

**GENE-A55E**

AMD G-Series T16R  
Processor

10/100/1000Mb Ethernet

1 Mini-Card

4 USB2.0, 4 COM

2CH HD Audio

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## Packing List

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

- GENE-A55E CPU Card
- DVD-ROM for manual (in PDF format) and drivers

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

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AAEON, a leading embedded boards manufacturer, is pleased to announce the debut of their new generation 3.5" SubCompact Board — GENE-A55E.

GENE-A55E adopts AMD G-Series T16R single core processor. The system memory is deployed with 204-pin SODIMM DDR3L 1066MHz up to 4 GB. In addition, Realtek® RTL8111E supports 10/100/1000Mb LAN that allows faster network connections.

The display of GENE-A55E supports VGA/LCD, simultaneous and dual view displays. This model applies Mini Card slots and 1x optional mSATA for flexible expansions. USB2.0 x 4, COM ports x 4 (RS-232 x 2, RS-232/422/485 x 2) are configured on the GENE-A55E as well. Full functions make GENE-A55E a flexible and user friendly solution. This brand new SubCompact board is developed to cater to the requirements of Automation, Medical, ticket machine, transportation, gaming, KIOSK, and POS/POI applications.

## 1.2 Features

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- AMD G-Series Single Core 615MHz Processor
- AMD A55E Chipset
- DDR3L SODIMM, 1066MHz Memory Up to 4 GB
- VGA, 18/24-bit Dual Channel LVDS LCD
- 2CH HD Audio
- SATA 2 & CFD x 1
- PC/104 Interface Support
- Gigabit Ethernet x 2
- Supports Digital I/O 8-bit, USB 2.0 x 4, COM x 4, LPT x 1
- Mini-Card slot x 1
- +5V DC Input, AT/ATX

### 1.3 Specifications

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#### System

● Processor	AMD G-series T16R single core 615 MHz
● System Memory	204-pin DDR3L 1066MHz SODIMM x 1, Max. 4GB
● Chipset	AMD A55E
● I/O Chipset	Fintek 81866D-I
● Ethernet	Realtek RTL8111E 10/100/1000Base-TX, RJ-45 x 2
● BIOS	AMI BIOS
● Wake on LAN	Yes
● Watchdog Timer	Fintek 81866D-I
● H/W Status Monitoring	Supports power supply voltages and temperature monitoring
● Expansion Interface	Mini-Card slot or mSATA(Optional) x 1 LPC Bus x1
● Power Requirement	+5V(Default), AT or ATX
● Power Consumption (Typical)	AMD T16R, DDR3 1333 4GB, 2.2A@+5V

● Board Size	5.75" x 4" (146mm x 101.6mm)
● Gross Weight	0.88 lb (0.4 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% R/H, non-condensing

**Display**

● Chipset	AMD G-series T16R processor integrated Graphics Engine
● Memory	Shared memory: 512MB/ DVMT 5.0
● Resolutions	VGA up 1920 x 1200, LCD up to 1920 x 1200 (By Chrontel CH7511)
● LCD Interface	18/24 bit Dual Channel LVDS LCD

**I/O**

● Storage	SATA 2 x 1
● Serial Port	RS-232 x 2, RS-232/422/485 (auto flow) x 2
● Parallel Port	SPP/ECP/EPP mode x1
● USB	USB 2.0 x 4

● PS/2 Port	Keyboard x 1, Mouse x 1
● Audio	Line-in, Line-out, Mic-in
● GPIO	Up to 4 in and 4 out

Chapter

2

**Quick  
Installation  
Guide**

## 2.1 Safety Precautions

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**Warning!**

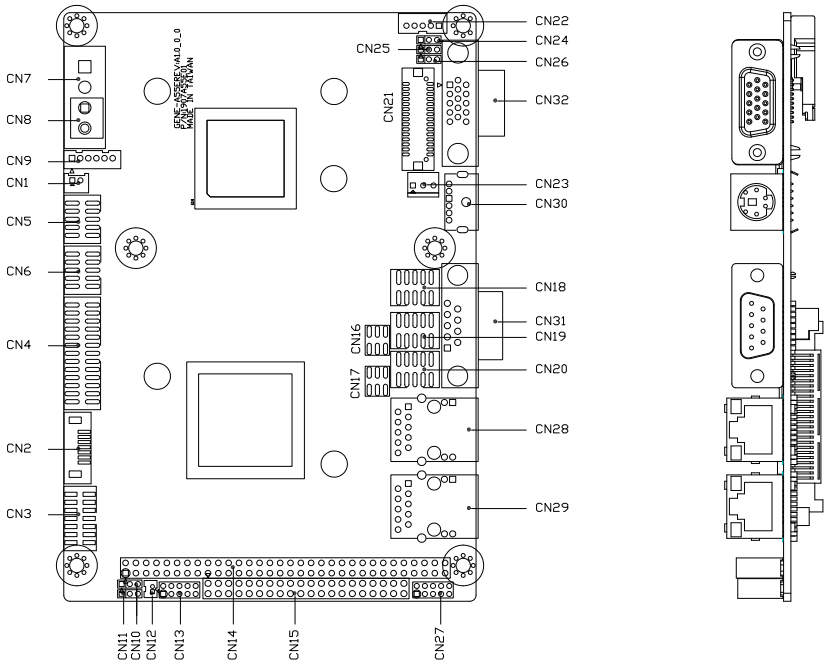
*Always completely disconnect the power cord from your board whenever you are working on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.*

**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*

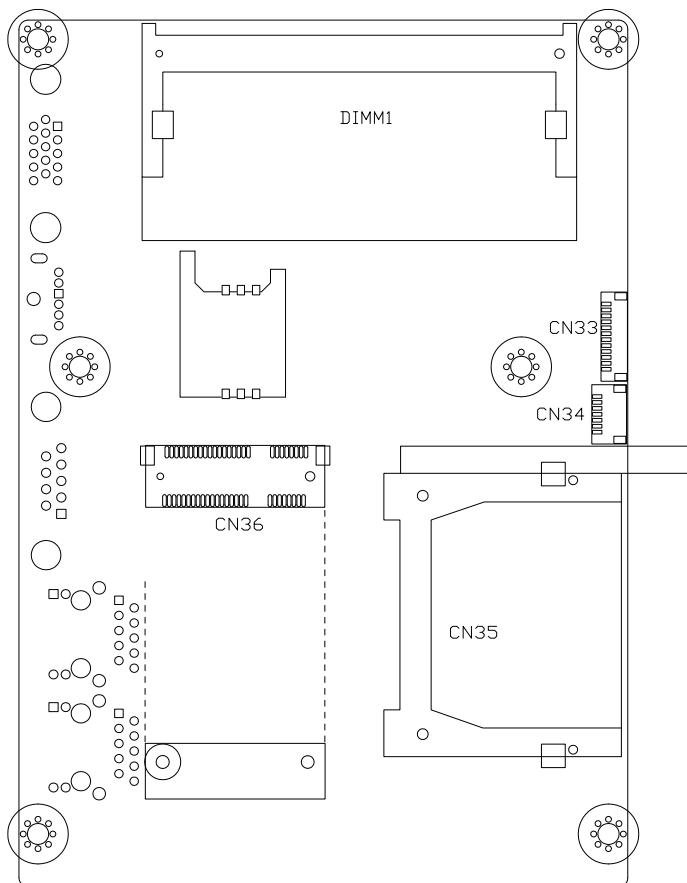
## 2.2 Location of Connectors and Jumpers

### Component Side



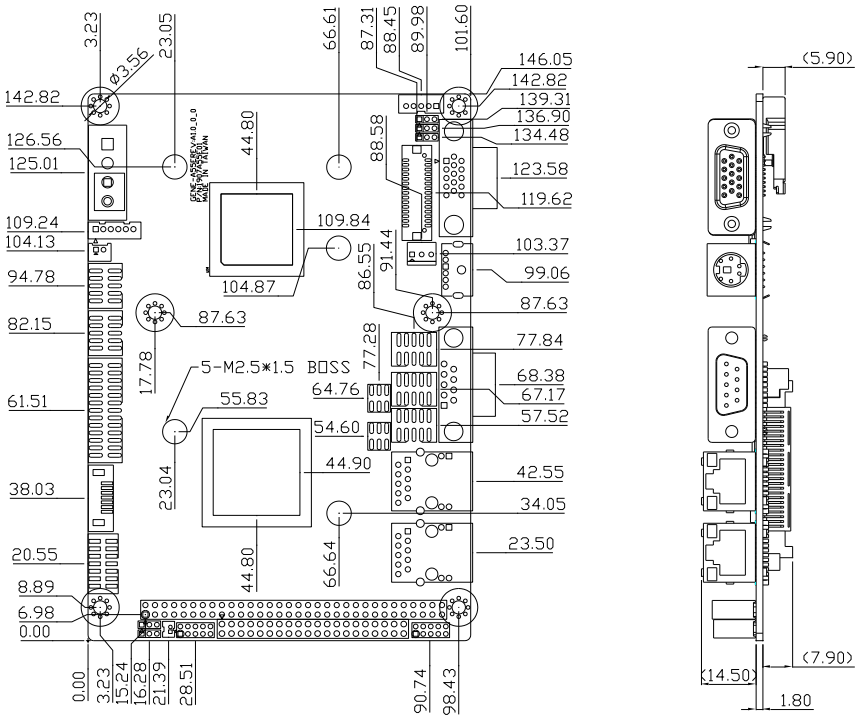


Solder Side

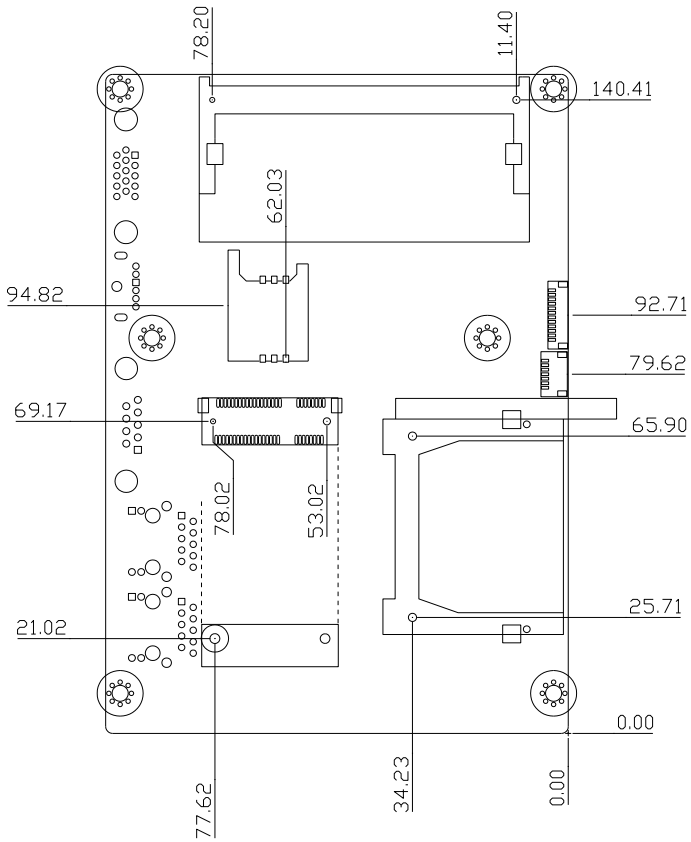


### 2.3 Mechanical Drawing

#### 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:

<b>Label</b>	<b>Function</b>
CN10	AT/ATX Power Supply Mode Selection
CN11	Clear CMOS Jumper
CN16	COM3 Pin9 Function Selection
CN17	COM2 Pin9 Function Selection
CN24	LVDS Backlight Inverter VCC Selection
CN25	LVDS Backlight Lightness Control Mode Selection
CN26	LVDS Operating VDD Selection

## 2.5 List of Connectors

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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:

<b>Label</b>	<b>Function</b>
CN1	+5V Output for SATA HDD
CN2	SATA Port Connector
CN3	Audio I/O Port
CN4	LPT Port
CN5	USB 2.0 Ports 3 and Ports 4
CN6	USB 2.0 Ports 1 and Ports 2
CN7	4P Power Connector Input
CN9	External +5VSB Input
CN13	Digital IO Port
CN14+CN15	PC/104 Slot
CN18	COM Port 4
CN19	COM Port 3
CN20	COM Port 2
CN21	LVDS Port
CN22	LVDS Inverter / Backlight Connector
CN23	System FAN
CN27	Front Panel Connector
CN28	Realtek LAN (RJ-45) Port 2

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CN29	Realtek LAN (RJ-45) Port 1
CN30	Mini-Din PS/2 Connector
CN31	COM Port 1 (D-SUB 9)
CN32	VGA Port
CN33	LPC Port
CN34	SPI Flash JTAG
CN35	CFD Slot
CN36	Mini-Card Slot
CN37	UIM Card Module
DIMM1	DDR3L SO-DIMM Slot

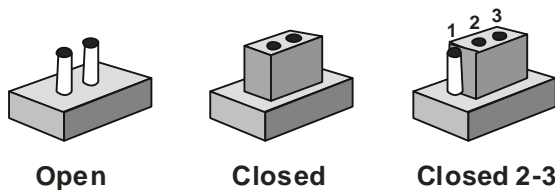
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## 2.6 Setting Jumpers

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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.



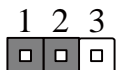
A pair of needle-nose pliers may be helpful when working with jumpers.

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.

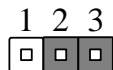
Generally, you simply need a standard cable to make most connections.

## 2.7 AT/ATX Power Supply Mode Selection (CN10)

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AT Mode (Default)

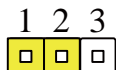


ATX Mode

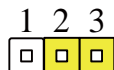
CN10	Function
1-2	AT Mode (Default)
2-3	ATX Mode

## 2.8 Clear CMOS Jumper (CN11)

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Normal (Default)

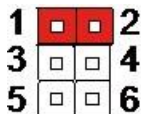


Clear CMOS

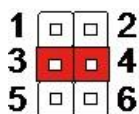
CN11	Function
1-2	Normal (Default)
2-3	Clear CMOS

## 2.9 COM3 Pin9 Function Selection (CN16)

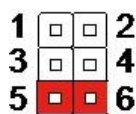
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+12V



Ring (Default)

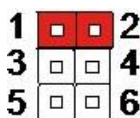


+5V

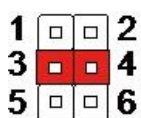


CN16	Function
1-2	+12V
3-4	Ring (Default)
5-6	+5V

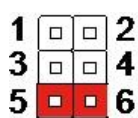
### 2.10 COM2 Pin9 Function Selection (CN17)



+12V



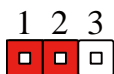
Ring (Default)



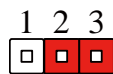
+5V

CN17	Function
1-2	+12V
3-4	Ring (Default)
5-6	+5V

### 2.11 LVDS Backlight Inverter VCC Selection (CN24)



+12V



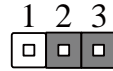
+5V (Default)

CN24	Function
1-2	+12V
2-3	+5V (Default)

## 2.12 LVDS Backlight Lightness Control Mode Selection (CN25)



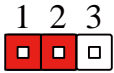
VR Mode (Default)



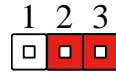
PWM Mode

CN25	Function
1-2	+VR Mode (Default)
2-3	PWM Mode

## 2.13 LVDS Operating VDD Selection (CN26)



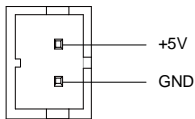
+5V



+3.3V (Default)

CN26	Function
1-2	+5V
2-3	+3.3V (Default)

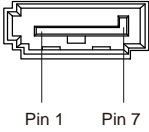
## 2.14 +5V Output for SATA HDD (CN1)



Pin	Pin Name	Signal Type	Signal level
1	+5V	PWR	+5V
2	GND	GND	

## 2.15 SATA Port (CN2)

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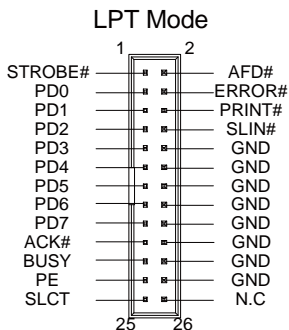
Pin	Pin Name	Signal Type	Signal level
1	GND	GND	
2	SATA_TX+	DIFF	
3	SATA_TX-	DIFF	
4	GND	GND	
5	SATA_RX-	DIFF	
6	SATA_RX+	DIFF	
7	GND	GND	

## 2.16 Audio I/O Port (CN3)

---

Pin	Pin Name	Signal Type	Signal level
1	MIC	IN	
2	MIC_Vcc	PWR	
3	GND_AUDIO	GND	
4	CD_GND	GND	
5	LINE_L_IN	IN	
6	CD_L	OUT	
7	LINE_R_IN	IN	
8	CD_GND	GND	
9	GND_AUDIO	GND	
10	CD_R	OUT	
11	LEFT_OUT	OUT	
12	RIGHT_OUT	OUT	
13	GND_AUDIO	GND	
14	GND_AUDIO	GND	

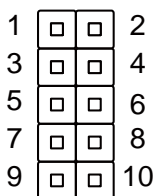
## 2.17 LPT Port (CN4)



LPT Mode			
Pin	Pin Name	Signal Type	Signal level
1	STROBE#	IN	
2	AFD#	I/O	
3	PD0	I/O	
4	ERROR#	IN	
5	PD1	I/O	
6	PRINT#	I/O	
7	PD2	I/O	
8	SLIN#	I/O	
9	PD3	I/O	
10	GND	GND	
11	PD4	I/O	
12	GND	GND	
13	PD5	I/O	
14	GND	GND	

LPT Mode			
Pin	Pin Name	Signal Type	Signal level
15	PD6	I/O	
16	GND	GND	
17	PD7	I/O	
18	GND	GND	
19	ACK#	IN	
20	GND	GND	
21	BUSY	IN	
22	GND	GND	
23	PE	IN	
24	GND	GND	
25	SLCT	IN	
26	NC		

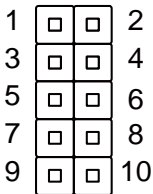
### 2.18 USB 2.0 Port 3 and Port 4 (CN5)



Pin	Pin Name	Signal Type	Signal level
1	+5VSB	PWR	+5V
2	GND	GND	
3	USB2_D-	DIFF	
4	GND	GND	

5	USB2_D+	DIFF	
6	USB3_D+	DIFF	
7	GND	GND	
8	USB3_D-	DIFF	
9	GND	GND	
10	+5VSB	PWR	+5V

### 2.19 USB 2.0 Port 1 and Port 2 (CN6)



Pin	Pin Name	Signal Type	Signal level
1	+5VSB	PWR	+5V
2	GND	GND	
3	USB0_D-	DIFF	
4	GND	GND	
5	USB0_D+	DIFF	
6	USB1_D+	DIFF	
7	GND	GND	
8	USB1_D-	DIFF	
9	GND	GND	
10	+5VSB	PWR	+5V

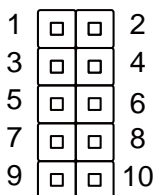
## 2.20 4P Power Connector Input (CN7)

Pin	Pin Name	Signal Type	Signal level
1	+12V	PWR	+12V
2	GND	GND	
3	GND	GND	
4	+5V	PWR	+5V

## 2.21 External +5VSB Input (CN9)

Pin	Pin Name	Signal Type	Signal level
1	N/A		
2	GND	GND	
3	N/A		
4	GND	GND	
5	PS_ON#	OUT	+5V
6	+5VSB	PWR	+5V

## 2.22 Digital I/O Port (CN13)



Pin	Pin Name	Signal Type	Signal level
1	DIO0	I/O	+3.3V
2	DIO1	I/O	+3.3V



3	DIO2	I/O	+3.3V
4	DIO3	I/O	+3.3V
5	DIO4	I/O	+3.3V
6	DIO5	I/O	+3.3V
7	DIO6	I/O	+3.3V
8	DIO7	I/O	+3.3V
9	+3.3V	PWR	+3.3V
10	GND	GND	

### 2.23 PC/104 Slot (CN14+CN15)

Pin	Pin Name	Signal Type	Signal level
A1	IOCHCK#		
A2	D7	IN/OUT	
A3	D6	IN/OUT	
A4	D5	IN/OUT	
A5	D4	IN/OUT	
A6	D3	IN/OUT	
A7	D2	IN/OUT	
A8	D1	IN/OUT	
A9	D0	IN/OUT	
A10	IOCHRDY		
A11	AEN		
A12	A19	OUT	
A13	A18	OUT	
A14	A17	OUT	

Pin	Pin Name	Signal Type	Signal level
A15	A16	OUT	
A16	A15	OUT	
A17	A14	OUT	
A18	A13	OUT	
A19	A12	OUT	
A20	A11	OUT	
A21	A10	OUT	
A22	A9	OUT	
A23	A8	OUT	
A24	A7	OUT	
A25	A6	OUT	
A26	A5	OUT	
A27	A4	OUT	
A28	A3	OUT	
A29	A2	OUT	
A30	A1	OUT	
A31	A0	OUT	
A32	GND	GND	
B1	GND	GND	
B2	RSTDRV		
B3	+5V	PWR	+5V
B4	IRQ9		
B5	NC		
B6	DRQ2		

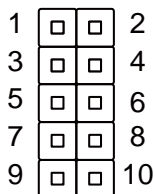
Pin	Pin Name	Signal Type	Signal level
B7	NC		
B8	ENDXFR#		
B9	+12V	PWR	+12V
B10	GND	GND	
B11	SMEMW#		
B12	SMEMR#		
B13	IOW#		
B14	IOR#		
B15	DACK3#		
B16	DRQ3		
B17	DACK1#		
B18	DRQ1		
B19	REFRESH#		
B20	SYSCLK		
B21	IRQ7		
B22	IRQ6		
B23	IRQ5		
B24	IRQ4		
B25	IRQ3		
B26	DACK2#		
B27	TC		
B28	BALE		
B29	+5V	PWR	+5V
B30	OSC		

Pin	Pin Name	Signal Type	Signal level
B31	GND	GND	
B32	GND	GND	
C1	GND	GND	
C2	SBHE#		
C3	A23	OUT	
C4	A22	OUT	
C5	A21	OUT	
C6	A20	OUT	
C7	A19	OUT	
C8	A18	OUT	
C9	A17	OUT	
C10	MEMR#		
C11	MEMW#		
C12	D8	IN/OUT	
C13	D9	IN/OUT	
C14	10	IN/OUT	
C15	D11	IN/OUT	
C16	D12	IN/OUT	
C17	D13	IN/OUT	
C18	D14	IN/OUT	
C19	D15	IN/OUT	
C20	GND	GND	
D1	GND	GND	
D2	MEMCS16#		

Pin	Pin Name	Signal Type	Signal level
D3	IOCS16#		
D4	IRQ10		
D5	IRQ11		
D6	IRQ12		
D7	IRQ15		
D8	IRQ14		
D9	DACK0#		
D10	DRQ0		
D11	DACK5#		
D12	DRQ5		
D13	DACK6#		
D14	DRQ6		
D15	DACK7#		
D16	DRQ7		
D17	+5V	PWR	+5V
D18	MASTER#		
D19	GND	GND	
D20	GND	GND	

## 2.24 COM Port 4(CN18)

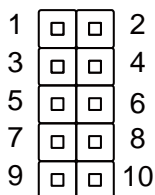
---



Pin	Pin Name	Signal Type	Signal level
1	DCD	IN	
2	RX	IN	
3	TX	OUT	±9V
4	DTR	OUT	±9V
5	GND	GND	
6	DSR	IN	
7	RTS	OUT	±9V
8	CTS	IN	
9	RI	IN	
10	NC		

## 2.25 COM Port 3(CN19)

---



## RS-232

Pin	Pin Name	Signal Type	Signal level
1	DCD	IN	
2	RX	IN	
3	TX	OUT	±9V
4	DTR	OUT	±9V
5	GND	GND	
6	DSR	IN	
7	RTS	OUT	±9V
8	CTS	IN	
9	RI/+5V/+12V	IN/ PWR	+5V/+12V
10	NC		

## RS-422

Pin	Pin Name	Signal Type	Signal level
1	RS422_TX-	OUT	±5V
2	RS422_TX+	OUT	±5V
3	RS422_RX+	IN	
4	RS422_RX-	IN	
5	GND	GND	
6	NC		
7	NC		
8	NC		
9	NC/+5V/+12V	PWR	+5V/+12V
10	NC		

## RS-485

Pin	Pin Name	Signal Type	Signal level
1	RS485_D-	I/O	±5V
2	RS485_D+	I/O	±5V
3	NC		
4	NC		
5	GND	GND	
6	NC		
7	NC		
8	NC		
9	NC/+5V/+12V	PWR	+5V/+12V
10	NC		

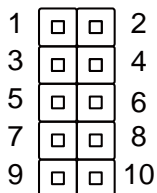
※ COM3 RS-232/422/485 can be set by BIOS setting. Default is RS-232.

※ Pin 9 function can be set by CN16



## 2.26 COM Port 2 (CN20)

---



### RS-232

Pin	Pin Name	Signal Type	Signal level
1	DCD	IN	
2	RX	IN	
3	TX	OUT	±9V
4	DTR	OUT	±9V
5	GND	GND	
6	DSR	IN	
7	RTS	OUT	±9V
8	CTS	IN	
9	RI/+5V/+12V	IN/ PWR	
10	NC		

## RS-422

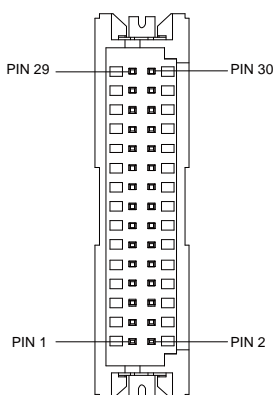
Pin	Pin Name	Signal Type	Signal level
1	RS422_TX-	OUT	±5V
2	RS422_TX+	OUT	±5V
3	RS422_RX+	IN	
4	RS422_RX-	IN	
5	GND	GND	
6	NC		
7	NC		
8	NC		
9	NC/+5V/+12V	PWR	+5V/+12V
10	NC		

## RS-485

Pin	Pin Name	Signal Type	Signal level
1	RS485_D-	I/O	±5V
2	RS485_D+	I/O	±5V
3	NC		
4	NC		
5	GND	GND	
6	NC		
7	NC		
8	NC		
9	NC/+5V/+12V	PWR	+5V/+12V
10	NC		

- ※ COM2 RS-232/422/485 can be set by BIOS setting. Default is RS-232.
- ※ Pin 9 function can be set by CN17

## 2.27 LVDS Port (CN21)

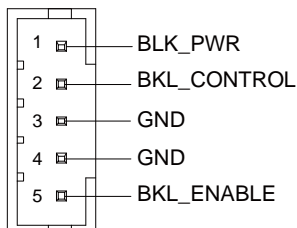


- ※ LVDS LCD\_PWR can be set to +3.3V or +5V by CN26

Pin	Pin Name	Signal Type	Signal level
1	BKL_ENABLE	OUT	
2	BKL_CONTROL	OUT	
3	LCD_PWR	PWR	+3.3V/+5V
4	GND	GND	
5	LVDS_A_CLK-	DIFF	
6	LVDS_A_CLK+	DIFF	
7	LCD_PWR	PWR	+3.3V/+5V
8	GND	GND	

Pin	Pin Name	Signal Type	Signal level
9	LVDS_DA0-	DIFF	
10	LVDS_DA0+	DIFF	
11	LVDS_DA1-	DIFF	
12	LVDS_DA1+	DIFF	
13	LVDS_DA2-	DIFF	
14	LVDS_DA2+	DIFF	
15	LVDS_DA3-	DIFF	
16	LVDS_DA3+	DIFF	
17	DDC_DATA	I/O	+3.3V
18	DDC_CLK	I/O	+3.3V
19	LVDS_DB0-	DIFF	
20	LVDS_DB0+	DIFF	
21	LVDS_DB1-	DIFF	
22	LVDS_DB1+	DIFF	
23	LVDS_DB2-	DIFF	
24	LVDS_DB2+	DIFF	
25	LVDS_DB3-	DIFF	
26	LVDS_DB3+	DIFF	
27	LCD_PWR	PWR	+3.3V/+5V
28	GND	GND	
29	LVDS_B_CLK-	DIFF	
30	LVDS_B_CLK+	DIFF	

## 2.28 LVDS Inverter/ Backlight Connector (CN22)



Pin	Pin Name	Signal Type	Signal level
1	BKL_PWR	PWR	+5V / +12V
2	BKL_CONTROL	OUT	
3	GND	GND	
4	GND	GND	
5	BKL_ENABLE	OUT	+5V

※ LVDS BKL\_PWR can be set to +5V or +12V by CN24

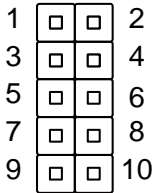
※ LVDS BKL\_CONTROL can be set by CN25

## 2.29 System FAN (CN23)

Pin	Pin Name	Signal Type	Signal level
1	FAN_TAC	IN	
2	FAN_POWER	PWR	+5V
3	GND	GND	

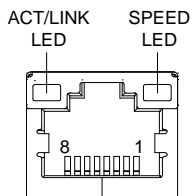
### 2.30 Front Panel Connector (CN27)

---



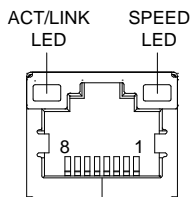
<b>Pin 1</b>	PWR_BTN-	<b>Pin 2</b>	PWR_BTN+
<b>Pin 3</b>	HDD_LED-	<b>Pin 4</b>	HDD_LED+
<b>Pin 5</b>	SPEAKER-	<b>Pin 6</b>	SPEAKER+
<b>Pin 7</b>	PWR_LED-	<b>Pin 8</b>	PWR_LED+
<b>Pin 9</b>	H/W RESET-	<b>Pin 10</b>	H/W RESET+

### 2.31 Realtek LAN (RJ-45) Port 2 (CN28)



Pin	Pin Name	Signal Type	Signal level
1	MDI0+	DIFF	
2	MDI0-	DIFF	
3	MDI1+	DIFF	
4	MDI2+	DIFF	
5	MDI2-	DIFF	
6	MDI1-	DIFF	
7	MDI3+	DIFF	
8	MDI3-	DIFF	

### 2.32 Realtek LAN (RJ-45) Port 1 (CN29)



Pin	Pin Name	Signal Type	Signal level
1	MDI0+	DIFF	
2	MDI0-	DIFF	
3	MDI1+	DIFF	
4	MDI2+	DIFF	
5	MDI2-	DIFF	
6	MDI1-	DIFF	
7	MDI3+	DIFF	
8	MDI3-	DIFF	

### 2.33 Mini-DIN PS/2 Keyboard/ Mouse Connector (CN30)

Pin	Pin Name	Signal Type	Signal level
1	KB_DATA	I/O	+5V
2	MS_DATA	I/O	+5V
3	GND	GND	
4	Shield		
5	+5VSB	PWR	+5V
6	KB_CLK	I/O	+5V
7	Shield		
8	MS_CLK	I/O	+5V



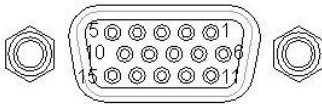
### 2.34 COM Port 1 (CN31)

---

Pin	Pin Name	Signal Type	Signal level
1	DCD	IN	
2	RX	IN	
3	TX	OUT	±9V
4	DTR	OUT	±9V
5	GND	GND	
6	DSR	IN	
7	RTS	OUT	±9V
8	CTS	IN	
9	RI	IN	

### 2.35 VGA Port (CN32)

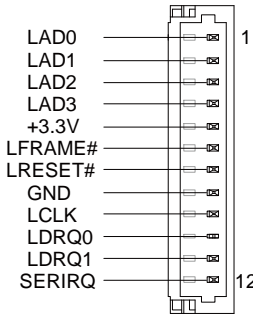
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VGA			
Pin	Pin Name	Signal Type	Signal level
1	RED	OUT	
2	GREEN	OUT	
3	BLUE	OUT	
4	NC		
5	GND	GND	

VGA			
Pin	Pin Name	Signal Type	Signal level
6	RED_GND_RTN	GND	
7	GREEN_GND_RTN	GND	
8	BLUE_GND_RTN	GND	
9	+5V	PWR	+5V
10	GND	GND	
11	NC		
12	DDC_DATA	I/O	+5V
13	HSYNC	OUT	
14	VSYNC	OUT	
15	DDC_CLK	I/O	+5V

### 2.36 LPC Port (CN33)



Pin	Pin Name	Signal Type	Signal level
1	LAD0	I/O	+3.3V
2	LAD1	I/O	+3.3V
3	LAD2	I/O	+3.3V
4	LAD3	I/O	+3.3V
5	+3.3V	PWR	+3.3V
6	LFRAME#	IN	
7	LRESET#	OUT	+3.3V
8	GND	GND	
9	LCLK	OUT	
10	LDRQ0	IN	
11	LDRQ1	IN	
12	SERIRQ	I/O	+3.3V

**2.37 CFD Slot (CN35)**

Pin	Pin Name	Signal Type	Signal level
1	GND	GND	
2	D3	IN/OUT	
3	D4	IN/OUT	
4	D5	IN/OUT	
5	D6	IN/OUT	
6	D7	IN/OUT	
7	CS#0		
8	GND	GND	
9	GND	GND	
10	GND	GND	
11	GND	GND	
12	GND	GND	
13	+3.3V	PWR	+3.3V
14	GND	GND	
15	GND	GND	
16	GND	GND	
17	GND	GND	
18	A2	OUT	
19	A1	OUT	
20	A0	OUT	
21	D0	IN/OUT	
22	D1	IN/OUT	

Pin	Pin Name	Signal Type	Signal level
23	D2	IN/OUT	
24	NC		
25	GND	GND	
26	CD1#	IN	
27	D11	IN/OUT	
28	D12	IN/OUT	
29	D13	IN/OUT	
30	D14	IN/OUT	
31	D15	IN/OUT	
32	CS#1		
33	GND	GND	
34	CF_IOR#	OUT	
35	CF_IOW#	OUT	
36	+3.3V		+3.3V
37	INTR		
38	+3.3V	PWR	+3.3V
39	CSEL#	IN	
40	NC		
41	RESET#	OUT	
42	IORDY		
43	IDE_REQ#		
44	IDE_DACK#		
45	DASP#		
46	+3.3V		+3.3V

Pin	Pin Name	Signal Type	Signal level
47	D8	IN/OUT	
48	D9	IN/OUT	
49	D10	IN/OUT	
50	GND	GND	

### 2.38 Mini-Card Slot (CN36)

Pin	Pin Name	Signal Type	Signal level
1	PCIE_WAKE#	IN	
2	+3.3VSB	PWR	+3.3V
3	NC		
4	GND	GND	
5	NC		
6	+1.5V	PWR	+1.5V
7	PCIE_CLK_REQ#	IN	
8	UIM_PWR	PWR	
9	GND	GND	
10	UIM_DATA	I/O	
11	PCIE_REF_CLK-	DIFF	
12	UIM_CLK	IN	
13	PCIE_REF_CLK+	DIFF	
14	UIM_RST	IN	
15	GND	GND	
16	UIM_VPP	PWR	

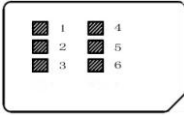
Pin	Pin Name	Signal Type	Signal level
17	NC		
18	GND	GND	
19	NC		
20	W_DISABLE#	OUT	+3.3V
21	GND	GND	
22	PCIE_RST#	OUT	+3.3V
23	PCIE_RX-	DIFF	
24	+3.3VSB	PWR	+3.3V
25	PCIE_RX+	DIFF	
26	GND	GND	
27	GND	GND	
28	+1.5V	PWR	+1.5V
29	GND	GND	
30	SMB_CLK	I/O	+3.3V
31	PCIE_TX-	DIFF	
32	SMB_DATA	I/O	+3.3V
33	PCIE_TX+	DIFF	
34	GND	GND	
35	GND	GND	
36	USB_D-	DIFF	
37	GND	GND	
38	USB_D+	DIFF	
39	+3.3VSB	PWR	+3.3V
40	GND	GND	

Pin	Pin Name	Signal Type	Signal level
41	+3.3VSB	PWR	+3.3V
42	NC		
43	GND	GND	
44	NC		
45	NC		
46	NC		
47	NC		
48	+1.5V	PWR	+1.5V
49	NC		
50	GND	GND	
51	NC		
52	+3.3VSB	PWR	+3.3V



### 2.39 UIM Card Module (CN37)

---



Pin	Pin Name	Signal Type	Signal level
1	UIM_PWR	PWR	
2	UIM_RST	IN	
3	UIM_CLK	IN	
4	GND	GND	
5	UIM_VPP	PWR	
6	UIM_DATA	I/O	

### 2.40 DDR3L SODIMM Slot (DIMM1)

---

Standard Specification

**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><b>O:</b> 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  <b>SJ/T 11363-2006</b> 标准规定的限量要求以下。</p> <p><b>X:</b> 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  <b>SJ/T 11363-2006</b> 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 stored in the CMOS memory and BIOS NVRAM. If system configuration is not found or system configuration data error is detected, system will load optimized default and re-boot with this default system configuration automatically.

There are four situations in which you will need to setup system configuration:

1. You are starting your system for the first time
2. You have changed the hardware attached to your system
3. The system configuration is reset by Clear-CMOS jumper
4. The CMOS memory has lost power and the configuration information has been erased.

## 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 and BIOS NVRAM so that it retains the Setup information when the power is turned off.

### Entering Setup

Power on the computer and press <Del> 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.

## Setup Menu

### Setup submenu: Main



#### Options summary: **(default setting)**

System Date	Day MM:DD:YYYY	
Change the month, year and century. The 'Day' is changed automatically.		
System Time	hh : mm : ss	
Change the clock of the system.		

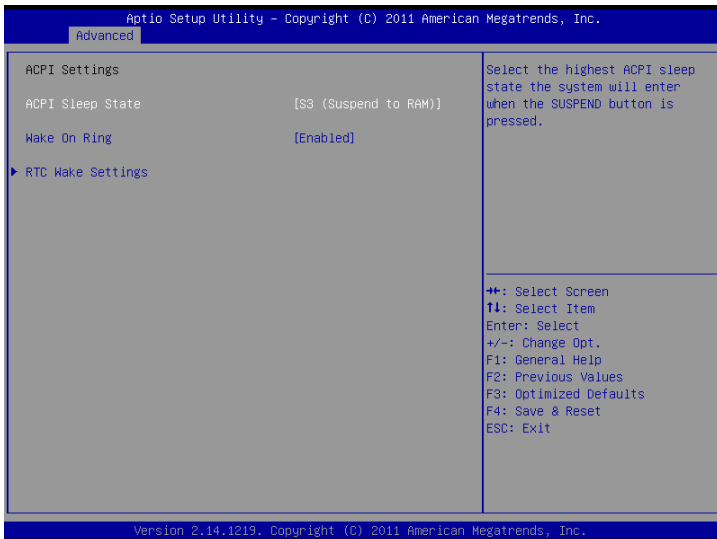
## Setup submenu: Advanced

Options summary: (**default setting**)

ACPI Settings		
System ACPI Parameters		
CPU Configuration		
CPU Configuration Parameters		
SATA Configuration		
SATA Device Options Settings		
USB Configuration		
USB Configuration Parameters		

F81866 Super IO Configuration		
System Super IO Chip Parameters.		
F81866 H/W Monitor		
Monitor hardware status		
ISA Configuration		
Configure IO or Memory address which will be decoded to ISA BUS		
IRQ Configuration		
Configure IRQs for ISA or PCI devices.		
Digital IO Port Configuration		
Set Input/Output of Digital IO Port Configuration		

## ACPI Settings

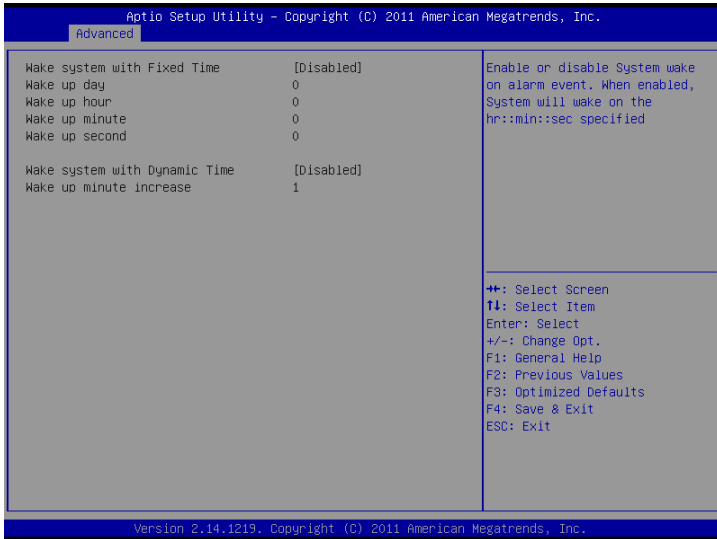




Options summary: **(default setting)**

ACPI Sleep State	<b>S3 only(Suspend to RAM)</b>	
Select the ACPI state used for System Suspend		
Wake on Ring	<b>Enabled</b>	
	Disabled	
Enabled or disabled wake on ring function.		
RTC Wake Settings		
Enable system to wake from S5 using RTC alarm.		

## RTC Wake Settings



Options summary: (*default setting*)

Wake system with Fixed	<b>Disabled</b>	
Time	Enabled	
Enable or disable System wake on alarm event. Wake up time is setting by following settings.		
Wake up day	0-31	
Select 0 for daily system wake up, 1-31 for which day of the month that you would like the system to wake up		
Wake up hour	0-23	
Wake up minute	0-59	
Wake up second	0-59	
Wake system with	<b>Disabled</b>	
Dynamic Time	Enabled	
Enable or disable System wake on alarm event. Wake up time is current time + Increase minutes.		
Wake up minute increase	1-5	

### CPU Configuration

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.

Advanced

Node0: AMD G-T16R Processor Single Core Running @ 625 MHz 925 mV Max Speed:615 MHZ Intended Speed:615 MHZ Min Speed:615 MHZ Microcode Patch Level: 500010d  ----- Cache per Core ----- L1 Instruction Cache: 32 KB/8-way L1 Data Cache: 32 KB/2-way L2 Cache: 512 KB/16-way No L3 Cache Present	
	<b>++</b> : Select Screen <b>T1</b> : Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit

Version 2.14.1219, Copyright (C) 2011 American Megatrends, Inc.

### SATA Configuration

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Advanced

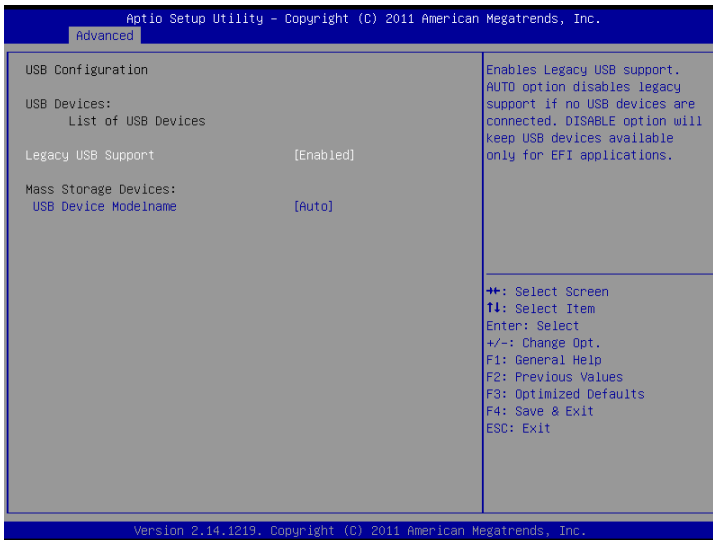
OnChip SATA Channel	[Enabled]	Enable Or Disable Serial ATA
OnChip SATA Type	[Legacy IDE]	
SATA Port	Drive Modelname	
CF Slot	Drive Modelname	
		<b>++</b> : Select Screen <b>T1</b> : Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit

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Options summary: **(default setting)**

OnChip SATA Channel	Disabled	
	<b>Enabled</b>	
Enable or Disable Serial ATA		
OnChip SATA Type	<b>Legacy IDE</b>	
	AHCI	
Configure SATA controller operating as IDE/AHCI mode.		

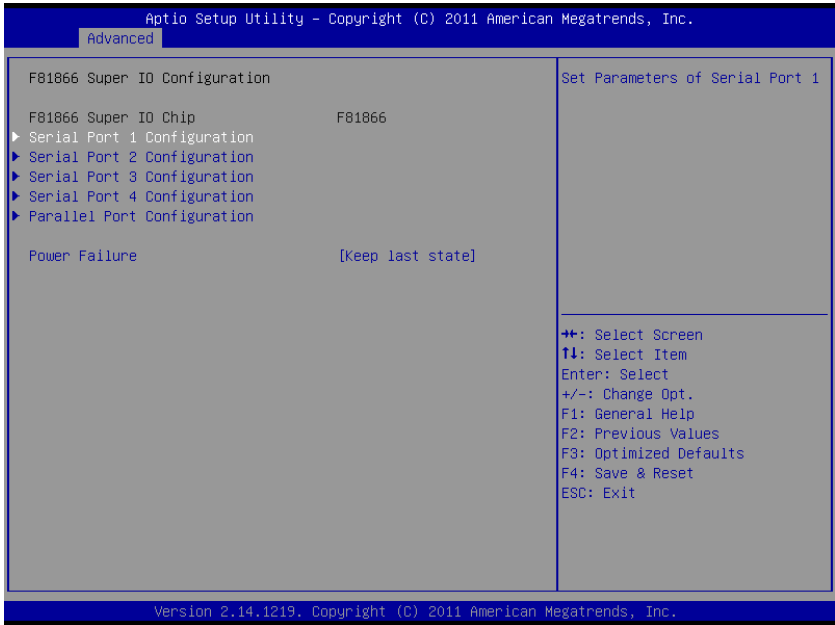
## USB Configuration

Options summary: **(default setting)**

Legacy USB Support	<b>Enabled</b>	
	Disabled	

	Auto	
<p>Enables BIOS Support for Legacy USB Support. When enabled, USB can be functional in legacy environment like DOS. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI application</p>		
Device Name (Emulation Type)	<b>Auto</b>	
	Floppy	
	Forced FDD	
	Hard Disk	
	CD-ROM	
<p>If Auto. USB devices less than 530MB will be emulated as Floppy and remaining as Floppy and remaining as hard drive. Forced FDD option can be used to force a HDD formatted drive to boot as FDD(Ex. ZIP drive)</p>		

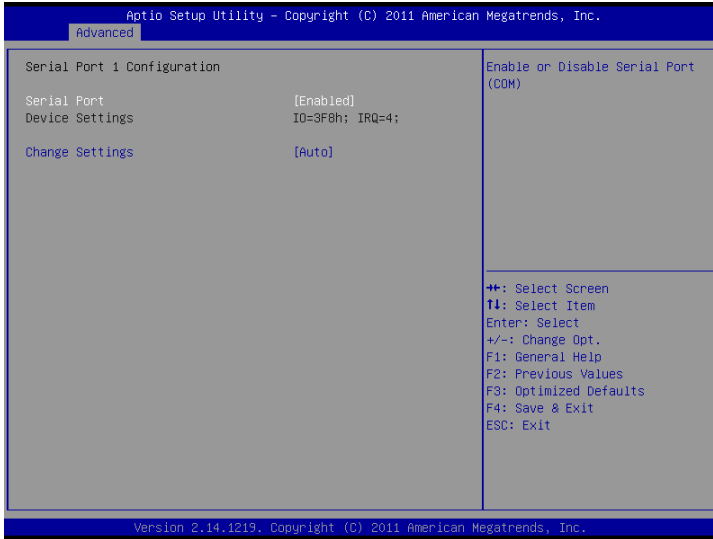
## F8 1866 Super IO Configuration

Options summary: (*default setting*)

Serial Port 1/2/3/4 Configuration		
Set Parameters of Serial Port 1/2/3/4		
Parallel Port Configuration		
Set Parameters of Parallel Port		
Power Failure	<b>Always OFF</b>	
	Always ON	
	Keep last state	

Select AC power state when power is re-applied after a power failure.

## Serial Port 1 Configuration



Options summary: (**default setting**)

Serial Port	Disabled	
	<b>Enabled</b>	
En/Disable specified serial port.		
Change Settings	<b>Auto</b>	
	IO=3F8h; IRQ=4;	
	IO=3F8h; IRQ=3,4,5,7,10,11,12;	
	IO=2F8h; IRQ=3,4,5,7,10,11,12;	
	IO=3E8h; IRQ=3,4,5,7,10,11,12;	

IO=2E8h; IRQ=3,4,5,7,10,11,12;

Select a resource setting for Super IO device.

## Serial Port 2 Configuration

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Advanced

Serial Port 2 Configuration		Enable or Disable Serial Port (COM)
Serial Port	[Enabled]	
Device Settings	IO=2F8h; IRQ=3;	
Change Settings	[Auto]	
Port Mode	[RS232]	
		++: Select Screen ↑: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

Options summary: (**default setting**)

Serial Port	Disabled	
	<b>Enabled</b>	
En/Disable specified serial port.		
Change Settings	<b>Auto</b>	
	IO=2F8h; IRQ=3;	
	IO=3F8h; IRQ=3,4,5,7,10,11,12;	
	IO=2F8h; IRQ=3,4,5,7,10,11,12;	



	IO=3E8h; IRQ=3,4,5,7,10,11,12;	
	IO=2E8h; IRQ=3,4,5,7,10,11,12;	
Select a resource setting for Super IO device.		
Port Mode	<b>RS232</b>	
	RS422	
	RS485	
RS232/422,485 port mode switch		

## Serial Port 3 Configuration

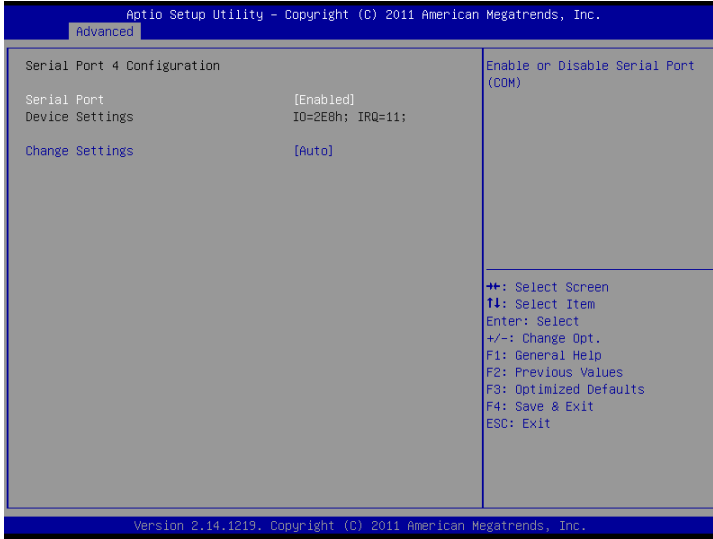
Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.	
Advanced	
Serial Port 4 Configuration	Enable or Disable Serial Port (COM)
Serial Port [Enabled]	
Device Settings IO=2E8h; IRQ=10;	
Change Settings [Auto]	
	++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.	

Options summary: (**default setting**)

Serial Port	Disabled	
-------------	----------	--

	<b>Enabled</b>	
En/Disable specified serial port.		
Change Settings	<b>Auto</b>	
	IO=3E8h; IRQ=11;	
	IO=3E8h; IRQ=3,4,5,7,10,11,12;	
	IO=2E8h; IRQ=3,4,5,7,10,11,12;	
	IO=228h; IRQ=3,4,5,7,10,11,12;	
	IO=220h; IRQ=3,4,5,7,10,11,12;	
Select a resource setting for Super IO device.		
Port Mode	<b>RS232</b>	
	RS422	
	RS485	
RS232/422,485 port mode switch		

### Serial Port 4 Configuration



Options summary: **(default setting)**

Serial Port	Disabled	
	<b>Enabled</b>	
En/Disable specified serial port.		
Change Settings	<b>Auto</b>	
	IO=2E8h; IRQ=11;	
	IO=3E8h; IRQ=3,4,5,7,10,11,12;	
	IO=2E8h; IRQ=3,4,5,7,10,11,12;	
	IO=228h; IRQ=3,4,5,7,10,11,12;	
	IO=220h; IRQ=3,4,5,7,10,11,12;	
Select a resource setting for Super IO device.		

## Parallel Port Configuration

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.		
Advanced		
Parallel Port Configuration		Enable or Disable Parallel Port (LPT/LPTE)
Parallel Port	[Enabled]	
Device Settings	IO=378h; IRQ=5;	
Change Settings	[Auto]	
Device Mode	[STD Printer Mode]	
		++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
Version 2.14.1219, Copyright (C) 2011 American Megatrends, Inc.		

### Options summary: (*default setting*)

Parallel Port	Disabled	
	<b>Enabled</b>	
En/Disable specified parallel port.		
Change Settings	<b>Auto</b>	
	IO=378h; IRQ=5;	
	IO=378h; IRQ=5,6,7,10,11,12;	
	IO=278h; IRQ=5,6,7,10,11,12;	
	IO=3BCh; IRQ=5,6,7,10,11,12;	
Select an optimal setting for LPT device.		
Device Mode	<b>STD Printer Mode</b>	

	SPP Mode	
	EPP-1.9 and SPP Mode	
	EPP-1.7 and SPP Mode	
	ECP Mode	
	ECP and EPP 1.9 Mode	
	ECP and EPP 1.7 Mode	
Change the Printer Port mode		

## F81866 H/W Monitor

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.

Advanced

<p>Pc Health Status</p> <p>▶ CPU Fan Configuration</p> <p>CPU Temperature :  System Temperature :  Fan1 Speed :  CPU Vcore :  5V :  12V :  VSB5V :  3.3V :  VBAT :</p>	<p>Configure behavior of CPU Fan</p> <p>++: Select Screen  ↑↓: Select Item  Enter: Select  +/-: Change Opt.  F1: General Help  F2: Previous Values  F3: Optimized Defaults  F4: Save &amp; Reset  ESC: Exit</p>
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

Options summary: (**default setting**)

CPU Fan Configuration		
Configure behavior of CPU fan.		

## CPU Fan Configuration

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.

Advanced

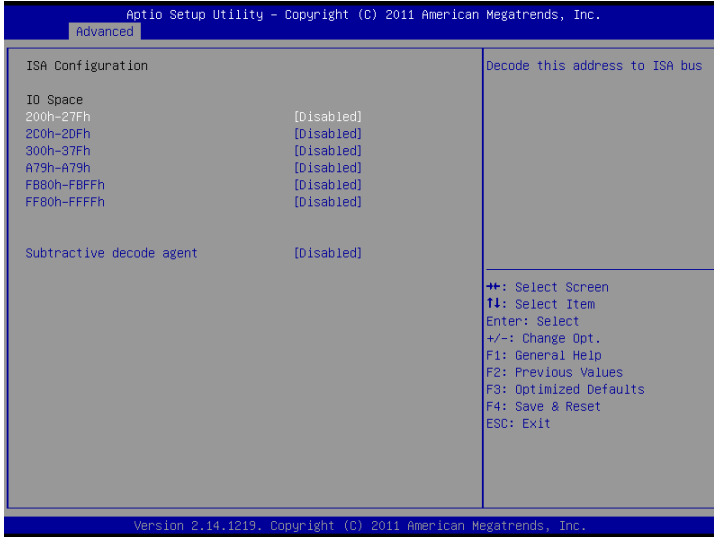
<p>DPU Fan Configuration</p> <p>Mode Control [Auto Mode]</p> <p>Fan Speed Full</p> <p>Temperature 1 60</p> <p>Fan Speed Medium</p> <p>Temperature 2 50</p> <p>Fan Speed Low</p>	<p>CPU Fan Mode Select</p>       <p>+/: Select Screen            ↑↓: Select Item            Enter: Select            +/-: Change Opt.            F1: General Help            F2: Previous Values            F3: Optimized Defaults            F4: Save &amp; Reset            ESC: Exit</p>
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Version 2.14.1219, Copyright (C) 2011 American Megatrends, Inc.

### Options summary: (*default setting*)

Mode Control	<b>Auto Mode</b>	
	Full Speed	
CPU Fan mode select		
Temperature 1/2	1-100	
Temperature setting for the boundary of the different fan speed level.		

ISA Configuration



Options summary: (**default setting**)

200h-27Fh/2C0h-20Fh/ 300h-37Fh/A79h-A79h/	<b>Disabled</b>	
FB80h-FBFFh/ FF80h-FFFFh	Decoded to ISA	
Decode specified IO address to ISA BUS		
Subtractive decode agent	<b>Disabled</b>	
	Enabled	
Configure PCI-to-ISA bridge works as a subtractive decode agent		

## IRQ Configuration

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.

Advanced

IRQ Configuration		Select IRQ usage.
IRQ3	[For PCI]	
IRQ4	[For PCI]	
IRQ5	[For PCI]	
IRQ7	[For PCI]	
IRQ10	[For PCI]	
IRQ11	[For PCI]	

++: Select Screen  
 ↑↓: Select Item  
 Enter: Select  
 +/-: Change Opt.  
 F1: General Help  
 F2: Previous Values  
 F3: Optimized Defaults  
 F4: Save & Reset  
 ESC: Exit

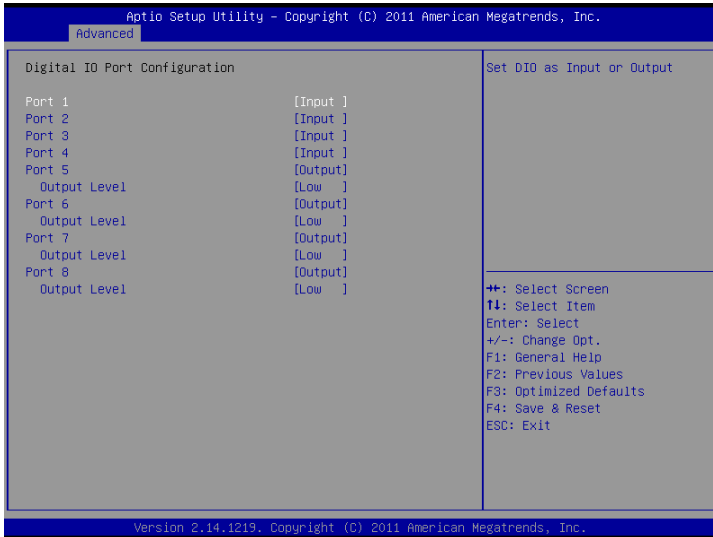
Version 2.14.1219, Copyright (C) 2011 American Megatrends, Inc.

Options summary: (**default setting**)

IRQ3/IRQ4/IRQ5/	Reserved	
IRQ7/IRQ10/IRQ11	<b>For PCI</b>	
Select specified IRQ can be used by PCI device or reserved for ISA devices.		

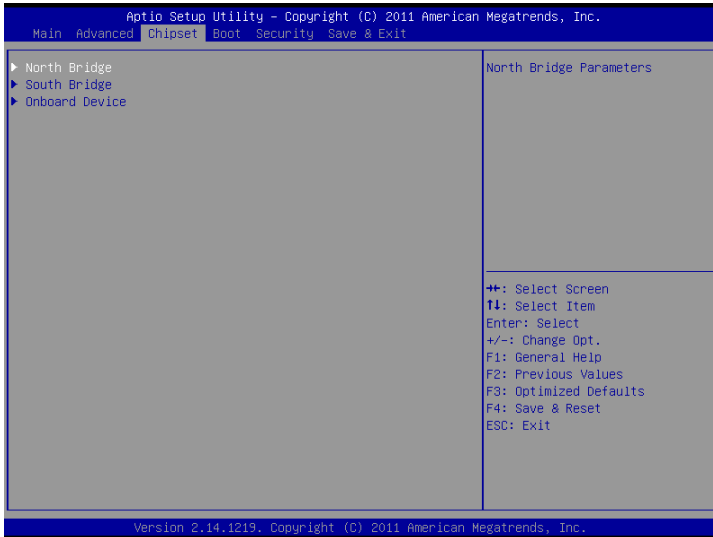


## Digital IO Port Configuration

Options summary: (**default setting**)

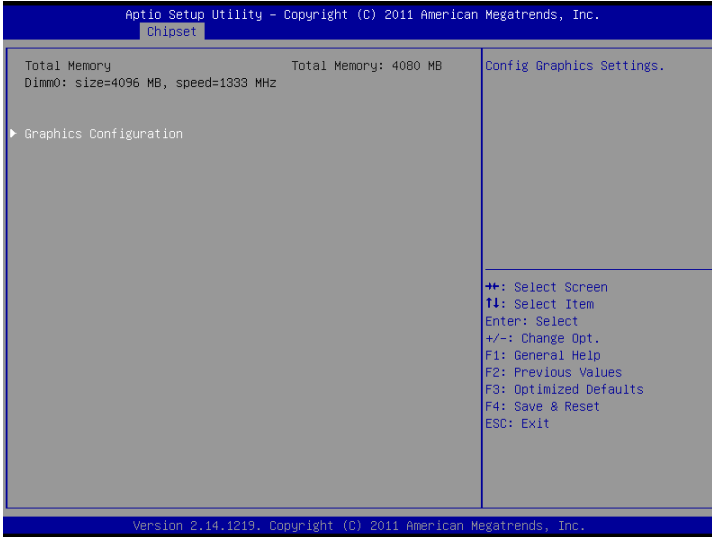
Port1/Port2/Port3/Port4	Input	
	<b>Output</b>	
Set DIO Port x as Input or Output		
Port5/Port6/Port7/Port8	<b>Input</b>	
	Output	
Set DIO Port x as Input or Output		
Output Level	Hi	
	<b>Low</b>	
Set DIO output level when used as output pin		

## Setup submenu: Chipset

Options summary: (*default setting*)

North Bridge		
North Bridge Parameters		
South Bridge		
South Bridge Parameters		
Onboard Device		
Configure onboard devices		

## North Bridge



Options summary: (**default setting**)

Graphics Configuration		
Configure Graphics Setting		

## Graphics Configuration

Apdio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.  
Chipset

DP1 Output Mode	[LVDS]	NB PCIE Connect Type (Display device)
LVDS Panel Type	[1024x768,18bit,60Hz]	
LVDS Backlight Level	[ 80%]	
LVDS Backlight Type	[Normal]	
		++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit

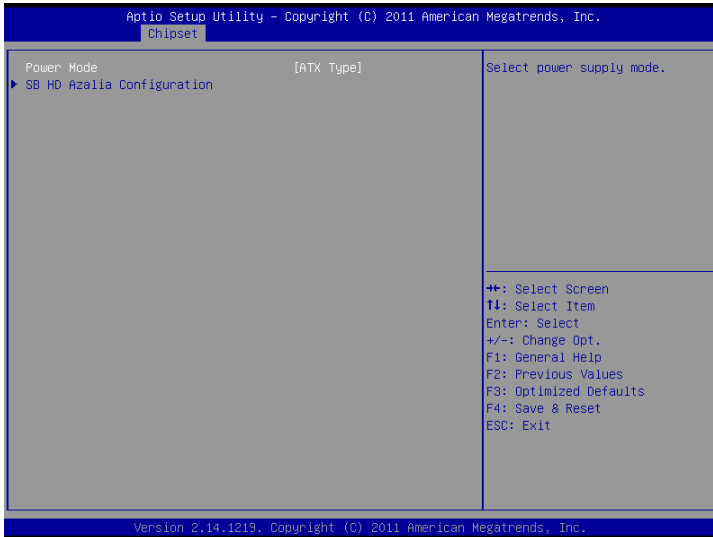
Version 2.14.1219, Copyright (C) 2011 American Megatrends, Inc.

Options summary: (**default setting**)

DP1 Output Mode	<b>LVDS</b>	
	Disabled	
Enabled/Disabled LVDS		
LVDS Panel	640x480,18bit,60Hz	
	800x480,18bit,60Hz	
	800x600,18bit,60Hz	
	1024x600,18bit,60Hz	
	<b>1024x768,18bit,60Hz</b>	
	1024x768,24bit,60Hz	
	1280x768,24bit,60Hz	

	1280x1024,48bit,60Hz	
	1366x768,24bit,60Hz	
	1440x900,48bit,60Hz	
	1600x1200,48bit,60Hz	
	1920x1080,48bit,60Hz	
	1920x1200,48bit,60Hz	
Select the resolution for LVDS Panel		
LVDS Backlight Level	100%	
	90%	
	<b>80%</b>	
	70%	
	60%	
	50%	
	40%	
	30%	
	20%	
	10%	
	0%	
Select the backlight level for LVDS Panel		
LVDS Backlight Type	<b>Normal</b>	
	Inverted	
Select the signal type for backlight control.		

## South Bridge



### Options summary: (*default setting*)

HD Audio Azalia Device	<b>Enabled</b>	
	Disabled	
Enable or Disable HD Audio Controller		
Power Mode	<b>ATX Type</b>	
	AT Type	
Select the power type used on the system		

## Onboard Device

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.		
Chipset		
Onboard Device Configuration		Enable or Disable Onboard Gigabit LAN 1
Onboard Gigabit LAN 1	[Enabled]	
Launch PXE OpROM	[Disabled]	
Onboard Gigabit LAN 2	[Enabled]	
Launch PXE OpROM	[Disabled]	
		+-: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
Version 2.14.1219, Copyright (C) 2011 American Megatrends, Inc.		

Options summary: (**default setting**)

Onboard Gigabit LAN 1/2	Disabled	
	<b>Enabled</b>	
Enable or Disable Onboard Gigabit LAN 1/2		
Launch PXE OpROM	<b>Disabled</b>	
	Enabled	
Enable or Disable Boot Option for Legacy Network Devices.		

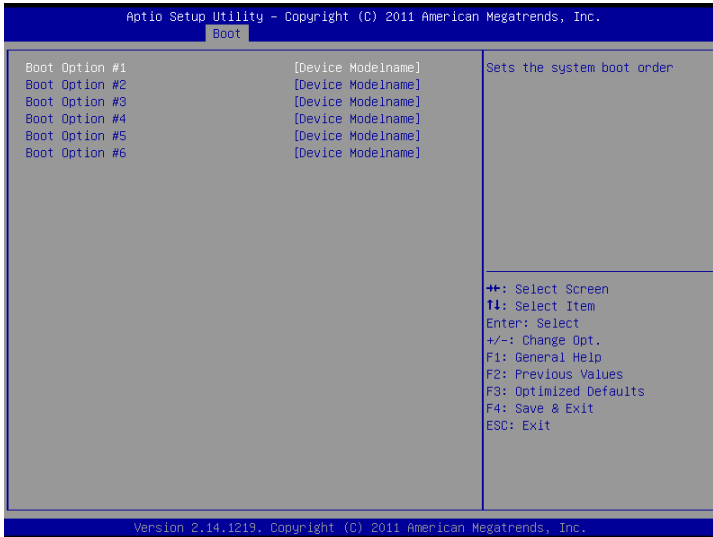
## Setup submenu: Boot

Options summary: (**default setting**)

Quiet Boot	Disabled	
	<b>Enabled</b>	
En/Disable showing boot logo.		
Launch RTL8111E PXE OpROM	<b>Disabled</b>	
	Enabled	
En/Disable PXE boot for RTL8111E LAN		
Boot Option #X/ XXXX Drive BBS Priorities		
The order of boot priorities.		



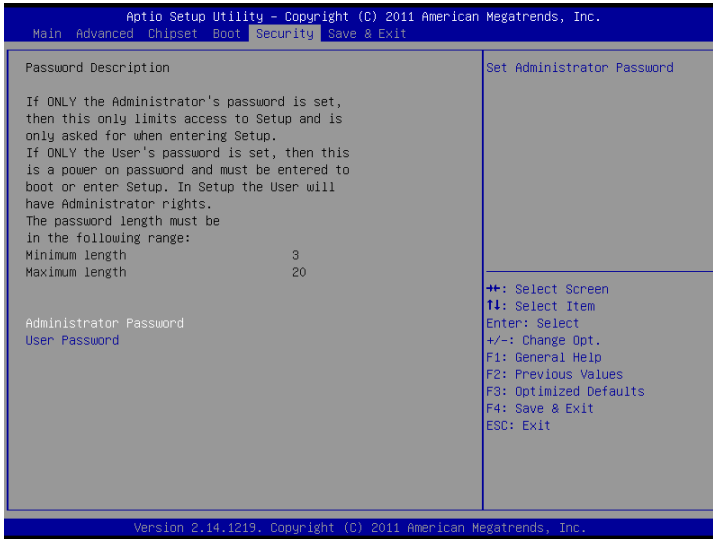
## BBS Priorities



### Options summary: (*default setting*)

Boot Option #x	Disabled	
	Device name	
Sets the system boot order		

### Setup submenu: Security



#### Options summary: (**default setting**)

Administrator Password/	<b>Not set</b>	
User Password		

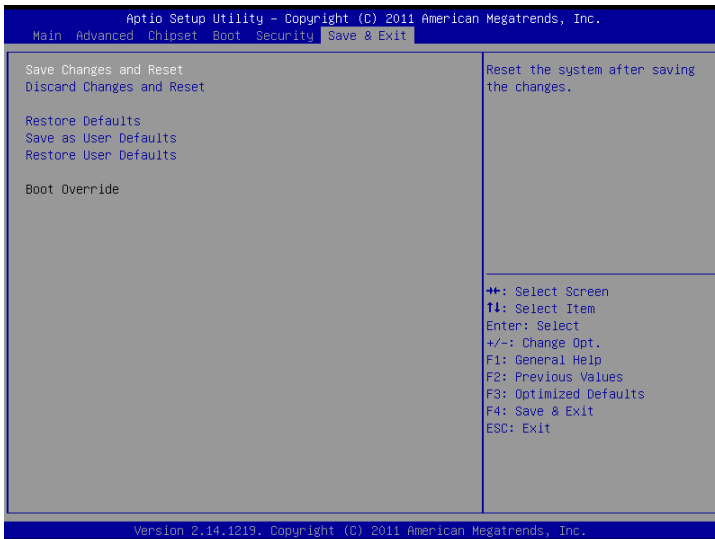
You can install a Supervisor password, and if you install a supervisor password, you can then install a user password. A user password does not provide access to many of the features in the Setup utility.

#### *Install the Password:*

Press Enter on this item, a dialog box appears which lets you enter a password. You can enter no more than six letters or numbers. Press Enter after you have typed in the password. A second dialog box asks you to retype the password for confirmation. Press Enter after you have retyped it correctly. The password is required at boot time, or when the user enters the Setup utility.

*Removing the Password:*

Highlight this item and type in the current password. At the next dialog box press Enter to disable password protection.

**Setup submenu: Exit****Options summary: (default setting)**

Save Changes and Reset		
Reset the system after saving the changes		
Discard Changes and Reset		
Reset system setup without saving any changes		
Restore Defaults		
Restore/Load Default values for all the setup options.		

Save as User Defaults		
Save the changes done so far as User Defaults		
Restore User Defaults		
Restore the User Defaults to all the setup options		
Boot Override		
Boot to specified device.		

Chapter

4

**Driver  
Installation**

The GENE-A55E comes with a DVD-ROM that contains all drivers and utilities that meet your needs.

***Follow the sequence below to install the drivers:***

Step 1 – Install Chipset Driver

Step 2 – Install LAN Driver

Step 3 – Install Audio Driver

Step 4 – Install AHCI Driver (Optional)

Step 5 – Install PCI to ISA Bridge Driver

Step 6 – Serial Port Driver (Optional)

## 4.1 Installation:

---

Insert the GENE-A55E DVD-ROM into the DVD-ROM Drive. And install the drivers from Step 1 to Step 6 in order.

### Step 1 – Install Chipset Driver

1. Click on the **STEP1 - CHIPSET** folder and select the OS folder according to your operating system.
2. Double click on the **Setup.exe** file located in the folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

### Step 2 – Install LAN Driver

1. Click on the **STEP2 - LAN** folder and select the OS folder according to your operating system.
2. Double click on the **Setup.exe** file located in the folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

### Step 3 – Install Audio Driver

1. Click on the **STEP3 - AUDIO** folder and select the OS folder according to your operating system.
2. Double click on the **Setup.exe** file located in the folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

#### Step 4 – Install AHCI Driver (Optional)

This driver is needed when installing Windows XP with SATA in AHCI mode. Please refer to Appendix D AHCI Settings

#### Step 5 – Install PCI to ISA Bridge Driver

Click on **Start** button.

2. Click on **Settings** button
3. Click on **Control Panel** button
4. Click on **System** button
5. Select **Hardware** and click on **Device Manager...**
6. Double click on **Other PCI Bridge Device**
7. Click on **Update Driver...**
8. Click on **Next**
9. Select **Search for a suitable driver...**, then click on **Next**
10. Select **Specify a location**, then click on **Next**
11. Click on **Browse**
12. Select "**It**" file from DVD-ROM (**Driver/ STEP5 - PCI to ISA Bridge**) then click on **open**
13. Click on **OK**
14. Click on **Next**
15. Click on **Yes**
16. Click on **Finish**



Step 6 – Serial Port Driver (Optional)

Please refer to *readme.txt* in the **STEP6- Serial Port Driver (Optional)** folder.

Appendix

**A**

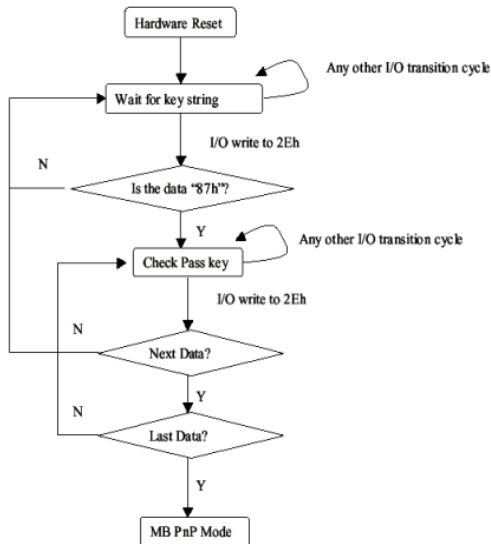
# Programming the Watchdog Timer

## A.1 Programming

GENE-A55E utilizes FINTEK 81866 chipset as its watchdog timer controller. Below are the procedures to complete its configuration and the AAEMON initial 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 FINTEK 81866 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 operations to the Special Address port (2EH). Two different enter keys are provided to select configuration ports (2Eh/2Fh) of the next step.

-o 4e 87

-o 4e 87 ( enable configuration )

### (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

Write exit key 0xAA to the index port.

-o 4e aa ( disable configuration )

## Watch Dog Timer 1, 2, 3 Control Register (Index=F5h,F6h,FAh Default=00h)

### 7.8.4 Watchdog Control Configuration Register 1 — Index F5h

Bit	Name	R/W	Reset	Default	Description
7	Reserved	R	-	0	Reserved
6	WDTMOUT_STS	R/W	5VSB	0	If watchdog timeout event occurred, this bit will be set to 1. Write a 1 to this bit will clear it to 0.
5	WD_EN	R/W	5VSB	0	If this bit is set to 1, the counting of watchdog time is enabled.
4	WD_PULSE	R/W	5VSB	0	Select output mode (0: level, 1: pulse) of RSTOUT# by setting this bit.
3	WD_UNIT	R/W	5VSB	0	Select time unit (0: 1sec, 1: 60 sec) of watchdog timer by setting this bit.
2	WD_HACTIVE	R/W	5VSB	0	Select output polarity of RSTOUT# (1: high active, 0: low active) by setting this bit.
1-0	WD_PSWIDTH	R/W	5VSB	0	Select output pulse width of RSTOUT# 0: 1 ms                   1: 25 ms 2: 125 ms                3: 5 sec

### 7.8.5 Watchdog Timer Configuration Register 2 — Index F6h

Bit	Name	R/W	Reset	Default	Description
7-0	WD_TIME	R/W	5VSB	0	Time of watchdog timer (0~255)

### 7.8.6 Watchdog PME Enable Configuration Register 2 — Index FAh

Bit	Name	R/W	Reset	Default	Description
7	WDT_PME	R	5VSB	0	0: No WDT PME occurred. 1: WDT PME occurred. The WDT PME is occurred one unit before WDT timeout.
6	WDT_PME_EN	R/W	5VSB	0	0: Disable Watchdog PME. 1: enable Watchdog PME.
5	Reserved	R	-	0	Reserved
4	WDT_CLK_SEL	R/W	5VSB	1	WDT Clock Source Select 0: Internal 1KHz clock. 1: 1KHZ clock driven by CLKIN.
3-1	Reserved	R	-	0	Reserved
0	WDOUT_EN	R/W	5VSB	0	0: disable Watchdog time out output via WDTRST#. 1: enable Watchdog time out output via WDTRST#.

## A.2 F81866 Watchdog Timer Initial Program

---

```
Main(){
```

```
aaeonSuperIOOpen();
```

```
aaeonWdtSetCountMode(BOOL bMinute); // Set wdt count mode
```

```
aaeonWdtSetTimeoutCount(BYTE tTimeout); // Set wdt timer
```

```
aaeonWdtSetEnable(BOOL bEnable); // Enable wdt
```

```
aaeonSuperIOClose();
```

```
}
```

```
Void aaeonSuperIOOpen(){ // Config F81866 Entry key
```

```
    aaeonioWritePortByte(F81866_INDEX, 0x87);
```

```
    aaeonioWritePortByte(F81866_INDEX, 0x87);
```

```
}
```

```
Void aaeonWdtSetCountMode(BOOL bMinute){
```

```
    BYTE WDT_CONTROL = f81866ReadByte(F81866_WDT_CONTROL_REG);
```

```
    if(bMinute)
```

```
        f81866WriteByte(F81866_WDT_CONTROL_REG, WDT_CONTROL | 0x08);
```

```
    else
```

```
        f81866WriteByte(F81866_WDT_CONTROL_REG, WDT_CONTROL & 0xF7);
```

```
}
```

```
Void aaeonWdtSetTimeoutCount(BYTE tTimeout){
    f81866SetLdn(0x07);
    f81866WriteByte(F81866_WDT_TIME_REG, tTimeout);
}

Void aaeonWdtSetEnable(BOOL bEnable){
    f81866SetLdn(0x07);
    if(bEnable){
        f81866WriteByte(0x30, 0x01);
        WDT_BASE_ADDR =
            (f81866ReadByte(F81866_WDT_BASEADDR_REG_MSB) << 8)
            | f81866ReadByte(F81866_WDT_BASEADDR_REG_LSB);
        WDT_STATUS = f81866ReadByte(F81866_WDT_CONTROL_REG);
        f81866WriteByte(F81866_WDT_CONTROL_REG, WDT_STATUS | 0x20);
        WDT_STATUS = f81866ReadByte(F81866_WDT_PME_REG);
        f81866WriteByte(F81866_WDT_PME_REG, WDT_STATUS | 0x01);
    }else{
        f81866WriteByte(0x30, 0x00);
        WDT_BASE_ADDR = 0;
        WDT_STATUS = f81866ReadByte(F81866_WDT_CONTROL_REG);
        f81866WriteByte(F81866_WDT_CONTROL_REG, WDT_STATUS & 0xDF);
        WDT_STATUS = f81866ReadByte(F81866_WDT_PME_REG);
        f81866WriteByte(F81866_WDT_PME_REG, WDT_STATUS & 0xFE);
    }
}
}
```

```
Void aaeonSuperIOClose(){  
    aaeonioWritePortByte(F81866_INDEX, 0xaa);  
}
```


















































































Appendix

**B**

## **I/O Information**

## B.1 I/O Address Map

Input/output (IO)	
	[00000000 - 0000000F] Direct memory access controller
	[00000000 - 0000000F] Motherboard resources
	[00000000 - 000003AF] 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 - 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

	[00000378 - 0000037F]	Printer Port (LPT1)
	[00000380 - 000003BB]	AMD Radeon HD 6320 Graphics
	[00000380 - 000003DF]	PCI bus
	[000003C0 - 000003DF]	AMD Radeon HD 6320 Graphics
	[000003E0 - 00000CF7]	PCI bus
	[000003E8 - 000003EF]	Communications Port (COM3)
	[000003F6 - 000003F6]	Primary IDE Channel
	[000003F8 - 000003FF]	Communications Port (COM1)
	[00000408 - 0000040B]	Motherboard resources
	[000004D0 - 000004D1]	Motherboard resources
	[000004D6 - 000004D6]	Motherboard resources
	[00000500 - 0000050F]	Motherboard resources
	[00000510 - 0000051F]	Motherboard resources
	[00000520 - 0000052F]	Motherboard resources
	[00000800 - 0000089F]	Motherboard resources
	[00000900 - 0000090F]	Motherboard resources
	[00000910 - 0000091F]	Motherboard resources
	[00000A79 - 00000A79]	ISAPNP Read Data Port
	[00000B20 - 00000B3F]	Motherboard resources
	[00000C00 - 00000C01]	Motherboard resources
	[00000C14 - 00000C14]	Motherboard resources
	[00000C50 - 00000C51]	Motherboard resources
	[00000C52 - 00000C52]	Motherboard resources
	[00000C6C - 00000C6C]	Motherboard resources
	[00000C6F - 00000C6F]	Motherboard resources
	[00000CD0 - 00000CD1]	Motherboard resources
	[00000CD2 - 00000CD3]	Motherboard resources
	[00000CD4 - 00000CD5]	Motherboard resources
	[00000CD6 - 00000CD7]	Motherboard resources
	[00000CD8 - 00000CDF]	Motherboard resources
	[00000D00 - 0000FFFF]	PCI bus
	[0000D000 - 0000D0FF]	Realtek PCIe GBE Family Controller #2
	[0000D000 - 0000DFFF]	PCI standard PCI-to-PCI bridge
	[0000E000 - 0000E0FF]	Realtek PCIe GBE Family Controller
	[0000E000 - 0000EFFF]	PCI standard PCI-to-PCI bridge
	[0000F000 - 0000F0FF]	AMD Radeon HD 6320 Graphics
	[0000F100 - 0000F10F]	Standard Dual Channel PCI IDE Controller
	[0000F110 - 0000F113]	Standard Dual Channel PCI IDE Controller
	[0000F120 - 0000F127]	Standard Dual Channel PCI IDE Controller
	[0000F130 - 0000F133]	Standard Dual Channel PCI IDE Controller
	[0000F140 - 0000F147]	Standard Dual Channel PCI IDE Controller
	[0000F150 - 0000F15F]	Standard Dual Channel PCI IDE Controller
	[0000FE00 - 0000FEFE]	Motherboard resources

## B.2 1<sup>st</sup> MB Memory Address Map

Address Range	Device
[000A0000 - 000BFFFF]	AMD Radeon HD 6320 Graphics
[000A0000 - 000BFFFF]	PCI bus
[000C0000 - 000DFFFF]	PCI bus
[2F000000 - 3EFFFFFF]	Motherboard resources
[3F000000 - FFFFFFFF]	PCI bus
[C0000000 - CFFFFFFF]	AMD Radeon HD 6320 Graphics
[D0000000 - D0003FFF]	Realtek PCIe GBE Family Controller #2
[D0000000 - D00FFFFFF]	PCI standard PCI-to-PCI bridge
[D0100000 - D0103FFF]	Realtek PCIe GBE Family Controller
[D0100000 - D01FFFFFF]	PCI standard PCI-to-PCI bridge
[E0000000 - EFFFFFFF]	System board
[FE900000 - FE900FFF]	Realtek PCIe GBE Family Controller #2
[FE900000 - FE9FFFFFF]	PCI standard PCI-to-PCI bridge
[FEA00000 - FEA00FFF]	Realtek PCIe GBE Family Controller
[FEA00000 - FEAFFFFFF]	PCI standard PCI-to-PCI bridge
[FEB00000 - FEB3FFFF]	AMD Radeon HD 6320 Graphics
[FEB40000 - FEB43FFF]	Microsoft UAA Bus Driver for High Definition Audio
[FEB44000 - FEB47FFF]	Microsoft UAA Bus Driver for High Definition Audio
[FEB48000 - FEB480FF]	Standard Enhanced PCI to USB Host Controller
[FEB49000 - FEB49FFF]	Standard OpenHCD USB Host Controller
[FEB4A000 - FEB4AFFF]	Standard OpenHCD USB Host Controller
[FEB4B000 - FEB4B0FF]	Standard Enhanced PCI to USB Host Controller
[FEB4C000 - FEB4CFFF]	Standard OpenHCD USB Host Controller
[FEB4D000 - FEB4D0FF]	Standard Enhanced PCI to USB Host Controller
[FEB4E000 - FEB4EFFF]	Standard OpenHCD USB Host Controller
[FEB4F000 - FEB4F3FF]	Standard Dual Channel PCI IDE Controller
[FEC00000 - FEC00FFF]	Motherboard resources
[FEC10000 - FEC10FFF]	Motherboard resources
[FED00000 - FED003FF]	High precision event timer
[FED00000 - FED00FFF]	Motherboard resources
[FED61000 - FED70FFF]	Motherboard resources
[FED80000 - FED8FFFF]	Motherboard resources
[FEE00000 - FEE00FFF]	Motherboard resources
[FFC00000 - FFFFFFFF]	Motherboard resources

### B.3 IRQ Mapping Chart

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) 8	System CMOS/real time clock
(ISA) 9	Microsoft ACPI-Compliant System
(ISA) 10	Communications Port (COM3)
(ISA) 11	Communications Port (COM4)
(ISA) 12	Microsoft PS/2 Mouse
(ISA) 13	Numeric data processor
(ISA) 14	Primary IDE Channel
(PCI) 16	Microsoft UAA Bus Driver for High Definition Audio
(PCI) 16	PCI standard PCI-to-PCI bridge
(PCI) 16	Realtek PCIe GBE Family Controller
(PCI) 17	PCI standard PCI-to-PCI bridge
(PCI) 17	Realtek PCIe GBE Family Controller #2
(PCI) 17	Standard Dual Channel PCI IDE Controller
(PCI) 17	Standard Enhanced PCI to USB Host Controller
(PCI) 17	Standard Enhanced PCI to USB Host Controller
(PCI) 17	Standard Enhanced PCI to USB Host Controller
(PCI) 18	AMD Radeon HD 6320 Graphics
(PCI) 18	Standard OpenHCD USB Host Controller
(PCI) 18	Standard OpenHCD USB Host Controller
(PCI) 18	Standard OpenHCD USB Host Controller
(PCI) 18	Standard OpenHCD USB Host Controller
(PCI) 19	Microsoft UAA Bus Driver for High Definition Audio

### B.4 DMA Channel Assignments

Direct memory access (DMA)	
3	Printer Port (LPT1)
4	Direct memory access controller

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	+5Vout Connector	PINRE X	721-81-02TW00	2 Pins For HDD Power	1702150155
CN2	SATA Connector	Molex	88750-5318	SATA Cable	1709070500
CN3	Audio Connector	PINRE X	52A-90-14GB00	Audio Cable	1700140510
CN4	LPT Port	PINRE X	52A-90-26GB00	LPT Cable	1701260200
CN5	USB Port Connector	Neltron	2026B-10	USB Cable	1709100201
CN6	USB Port Connector	Neltron	2026B-10	USB Cable	1709100201
CN7	4P Power Connector	Neltron	8980-04	Dual 4P Power Cable	170204010A
CN9	External +5VSB Power Input and PS_ON#	Catch Electro nics	2418HJ-06	ATX Cable	1702200205
CN12	External RTC	Molex	51021-0200	Battery Cable	175011901C

**SubCompact Board**
**GENE-A55E**

	Connector				
CN13	Digital I/O Connector	Neltron	2026B-10	N/A	N/A
CN18	COM Port 4 Connector	PINRE X	52A-90-10GB00	Serial Port Cable	1701100206
CN19	COM Port 3 Connector	PINRE X	52A-90-10GB00	Serial Port Cable	1701100206
CN20	COM Port 2 Connector	PINRE X	52A-90-10GB00	Serial Port Cable	1701100206
CN21	LVDS Connector	HIROS E	DF13-30DS-1.2 5C	N/A	N/A
CN22	LVDS Inverter Connector	PINRE X	721-81-05TW00	N/A	N/A
CN23	System Fan Connector	Molex	22-01-2035	N/A	N/A
CN30	Mini-Din PS/2 Connector	Catch Electro nics	MD06F011 121	Keyboard & Mouse Cable	1700060192



Appendix

**D**

# AHCI Settings

## D.1 Setting AHCI

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OS installation to SETUP AHCI Mode

Step 1: Copy files from “Driver DVD -> Step4 – AHCI(Optional)\WinXP\_32” to diskette.

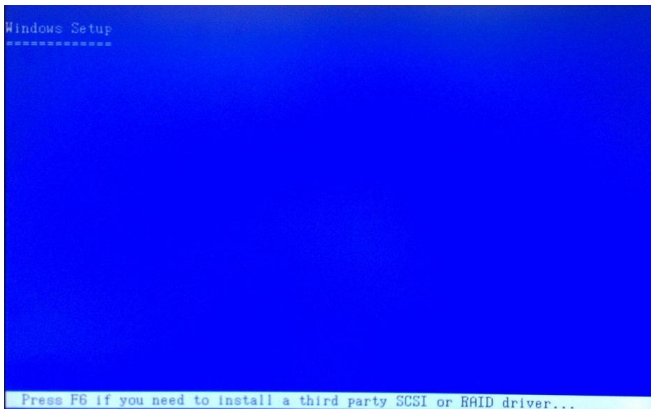


Step 2: Connect the USB Floppy drive to the board and insert the diskette from previous step.

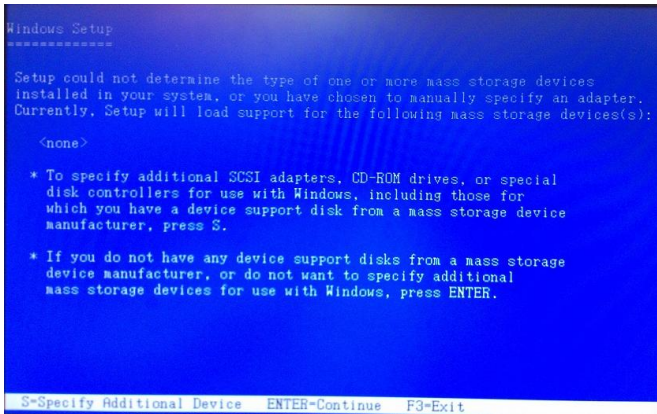
Step 3: Configure SATA Controller to AHCI mode in **BIOS SETUP**

Step 4: Boot to DVD/CD-ROM device to install OS

Step 5: Press “**F6**” to install AHCI driver



Step 6: Press “**S**” to install AHCI driver



Step 7: Choose “**AMD AHCI Compatible RAID Controller-x86 platform**” for Windows XP 32-bit system; “**AMD AHCI Compatible RAID Controller-x64 platform**” for Windows XP 64-bit system.

Step 8: Windows Setup will display the controller name you selected in previous step and continue to install OS when “**ENTER**” pressed.