Port Connector
CN19	IrDA Connector

CN20	PS2 Keyboard/Mouse Connector
CN21	VGA Display Connector
CN22	CompactFlash Slot
CN23	Option PME Connector
CN24	COM3 RS-232 Serial Port Connector
CN25	COM4 RS-232 Serial Port Connector
CN26	ATX Power Connector
CN27	Digital I/O Connector
CN28	SPDIF Connector
CN29	18-/36-bit LVDS Connector
CN31	24-bit LVDS Connector
CN32	10/100 Base-TX Ethernet 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 Power Selection (JP1)

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

2.8 PCI Signaling Voltage (VI/O) Selection (JP4)

JP4	Function
1-2	+5V
2-3	+3.3V (Default)

2.9 Clear CMOS (JP5)

JP5	Function
1-2	Protected (Default)
2-3	Clear

2.10 Clock Shift of TFT LCD (JP6)

JP6	Function
1-2	Shift (Default)
2-3	Non-Shift

2.11 ATX Power/ AT Power (JP7)

JP7	Function
N.C.	AT
1-2	ATX (Default)

2.12 COM2 Ring/+5V/+12V Selection (JP8)

JP8	Function
1-2	+12V
3-4	+5V
5-6	Ring (Default)

2.13 EIDE Connector (CN1)

Pin	Signal	Pin	Signal
1	IDE RESET	2	GND
3	DATA7	4	DATA8
5	DATA6	6	DATA9
7	DATA5	8	DATA10
9	DATA4	10	DATA11
11	DATA3	12	DATA12
13	DATA2	14	DATA13
15	DATA1	16	DATA14
17	DATA0	18	DATA15

19	GND	20	N.C
21	REQ	22	GND
23	IO WRITE	24	GND
25	IO READ	26	GND
27	IO READY	28	GND
29	DACK	30	GND
31	IRQ14	32	N.C
33	ADDR1	34	UDMA DETECT
35	ADDR0	36	ADDR2
37	CS#1	38	CS#3
39	LED	40	GND
41	+5V	42	+5V
43	GND	44	N.C

2.14 TV_Out Connector (CN2)

Pin	Signal	Pin	Signal
1	Y	2	CVBS
3	GND	4	GND
5	C	6	N.C
7	GND	8	N.C

2.15 Fan Connector (CN3)

Pin	Signal
1	GND
2	+5V
3	Speed Sense

2.16 TTL-LCD Connector 1 (CN4)

For 18-bit/ Channel 1 36-bit TTL-LCD

Pin	Signal	Pin	Signal
1	+5V	2	+5V
3	GND	4	GND
5	+3.3V	6	+3.3V
7	ENBKL	8	GND
9	N.C.	10	N.C.
11	BLUE0-0	12	BLUE0-1
13	BLUE0-2	14	BLUE0-3
15	BLUE0-4	16	BLUE0-5
17	N.C.	18	N.C.
19	GREEN0-0	20	GREEN0-1
21	GREEN0-2	22	GREEN0-3
23	GREEN0-4	24	GREEN0-5
25	N.C.	26	N.C.

27	RED0-0	28	RED0-1
29	RED0-2	30	RED0-3
31	RED0-4	32	RED0-5
33	GND	34	GND
35	DOT_CLOCK	36	VSYNC
37	DE	38	HSYNC
39	N.C.	40	ENAVEE

For 24-bit TTL-LCD

Pin	Signal	Pin	Signal
1	+5V	2	+5V
3	GND	4	GND
5	+3.3V	6	+3.3V
7	ENBKL	8	GND
9	BLUE0-0	10	BLUE0-1
11	BLUE0-2	12	BLUE0-3
13	BLUE0-4	14	BLUE0-5
15	BLUE0-6	16	BLUE0-7
17	GREEN0-0	18	GREEN0-1
19	GREEN0-2	20	GREEN0-3
21	GREEN0-4	22	GREEN0-5
23	GREEN0-6	24	GREEN0-7
25	RED0-0	26	RED0-1
27	RED0-2	28	RED0-3

29	RED0-4	30	RED0-5
31	RED0-6	32	RED0-7
33	GND	34	GND
35	DOT_CLOCK	36	VSYNC
37	DE	38	HSYNC
39	N.C.	40	ENAVEE

Note: If you need to use a 36-bit TTL LCD, please plug your cable into both CN4 and CN5.

2.17 TTL- LCD Connector 2 (CN5)

Pin	Signal	Pin	Signal
1	GND	2	GND
3	BLUE1-0	4	BLUE1-1
5	BLUE1-2	6	BLUE1-3
7	BLUE1-4	8	BLUE1-5
9	GREEN1-0	4	GREEN1-1
11	GREEN1-2	6	GREEN1-3
13	GREEN1-4	8	GREEN1-5
15	RED1-0	16	RED1-1
17	RED1-2	18	RED1-3
19	RED1-4	20	RED1-5

Note: If you need to use a 36-bit TTL LCD, please plug your cable into both CN4 and CN5.

2.18 Floppy Connector (CN6)

Pin	Signal	Pin	Signal
1	GND	2	#REDWC
3	GND	4	N.C
5	GND	6	#DS1
7	GND	8	#INDEX
9	GND	10	#MOTOR A
11	GND	12	#DRIVE SELECT B
13	GND	14	#DRIVE SELECT A
15	GND	16	#MOTOR B
17	GND	18	#DIR
19	GND	20	#STEP
21	GND	22	#WRITE DATA
23	GND	24	#WRITE GATE
25	GND	26	#TRACK0
27	GND	28	#WRITE PROTECT
29	GND	30	#READ DATA
31	GND	32	#SIDE1
33	GND	34	#DISK CHANGE

2.19 Front Panel Connector (CN7)

Pin	Signal	Pin	Signal
1	Power On Button(-)	2	Power On Button(+)
3	IDE LED(-)	4	IDE LED(+)
5	External Buzzer(-)	6	External Buzzer(+)
7	Power LED(-)	8	Power LED(+)
9	Reset Switch(-)	10	Reset Switch(+)

2.20 COM2 RS-232/422/485 Serial Port Connector (CN9)

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/ +12V/ +5V	10	N.C.

Note: You can select RS-232/422/485 from BIOS.

2.21 LPT Port Connector (CN10)

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

2.22 Battery Connector (CN12)

Pin	Signal	Pin	Signal
1	+3V	2	GND

2.23 Audio Connector (CN13)

Pin	Signal	Pin	Signal
1	First MIC_IN	2	Secondary MIC_IN
3	LINE_IN_GND	4	CD_GND
5	LINE_IN_L	6	CD_IN_L
7	LINE_IN_R	8	CD_GND

9	LINE_IN_GND	10	CD_IN_R
11	LINE_OUT_L	12	LINE_OUT_R
13	LINE_OUT_GND	14	LINE_OUT_GND

2.24 AT Power Connector (CN15)

Pin	Signal	Pin	Signal
1	+5V	2	GND
3	GND	4	+12V

2.25 USB Connector (CN16) (Supports USB 2.0/1.1)

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

2.26 USB Connector (CN17) (Supports USB 1.1)

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

5	USBD3+	6	USBD4+
7	GND	8	USBD4-
9	GND	10	+5V

2.27 COM1 RS-232 Serial Port Connector (CN18)

Pin	Signal	Pin	Signal
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI		

2.28 IrDA Connector (CN19)

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

2.29 VGA Display Connector (CN21)

Pin	Signal	Pin	Signal
1	RED	2	GREEN
3	BLUE	4	N.C.
5	GND	6	GND
7	GND	8	GND
9	+5V	10	GND
11	N.C	12	DDCDAT
13	HSYNC	14	VSYNC
15	DDCCLK	16	GND

2.30 Option PME Connector (CN23)

Pin	Signal
1	+5VSB
2	GND
3	#PME
4	SMB_DATA
5	SMB_CLK

2.31 COM3 RS-232 Serial Port Connector (CN24)

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.

2.32 COM4 RS-232 Serial Port Connector (CN25)

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.

2.33 ATX Power Connector (CN26)

Pin	Signal
1	N.C.
2	GND
3	N.C.
4	GND

5	PS-ON
6	+5VSB

2.34 Digital I/O Connector (CN27)

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

Address Table

	GP1	GP2
SET1	280H (Default)	290H (Default)
SET2	290H	2A0H
SET3	2A0H	2B0H
SET4	2B0H	2C0H

BIOS Setting	Connector Definition	Address	W83977EF GPIO Setting
DIO1-1	CN27 Pin 1	GP1_Bit 0	U30 Pin 03 (GP10)
DIO1-2	CN27 Pin 2	GP1_Bit 1	U30 Pin 56 (GP11)
DIO1-3	CN27 Pin 3	GP1_Bit 2	U30 Pin 57 (GP12)
DIO1-4	CN27 Pin 4	GP1_Bit 3	U30 Pin 58 (GP13)

DIO1-5	CN27 Pin 5	GP2_Bit 0	U30 Pin 69 (GP20)
DIO1-6	CN27 Pin 6	GP2_Bit 1	U30 Pin 70 (GP21)
DIO1-7	CN27 Pin 7	GP2_Bit 2	U30 Pin 72 (GP22)
DIO1-8	CN27 Pin 8	GP2_Bit 3	U30 Pin 73 (GP23)

Note: You can choose one set address from address table.

2.35 SPDIF Connector (CN28)

Pin	Signal	Pin	Signal
1	SPDIF-OUT	2	GND
3	SPDIF-IN		

2.36 18-/36-bit LVDS Connector (CN29)

Pin	Signal	Pin	Signal
1	ENBKL	2	N.C.
3	PPVCC	4	GND
5	CH1_LVDS_TXCLK-	6	CH1_LVDS_TXCLK+
7	PPVCC	8	GND
9	CH1_LVDS_TX0-	10	CH1_LVDS_TX0+
11	CH1_LVDS_TX1-	12	CH1_LVDS_TX1+
13	CH1_LVDS_TX2-	14	CH1_LVDS_TX2+
15	N.C.	16	N.C.
17	Serial port data	18	Serial port clock
19	CH2_LVDS_TX0-	10	CH2_LVDS_TX0+

21	CH2_LVDS_TX1-	12	CH2_LVDS_TX1+
23	CH2_LVDS_TX2-	14	CH2_LVDS_TX2+
25	N.C.	26	N.C.
27	PPVCC	28	GND
29	CH2_LVDS_TXCLK-	30	CH2_LVDS_TXCLK+

2.37 24-bit LVDS Connector (CN31)

Pin	Signal	Pin	Signal
1	ENBKL	2	N.C.
3	PPVCC	4	GND
5	LVDS_TXCLK-	6	LVDS_TXCLK+
7	PPVCC	8	GND
9	LVDS_TX0-	10	LVDS_TX0+
11	LVDS_TX1-	12	LVDS_TX1+
13	LVDS_TX2-	14	LVDS_TX2+
15	LVDS_TX3-	16	LVDS_TX3+
17	Serial port data	18	Serial port clock
19	N.C.	10	N.C.
21	N.C.	12	N.C.
23	N.C.	14	N.C.
25	N.C.	26	N.C.
27	PPVCC	28	GND
29	N.C.	30	N.C.

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

**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 GENE-6315 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 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 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 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 the advanced features available on your system.

Advanced Chipset Features

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

Integrated Peripherals

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

Power Management Setup

Use this menu to specify your settings for power management. (HDD power down, power on by ring, KB wake up, etc.)

PnP/PCI Configurations

This entry appears if your system supports PnP/PCI.

PC Health Status

This menu allows you to set the shutdown temperature for your system.

Frequency/Voltage Control

Use this menu to specify your settings for auto detect DIMM/PCI clock and spread spectrum.

Load Fail-Safe Defaults

Use this menu to load the BIOS default values for the minimal/stable performance for your system to operate.

Load Optimized Defaults

Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While AWARD has designated the custom BIOS to maximize performance, the factory has the right 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 value changes to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

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 GENE-6315 comes with an AutoRun CD-ROM that contains all drivers and utilities that can help you to install the driver automatically.

Insert the driver CD, the driver CD-title will auto start and show the installation guide. If not, please follow the sequence below to install the drivers.

Follow the sequence below to install the drivers:

Step 1 – Install System Driver

Step 2 – Install VGA Driver

Step 3 – Install LAN Driver

Step 4 – Install Audio Driver

Step 5 – Install USB 2.0 Driver

USB 2.0 Drivers are available for download using Windows® Update for both Windows® XP and Windows® 2000. For additional information regarding USB 2.0 support in Windows® XP and Windows® 2000, please visit www.microsoft.com/hwdev/usb/.

Please read instructions below for further detailed installations.

4.1 Installation:

Insert the GENE-6315 CD-ROM into the CD-ROM drive and install the drivers from Step 1 to Step 5 in order.

Step 1 – Install System Driver

1. Click on the **Step 1 – System** folder
2. Double click on **VIAHyperion4in1447v** file
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Step 2 – Install VGA Driver

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

Step 3 –Install LAN Driver

1. Click on the **Step 3 – LAN** folder
2. Double click on **Setup** file
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Step 4 – Install Audio Driver

1. Click on the **Step 4 – Audio** folder
2. Double click on **Setup** file
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Step 5 – Install USB 2.0 Driver

1. Click on the **Step 5 – USB20** folder
2. Double click on **Setup** file
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

GENE-6315 contains a watchdog timer reset pin. (GP16)

All reference material can be found on the following pages.

=====*

*

** Title : WatchDog Timer Setup Utility (for W83977 GP16)

**

** Company : AAEON Technology Inc.

**

** Compiler : Borland C ++ Version 3.0

**

** =====

=====*/

```
#include <dos.h>
```

```
#include <io.h>
```

```
#include <bios.h>
```

```
#include <stdio.h>
```

```
#include <stdlib.h>
```

```
#include <conio.h>
```

```
/* Set I/O Address : 370/371 or 3F0/3F1 */
```

```
#define IO_INDEX_PORT    0x370
```

```
#define IO_DATA_PORT     0x371
```

```
/* Set Watchdog reset pin : 12/13/16 */
```

```
#define watch_dog_output_GP 16
```

```
#define UNLOCK_DATA      0x87
```

```
#define LOCK_DATA        0xAA
```

```
#define DEVICE_REGISTER  0x07
```

```
void EnterConfigMode()
```

```
{
```

```
    outputb(IO_INDEX_PORT, UNLOCK_DATA);
```

```
    outputb(IO_INDEX_PORT, UNLOCK_DATA);
```

```
}
```

```
void ExitConfigMode()
```

```
{
    outportb(IO_INDEX_PORT, LOCK_DATA);
}

void SelectDevice(unsigned char device)
{
    outportb(IO_INDEX_PORT, DEVICE_REGISTER);
    outportb(IO_DATA_PORT, device);
}

unsigned char ReadAData(short int reg)
{
    outportb(IO_INDEX_PORT, reg);
    return (inportb(IO_DATA_PORT));
}

void WriteAData(unsigned char reg, unsigned char data)
{
    outportb(IO_INDEX_PORT, reg);
    outportb(IO_DATA_PORT, data);
}
```

```
}
```

```
void SetWatchDogTime(unsigned char time_val)
```

```
{
```

```
EnterConfigMode();
```

```
SelectDevice(8);
```

```
//Set Register F2
```

```
//Set Watch-Dog Timer 1~ 256
```

```
WriteAData(0xF2, time_val);
```

```
// set counter counts in second (or minute)
```

```
// Register F4 Bit 6 = 0/1 (minutes/seconds)
```

```
// For w83977EF only
```

```
WriteAData(0xF4, 0x40);
```

```
ExitConfigMode();
```

```
}
```

```
void init_w83977f_aw_watchdog()
```

```
{
```

short int value;

```
//Enter W83977 Configure Mode
```

```
EnterConfigMode();
```

```
//Select Device 7
```

```
SelectDevice(7);
```

```
//Set Device Active
```

```
WriteAData(0x30, 0x01);
```

```
//caution:skip this step will be a mistake!!
```

```
if (watch_dog_output_GP==12)
```

```
{
```

```
    //Set Register E2 to define GP12
```

```
    WriteAData(0xE2, 0x0A);
```

```
}
```

```
else if(watch_dog_output_GP==13)
```

```
{
```

```
    //Set Register E3 to define GP13
```

```
    WriteAData(0xE3, 0x0A);
}
else if(watch_dog_output_GP==16)
{
    //Set Register E6 to define GP16
    WriteAData(0xE6, 0x0A);
}

//Select Device 8
SelectDevice(8);

//Set Register F3

//keyboard and mouse interrupt reset Enable

//When Watch-Dog Time-out occurs,Enable POWER LED output
WriteAData(0xF3, 0x0E);

//caution:skip this step will be a mistake!!

if (watch_dog_output_GP==12)
{
    //Set Register 2A (PIN 57) Bit 7 = 0/1 (KBLOCK/GP12)

    //set to GP12 for WD Rst
```



```
WriteADData(0x2A,ReadADData(0x2A)|0x80);
}
else if(watch_dog_output_GP==13)
{
//Set Register 2B (PIN 58) Bit 0 = 0/1 (KBLOCK/GP13)
//set to GP13 for WD Rst
WriteADData(0x2B,ReadADData(0x2B)|0x01);
}
else if(watch_dog_output_GP==16)
{
//Set Register 2C (PIN 119) Bit 5-4 = 01 (GP16)
//set to GP16 for WD Rst
WriteADData(0x2C,ReadADData(0x2C)|0x10);
}

//Exit W83977 Configure mode
ExitConfigMode();
}
```

```
void main(int argc, char* argv[])
{
int time_value=0;

char *ptr;

printf("winBond 83977 WatchDog Timer Setup Utility Version 1.0
\n" );

printf("Ccopyright (c) 2000 AAEON Technology Inc.\n");

printf("Tthis version only for W83977 that using GP%d to Reset
System.\n",watch_dog_output_GP);

if (argc == 1)
{
    printf("\n Syntax: WATCHDOG  [time] \n" );
    printf(" time range : 1 ~ 256 \n\n" );
    return ;
}

if (argc > 1)
{
    ptr = argv[1];
```

```
    time_value = atoi(ptr);  
}  
if (time_value > 0 && time_value < 256)  
{  
    SetWatchDogTime((unsigned char) time_value);  
    init_w83977f_aw_watchdog();  
    printf("Watch Dog Timer set up : %d \n",time_value);  
}  
}
```

Appendix

B

I/O Information

B.1 I/O Address Map

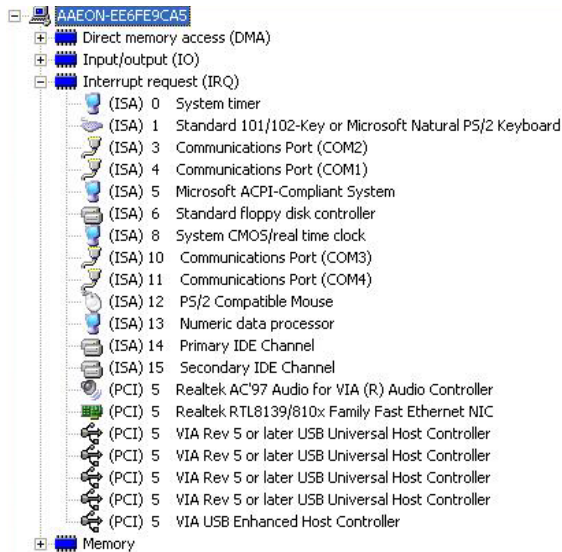
The screenshot shows the Windows Device Manager window with the 'Device Manager' title bar. The menu bar includes 'File', 'Action', 'View', and 'Help'. Below the menu bar are navigation icons. The main area displays a tree view of hardware resources for the motherboard, with the 'Input/output (I/O)' category expanded. The list of resources and their I/O address ranges is as follows:

Resource	I/O Address Range
Direct memory access (DMA)	
Input/output (I/O)	
Direct memory access controller	[00000000 - 0000000F]
PCI bus	[00000000 - 000000CF]
Motherboard resources	[00000010 - 0000001F]
Programmable interrupt controller	[00000020 - 00000021]
Motherboard resources	[00000022 - 0000003F]
System timer	[00000040 - 00000043]
Motherboard resources	[00000044 - 0000005F]
Standard 101/102-Key or Microsoft Natural PS/2 Keyboard	[00000060 - 00000060]
System speaker	[00000061 - 00000061]
Motherboard resources	[00000062 - 00000063]
Standard 101/102-Key or Microsoft Natural PS/2 Keyboard	[00000064 - 00000064]
Motherboard resources	[00000065 - 0000006F]
System CMOS/real time clock	[00000070 - 00000073]
Motherboard resources	[00000074 - 0000007F]
Direct memory access controller	[00000080 - 00000090]
Motherboard resources	[00000091 - 00000093]
Direct memory access controller	[00000094 - 0000009F]
Programmable interrupt controller	[000000A0 - 000000A1]
Motherboard resources	[000000A2 - 000000BF]
Direct memory access controller	[000000C0 - 000000DF]
Motherboard resources	[000000E0 - 000000EF]
Numeric data processor	[000000F0 - 000000FF]
Secondary IDE Channel	[00000170 - 00000177]
Primary IDE Channel	[000001F0 - 000001F7]
ISAPNP Read Data Port	[00000274 - 00000277]
ISAPNP Read Data Port	[00000279 - 00000279]
Communications Port (COM4)	[000002E8 - 000002EF]
Communications Port (COM2)	[000002F8 - 000002FF]
Secondary IDE Channel	[00000376 - 00000376]
Printer Port (LPT1)	[00000378 - 0000037F]
S3 Graphics Twister	[000003B0 - 000003BB]
VIA CPU to AGP Controller	[000003B0 - 000003BB]
S3 Graphics Twister	[000003C0 - 000003DF]
VIA CPU to AGP Controller	[000003C0 - 000003DF]
Communications Port (COM3)	[000003E8 - 000003EF]
Standard floppy disk controller	[000003F0 - 000003F5]
Communications Port (COM1)	[000003F8 - 000003FF]
Motherboard resources	[000004D0 - 000004D1]
ISAPNP Read Data Port	[00000A79 - 00000A79]
PCI bus	[00000D00 - 00003FFF]
PCI bus	[00004100 - 00004FFF]
PCI bus	[00005010 - 00005FFF]
PCI bus	[00006080 - 0000FFFF]
VIA Bus Master IDE Controller	[0000E000 - 0000E00F]
VIA Rev 5 or later USB Universal Host Controller	[0000E100 - 0000E11F]
VIA Rev 5 or later USB Universal Host Controller	[0000E200 - 0000E21F]
Realtek AC'97 Audio for VIA (R) Audio Controller	[0000E400 - 0000E403]
Realtek AC'97 Audio for VIA (R) Audio Controller	[0000E500 - 0000E503]
Realtek RTL8139/810x Family Fast Ethernet NIC	[0000E600 - 0000E6FF]
VIA Rev 5 or later USB Universal Host Controller	[0000E700 - 0000E71F]
VIA Rev 5 or later USB Universal Host Controller	[0000E800 - 0000E81F]
Realtek AC'97 Audio for VIA (R) Audio Controller	[0000FE00 - 0000FEFF]
Interrupt request (IRQ)	
Memory	

B.2 Memory Address Map

Memory Range	Hardware Component
[00000000 - 0009FFFF]	System board
[000A0000 - 000BFFFF]	PCI bus
[000A0000 - 000BFFFF]	S3 Graphics Twister
[000A0000 - 000BFFFF]	VIA CPU to AGP Controller
[000C0000 - 000DFFFF]	PCI bus
[000D5400 - 000D7FFF]	System board
[000F0000 - 000F7FFF]	System board
[000F8000 - 000FBFFF]	System board
[000FC000 - 000FFFFF]	System board
[00100000 - 1F7EFFFF]	System board
[1F7F0000 - 1F7FFFFF]	System board
[1F800000 - FFEFFFFFFF]	PCI bus
[E0000000 - E7FFFFFFF]	S3 Graphics Twister
[E0000000 - E7FFFFFFF]	VIA CPU to AGP Controller
[E8000000 - EBFFFFFFF]	VIA CPU to AGP Controller
[EC000000 - EC07FFFF]	S3 Graphics Twister
[EC000000 - EC0FFFFF]	VIA CPU to AGP Controller
[EC110000 - EC1100FF]	VIA USB Enhanced Host Controller
[EC111000 - EC1110FF]	Realtek RTL8139/810x Family Fast Ethernet NIC
[FEE00000 - FEE00FFF]	System board
[FFFF0000 - FFFFFFFF]	System board

B.3 IRQ Mapping Chart



B.4 DMA Channel Assignments



B.5 Digital I/O Address

Digital I/O Port Address : Specified in BIOS Setup Manual (Integrated Peripherals -> Digital I/O, Port Address)

Digital I/O Port Bit Mapping:

Address1 bit 0 --- CN27 Pin 1

Address1 bit 1 --- CN27 Pin 2

Address1 bit 2 --- CN27 Pin 3

Address1 bit 3 --- CN27 Pin 4

Address2 bit 0 --- CN27 Pin 5

Address2 bit 1 --- CN27 Pin 6

Address2 bit 2 --- CN27 Pin 7

Address2 bit 3 --- CN27 Pin 8

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		
CN1	IDE Connector	Astron	2.0mm 44pins (26-4304-222-1G-T B1-R or compatible)	IDE Cable	1701440500
CN2	TV Connector	Astron	2.0mm 8 pins (27-24041-204-1G- TB1-R or compatible)	TV Cable	1700080180
CN3	FAN Connector	CATCH	2.54mm 3pins (1190-700-03S or compatible)	N/A	N/A
CN4	TFT-LCD Connector 1	SPEED TECN	1.25mm 40pins (W01@103-403M or compatible)	N/A	N/A
CN5	TFT-LCD Connector 2	SPEED TECN	1.25mm 20pins (W01@103-203M or compatible)	N/A	N/A
CN6	Floppy Connector	Astron	2.0mm 34pins (26-4304-217-1G-T B1-R or compatible)	Floppy Cable	1701340080

CN7	Front Panel Connector	Astron	2.0mm 10pins (27-24041-205-1G-TB1-R or compatible)	N/A	N/A
CN9	RS-232/422/485 Serial Port Connector	CATCH	2.0mm 10pins (1147-000-10MSP or compatible)	Serial Port Cable	1701100206
CN10	LPT Port Connector	CATCH	2.0mm 26pins (1147-000-26MSP or compatible)	LPT Cable	1701260200
CN11	PCI-104 Connector	Astron	2.28mm 120pins (1250120-017-R or compatible)	N/A	N/A
CN12	Battery Connector	CATCH	1.25mm 2pins (1201-700-02S or compatible)	N/A	N/A
CN13	Audio Connector	Astron	2.0mm 14pins (27-24041-207-1G-TB1-R or compatible)	Audio Cable	1700140510
CN15	AT Power Connector	Hobase	5.08mm 4pins (5082A-WS-4 or compatible)	N/A	N/A

CN16	USB1 / USB2 Connector (Support USB 2.0/ USB 1.1)	JIH VEI	2.0mm 10pins (21B22050-10S10B or compatible)	USB Cable	1709100201
CN17	USB3 / USB4 Connector (Support USB1.1)	JIH VEI	2.0mm 10pins (21B22050-10S10B or compatible)	USB Cable	1709100201
CN18	RS-232 Serial Port Connector	Hobase	5.0mm 9pins (DRD-9Por compatible)	N/A	N/A
CN19	IrDA Connector	JIH VEI	2.54mm 5pins (21B12564-05S10B or compatible)	N/A	N/A
CN20	PS2 Keyboard/ Mouse Connector	Artron	13-4101-6-1T-R	PS2 Keyboard /Mouse cable	1700060152
CN21	VGA Display Connector	Astron	HDLH-B15-CFHN1 T-1-R or compatible	N/A	N/A

CN22	Type1 Compact Flash Slot	SPEED TECH	N016@0140-004 or compatible	N/A	N/A
CN24	RS-232 Serial Port Connector	CATCH	2.0mm 10pins (1147-000-10MSP or compatible)	Serial Port Cable	1701100206
CN25	RS-232 Serial Port Connector	CATCH	2.0mm 10pins (1147-000-10MSP or compatible)	Serial Port Cable	1701100206
CN26	Option ATX Power Connector	CATCH	2.0mm 6pins (1192-700-06SA or compatible)	ATX Power Cable	1702200205
CN27	Digital I/OConnec tor	JIH VEI	2.0mm 10pins (21B22050-10S10B or compatible)	N/A	N/A
CN28	SPDIF Connector	CATCH	2.0mm 3pins (1192-700-03S or compatible)	SPDIF Cable	1709030150
CN29	18-/36-bit LVDS Connector	SPEED TECN	1.25mm 30pins (W01@103-303M or compatible)	N/A	N/A
CN31	24-bit LVDS Connector	SPEED TECN	1.25mm 30pins (W01@103-303M or compatible)	N/A	N/A

SubCompact Board**GENE-6315**

CN32	10/100 or 100/1000 Base-TX Ethernet Connecto	SPEED TECH	P26@P04-1DC7 or compatible)	N/A	N/A
DIMM1	SDRAM SODIMM Slot	AMP	390112-1 or compatible)	N/A	N/A