GENE-HD05

3.5" Subcompact Board

User's Manual 4th Ed

Last Updated: November 10, 2015

Copyright Notice

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- ITE is a trademark of Integrated Technology Express, Inc.
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Packing List

Before setting up your product, please make sure the following items have been shipped:

Item		Quantity
●	GENE-HD05	1
●	Product DVD with User's Manual (in pdf) and drivers	1

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

About this Document

This User's Manual contains all the essential information, such as detailed descriptions and explanations on the product's hardware and software features (if any), its specifications, dimensions, jumper/connector settings/definitions, and driver installation instructions (if any), to facilitate users in setting up their product.

Users may refer to the AAEON.com for the latest version of this document.

Safety Precautions

Please read the following safety instructions carefully. It is advised that you keep this manual for future references

1. All cautions and warnings on the device should be noted.
2. Make sure the power source matches the power rating of the device.
3. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
4. Always completely disconnect the power before working on the system's hardware.
5. No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.
6. If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.
7. Always disconnect this device from any AC supply before cleaning.
8. While cleaning, use a damp cloth instead of liquid or spray detergents.
9. Make sure the device is installed near a power outlet and is easily accessible.
10. Keep this device away from humidity.
11. Place the device on a solid surface during installation to prevent falls
12. Do not cover the openings on the device to ensure optimal heat dissipation.
13. Watch out for high temperatures when the system is running.
14. Do not touch the heat sink or heat spreader when the system is running
15. Never pour any liquid into the openings. This could cause fire or electric shock.
16. As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.

17. If any of the following situations arises, please the contact our service personnel:
    i. Damaged power cord or plug
    ii. Liquid intrusion to the device
    iii. Exposure to moisture
    iv. Device is not working as expected or in a manner as described in this manual
    v. The device is dropped or damaged
    vi. Any obvious signs of damage displayed on the device
18. DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WITH TEMPERATURES BEYOND THE DEVICE'S PERMITTED STORAGE TEMPERATURES (SEE CHAPTER 1) TO PREVENT DAMAGE.

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FCC Statement

This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

Caution:

There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.

Attention:

Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte.
Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.

China RoHS Requirements (CN)

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	×	O	O	O	O	O
外部信号连接器及线材	×	O	O	O	O	O

O：表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下。

X：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 标准规定的限量要求。

备注：此产品所标示之环保使用期限，系指在一般正常使用状况下。

China RoHS Requirement (EN)

Poisonous or Hazardous Substances or Elements in Products

AAEON Main Board/ Daughter Board/ Backplane

Component	Poisonous or Hazardous Substances or Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
PCB & Other Components	X	O	O	O	O	O
Wires & Connectors for External Connections	X	O	O	O	O	O

O：The quantity of poisonous or hazardous substances or elements found in each of the component's parts is below the SJ/T 11363-2006-stipulated requirement.

X: The quantity of poisonous or hazardous substances or elements found in at least one of the component's parts is beyond the SJ/T 11363-2006-stipulated requirement.

Note: The Environment Friendly Use Period as labeled on this product is applicable under normal usage only

Table of Contents

Chapter 1

Product Specifications

1.1 Specifications

System

Form Factor	3.5"
Processor	AMD® G-series™ T56N/T40E/T40R Processor
System Memory	SODIMM DDR3 1066/1333, up to 4GB
Chipset	AMD® A50M
I/O Chipset	Fintek 8186Error! Not a valid result for table.6D
Ethernet	10/100/1000Base-TX (Realtek® 8111E), RJ-45 x 2
BIOS	AMI Plug & Play BIOS
Wake On LAN	Yes
Watchdog Timer	Generates a time-out system reset
H/W Status Monitoring	Supports power supply voltages, fan speed, and temperature monitoring
Expansion Interface	MiniCard connector x 1 TPM Module (Optional)
Battery	Lithium battery
Power Requirement	DC 12 V
Power Consumption (Typical)	AMD® G-series™ T56N 1.65GHz, DDR3 4GB, 1.73 A @ +12V
Board Size	146 x 101.6 mm (5.75 x 4")
Gross Weight	0.4 kg (0.88 lb)

Operating Temperature	0 ~ 60°C (32 ~ 140°F)
Storage Temperature	-40 ~ 80°C (-40 ~ 176°F)
Operation Humidity	0 ~ 90% Relative Humidity, Non-Condensing

Display

Chipset	AMD® G-series CPU integrated
Resolution	T56N- up to 2560 x 1600 (18W) CRT- 1920 x 1200 T40E/T40R (6.5W/5.5W) HDMI- up to 1920 x 1200 Dual channel LVDS- up to 1920 x 1200
LCD Interface	18/24-bit dual/single channel LVDS
Display Combination	Simultaneous/ dual display from CRT/LVDS/HDMI

I/O

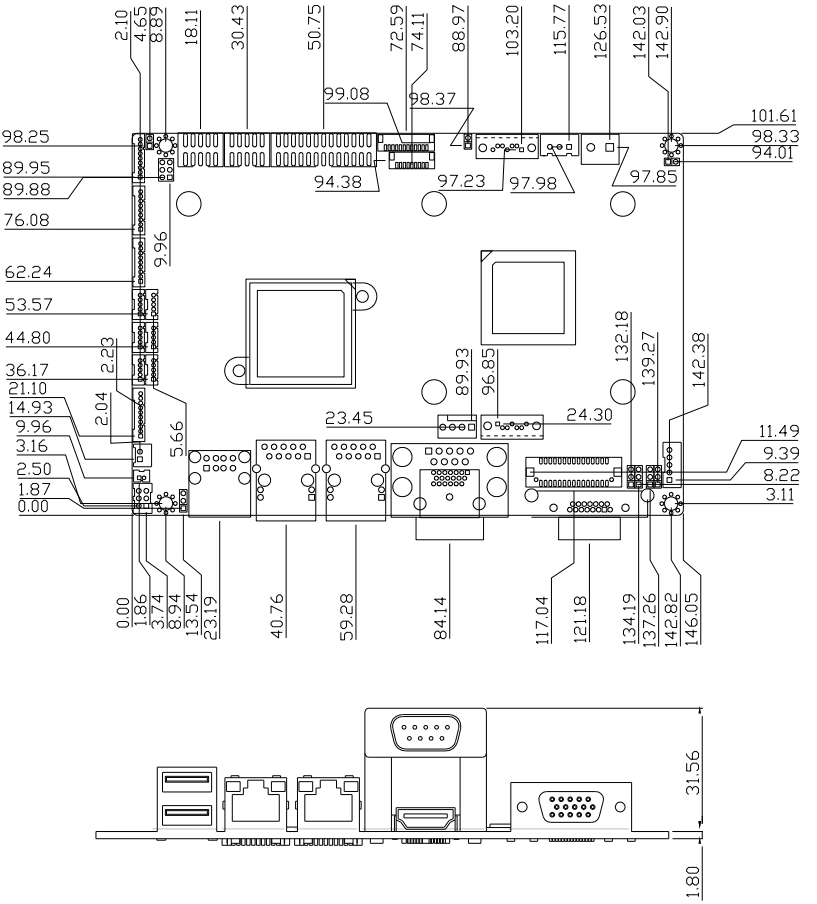
Storage	SATA 6.0 Gb/s x 2 CFast™ x 1
USB	USB 2.0 x 8
Serial Port	RS-232 x 3 PS-232/422/485 x 1
Parallel Port	SPP/EPP/ECP mode
PS/2 Port	Keyboard x 1, mouse x 1
DI/O	Supports 8-bit (programmable)
Audio	Line-in, Line-out, & Mic-in

Chapter 2

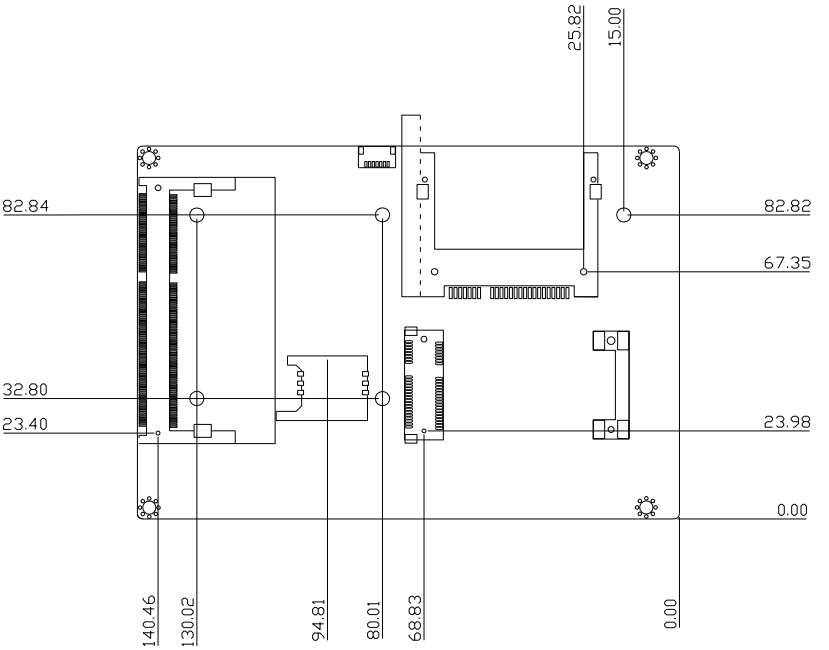
Hardware Information

2.1 Dimensions

Component Side

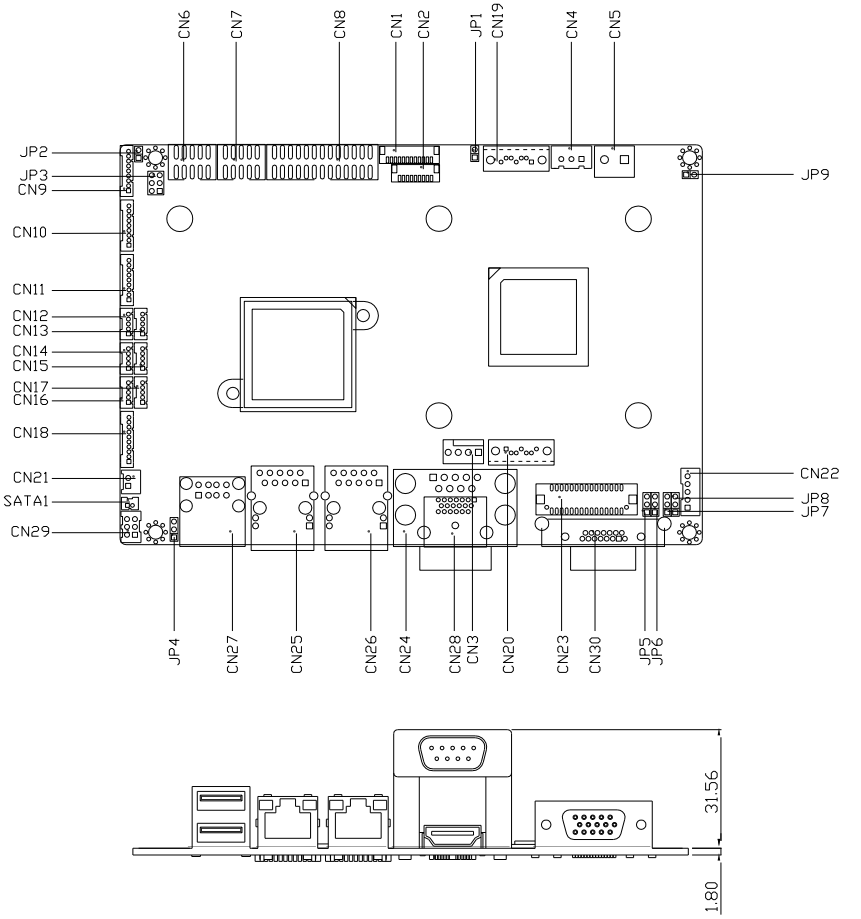


Solder Side

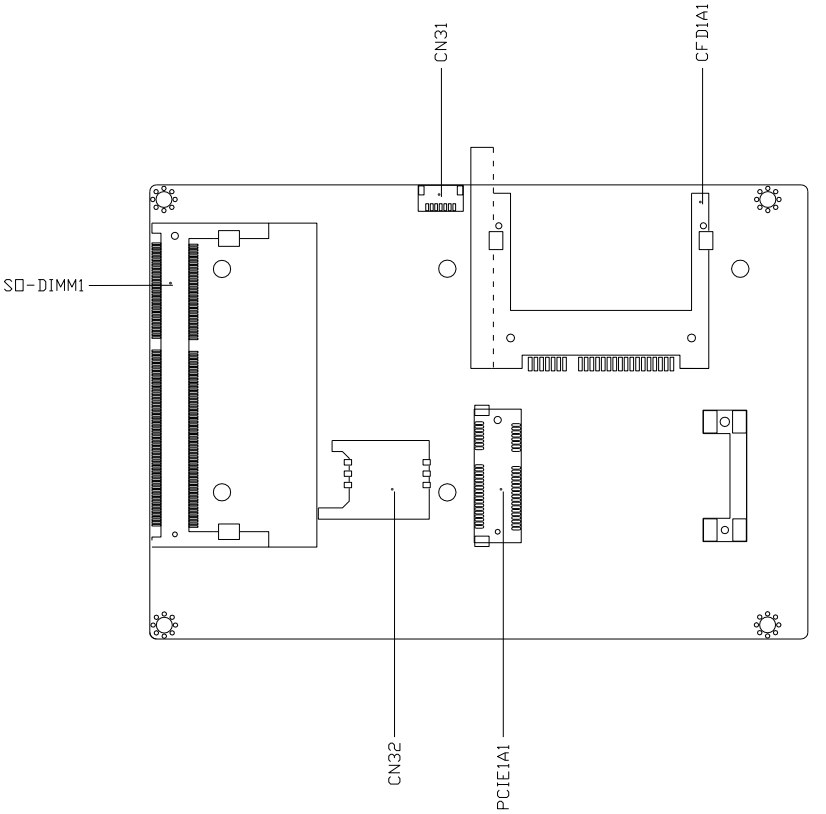

25.82
15.00
82.84
82.82
67.35
32.80
23.40
23.98
0.00
140.46
130.02
94.81
80.01
68.83
0.00

2.2 Jumpers and Connectors

Component Side



Solder Side

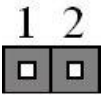


2.3 List of Jumpers

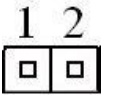
Please refer to the table below for all of the board's jumpers that you can configure for your application

Label	Function
JP1	Touch Screen 4/5/8-wire Mode Selection
JP2	AT/ATX Power Supply Mode Selection-1
JP3	COM2 Pin8 Function Selection
JP4	Clear CMOS Jumper
JP5	LVDS Backlight Lightness Up/Down Selection
JP6	LVDS Operating VDD Selection
JP7	LVDS Backlight Lightness Control Mode Selection
JP8	LVDS Backlight Inverter VCC Selection
JP9	AT/ATX Power Supply Mode Selection-2

2.3.1 Touch screen4/5/8-wire Selection (JP1)



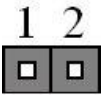
4/8-wire mode



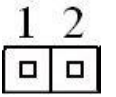
5-wire mode

Pin	Function
1-2	4/8-wire (Default)
1-2 (open)	5-wire

2.3.2 AT/ATX Power Supply Mode Selection-1 (JP2)



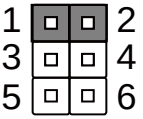
AT mode



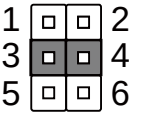
ATX mode

Pin	Function
1-2	AT Mode (Default)
1-2 (open)	ATX Mode

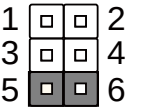
2.3.3 COM2 Pin8 Function Selection (JP3)



+12 V

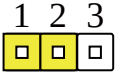


Ring (Default)

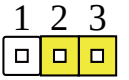


+5 V

2.3.4 Clear CMOS Selection (JP4)

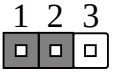


Normal (Default)

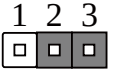


Clear CMOS

2.3.5 LVDS Backlight Lightness Up/down Selection (JP5)



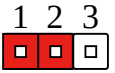
Lightness Up



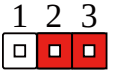
Lightness Down

Note: Up/Down Selection is Push-Button type interface (do not use for Jumper Header) – and is only for PWM type Backlight Control (JP7 2~3).

2.3.6 LVDS Operating VDD Selection (JP6)

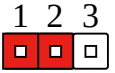


+5 V

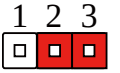


+3.3 V

2.3.7 LVDS Operating VDD Selection (JP6)

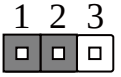


+5 V

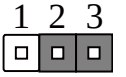


+3.3 V (Default)

2.3.7 LVDS Backlight Lightness Control Mode Selection (JP7)

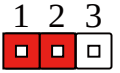


VR Mode (Default)

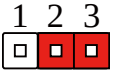


PWM Mode

2.3.8 LVDS Backlight Inverter VCC Selection (JP8)

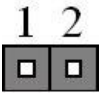


+12 V

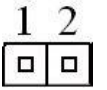


+5 V (Default)

2.3.9 AT/ATX Power Supply Mode Selection-2 (JP9)



At Mode (Default)



ATX Mode

Pin	Function
1-2	AT Mode (Default)
1-2 (open)	ATX Mode

2.4 List of Connectors

Please refer to the table below for all of the board's connectors that you can configure for your application

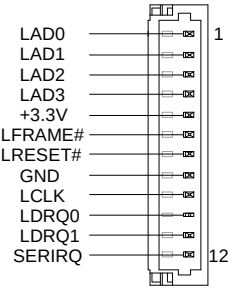
Note: If CN4 (power input for 5VSB input) is not used, please short JP9 (set pin1 and pin2 to short).

If CN4 (power input for 5VSB input) is used, please leave JP9 open (set pin1 and pin2 to open).

Label	Function
CN1	LPC Port
CN2	Touch Screen Connector
CN3	CPU FAN
CN4	External +5VSB Input
CN5	External +12V Input
CN6	Front Panel Connector
CN7	Digital IO Port
CN8	LPT Port
CN9	COM Port 2
CN10	COM Port 3
CN11	COM Port 4
CN12	USB 2.0 Ports 7
CN13	USB 2.0 Ports 8
CN14	USB 2.0 Ports 5
CN15	USB 2.0 Ports 6
CN16	USB 2.0 Ports 3

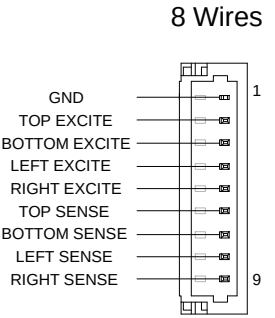
CN17	USB 2.0 Ports 4
CN18	Audio I/O Port
CN19	SATA Port1 Connector
CN20	SATA Port 2 Connector
CN21	+5V Output for SATA HDD
CN22	LVDS Inverter / Backlight Connector
CN23	LVDS Port
CN24	COM Port 1 (D-SUB 9)
CN25	Realtek LAN (RJ-45) Port 2
CN26	Realtek LAN (RJ-45) Port 1
CN27	USB Ports 1 and 2
CN28	HDMI Port
CN29	PS/2 Keyboard/Mouse Combo Port
CN30	VGA Port
CN31	SPI Flash JTAG
CN32	UIM Card Module
SO-DIMM1	DDR3 SODIMM Slot
CFDA1	CFast Slot
PCIEA1	Mini-Card Slot

2.4.1 LPC Port (CN1)



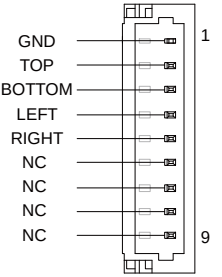
Pin	Pin Name	Signal Type	Signal level
1	LAD0	I/O	+3.3V
2	LAD1	I/O	+3.3V
3	LAD2	I/O	+3.3V
4	LAD3	I/O	+3.3V
5	+3.3V	PWR	+3.3V
6	LFRAME#	IN	
7	LRESET#	OUT	+3.3V
8	GND	GND	
9	LCLK	OUT	
10	LDRQ0	IN	
11	LDRQ1	IN	
12	SERIRQ	I/O	+3.3V

2.4.2 Touch Screen Connector (CN2)



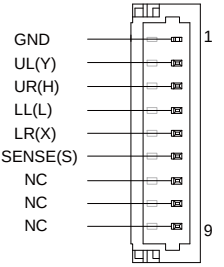
Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	
2	TOP EXCITE	IN	
3	BOTTOM EXCITE	IN	
4	LEFT EXCITE	IN	
5	RIGHT EXCITE	IN	
6	TOP SENSE	IN	
7	BOTTOM SENSE	IN	
8	LEFT SENSE	IN	
9	RIGHT SENSE	IN	

4 Wires



Pin	Pin Name	Signal Type	Signal level
1	GND	GND	
2	TOP	IN	
3	BOTTOM	IN	
4	LEFT	IN	
5	RIGHT	IN	
6	NC		
7	NC		
8	NC		
9	NC		

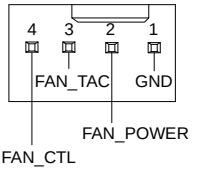
5 Wires



Pin	Pin Name	Signal Type	Signal level
1	GND	GND	
2	UL(Y)	IN	
3	UR(H)	IN	
4	LL(L)	IN	
5	LR(X)	IN	
6	SENSE(S)	IN	
7	NC		
8	NC		
9	NC		

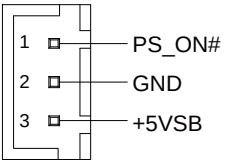
Note: Touch mode can be set by JP1

2.4.3 CPU FAN Connector (CN3)



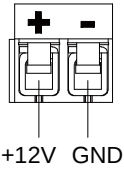
Pin	Pin Name	Signal Type	Signal level
1	GND	GND	
2	FAN_POWER	PWR	+12V
3	FAN_TAC	IN	
4	FAN_CTL	IN	

2.4.4 External +5VSB Input Connector (CN4)



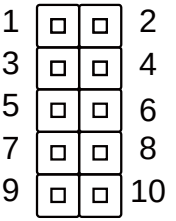
Pin	Pin Name	Signal Type	Signal level
1	PS_ON#	OUT	+5V
2	GND	GND	
3	+5VSB	PWR	+5V

2.4.5 External +5VSB Input Connector (CN5)



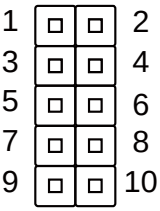
Pin	Pin Name	Signal Type	Signal level
1	+12V	PWR	+12V
2	GND	GND	

2.4.6 Front Panel Connector (CN6)



Pin	Pin Name	Signal Type	Signal level
1	PWR_BTN-		
2	PWR_BTN+		
3	HDD_LED-		
4	HDD_LED+		
5	SPEAKER-		
6	SPEAKER+		
7	PWR_LED-		
8	PWR_LED+		
9	H/W RESET-		
10	H/W RESET+		

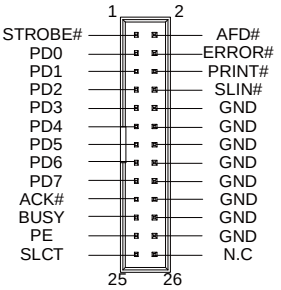
2.4.7 Digital IO Port Connector (CN7)



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	

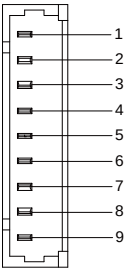
2.4.8 LPT Port Connector (CN8)



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
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	

2.4.9 COM Port 2 Connector (CN9)



RS-232			
Pin	Pin Name	Signal Type	Signal level
1	DCD	IN	
2	DSR	IN	
3	RX	IN	

4	RTS	OUT	±9V
5	TX	OUT	±9V
6	CTS	IN	
7	DTR	OUT	±9V
8	RI/+5V/+12V	IN/ PWR	+5V/+12V
9	GND	GND	

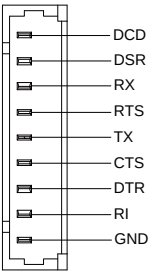
RS-422			
Pin	Pin Name	Signal Type	Signal level
1	RS422_TX-	OUT	±5V
2	NC		
3	RS422_RX+	IN	
4	NC		
5	RS422_TX+	OUT	±5V
6	NC		
7	RS422_RX-	IN	
8	NC/+5V/+12V	PWR	+5V/+12V
9	GND	GND	

RS-485			
Pin	Pin Name	Signal Type	Signal level
1	RS485_D-	I/O	±5V
2	NC		
3	NC		
4	NC		

5	RS485_D+	I/O	±5V
6	NC		
7	NC		
8	NC/+5V/+12V	PWR	+5V/+12V
9	GND	GND	

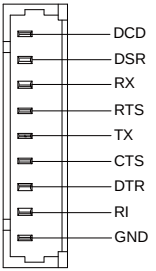
Note: COM2 RS-232/422/485 can be set by BIOS setting. Default is RS-232. Pin 8 function can be set by Jumper.

2.4.10 COM Port 3 Connector (CN10)



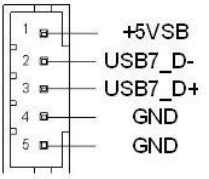
Pin	Pin Name	Signal Type	Signal level
1	DCD	IN	
2	DSR	IN	
3	RX	IN	
4	RTS	OUT	±9V
5	TX	OUT	±9V
6	CTS	IN	
7	DTR	OUT	±9V
8	RI	IN	
9	GND	GND	

2.4.11 COM Port 4 Connector (CN11)



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

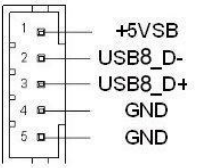
2.4.12 USB 2.0 Ports 7 Connector (CN12)



Pin	Pin Name	Signal Type	Signal level
1	+5VSB	PWR	+5V
2	USB7_D-	DIFF	

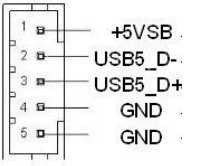
3	USB7_D+	DIFF
4	GND	GND
5	GND	GND

2.4.13 USB 2.0 Ports 8 Connector (CN13)



Pin	Pin Name	Signal Type	Signal level
1	+5VSB	PWR	+5V
2	USB8_D-	DIFF	
3	USB8_D+	DIFF	
4	GND	GND	
5	GND	GND	

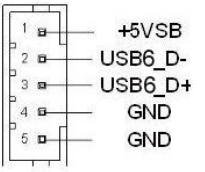
2.4.14 USB 2.0 Ports 5 Connector (CN14)



Pin	Pin Name	Signal Type	Signal level
1	+5VSB	PWR	+5V
2	USB5_D-	DIFF	
3	USB5_D+	DIFF	
4	GND	GND	

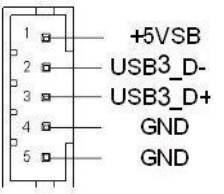
5	GND	GND	

2.4.15 USB 2.0 Ports 6 Connector (CN15)



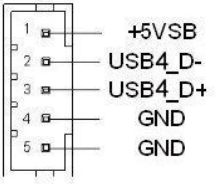
Pin	Pin Name	Signal Type	Signal level
1	+5VSB	PWR	+5V
2	USB6_D-	DIFF	
3	USB6_D+	DIFF	
4	GND	GND	
5	GND	GND	

2.4.16 USB 2.0 Ports 3 Connector (CN16)



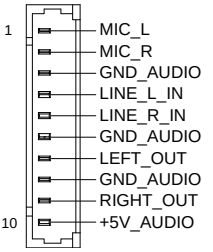
Pin	Pin Name	Signal Type	Signal level
1	+5VSB	PWR	+5V
2	USB3_D-	DIFF	
3	USB3_D+	DIFF	
4	GND	GND	
5	GND	GND	

2.4.17 USB 2.0 Ports 4 Connector (CN17)



Pin	Pin Name	Signal Type	Signal level
1	+5VSB	PWR	+5V
2	USB4_D-	DIFF	
3	USB4_D+	DIFF	
4	GND	GND	
5	GND	GND	

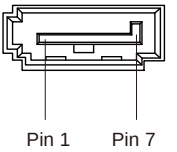
2.4.18 Audio I/O Port Connector (CN18)



Pin	Pin Name	Signal Type	Signal level
1	MIC_L	IN	
2	MIC_R	IN	
3	GND_AUDIO	GND	
4	LINE_L_IN	IN	
5	LINE_R_IN	IN	
6	GND_AUDIO	GND	

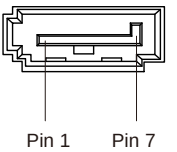
7	LEFT_OUT	OUT	
8	GND_AUDIO	GND	
9	RIGHT_OUT	OUT	
10	+5V_AUDIO	PWR	+5V

2.4.19 SATA Port 1 Connector (CN19)



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	

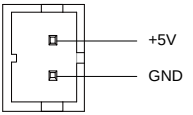
2.4.20 SATA Port 1 Connector (CN20)



Pin	Pin Name	Signal Type	Signal level
1	GND	GND	

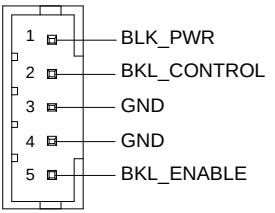
2	SATA_TX+	DIFF
3	SATA_TX-	DIFF
4	GND	GND
5	SATA_RX-	DIFF
6	SATA_RX+	DIFF
7	GND	GND

2.4.21 +5V Output for SATA HDD Connector (CN21)



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

2.4.22 +5V Output for SATA HDD Connector (CN22)

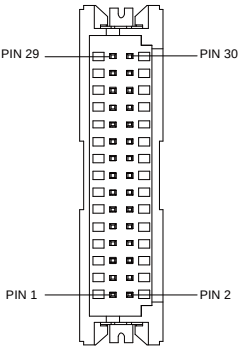


Pin	Pin Name	Signal Type	Signal level
1	BKL_PWR	PWR	+5V / +12V
2	BKL_CONTROL	OUT	
3	GND	GND	

4	GND	GND	
5	BKL_ENABLE	OUT	+5V

Note: LVDS BKL_PWR can be set to +5V or +12V by JP8. LVDS BKL_CONTROL can be set by JP7.

2.4.23 LVDS Port Connector (CN23)

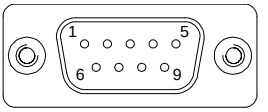


Pin	Pin Name	Signal Type	Signal level
1	BKL_ENABLE	OUT	
2	BKL_CONTROL	OUT	
3	LCD_PWR	PWR	+3.3V/+5V
4	GND	GND	
5	LVDS_A_CLK-	DIFF	
6	LVDS_A_CLK+	DIFF	
7	LCD_PWR	PWR	+3.3V/+5V
8	GND	GND	
9	LVDS_DA0-	DIFF	
10	LVDS_DA0+	DIFF	
11	LVDS_DA1-	DIFF	

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	

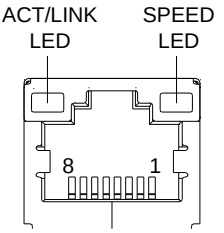
Note: LVDS LCD_PWR can be set to +3.3V or +5V by JP6.

2.4.24 COM Port 1 (D-SUB 9) Connector (CN24)



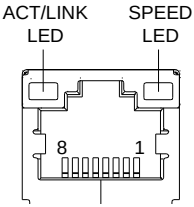
Pin	Pin Name	Signal Type	Signal level
1	DCD	IN	
2	RX	IN	
3	TX	OUT	±9V
4	DTR	OUT	±9V
5	GND	GND	
6	DSR	IN	
7	RTS	OUT	±9V
8	CTS	IN	
9	RI	IN	

2.4.25 Realtek LAN (RJ-45) Port2 Connector (CN25)



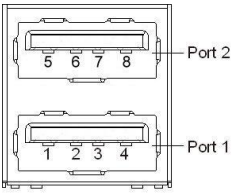
Pin	Pin Name	Signal Type	Signal level
1	MDI0+	DIFF	
2	MDI0-	DIFF	
3	MDI1+	DIFF	
4	MDI2+	DIFF	
5	MDI2-	DIFF	
6	MDI1-	DIFF	
7	MDI3+	DIFF	
8	MDI3-	DIFF	

2.4.26 Realtek LAN (RJ-45) Port1 Connector (CN26)



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	

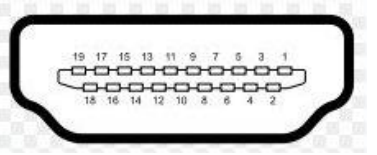
2.4.27 USB Port 1 and 2 Connector (CN27)



Pin	Pin Name	Signal Type	Signal level
1	+5VSB	PWR	+5V
2	USB1_D-	DIFF	
3	USB1_D+	DIFF	

4	GND	GND	
5	+5VSB	PWR	+5V
6	USB2_D-	DIFF	
7	USB2_D+	DIFF	
8	GND	GND	

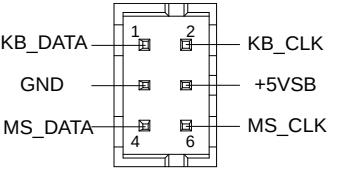
2.4.28 HDMI Port Connector (CN28)



Pin	Pin Name	Signal Type	Signal level
1	TMDS_Data2+	DIFF	
2	GND	GND	
3	TMDS_ Data2-	DIFF	
4	TMDS_ Data1+	DIFF	
5	GND	GND	
6	TMDS_ Data1-	DIFF	
7	TMDS_ Data0+	DIFF	
8	GND	GND	
9	TMDS_ Data0-	DIFF	
10	TMDS_Clock+	DIFF	
11	GND	GND	
12	TMDS_Clock-	DIFF	
13	CEC		

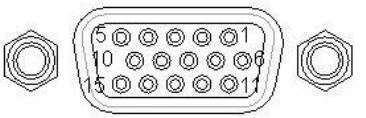
14	NC		
15	SCL	I/O	+3.3V
16	SDA	I/O	+3.3V
17	GND		
18	+5V	PWR	+5V
19	HPLG_DETECT	IN	

2.4.29 Keyboard/Mouse Combo Port Connector (CN29)



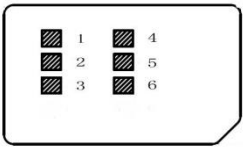
Pin	Pin Name	Signal Type	Signal level
1	KB_ DATA	I/O	+5V
2	KB_CLK	I/O	+5V
3	GND	GND	
4	+5VSB	PWR	+5V
5	MS_DATA	I/O	+5V
6	MS_CLK	I/O	+5V

2.4.30 VGA Port Connector (CN30)



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

2.4.31 UIM Card Module Connector (CN32)



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

2.4.32 DDR3 SODIMM Slot (SO-DIMM1)

Standard Specification

2.4.33 CFast Slot (CFDA1)

Pin	Pin Name	Signal Type	Signal level
S1	GND	GND	
S2	SATA_TX+	DIFF	
S3	SATA_TX-	DIFF	
S4	GND	GND	
S5	SATA_RX-	DIFF	
S6	SATA_RX+	DIFF	
S7	GND	GND	
PC1	NC		
PC2	GND	GND	
PC3	NC		
PC4	NC		
PC5	NC		
PC6	NC		
PC7	GND	GND	

PC8	NC		
PC9	NC		
PC10	NC		
PC11	NC		
PC12	NC		
PC13	+3.3V	PWR	+3.3V
PC14	+3.3V	PWR	+3.3V
PC15	GND	GND	
PC16	GND	GND	
PC17	NC		

2.4.34 MiniCard Slot (PCIEA1)

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	
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	
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

Chapter 3

AMI BIOS Setup

3.1 System Test and Initialization

The board uses certain routines to perform testing and initialization. If an error, fatal or non-fatal, is encountered, a few short beeps or an error message will be outputted. The board can usually continue the boot up sequence with non-fatal errors.

The system configuration verification routines check the current system configuration against the values stored in the CMOS memory. If they do not match, an error message will be outputted, in which case you will 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:

- You are starting your system for the first time
- You have changed your system's hardware
- The CMOS memory has lost power and the configuration information is erased

The system's CMOS memory uses a backup battery for data retention, which is to be replaced once emptied.

3.2 AMI BIOS Setup

The AMI BIOS ROM has a pre-installed Setup program that allows users to modify basic system configurations, which is stored in the battery-backed CMOS RAM and BIOS NVRAM so that the information is retained when the power is turned off.

To enter BIOS Setup, press <Del> or <F2> immediately while your computer is powering up.

The function for each interface can be found below.

Main – Date and time can be set here. Press <Tab> to switch between date elements

Advanced – Enable/ Disable boot option for legacy network devices

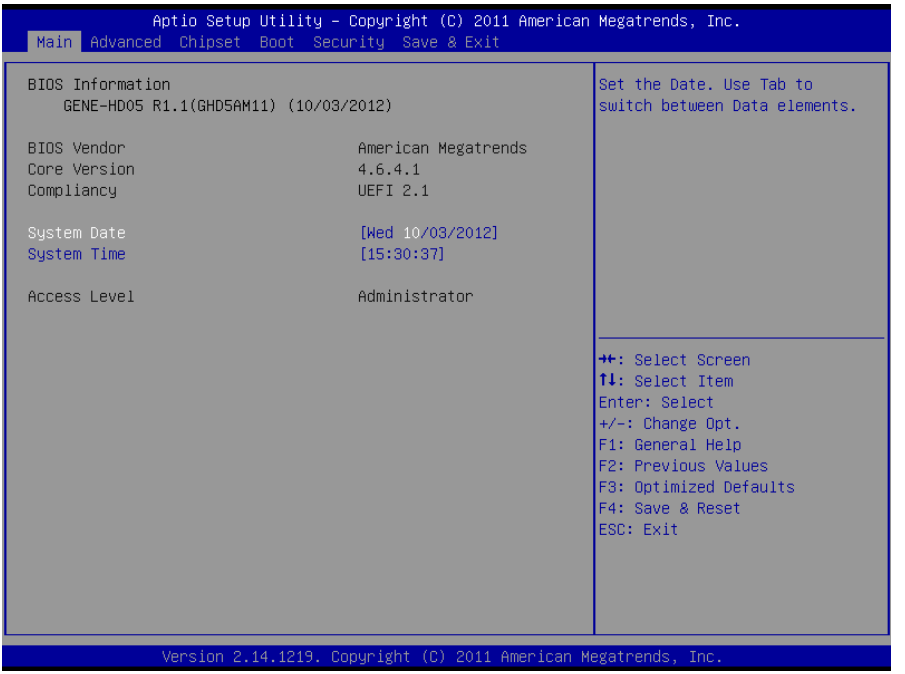
Chipset – For hosting bridge parameters

Boot – Enable/ Disable quiet Boot Option

Security – The setup administrator password can be set here

Save & Exit –Save your changes and exit the program

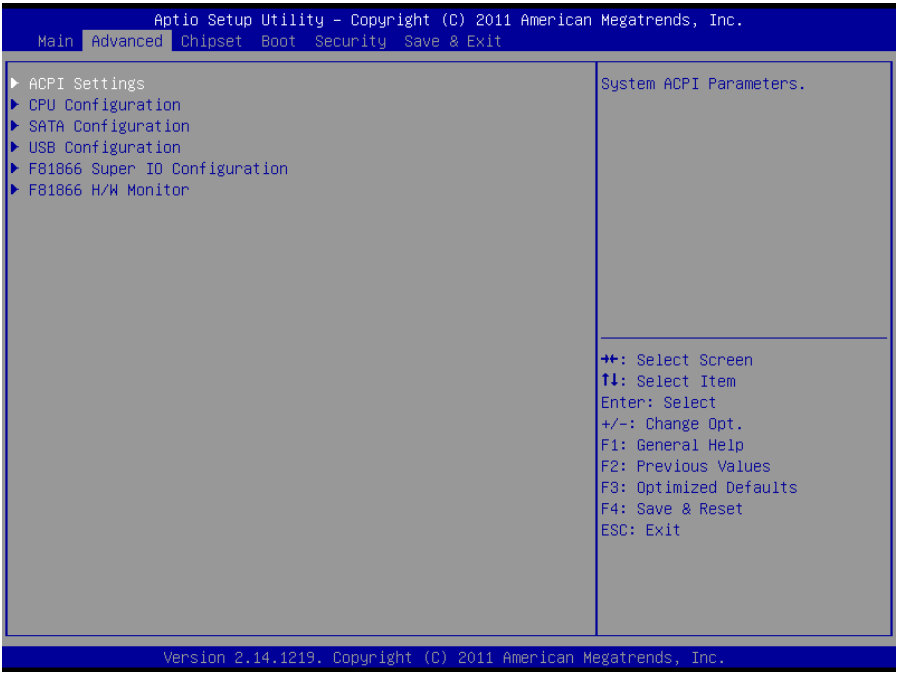
3.3 Setup submenu: Main



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.		

3.4 Setup submenu: Advanced

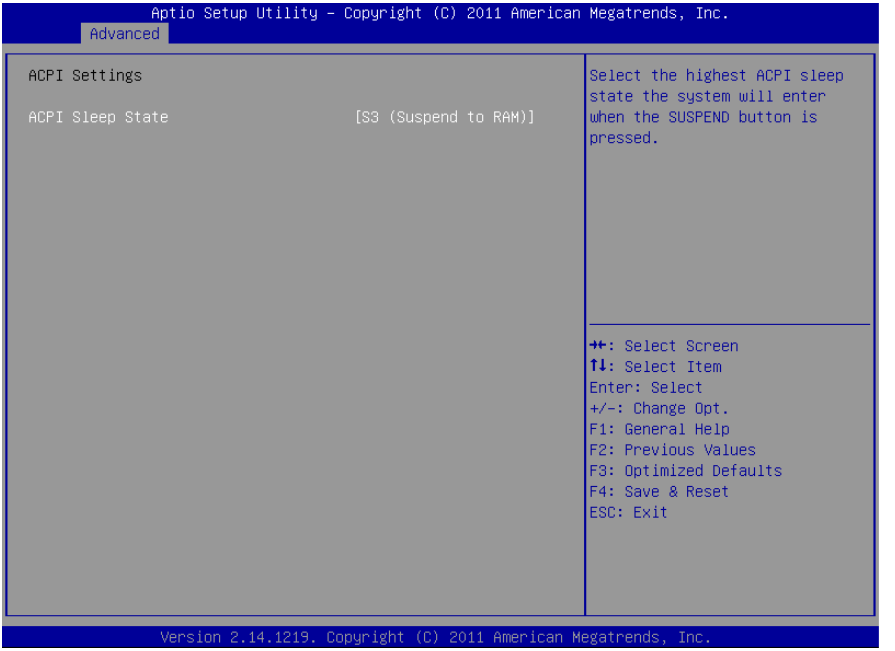


Options summary: (**default setting**)

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		

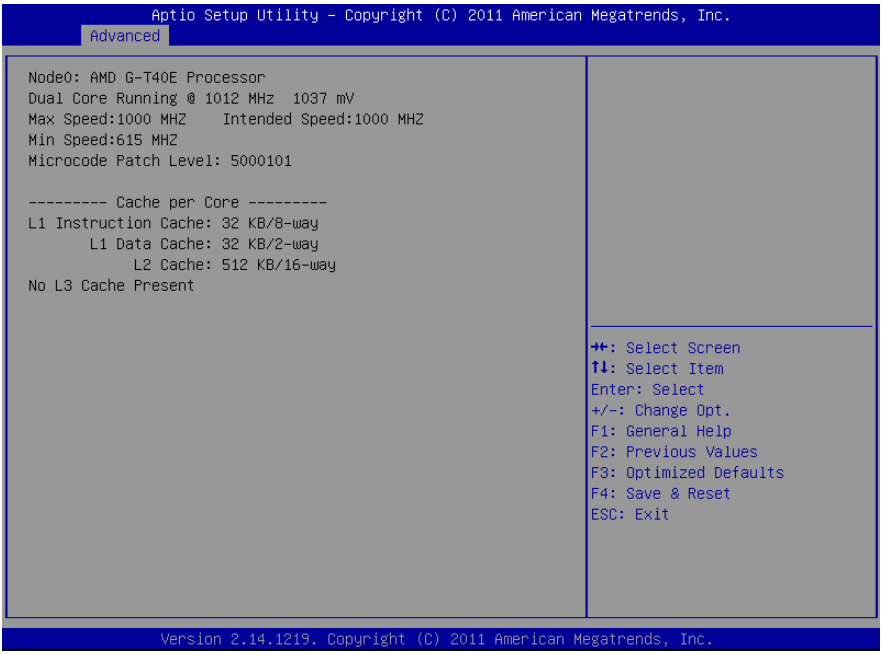
3.4.1 Advanced: ACPI Settings



Options summary: (**default setting**)

ACPI Sleep State	S3 (Suspend to RAM)	
Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.		

3.4.2 Advanced: CPU Configuration

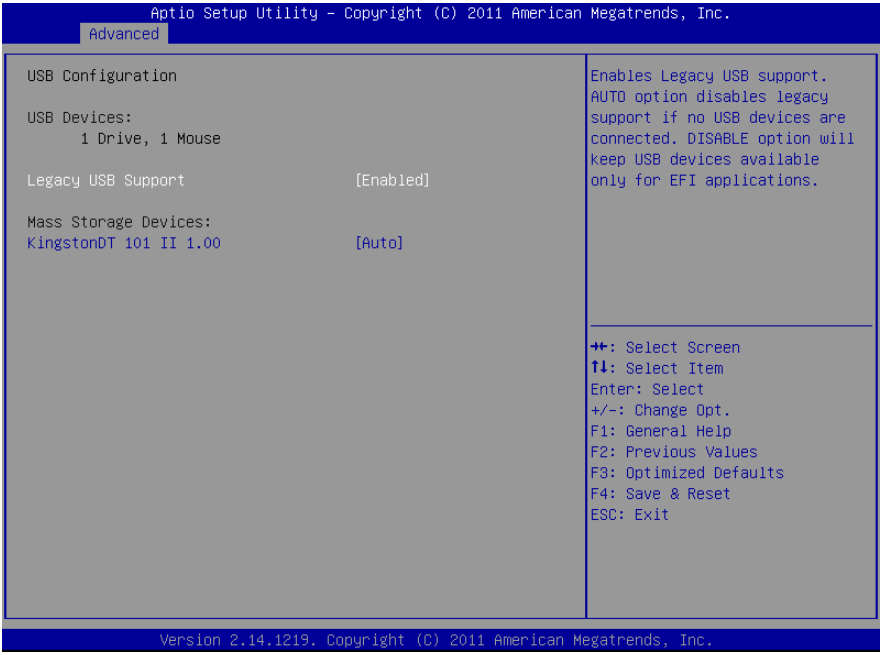


3.4.3 Advanced: SATA Configuration

Options summary: (**default setting**)

OnChip SATA Channel	Disabled	
	Enabled	
En/Disable Serial ATA		
OnChip SATA Type	ACHI	
	Legacy IDE	
Configure SATA controller operating as Legacy IDE/AHCI mode.		

3.4.4 Advanced: USB Configuration

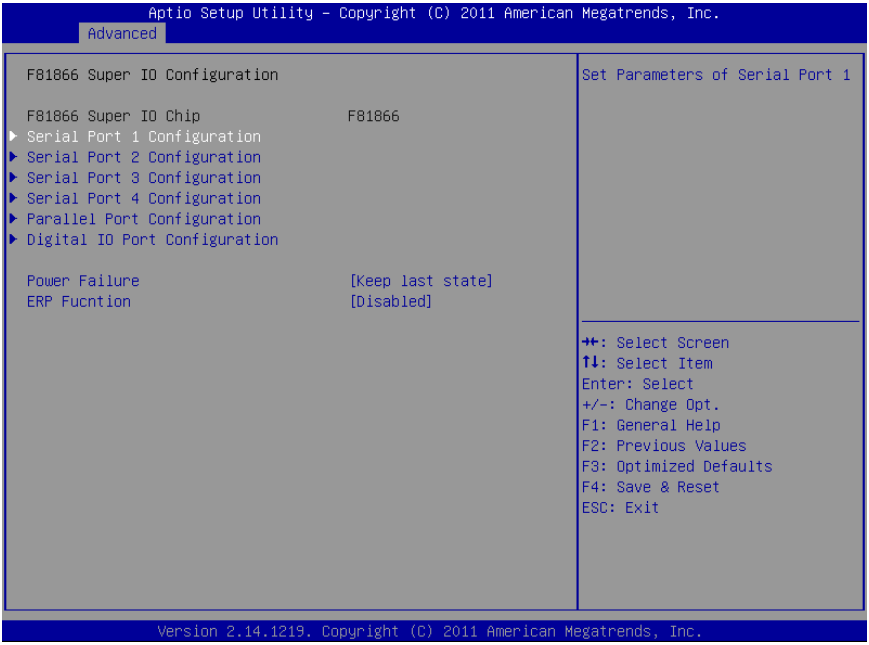


Options summary: (**default setting**)

Legacy USB Support	**Enabled**	
	Disabled	
	Auto	
Enables Legacy USB Support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications		
Device Name (Emulation Type)	**Auto**	
	Floppy	
	Forced FDD	
	Hard Disk	
	CD-ROM	

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)

3.4.5 Advanced: F81866 Super IO Configuration

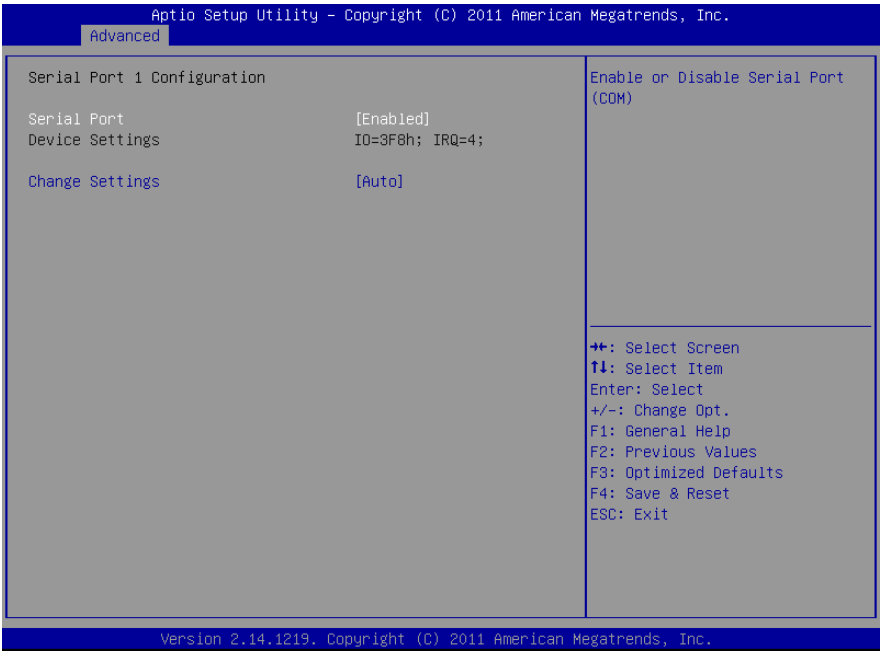


Options summary: (**default setting**)

Serial Port 1/2/3/4 Configuration		
Set Parameters of Serial Port 1/2/3/4		
Parallel Port Configuration		
Set Parameters of Parallel Port		
Digital IO Port Configuration		
Set Input / Output of Digital IO Port Configuration		
Power Failure	**Keep last state**	
	Always on	
	Always off	

Select AC power state when power is re-applied after a power failure.		
ERP Function	**Disabled**	
	Enabled	
ERP Function En/Disable		

3.4.5.1 F81866 Super IO Configuration: Serial Port 1 Configuration



Options summary: (**default setting**)

Serial Port	Disabled	
	Enabled	
En/Disable specified serial port.		
Change Settings	**Auto**	
	IO=3F8h; IRQ=4;	
	IO=3F8h; IRQ=3,4;	
	IO=2F8h; IRQ=3,4;	
Select an optimal setting for Super IO device.		

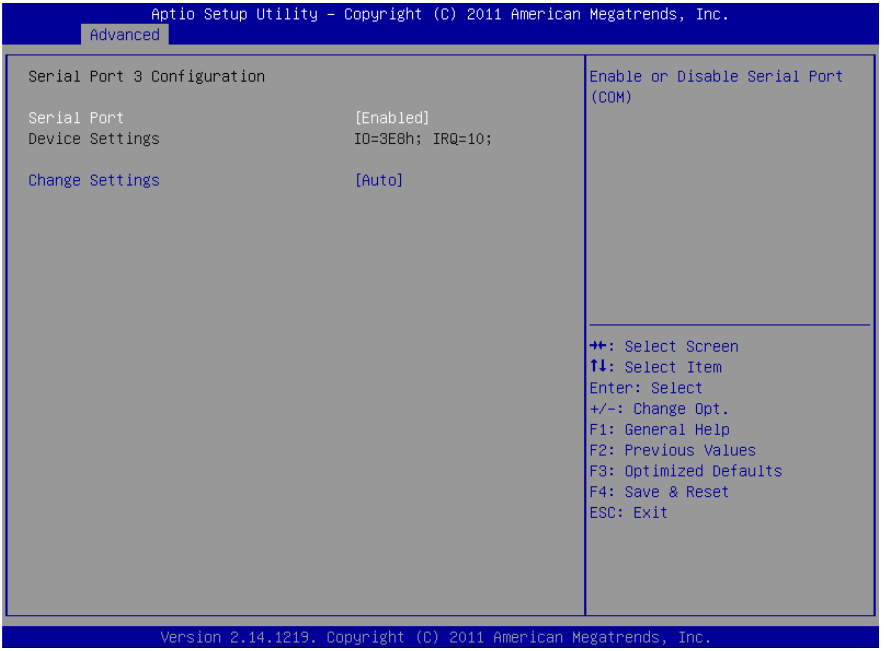
3.4.5.2 F81866 Super IO Configuration: Serial Port 2 Configuration

Options summary: (**default setting**)

Serial Port	Disabled	
	Enabled	
En/Disable specified serial port.		
Change Settings	**Auto**	
	IO=2F8h; IRQ=3;	
	IO=3F8h; IRQ=3,4;	
	IO=2F8h; IRQ=3,4;	
Select an optimal setting for Super IO device.		
RS232/422,485	**RS232**	
	RS422	

	RS485	
RS232/422,485 switch		

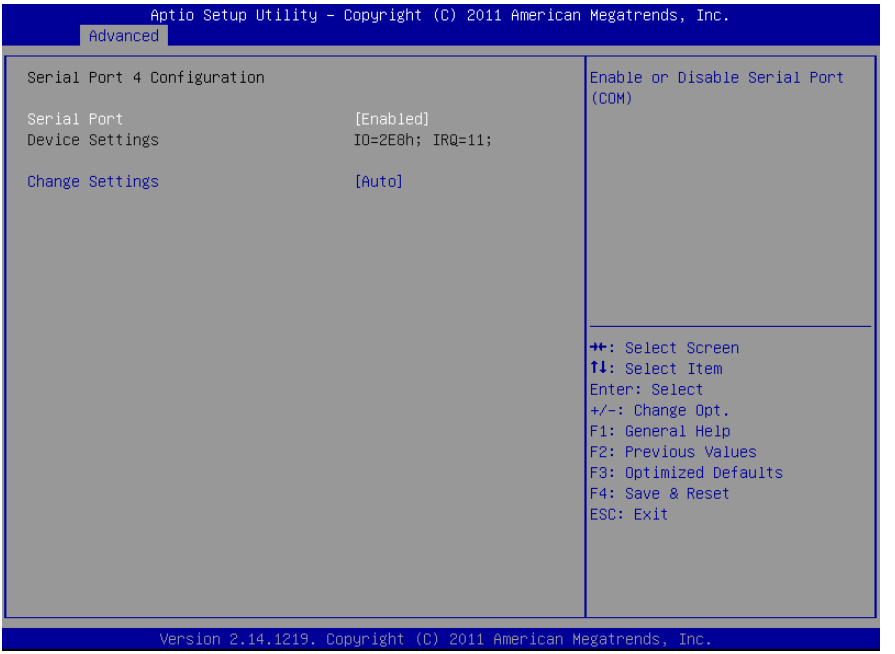
3.4.5.3 F81866 Super IO Configuration: Serial Port 3 Configuration



Options summary: (**default setting**)

Serial Port	Disabled	
	Enabled	
En/Disable specified serial port.		
Change Settings	**Auto**	
	IO=3E8h; IRQ=11;	
	IO=3E8h; IRQ=11;	
	IO=2E8h; IRQ=11;	
Select an optimal setting for Super IO device.		

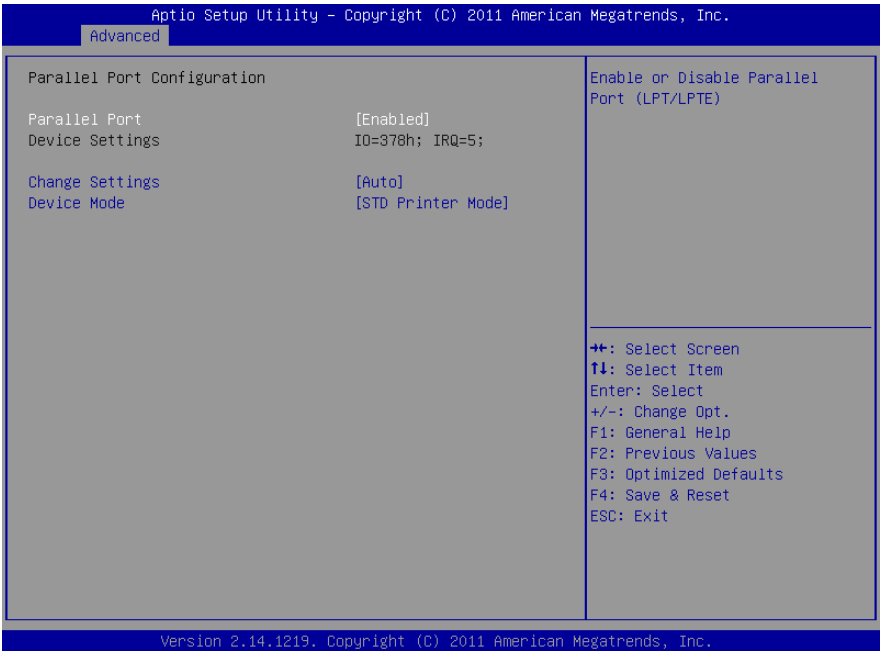
3.4.5.4 F81866 Super IO Configuration: Serial Port 4 Configuration



Options summary: (**default setting**)

Serial Port	Disabled	
	Enabled	
En/Disable specified serial port.		
Change Settings	**Auto**	
	IO=2E8h; IRQ=11;	
	IO=3E8h; IRQ=11;	
	IO=2E8h; IRQ=11;	
Select an optimal setting for Super IO device.		

3.4.5.5 F81866 Super IO Configuration: Parallel Port Configuration

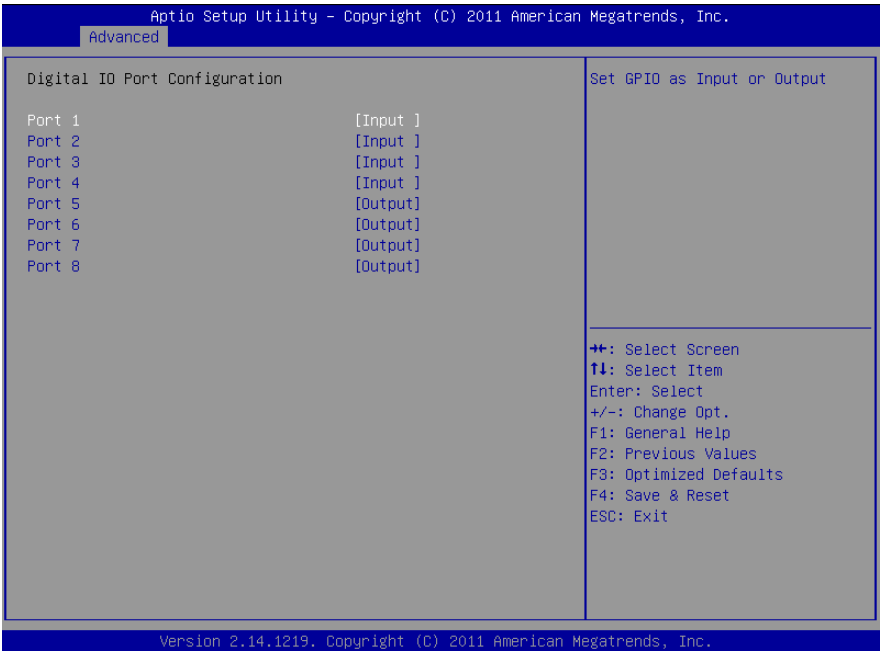


Options summary: (**default setting**)

Parallel Port	Disabled	
	Enabled	
En/Disable specified parallel port.		
Change Settings	**Auto**	
	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 Super IO device.		
Device Mode	**STD Printer Mode**	

	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		

3.4.5.6 F81866 Super IO Configuration: Digital IO Port Configuration

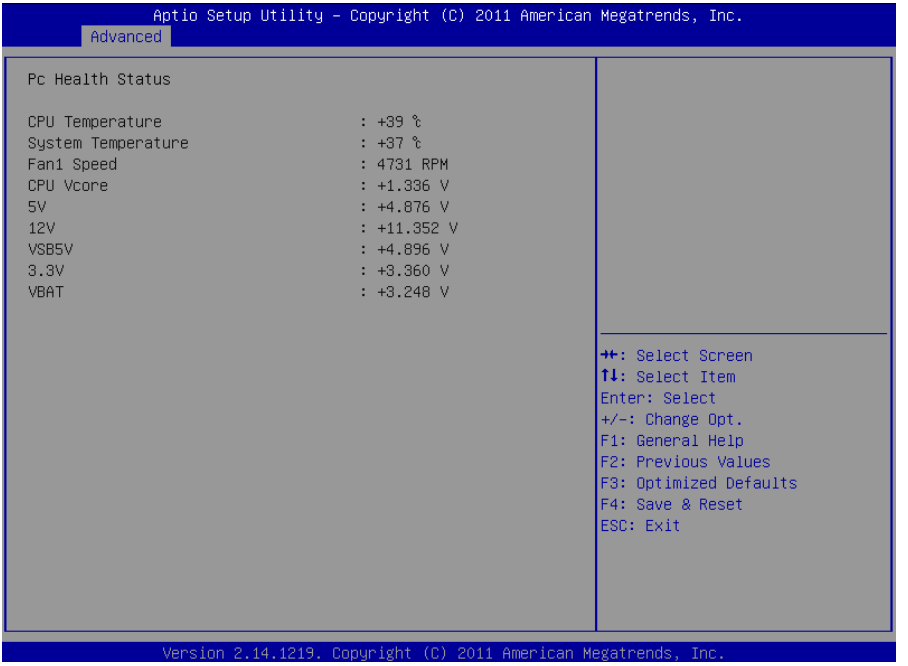


Options summary: (**default setting**)

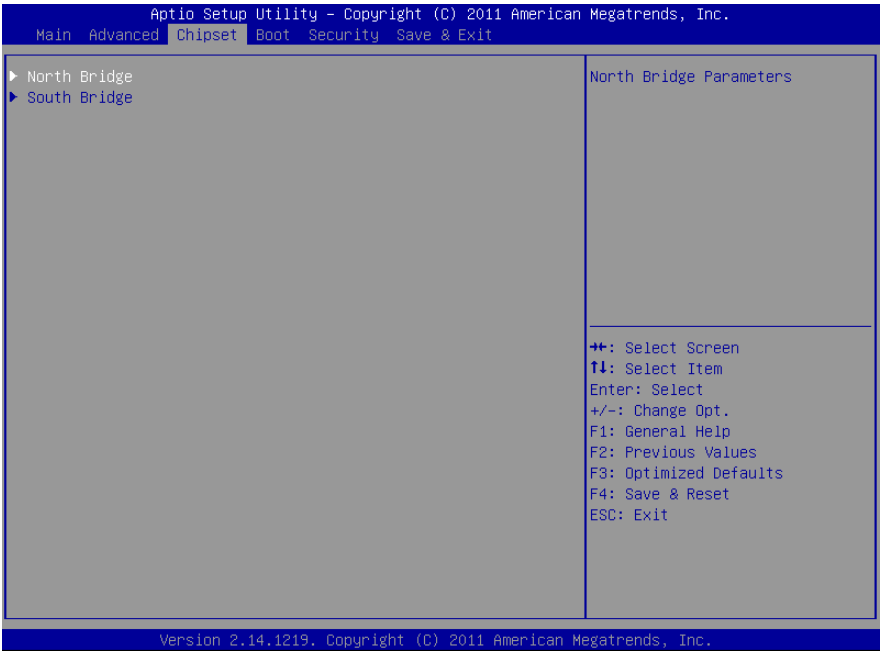
Port 1	**Input**	
	Output	
Set GPIO as Input or Output.		
Port 2	**Input**	
	Output	
Set GPIO as Input or Output.		
Port 3	**Input**	
	Output	
Set GPIO as Input or Output.		
Port 4	**Input**	

	Output	
Set GPIO as Input or Output.		
Port 5	Input	
	Output	
Set GPIO as Input or Output.		
Port 6	Input	
	Output	
Set GPIO as Input or Output.		
Port 7	Input	
	Output	
Set GPIO as Input or Output.		
Port 8	Input	
	Output	
Set GPIO as Input or Output.		
Power Failure	**Keep last state**	
	Always on	
	Always off	
F81866 Power Failure		
ERP Function	**Disabled**	
	Enabled	
ERP Function Enable / Disable		

3.4.6 F81866 Super IO Configuration: F81866 H/W Monitor



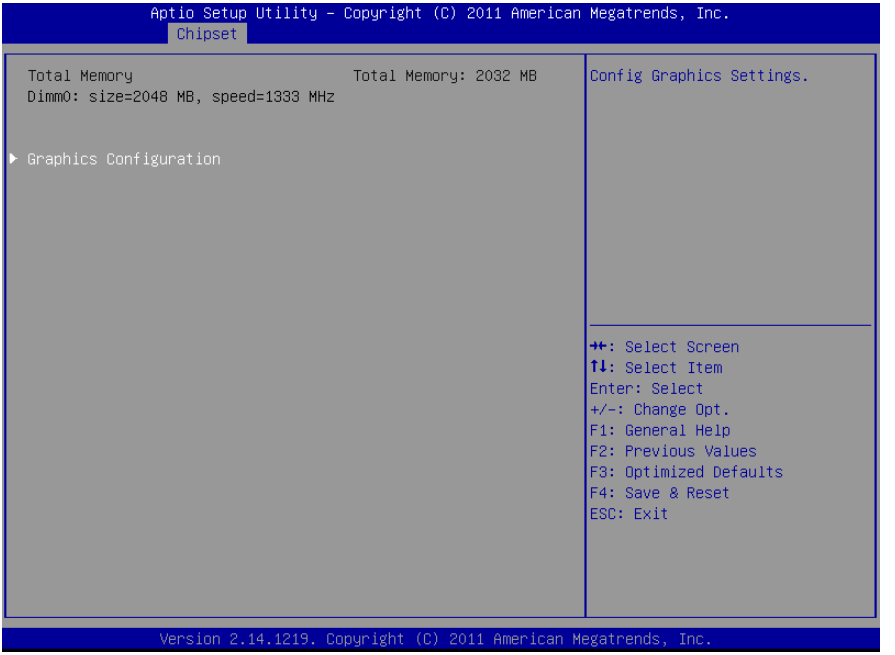
3.5 Setup Submenu: Chipset



Options summary: (**default setting**)

North Bridge		
South Bridge Parameters		
South Bridge		
South Bridge Parameters		

3.5.1 Chipset: North Bridge



Options summary: (default setting)

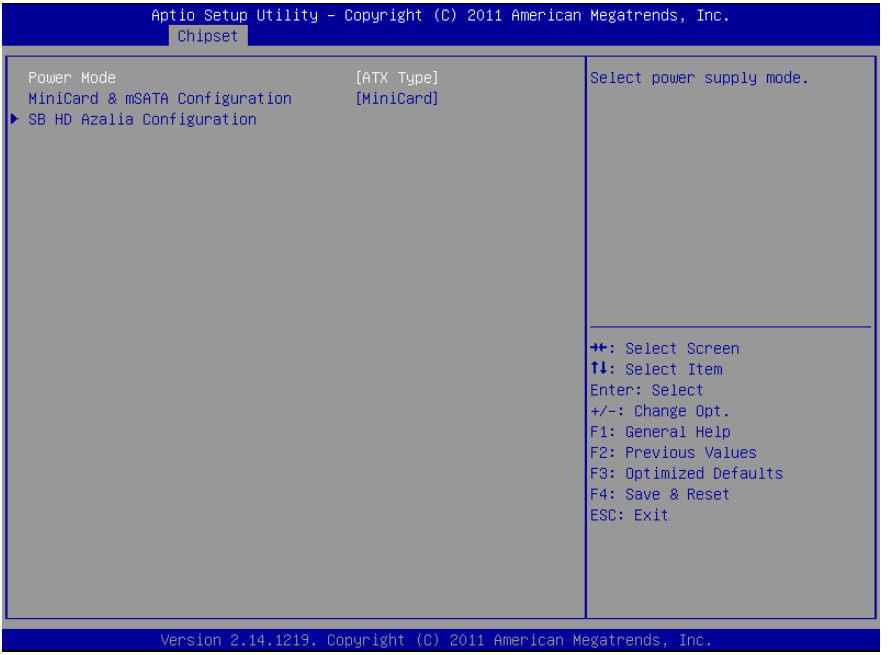
Graphics Configuration		
Configure Graphics Settings.		

3.5.1.1 North Bridge: Graphics Configuration

Options summary: (**default setting**)

DP0 Output	**HDMI**	
	Disabled	
NB PCIE Connect Type (Display device)		
DP1 Output	LVDS	
	Disabled	
NB PCIE Connect Type (Display device)		

3.5.2 Chipset: South Bridge



Options summary: (default setting)

Power Mode	**ATX Type**	
	AT Type	
Select power supply mode.		
MiniCard & msata Configuration	**Minicard**	
	mSATA	
Support MiniCard & msata Device		
SB HD Azalia Configuration		
Options for SB HD Azalia.		

3.5.2.1 South Bridge: SB HD Azalia Configuration

Options summary: (**default setting**)

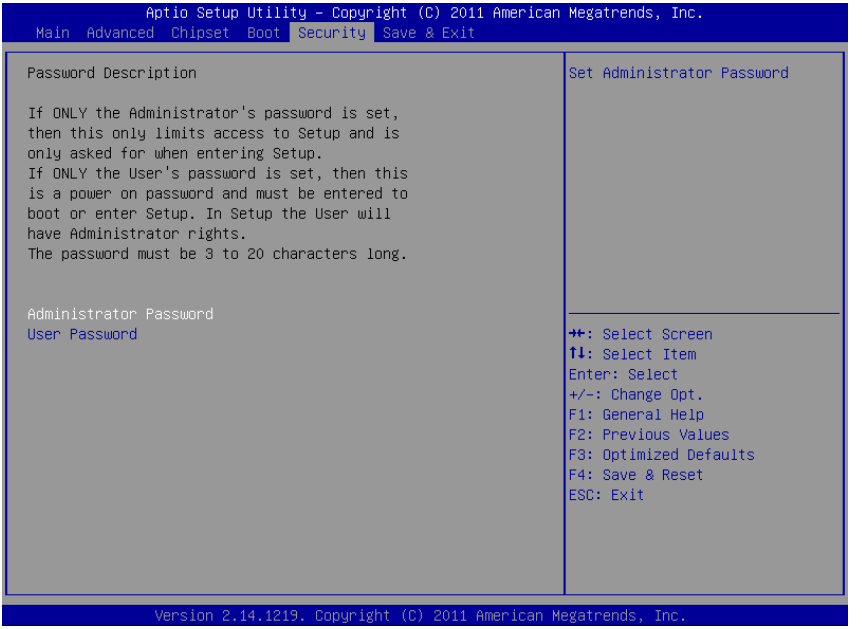
HD Audio Azalia Device	Auto	
	Disabled	
	Enabled	
Enable Or Disable HD Audio Azalia Device		

3.6 Setup submenu: Boot

Options summary: (**default setting**)

Quiet Boot	Disabled	
	Enabled	
En/Disable showing boot logo.		
Launch RTL8111E PXE OpROM.	**Disabled**	
	Enabled	
En/Disable PXE boot for RTL8111E LAN		
Boot Option #x		
Set the system boot order.		
Hard Drive BBS Priorities		
Set the order of the legacy devices in this group		

3.7 Setup submenu: Security



Options summary: (*default setting*)

Administrator Password/ User Password	*Not set*	

Change User/Administrator Password

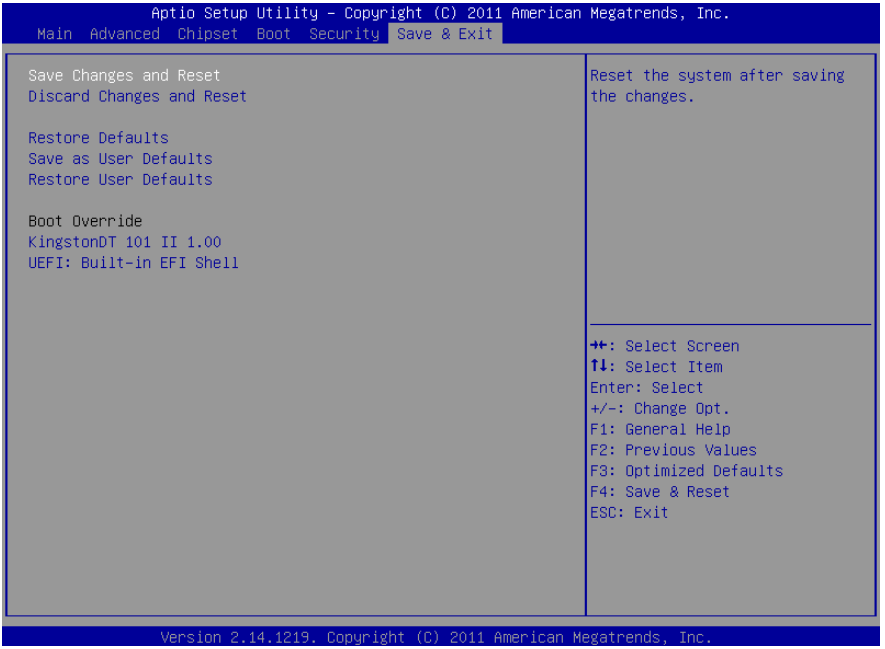
You can set a User Password once an Administrator Password is set. The password will be required during boot up, or when the user enters the Setup utility. Please Note that a User Password does not provide access to many of the features in the Setup utility.

Select the password you wish to set, press Enter to open a dialog box to enter your password (you can enter no more than six letters or numbers). Press Enter to confirm your entry, after which you will be prompted to retype your password for a final confirmation. Press Enter again after you have retyped it correctly.

Removing the Password

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

3.8 Setup submenu: Save & 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		

Chapter 4

Drivers Installation

4.1 Product CD/DVD

The GENE-HD05 comes with a product DVD that contains all the drivers and utilities you need to setup your product. Insert the DVD and follow the steps in the autorun program to install the drivers.

In case the program does not start, follow the sequence below to install the drivers.

Step 1 – Install Chipset Drivers

1. Open the **Step1 - Chipset** folder and select your OS
2. Open the **Setup.exe** file in the folder
3. Follow the instructions
4. Drivers will be installed automatically

Step 2 – Install LAN Driver

1. Click on the **Step2 - LAN** folder and select your OS
2. Open the S**etup.exe** file in the folder
3. Follow the instructions
4. Drivers will be installed automatically

Step 3 – Install Audio Drivers (Windows 8.1/10 only)

1. Open the **Step4 - TXE** folder and select your OS
2. Open the **Setup.exe** file in the folder
3. Follow the instructions
4. Drivers will be installed automatically

Step 4 – Install AHCI Driver

Please refer to Appendix D AHCI Setting

Step 5 – Install Touch Driver

1. Open the **Step5 - Touch** folder followed by **Setup.exe**
2. Follow the instructions
3. Drivers will be installed automatically

Step 6 – Install TPM Driver

1. Open the **Step6 - TPM** folder and select your OS
2. Open the **Setup.exe file** in the folder
3. Follow the instructions
4. Drivers will be installed automatically

Appendix A

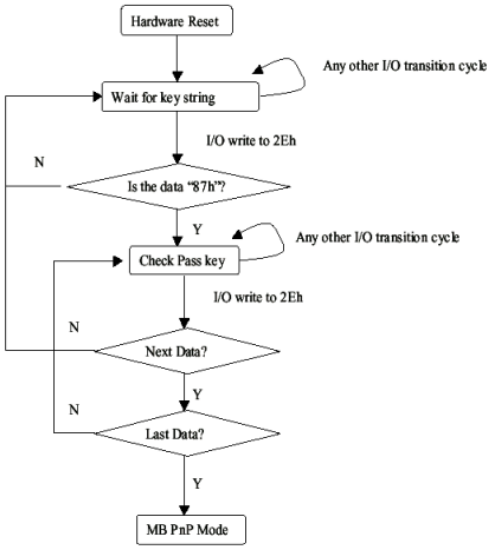
Watchdog Timer Programming

A.1 Watchdog Timer Programming

GENE-HD05 utilizes FINTEK 81866 chipset as its watchdog timer controller. Below are the procedures to complete its configuration and the AAEON 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 opera-tions 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

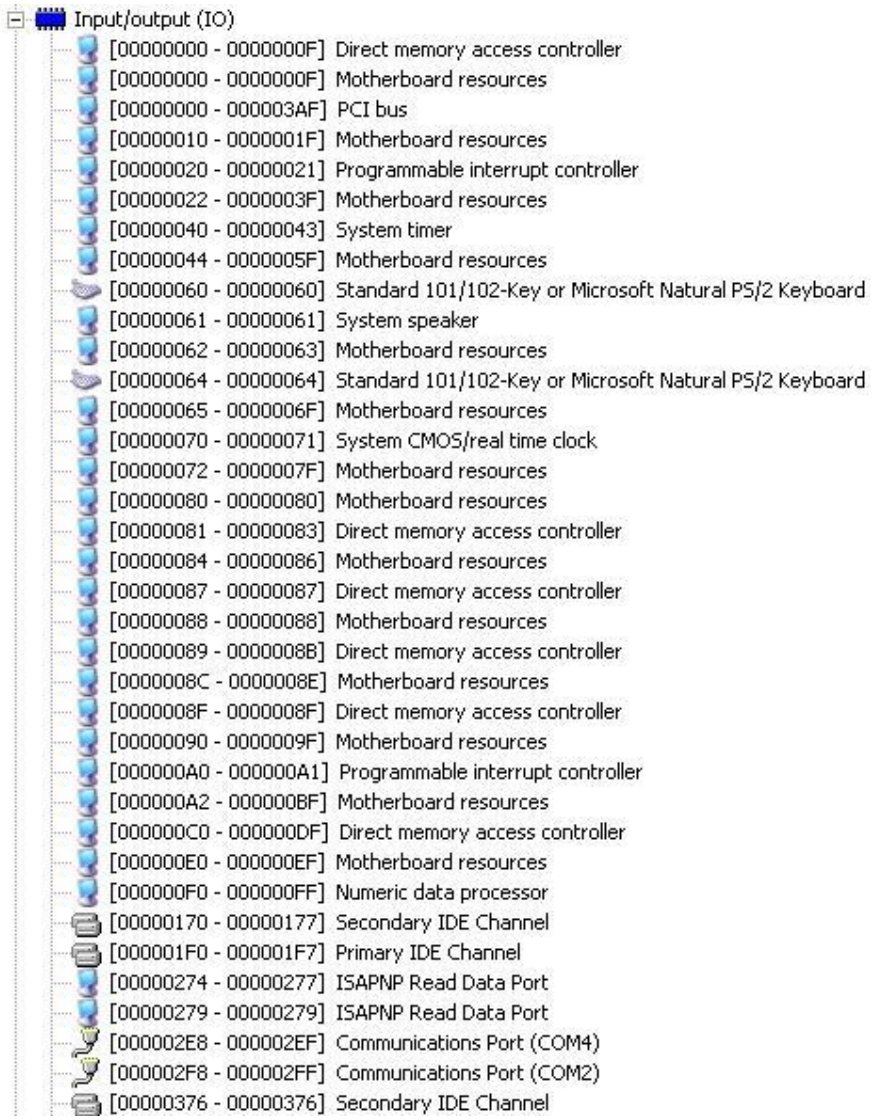
```
Main(){
aaeonSuperIOOpen();
aaeonWdtSetCountMode(BOOL bMinute); // Set wdt count mode
aaeonWdtSetTimeoutCount(BYTE tTimeout); // Set wdt timer
aaeonWdtSetEnable(BOOL bEnable); // Enable wdt
aaeonSuperIOClose();
}

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);
}
```

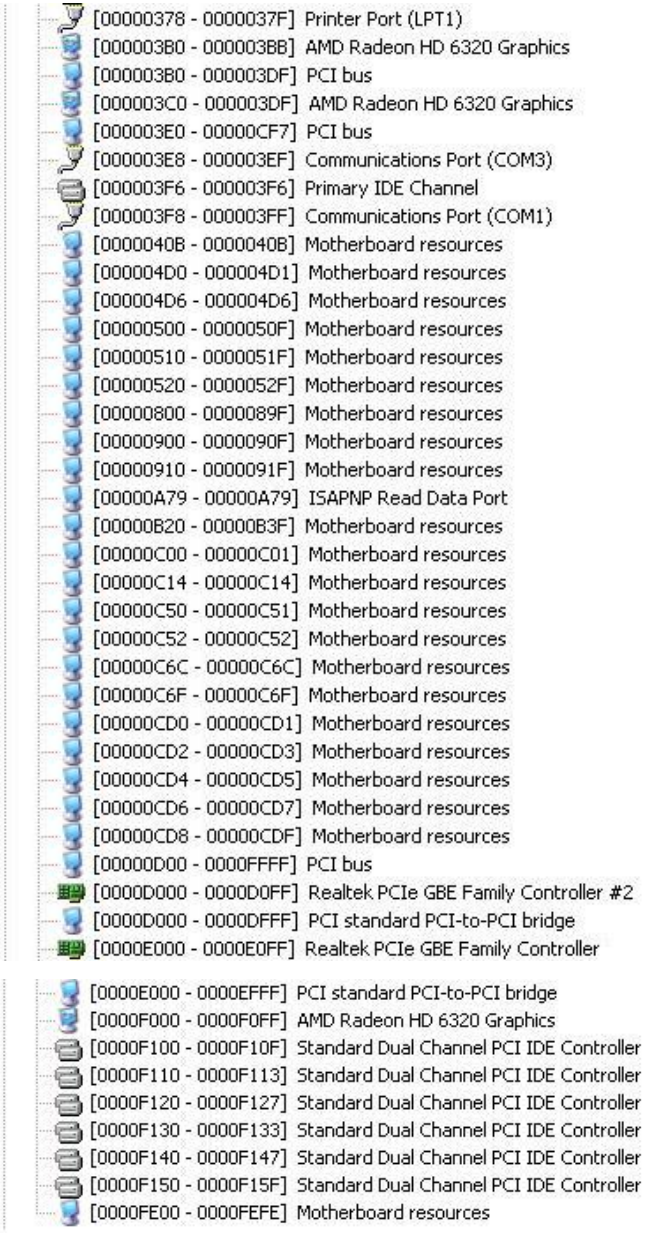
```
Void aaeonWdtSetEnable(BOOL bEnable){
    f81866SetLdn(0x07);
    if(bEnable){
        f81866WriteByte(0x30, 0x01);
         WDT_BASE_ADDR =
         (f81866ReadByte(F81866_WDT_BASEADDR_REG_MSB) << 8)
         | f81866ReadByte(F81866_WDT_BASEADDR_REG_LSB);
         WDT_STATUS = f81866ReadByte(F81866_WDT_CONTROL_REG);
         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

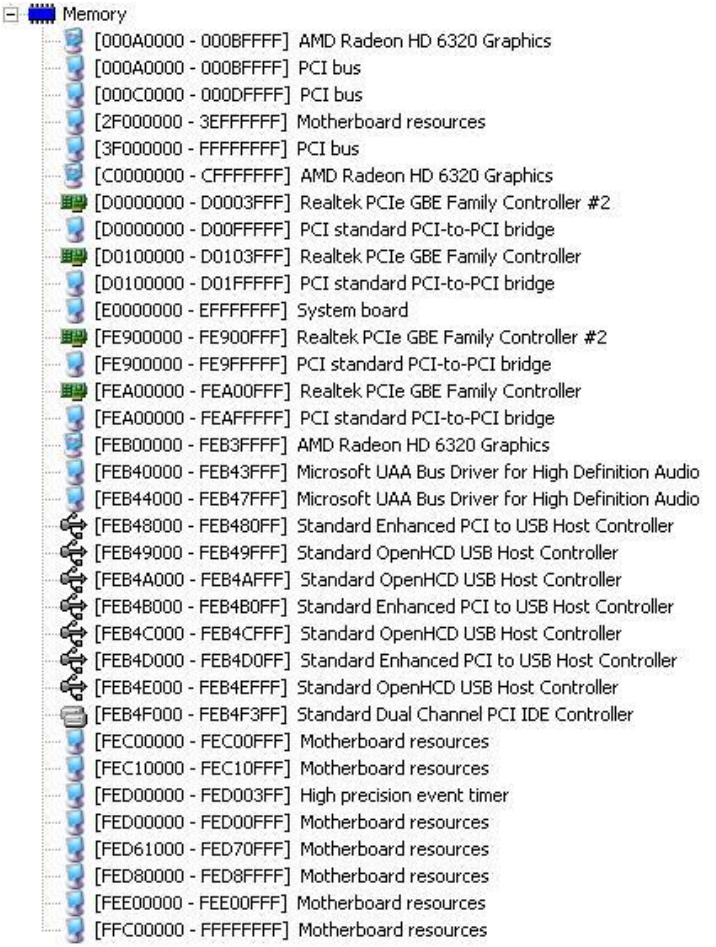
I/O Information

B.1 I/O Address Map



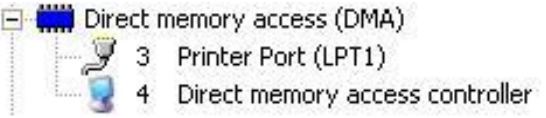

[00000378 - 0000037F] Printer Port (LPT1)
[000003B0 - 000003BB] AMD Radeon HD 6320 Graphics
[000003B0 - 000003DF] PCI bus
[000003C0 - 000003DF] AMD Radeon HD 6320 Graphics
[000003E0 - 00000CF7] PCI bus
[000003E8 - 000003EF] Communications Port (COM3)
[000003F6 - 000003F6] Primary IDE Channel
[000003F8 - 000003FF] Communications Port (COM1)
[0000040B - 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 First MB Memory Address Map



B.3 IRQ Mapping Chart

B.4 DMA Channel Assignments



Appendix C

Mating Connectors

C.1 List of Mating Connectors and Cables

Connector Label	Function	Mating Connector		Available Cable	Cable P/N
		Vendor	Model no		
CN2	Touch Screen Connector	JST	SHR-9V-S-B	N/A	N/A
CN3	CPU Fan Connector	Molex	22-01-2035	N/A	N/A
CN4	External +5VSB Power Input and PS_ON#	JST	PHR-3	ATX Cable	170220020B
CN5	+12V Vin Connector	N/A	N/A	Power Cable	1702002010
CN7	Digital I/O Connector	Neltron	2026B-10	N/A	N/A
CN8	LPT Port	Molex	51110-2650	LPT Cable	1701260200
CN9	COM Port 2 Connector	Molex	51021-0900	Serial Port Cable	1701090150
CN10	COM Port 3 Connector	Molex	51021-0900	Serial Port Cable	1701090150
CN11	COM Port 4 Connector	Molex	51021-0900	Serial Port Cable	1701090150
CN12	USB Port Connector	Molex	51021-0500	USB Wafer Cable	1700050207
CN13	USB Port Connector	Molex	51021-0500	USB Wafer Cable	1700050207
CN14	USB Port Connector	Molex	51021-0500	USB Wafer Cable	1700050207
CN15	USB Port Connector	Molex	51021-0500	USB Wafer Cable	1700050207
CN16	USB Port Connector	Molex	51021-0500	USB Wafer Cable	1700050207
CN17	USB Port Connector	Molex	51021-0500	USB Wafer Cable	1700050207
CN18	Audio Connector	Molex	51021-1000	Audio Cable	1709100254

CN21	+5Vout Connector	JST	PHR-2	2 Pins For HDD Power	1702150155
CN22	LVDS Inverter Connector	JST	PHR-5	N/A	N/A
CN23	LVDS Connector	HIROSE	DF13-30DS -1.25C	N/A	N/A
CN29	P/S2 KB/MS Connector	JST	PHDR-06VS	P/S2 KB/MS Cable	1700060152
BATA1	External RTC Connector	Molex	51021-0200	Battery Cable	175011901C

Appendix D

AHCI Settings

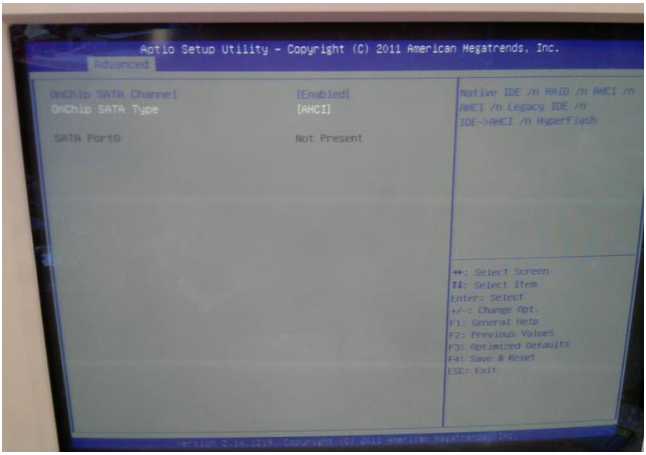
D.1 Setting AHCI

OS installation to setup AHCI Mode.

Step 1: Copy the files below from "Driver DVD -> STEP4 - AHCI\WinXP\SB8xx_RAID_XP_3.2.1540.92" to Disk

Step 2: Connect the USB Floppy to the board (The board on the photo is just for reference)

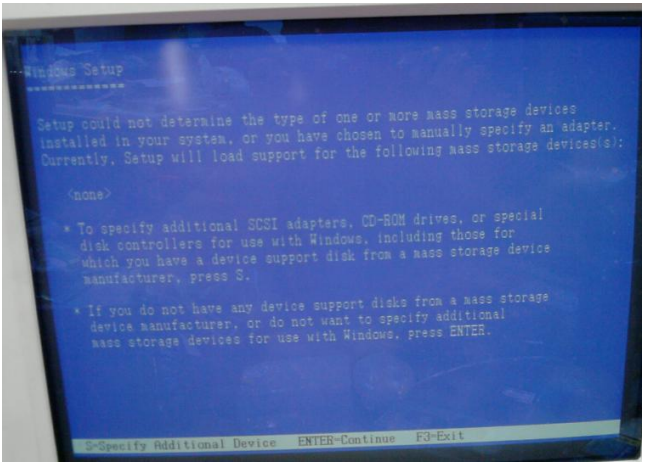
Step 3: BIOS Setup menu select "Advanced\OnChip SATA Type -> AHCI"



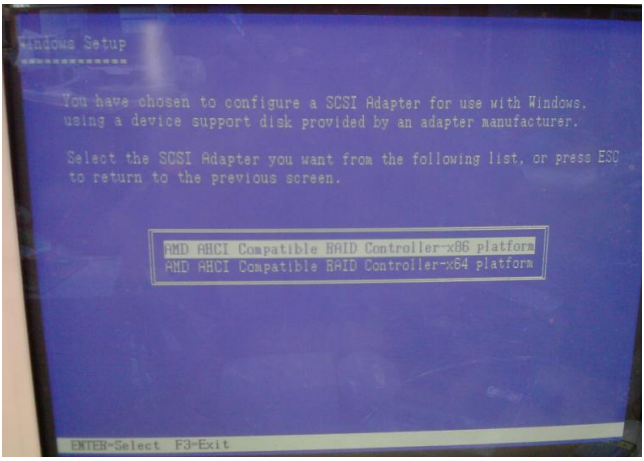
Step 4: Setup OS

Step 5: Press "F6"

Step 6: Choose "S"



Step 7: Choose "AMD® A50M"



Step 8: It will show the model number you select and then press "ENTER"

Step 9: Setup is loading files

Appendix E

Electrical Specifications for I/O Ports

E.1 Electrical Specifications for Digital I/O Ports

I/O	Reference	Signal Name	Rate Output
LVDS Inverter / Backlight Connector	CN22	VDD	+5V/2A or +12V/2A
LPC Port	CN1	+3.3VCC	+3.3V/0.5A
CPU FAN	CN3	VDD	+12V/0.5A
Digital IO Port	CN7	D0~D7	+3.3V/(Open drain)
COM Port 2	CN9	+5V/+12V	+5V/1A or +12V/0.5A
USB 2.0 Ports 7	CN12	+5V	
USB 2.0 Ports 8	CN13	+5V	+5V/0.5A (per channel)
USB 2.0 Ports 5	CN14	+5V	
USB 2.0 Ports 6	CN15	+5V	
USB 2.0 Ports 3	CN16	+5V	
USB 2.0 Ports 4	CN17	+5V	
Audio I/O Port	CN18	+5V	+5V/1A
+5V Output for SATA HDD	CN21	+5V	+5V/1A
LVDS Port	CN23	VCC	+3.3V/1A or +5V/1A
USB Ports 1 and 2	CN27	VCC	+5V/1A (per channel)
PS/2 Keyboard/Mouse Combo Port	CN29	+5V	+5V/1A
VGA Port	CN30	+5V	+5V/1A (reserved) +5V/0.5A
CFast Slot	CFDA1	+3.3V	+3.3V/0.5A
Mini-Card Slot	PCIEA1	+3.3VSB +1.5V	+3.3V/1.1A +1.5V/0.375A