

EPIC-CV07

Intel® Atom™ N2600/ D2550 Processor
Onboard DDR3 800/1066 MHz SODIMM
18/24-bit Single/ Dual-channel LVDS LCD
8 USB2.0, 8 COM
1 SATA, 1mSATA
2 Gigabit Ethernet, PCI-104, Mini Card

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Packing List

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

- 1709070500 SATA Cable
- 1702150155 SATA Power Cable
- 9657666600 Jumper Cap
- Heat Spreader
- DVD-ROM for manual (in PDF format) and drivers
- EPIC-CV07

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

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Chapter

1

**General
Information**

1.1 Introduction

AAEON, a leading embedded boards manufacturer, is pleased to announce the debut of their new EPIC Board—EPIC-CV07.

EPIC-CV07 adopts Intel® Atom™ N2600/ D2550 Processor. The system memory is deployed with 204-pin SODIMM DDR3 800/1066 up to 4 GB for Intel® Atom™ D2550 processor and up to 2 GB for Intel® Atom™ N2600 Processor. In addition, Realtek RTL8111E supports two 10/100/1000Base-TX that allows a faster network connections.

The display of EPIC-CV07 supports CRT/LCD, DVI/LCD simultaneous and dual view displays. This model applies one Mini Card and LPC bus for flexible expansions. Moreover, one SATA 3.0Gb/s and one mSATA provide a better storage. Eight USB2.0, eight COM Ports and 16-bit digital I/O are configured on the EPIC-CV07 as well. Full functions make EPIC-CV07 user friendly. 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

- Onboard Intel® Atom™ N2600/ D2550 Processor
- Intel® NM10
- DDR3 800/1066 SODIMM , Max. 4 GB for Intel® Atom™ D2550 Processor, and Max. 2 GB for Intel® Atom™ N2600 Processor
- Gigabit Ethernet x 2
- CRT, 18-bit Single Channel LVDS x 1, 24-bit Dual Channel LVDS x 1, VGA x 1, DVI-I x 1
- SATA 3.0Gb/s x 1, mSATA x 1
- USB2.0 x 8, COM x 8 , 16-bit Digital I/O, Parallel x 1
- Mini Card x 1, PCI-104 x 1
- +12V Only Operation

1.3 Specifications

System

- Processor Intel® Atom™
N2600/ D2550 processor (1.6 GHz ~ 1.86 GHz)
- System Memory 204-pin DDR3 SODIMM x 1,
Max. 4 GB (DDR3 800/1066) for Intel® Atom™D2550;
Max. 2 GB (DDR3 800/1066) for Intel® Atom™N2600
- Chipset Intel® NM10
- I/O Chipset Fintek 81866F + Fintek F81216AD
- Ethernet Realtek RTL8111E,
10/100/1000Base-TX, RJ-45 x 2
- BIOS AMI SPI BIOS – 64Mb ROM
- Wake On LAN Yes
- Watchdog Timer Generates a time-out system reset
- H/W Status Monitoring Supports system temperature, voltage, and cooling fan status
- Expansion Interface Mini Card Slot x 2 (one for Mini Card and the other one for mSATA), PCI-104 x 1, Touch

- Power Requirement Connector x 1 (via USB7)
+12V, ATX
- Battery Lithium battery
- Board Size 6.5"(L) x 4.53"(W) (165mm x 115mm)
- Gross Weight 0.88 lb (0.4 Kg)
- Operating Temperature 32°F~ 140°F (0°C ~ 60°C)
- Storage Temperature -4°F~ 158°F (-20°C ~ 70°C)
- Operating Humidity 0%~80% relative humidity, non-condensing

Display: Supports CRT/LCD, DVI/LCD, simultaneous and dual view displays

- Chipset Intel® Atom™
N2600/ D2550 integrated
- Resolution 2048x1536 @ 75Hz for CRT
1366x768 @ 85Hz for LCD
1920x1200 @ 60Hz for DVI
- Output Interface VGA x 1, DVI-I x 1, 24-bit dual channel LVDS x 1, 18-bit single channel LVDS x 1

I/O

- Storage SATA 3.0Gb/s x 1, mSATA x 1
- Serial Port RS-232 x 7, RS-232/422/485

- Parallel Port x 1
LPT x 1
- USB Port USB2.0 x 8
- PS/2 Port Keyboard x 1, Mouse x 1
- Audio MIC-in, Line-in, Line-out
- Touch Screen Touch panel control via USB interface

Chapter

2

**Quick
Installation
Guide**

2.1 Safety Precautions

Warning!

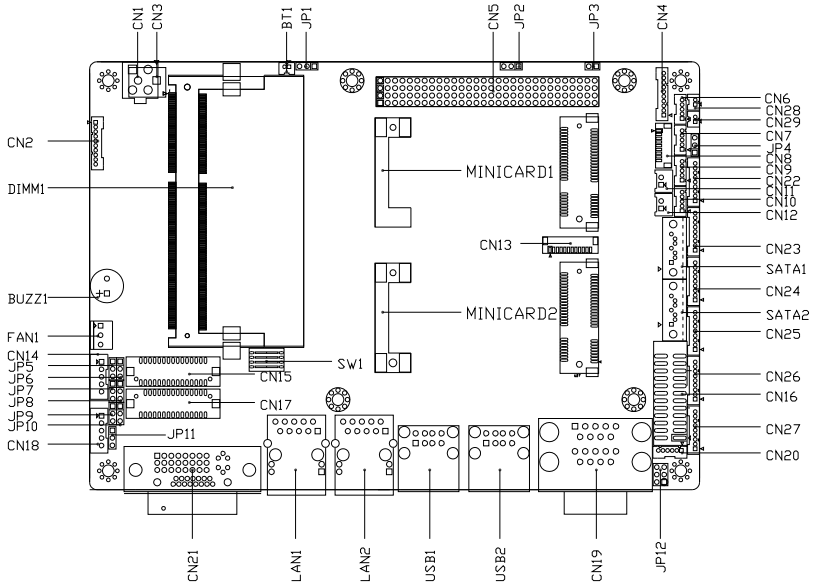
Always completely disconnect the power cord from your board whenever you are working on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.

Caution!

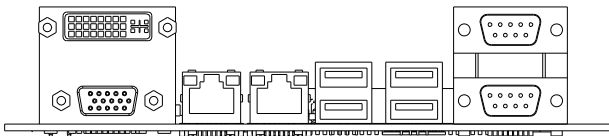
Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not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

2.2 Location of Connectors and Jumpers

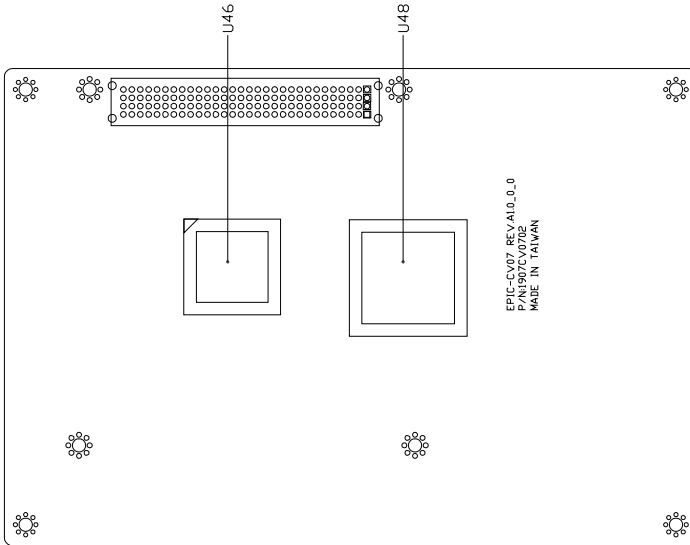
Component Side



Component Side



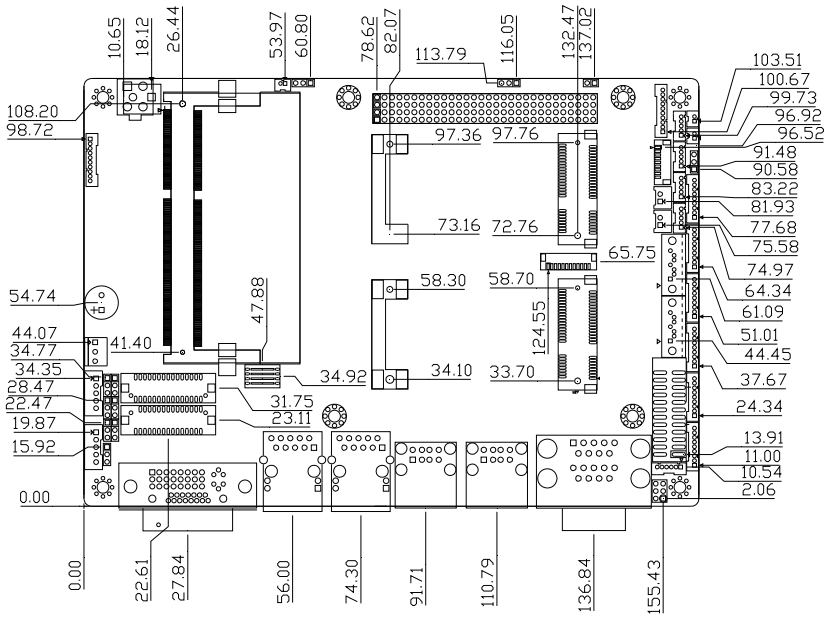
Solder Side



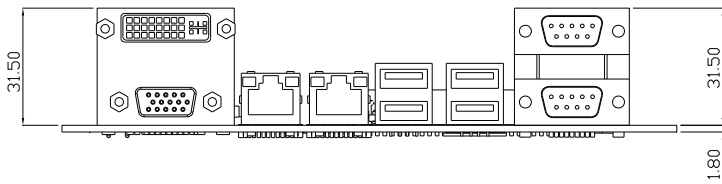
Solder Side

2.3 Mechanical Drawing

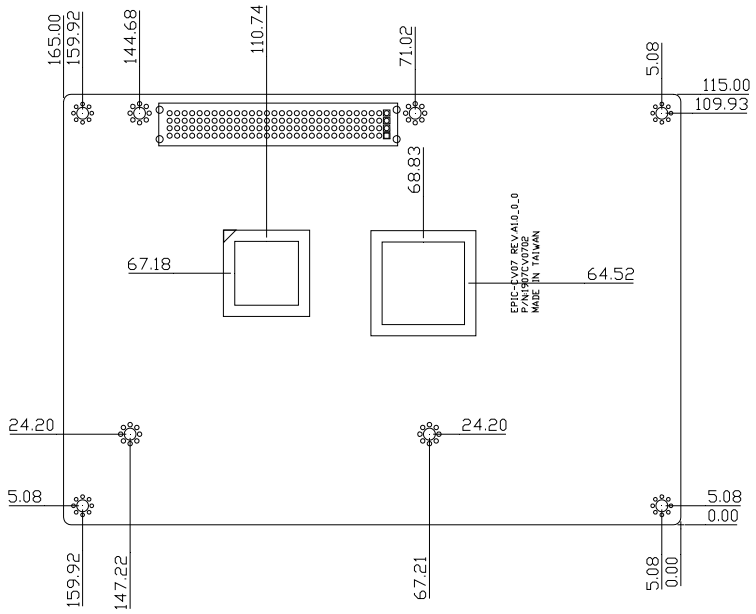
Component Side



Component Side



Solder 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:

Label	Function
JP1	Clear CMOS
JP2	PCI104 VIO Voltage Selection
JP3	Touch Screen 4,5 Wire Selection
JP4	AT/ATX Selection
JP5	2 nd LCD Inverter Voltage Selection
JP6	2 nd LVDS Voltage Selection
JP7	2 nd PWM/Voltage Backlight Control
JP8	1 st PWM/Voltage Backlight Control
JP9	1 st LCD Inverter Voltage Selection
JP10	1 st LVDS Voltage Selection
JP11	2 nd PWM Backlight Control Selection(Reserved)
JP12	COM2 +5V/Ring/+12V Selection

2.5 List of Connectors

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

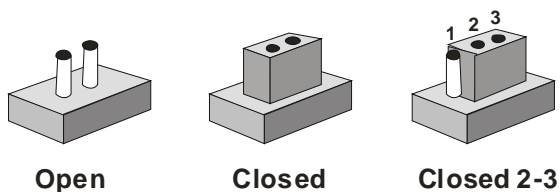
Label	Function
CN1	+12VSB Power Input Connector
CN2	Front Panel Connector
CN3	Power Connector
CN4	Audio Connector
CN5	PCI104 Connector
CN6	USB Connector
CN7	USB Connector
CN8	Touch screen Connector
CN9	USB Connector
CN10	USB Connector
CN11	SATA Power Connector
CN12	SATA Power Connector
CN13	LPC Debug Connector
CN14	2 nd LCD Inverter Connector
CN15	2 nd LCD Connector
CN16	LPT/Digital I/O Connector
CN17	1 st LCD Connector
CN18	1 st LCD Inverter Connector
CN19	1 st /2 nd Serial COM Port Connector

CN20	PS2 Keyboard / Mouse Connector
CN21	DVI-I/CRT Connector
CN22	8 th COM Port Connector
CN23	7 th COM Port Connector
CN24	6 th COM Port Connector
CN25	5 th COM Port Connector
CN26	4 th COM Port Connector
CN27	3 th COM Port Connector
CN28	Left Speaker Connector
CN29	Right Speaker Connector
LAN1	10 /100 /1000 Base-Tx Ethernet Connector
LAN2	10 /100 /1000 Base-Tx Ethernet Connector
MINICARD1	Mini PCI Express Connector
MINICARD2	Mini PCI Express/mSATA Connector
SATA1	SATA Connector
SATA2	SATA Connector
USB1	Stack USB Connector
USB2	Stack USB Connector
FAN1	FAN Connector
DIMM1	DIMM Connector
BT1	Battery Connector

2.6 Setting Jumpers

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

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

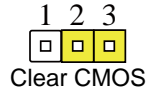
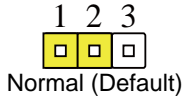


A pair of needle-nose pliers may be helpful when working with jumpers.

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

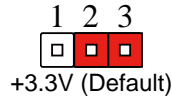
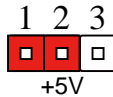
Generally, you simply need a standard cable to make most connections.

2.7 Clear CMOS (JP1)



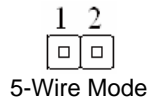
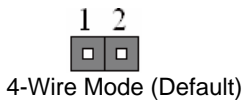
JP1	Function
1-2	Normal (Default)
2-3	Clear CMOS

2.8 PCI104 VIO Voltage Selection (JP2)



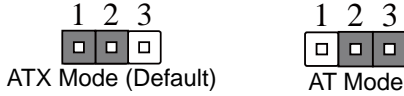
JP2	Function
1-2	+5V
2-3	+3.3V (Default)

2.9 TOUCH SCREEN Selection (JP3)



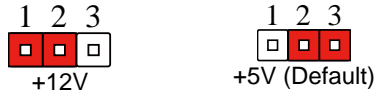
JP3	Function
1-2	4-Wire Mode (Default)
Open	5-Wire Mode

2.10 AT/ATX Selection (JP4)



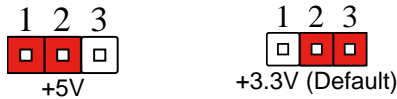
JP4	Function
1-2	ATX Mode (Default)
2-3	AT Mode

2.11 2nd LVDS Port 2 Backlight Inverter VCC Selection (JP5)



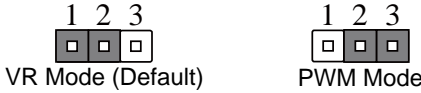
JP5	Function
1-2	+12V
2-3	+5V (Default)

2.12 2nd LVDS-LCD Port 2 Operating VDD Selection (JP6)



JP6	Function
1-2	+5V
2-3	+3.3V (Default)

2.13 2nd LVDS Backlight Lightness Control Mode Selection (JP7)



JP7	Function
1-2	VR Mode (Default)
2-3	PWM Mode

2.14 1st LVDS Backlight Lightness Control Mode Selection (JP8)



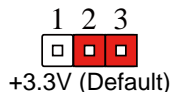
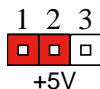
JP8	Function
1-2	VR Mode (Default)
2-3	PWM Mode

2.15 1st LVDS Port1 Backlight Inverter VCC Selection (JP9)



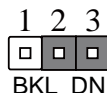
JP9	Function
1-2	+12V
2-3	+5V (Default)

2.16 1st LVDS-LCD Port1 Operating VDD Selection (JP10)



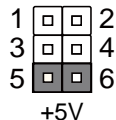
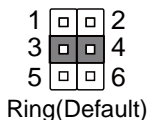
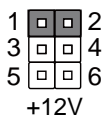
JP10	Function
1-2	+5V
2-3	+3.3V(Default)

2.17 2nd LVDS-LCD Backlight Control Selection (JP11)



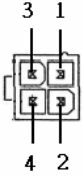
JP11	Function
1-2	BKL_UP
2-3	BKL_DN

2.18 COM2 +5V/Ring/+12V Selection (JP12)



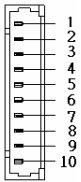
JP12	Function
1-2	+12V
3-4	Ring(Default)
5-6	+5V

2.19 +12VSB Power Input Connector (CN1)



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

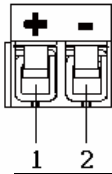
2.20 Front Panel Connector (CN2)



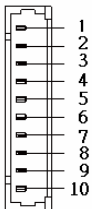
Pin	Pin Name	Signal Type	Signal Level
1	PWRBTN+	IN	
2	PWRBTN-	IN	
3	SPEAKER+	OUT	
4	SPEAKER-	OUT	
5	HDD_LED+	OUT	
6	HDD_LED-	OUT	

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7	PWR_LED+	OUT
8	PWR_LED-	OUT
9	H/W RESET+	IN
10	H/W RESET-	IN

2.21 Power Connector (CN3)

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

2.22 Audio Connector (CN4)

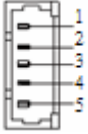
Pin	Pin Name	Signal Type	Signal Level
1	MIC_L	IN	
2	MIC_R	IN	
3	GND_AUDIO	GND	
4	Line_L_IN	IN	

5	Line_R_IN	IN	
6	GND_AUDIO	GND	
7	FRONT_L_OUT	OUT	
8	GND_AUDIO	GND	
9	FRONT_R_OUT	OUT	
10	+5V_AUDIO	PWR	+5V

2.23 PCI/104 Connector (CN5)

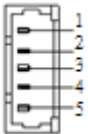
	A	B	C	D
1	GND	+5V_SB	+5V	AD00
2	VI/O	AD02	AD01	+5V
3	AD05	GND	AD04	AD03
4	C/BE0#	AD07	GND	AD06
5	GND	AD09	AD08	GND
6	AD11	VI/O	AD10	M66EN
7	AD14	AD13	GND	AD12
8	+3.3V	C/BE1#	AD15	+3.3V
9	SERR#	GND	PS0N#	PAR
10	GND	PERR#	+3.3V	PME#
11	STOP#	+3.3V	LOCK#	GND
12	+3.3V	TRDY#	GND	DEVSEL#
13	FRAME#	GND	IRDY#	+3.3V
14	GND	AD16	+3.3V	C/BE2#
15	AD18	+3.3V	AD17	GND
16	AD21	AD20	GND	AD19
17	+3.3V	AD23	AD22	+3.3V
18	IDSEL0	GND	IDSEL1	IDSEL2
19	AD24	C/BE3#	VI/O	IDSEL3
20	GND	AD26	AD25	GND
21	AD29	+5V	AD28	AD27
22	+5V	AD30	GND	AD31
23	REQ0#	GND	REQ1#	VI/O
24	GND	REQ2#	+5V	GNT0#
25	GNT1#	VI/O	GNT2#	GND
26	+5V	CLK0	GND	CLK1
27	CLK2	+5V	CLK3	GND
28	GND	INTD#	+5V	RST#
29	+12V	INTA#	INTB#	INTC#
30	-12V	REQ3#	GNT3#	GND

2.24 USB Connector (CN6)



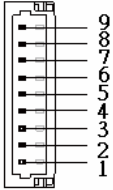
Pin	Pin Name	Signal Type	Signal Level
1	+5V	PWR	+5V
2	USB4_D-	DIFF	
3	USB4_D+	DIFF	
4	GND	GND	
5	GND	GND	

2.25 USB Connector (CN7)



Pin	Pin Name	Signal Type	Signal Level
1	+5V	PWR	+5V
2	USB_5D-	DIFF	
3	USB_5D+	DIFF	
4	GND	GND	
5	GND	GND	

2.26 Touch Screen Connector (CN8)



4-wire

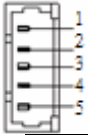
Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	
2	TOP	IN	
3	BOTTOM	IN	
4	LEFT	IN	
5	RIGHT	IN	
6	NC		
7	NC		
8	NC		
9	NC		

5-wire

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	

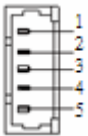
6	SENSE(S)	IN
7	NC	
8	NC	
9	NC	

2.27 USB Connector (CN9)



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

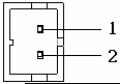
2.28 USB Connector (CN10)



Pin	Pin Name	Signal Type	Signal Level
1	+5V	PWR	+5V
2	USB7_D-	DIFF	
3	USB7_D+	DIFF	
4	GND	GND	

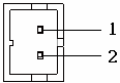
5 GND GND

2.29 SATA Power Connector (CN11)



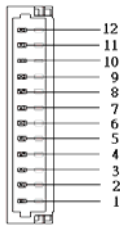
Pin	Pin Name	Signal Type	Signal Level
1	+5V	PWR	+5V
2	GND	GND	

2.30 SATA Power Connector (CN12)



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

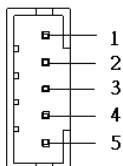
2.31 LPC Debug Connector (CN13)



Pin	Pin Name	Signal Type	Signal Level
1	LAD0	I/O	+3.3V
2	LAD1	I/O	+3.3V

EPIC Board		EPIC-CV07	
3	LAD2	I/O	+3.3V
4	LAD3	I/O	+3.3V
5	+3.3V	PWR	+3.3V
6	FRAME#	IN	
7	LRESET#	OUT	+3.3V
8	GND	GND	
9	LCLK	OUT	
10	LDRQ0	IN	
11	LDRQ1	IN	
12	SERIRQ	I/O	+3.3V

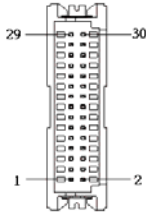
2.32 2nd LCD Inverter Connector (CN14)



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	+3.3V

Note: BKL_PWR can be set to +5V or +12V by JP5

2.33 2nd LCD Connector (CN15)

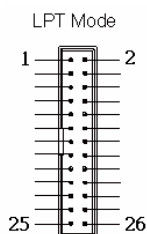


Pin	Pin Name	Signal Type	Signal Level
1	BKL_ENABLE	OUT	+3.3V
2	BKL_CONTROL	OUT	
3	LCD_PWR	PWR	+3.3V/+5V
4	GND	GND	
5	LVDS_A_CLK-	DIFF	
6	LVDS_A_CLK+	DIFF	
7	LCD_PWR	PWR	+3.3V/+5V
8	GND	GND	
9	LVDS_DA0-	DIFF	
10	LVDS_DA0+	DIFF	
11	LVDS_DA1-	DIFF	
12	LVDS_DA1+	DIFF	
13	LVDS_DA2-	DIFF	
14	LVDS_DA2+	DIFF	
15	LVDS_DA3-	DIFF	
16	LVDS_DA3+	DIFF	
17	DDC_DATA	I/O	+3.3V

EPIC Board		EPIC-CV07	
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: LCD_PWR can be set to +3.3V or +5V by JP6.

2.34 LPT/ Digital I/O Connector (CN16)

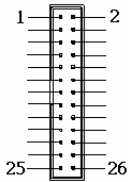


Pin	Pin Name	Signal Type	Signal Level
1	STROBE#	I/O	
2	AFD#	I/O	
3	PD0	I/O	

EPIC Board**EPIC-CV07**

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	

DIO Mode

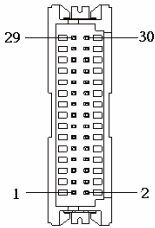


Pin	Pin Name	Signal Type	Signal Level
1	DIO7	I/O	+5V
2	DIO6	I/O	+5V
3	DIO8	I/O	+5V
4	DIO5	I/O	+5V
5	DIO9	I/O	+5V
6	DIO4	I/O	+5V
7	DIO10	I/O	+5V
8	DIO3	I/O	+5V
9	DIO11	I/O	+5V
10	GND	GND	
11	DIO12	I/O	+5V
12	GND	GND	
13	DIO13	I/O	+5V
14	GND	GND	
15	DIO14	I/O	+5V
16	GND	GND	
17	DIO15	I/O	+5V
18	GND	GND	

EPIC Board		EPIC-CV07	
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19	DIO2	I/O	+5V
20	GND	GND	
21	DIO1	I/O	+5V
22	GND	GND	
23	DIO0	I/O	+5V
24	GND	GND	
25	NC		
26	+5V	PWR	+5V

2.35 1st LCD Connector (CN17)



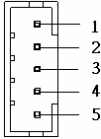
Pin	Pin Name	Signal Type	Signal Level
1	BKL_ENABLE	OUT	
2	BKL_CONTROL	OUT	
3	LCD_PWR	PWR	+3.3V/+5V
4	GND	GND	
5	LVDS_CLK-	DIFF	
6	LVDS_CLK+	DIFF	
7	LCD_PWR	PWR	+3.3V/+5V
8	GND	GND	

EPIC Board**EPIC-CV07**

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	NC		
20	NC		
21	NC		
22	NC		
23	NC		
24	NC		
25	NC		
26	NC		
27	LCD_PWR	PWR	+3.3V/+5V
28	GND	GND	
29	NC		
30	NC		

Note: LCD_PWR can be set to +3.3V or +5V by JP10.

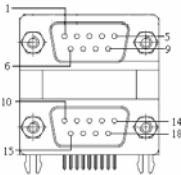
2.36 1st LCD Inverter Connector (CN18)



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	+3.3V

Note: BKL_PWR can be set to +5V or +12V by JP9.

2.37 1st / 2nd Serial COM Port Connector (CN19)



Pin	Pin Name	Signal Type	Signal Level
1	DCD1	IN	
2	RX1	IN	
3	TX1	OUT	±9V
4	DTR1	OUT	±9V
5	GND	GND	

EPIC Board**EPIC-CV07**

6	DSR1	IN	
7	RTS1	OUT	±9V
8	CTS1	IN	
9	RI1	IN	

RS-232

Pin	Pin Name	Signal Type	Signal Level
10	DCD2	IN	
11	RX2	IN	
12	TX2	OUT	±9V
13	DTR2	OUT	±9V
14	GND	GND	
15	DSR2	IN	
16	RTS2	OUT	±9V
17	CTS2	IN	
18	RI2	IN	

RS-422

Pin	Pin Name	Signal Type	Signal Level
10	RS422_TX-	OUT	±5V
11	RS422_RX+	IN	±5V
12	RS422_TX+	OUT	±5V
13	RS422_RX-	IN	±5V
14	GND	GND	
15	NC		
16	NC		

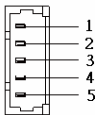
17	NC		
18	RING/+5V/+12V	PWR	+5V/+12V

RS-485

Pin	Pin Name	Signal Type	Signal Level
10	RS485_D-	I/O	±5V
11	NC		
12	RS485_D+	I/O	±5V
13	NC		
14	GND	GND	
15	NC		
16	NC		
17	NC		
18	RING/+5V/+12V	PWR	+5V/+12V

Note: RING/+5V/+12V can be set to +5V or +12V by JP12.

2.38 PS2 Keyboard / Mouse Connector (CN20)

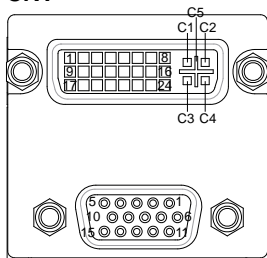


Pin	Pin Name	Signal Type	Signal Level
1	KB_DATA	I/O	+5V
2	KB_CLK	I/O	+5V
3	GND	GND	
4	+5V	PWR	+5V

5	MS_DATA	I/O	+5V
6	MS_CLK	I/O	+5V

2.39 DVI-I/CRT Connector (CN21)

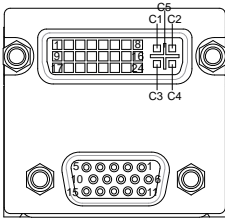
CRT



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

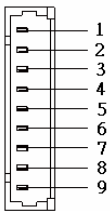
DVI



Pin	Pin Name	Signal Type	Signal Level
1	TMDS_DAT2-	DIFF	
2	TMDS_DAT2+	DIFF	
3	GND	GND	
4	NC		
5	NC		
6	DVI_DDC_CLK	I/O	+5V
7	DVI_DDC_DATA	I/O	+5V
8	VSYNC	OUT	
9	TMDS_DAT1-	DIFF	
10	TMDS_DAT1+	DIFF	
11	GND	GND	
12	NC		
13	NC		
14	+5V	PWR	+5V
15	GND	GND	

EPIC Board**EPIC-CV07**

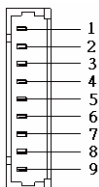
16	HPLG_DETEC	IN
17	TMDS_DAT0-	DIFF
18	TMDS_DAT0+	DIFF
19	GND	GND
20	NC	
21	NC	
22	GND	
23	TMDS_CLK+	DIFF
24	TMDS_CLK-	DIFF
C1	RED	OUT
C2	GREEN	OUT
C3	BLUE	OUT
C4	HSYNC	OUT
C5	ANALOG_GND	GND

2.40 8th COM Port Connector (CN22)

Pin	Pin Name	Signal Type	Signal Level
1	DCD8	IN	
2	DSR8	IN	
3	RX8	IN	

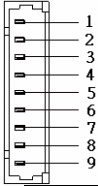
EPIC Board		EPIC-CV07	
4	RTS8	OUT	±9V
5	TX8	OUT	±9V
6	CTS8	IN	
7	DTR8	OUT	±9V
8	RI8	IN	
9	GND	GND	

2.41 7th COM Port Connector (CN23)



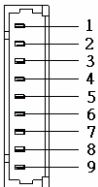
Pin	Pin Name	Signal Type	Signal Level
1	DCD7	IN	
2	DSR7	IN	
3	RX7	IN	
4	RTS7	OUT	±9V
5	TX7	OUT	±9V
6	CTS7	IN	
7	DTR7	OUT	±9V
8	RI7	IN	
9	GND	GND	

2.42 6th COM Port Connector (CN24)



Pin	Pin Name	Signal Type	Signal Level
1	DCD6	IN	
2	DSR6	IN	
3	RX6	IN	
4	RTS6	OUT	±9V
5	TX6	OUT	±9V
6	CTS6	IN	
7	DTR6	OUT	±9V
8	RI6	IN	
9	GND	GND	

2.43 5th COM Port Connector (CN25)

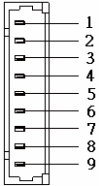


Pin	Pin Name	Signal Type	Signal Level
1	DCD5	IN	

EPIC Board		EPIC-CV07	
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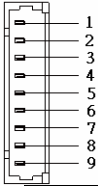
2	DSR5	IN	
3	RX5	IN	
4	RTS5	OUT	±9V
5	TX5	OUT	±9V
6	CTS5	IN	
7	DTR5	OUT	±9V
8	RI5	IN	
9	GND	GND	

2.44 4th COM Port Connector (CN26)



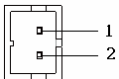
Pin	Pin Name	Signal Type	Signal Level
1	DCD4	IN	
2	DSR4	IN	
3	RX4	IN	
4	RTS4	OUT	±9V
5	TX4	OUT	±9V
6	CTS4	IN	
7	DTR4	OUT	±9V
8	RI4	IN	
9	GND	GND	

2.45 3rd COM Port Connector (CN27)



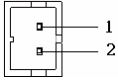
Pin	Pin Name	Signal Type	Signal Level
1	DCD3	IN	
2	DSR3	IN	
3	RX3	IN	
4	RTS3	OUT	±9V
5	TX3	OUT	±9V
6	CTS3	IN	
7	DTR3	OUT	±9V
8	RI3	IN	
9	GND	GND	

2.46 LEFT Speaker Connector (CN28)



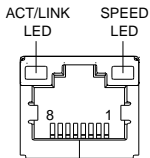
Pin	Pin Name	Signal Type	Signal Level
1	SKR_L+	OUT	
2	SKR_L-	OUT	

2.47 RIGHT Speaker Connector (CN29)



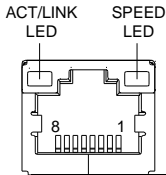
Pin	Pin Name	Signal Type	Signal Level
1	SKR_R+	OUT	
2	SKR_R-	OUT	

2.48 10/100/1000Base-TX Ethernet Connector (LAN1)



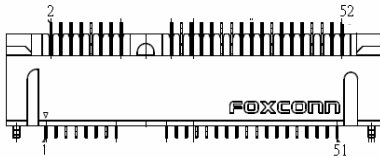
Pin	Pin Name	Signal Type	Signal Level
1	MDI0+	DIFF	
2	MDI0-	DIFF	
3	MDI1+	DIFF	
4	MDI1-	DIFF	
5	MDI2+	DIFF	
6	MDI2-	DIFF	
7	MDI3+	DIFF	
8	MDI3-	DIFF	

2.49 10/100/1000Base-TX Ethernet Connector (LAN2)



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

2.50 Mini PCI Express Connector (MINICARD1)



Pin	Pin Name	Signal Type	Signal Level
1	PCIE_WAKE#	OUT	
2	+3.3VSB	PWR	+3.3V
3	NC		

EPIC Board**EPIC-CV07**

4	GND	GND	+5V
5	NC		
6	+1.5V	PWR	+1.5V
7	NC		
8	NC		
9	GND	GND	
10	NC		
11	PCIE_REF_CLK-	DIFF	
12	NC		
13	PCIE_REF_CLK+	DIFF	
14	NC		
15	GND	GND	
16	NC		
17	NC		
18	GND	GND	
19	NC		
20	W_DISABLE#	IN	
21	GND	GND	
22	PCIE_RST#	IN	
23	PCIE_RX-	DIFF	
24	+3.3VSB	PWR	+3.3V
25	PCIE_RX+	DIFF	
26	GND	GND	
27	GND	GND	

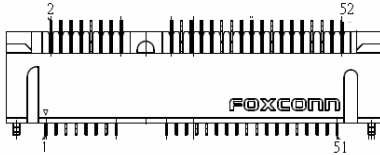
EPIC Board**EPIC-CV07**

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	USB6_D-	DIFF	
37	GND	GND	
38	USB6_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
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Note: Either CN9 or MINICARD1 for USB

2.51 Mini PCI Express/ mSATA Connector (MINICARD2)



Pin	Pin Name	Signal Type	Signal Level
1	PCIE_WAKE#	OUT	
2	+3.3VSB/+3.3V	PWR	+3.3V
3	NC		
4	GND	GND	
5	NC		
6	+1.5V	PWR	+1.5V
7	NC		
8	NC		
9	GND	GND	
10	NC		
11	PCIE_REF_CLK-	DIFF	
12	NC		
13	PCIE_REF_CLK+	DIFF	
14	NC		
15	GND	GND	

EPIC Board**EPIC-CV07**

16	NC		
17	NC		
18	GND	GND	
19	NC		
20	W_DISABLE#	IN	
21	GND	GND	
22	PCIE_RST#	IN	
23	PCIE_RX-/SATA2_RX+	DIFF	
24	+3.3VSB/+3.3V	PWR	
25	PCIE_RX+/SATA2_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-/SATA2_TX-	DIFF	
32	SMB_DATA	I/O	+3.3V
33	PCIE_TX+/SATA2_TX+	DIFF	
34	GND	GND	
35	GND	GND	
36	NC		
37	GND	GND	
38	NC		
39	+3.3VSB/+3.3V	PWR	+3.3V

EPIC Board**EPIC-CV07**

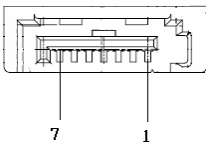
40	GND	GND	
41	+3.3VSB/+3.3V	PWR	+3.3V
42	NC		
43	GND	GND	
44	NC		
45	NC		
46	NC		
47	NC		
48	+1.5V	PWR	+1.5V
49	NC		
50	GND	GND	
51	NC		
52	+3.3VSB/+3.3V	PWR	+3.3V

Note 1: Either SATA2 or mSATA,PCI Express for MINICARD2

Note 2: +3.3V by mSATA , +3.3VSB by Mini PCI Express

Note 3: No support USB I/F on MINICARD2

2.52 SATA Connector (SATA1)

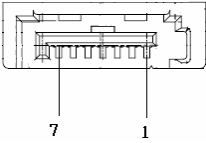


Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	
2	SATA1_TX+	DIFF	
3	SATA1_TX-	DIFF	

EPIC Board		EPIC-CV07
------------	--	-----------

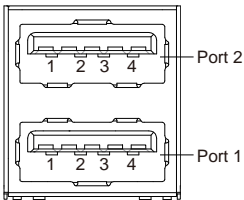
4	GND	GND
5	SATA1_RX-	DIFF
6	SATA1_RX+	DIFF
7	GND	GND

2.53 SATA Connector (SATA2)



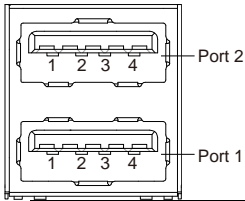
Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	
2	SATA2_TX+	DIFF	
3	SATA2_TX-	DIFF	
4	GND	GND	
5	SATA2_RX-	DIFF	
6	SATA2_RX+	DIFF	
7	GND	GND	

2.54 Stack USB Connector (USB1)



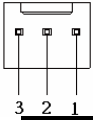
Pin	Pin Name	Signal Type	Signal Level
1	+5VSB	PWR	+5V
2	USB0_D-	DIFF	
3	USB0_D+	DIFF	
4	GND	GND	
5	+5VSB	PWR	+5V
6	USB1_D-	DIFF	
7	USB1_D+	DIFF	
8	GND	GND	

2.55 Stack USB Connector (USB2)



Pin	Pin Name	Signal Type	Signal Level
1	+5VSB	PWR	+5V
2	USB2_D-	DIFF	
3	USB2_D+	DIFF	
4	GND	GND	
5	+5VSB	PWR	+5V
6	USB3_D-	DIFF	
7	USB3_D+	DIFF	
8	GND	GND	

2.56 FAN Connector (FAN1)

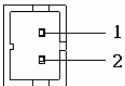


Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	
2	+12V	PWR	+12V
3	FAN_TAC	IN	

2.57 DIMM Connector (DIMM1)

Standard DDR3 Connector (204Pins)

2.58 Battery Connector (BT1)



Pin	Pin Name	Signal Type	Signal Level
1	+3VBAT	PWR	+3.3V
2	GND	GND	

Below Table for China RoHS Requirements

产品中有害有毒物质或元素名称及含量

AAEON Main Board/ Daughter Board/ Backplane

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

Chapter

3

**AMI
BIOS Setup**

3.1 System Test and Initialization

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

System configuration verification

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

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

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

The EPIC-CV07 CMOS memory has an integral lithium battery backup for data retention. However, you will need to replace the complete unit when it runs down.

3.2 AMI BIOS Setup

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

Entering Setup

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

Main

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

Advanced

Advanced BIOS Features Setup including TPM, ACPI, etc.

Chipset

Host bridge parameters.

Boot

Enables/disable quiet boot option.

Security

Set setup administrator password.

Save&Exit

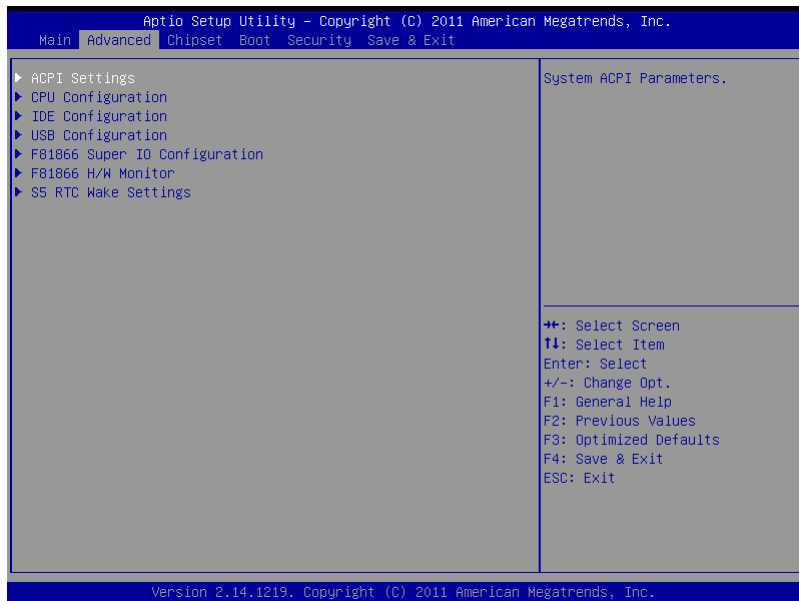
Exit system setup after saving the changes.

Setup Menu

Setup submenu: Main

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.	
Main Advanced Chipset Boot Security Save & Exit	
BIOS Information EPIC-CV07 R1.2(EPCVBM12) (08/09/2012)	Set the Date. Use Tab to switch between Data elements.
BIOS Vendor: American Megatrends Core Version: 4.6.5.1 Compliancy: UEFI 2.3; PI 1.2	
System Date: [Fri 01/02/2009] System Time: [17:33:59]	
Access Level: Administrator	
	+/: Select Screen ↑: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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Setup submenu: Advanced



Options Summary :

ACPI Settings	System ACPI Parameters.
CPU Configuration	CPU Configuration Parameters
IDE Configuration	IDE Devices Configuration
USB Configuration	USB Configuration Parameters
F81866 Super IO Configuration	System Super IO Chip Parameters.
F81866 H/W Monitor	Monitor hardware status
S5 RTC Wake Settings	Enable system to wake from S5 using RTC alarm

ACPI Settings

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Advanced

<p>ACPI Settings</p> <p>ACPI Sleep State [S3 (Suspend to RAM)]</p>	<p>Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.</p> <hr/> <p> ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit </p>
--	--

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Options Summary :

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

CPU Configuration

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Advanced

CPU Configuration		Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology).
Processor Type	Intel(R) Atom(TM) CPU Supported	
EMT64	1600 MHz	
Processor Speed	400 MHz	
System Bus Speed	16	
Ratio Status	16	
Actual Ratio	400 MHz	
System Bus Speed	30661	
Processor Stepping	269	
Microcode Revision	2x56 k	
L1 Cache RAM	2x512 k	
L2 Cache RAM	Dual	
Processor Core	Supported	
Hyper-Threading	[Enabled]	+-: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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Options Summary :

Hyper-Threading	Disabled	
	Enabled	Default
Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) And Disabled for other OS (OS not optimized for Hyper0Threading Technology).		

IDE Configuration (IDE)

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Advanced

SATA Port0	Not Present	SATA Ports (0-3) Device Names if Present and Enabled.
SATA Port1	Not Present	
SATA Controller(s)	[Enabled]	⇧⇩: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Configure SATA as	[IDE]	

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Options Summary :

SATA Controller(s)	Enabled	Default
	Disabled	
SATA Ports (0-3) Device Names if Present and Enabled.		
Configure SATA as	IDE	Default
	AHCI	
Select a configuration for SATA Controller.		

IDE Configuration (AHCI)

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Advanced

SATA Port0	Not Present	Select a configuration for SATA Controller.
SATA Port1	Not Present	
SATA Controller(s)	[Enabled]	++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Configure SATA as	[AHCI]	
SATA Port 0 Hot Plug	[Enabled]	
SATA Port 1 Hot Plug	[Enabled]	

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Options Summary :

SATA Controller(s)	Disabled	
	Enabled	Default
SATA Ports (0-3) Device Names if Present and Enabled.		
Configure SATA as	IDE	
	AHCI	Selected
Select a configuration for SATA Controller.		

USB Configuration

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Advanced

<p>USB Configuration</p> <p>USB Devices: 1 Drive, 1 Keyboard, 1 Mouse</p> <p>Legacy USB Support [Enabled]</p> <p>Mass Storage Devices: Skymedi USB3_Pen_Drive 1.01 [Auto]</p>	<p>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.</p> <hr/> <p>+/: Select Screen ↑: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</p>
---	--

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Options Summary :

Legacy USB Support	Enabled	Default
	Disabled	
	Auto	
Enable 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.		
Mass Storage Devices: Your Storage Device	Auto	Default
	Floppy	
	Forced FDD	
	Hard Disk	
	CD-ROM	
Mass storage device emulation type. 'AUTO' enumerates devices less than 530 MB as floppies. Forced FDD option can be used to force HDD formatted drive to boot as FDD (e.g. ZIP drive).		

F81866 Super IO Configuration

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Advanced

<p>F81866 Super IO Configuration</p> <p>F81866 Super IO Chip F81866</p> <ul style="list-style-type: none"> ▶ Serial Port 1 Configuration ▶ Serial Port 2 Configuration ▶ Serial Port 3 Configuration ▶ Serial Port 4 Configuration ▶ Serial Port 5 Configuration ▶ Serial Port 6 Configuration ▶ Parallel Port Configuration <p>Power Failure [Keep last state]</p> <p>ERP Function [Disabled]</p>	<p>Set Parameters of Serial Port 1</p> <hr/> <p> ⇨+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit </p>
--	--

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Options Summary :

Serial Port 1 Configuration	Set Parameters of Serial Port 1	
Serial Port 2 Configuration	Set Parameters of Serial Port 2	
Serial Port 3 Configuration	Set Parameters of Serial Port 3	
Serial Port 4 Configuration	Set Parameters of Serial Port 4	
Serial Port 5 Configuration	Set Parameters of Serial Port 5	
Serial Port 6 Configuration	Set Parameters of Serial Port 6	
Parallel Port Configuration	Set Parameters of Parallel Port (LPT/LPTE)	
Power Failure	Keep last state	Default
	Always on	
	Always off	
F81866 Power Failure		
ERP Function	Disabled	Default
	Enabled	
ERP Function Enable/Disable		

Serial Port 1 Configuration

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Advanced

Serial Port 1 Configuration		Enable or Disable Serial Port (COM)
Serial Port	[Enabled]	⇧+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Device Settings	IO=3F8h; IRQ=4;	
Change Settings	[Auto]	

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Options Summary :

Serial Port	Disabled	
	Enabled	Default
Enable or Disable Serial Port (COM)		
Change Settings (Serial Port 1)	Auto	Default
	IO=3F8h; IRQ=4;	
	IO=3F8h; IRQ=3,4;	
	IO=2F8h; IRQ=3,4'	
Select an optimal 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]	
RS232/422,485	[RS232]	
		++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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Options Summary :

Serial Port	Disabled	
	Enabled	Default
Enable or Disable Serial Port (COM)		
Change Settings	Auto	Default
	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	Default
	RS422	
	RS485	
RS232/422,485 switch		

Serial Port 3 Configuration

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Advanced

Serial Port 3 Configuration		Enable or Disable Serial Port (COM)
Serial Port	[Enabled]	⇧+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Device Settings	IO=3E8h; IRQ=11;	
Change Settings	[Auto]	

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Options Summary :

Serial Port	Disabled	Default
	Enabled	
Enable or Disable Serial Port (COM)		
Change Settings	Auto	Default
	IO=3E8h; IRQ=11;	
	IO=3E8h; IRQ=11;	
	IO=2E8h; IRQ=11;	
Select an optimal setting for Super IO device.		

Serial Port 4 Configuration

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Advanced

Serial Port 4 Configuration		Enable or Disable Serial Port (COM)
Serial Port	[Enabled]	⇧+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Device Settings	IO=2E8h; IRQ=11;	
Change Settings	[Auto]	

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Options Summary :

Serial Port	Disabled	Default
	Enabled	
Enable or Disable Serial Port (COM)		
Change Settings	Auto	Default
	IO=2E8h; IRQ=11;	
	IO=3E8h; IRQ=11;	
	IO=2E8h; IRQ=11;	
Select an optimal setting for Super IO device.		

Serial Port 5 Configuration

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Advanced

Serial Port 5 Configuration		Enable or Disable Serial Port (COM)
Serial Port	[Enabled]	⇧+: Select Screen ⇧1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Device Settings	IO=2C8h; IRQ=11;	
Change Settings	[Auto]	

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Options Summary :

Serial Port	Disabled	Default
	Enabled	
Enable or Disable Serial Port (COM)		
Change Settings	Auto	Default
	IO=2C8h; IRQ=11;	
	IO=2C8h; IRQ=11;	
	IO=2C0h; IRQ=11;	
Select an optimal setting for Super IO device.		

Serial Port 6 Configuration

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Advanced

Serial Port 6 Configuration		Enable or Disable Serial Port (COM)
Serial Port	[Enabled]	
Device Settings	IO=2C0h; IRQ=11;	
Change Settings	[Auto]	
Device Mode	[Disable IR1 function]	
		++: Select Screen ↑: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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Options Summary :

Serial Port	Disabled	
	Enabled	Default
Enable or Disable Serial Port (COM)		
Change Settings	Auto	Default
	IO=2C0h; IRQ=11;	
	IO=2C8h; IRQ=11;	
IO=2C0h; IRQ=11;		
Select an optimal setting for Super IO device.		
Device Mode	Disable IR1 function	Default
	Enable IR1 function, active pulse 1.6 uS	
	Enable IR1 function, active pulse 3/16 bit time	
Change the Serial Port mode. Select <High Speed> or <Normal mode> mode		

Parallel Port Configuration

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Advanced

Parallel Port Configuration		Enable or Disable Parallel Port (LPT/LPTE)
Parallel Port	[Enabled]	⇧+: Select Screen ⇧1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Device Settings	IO=378h; IRQ=5;	
Change Settings	[Auto]	
Device Mode	[STD Printer Mode]	

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Options Summary :

Parallel Port	Disabled	
	Enabled	Default
Enable or Disable Parallel Port (LPT/LPTE)		
Change Settings	Auto	Default
	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	Default
	SPP Mode	
	EPP-1.9 and SPP Mode	
	EPP-1.7 and SPP Mode	
	ECP Mode	
	ECP and EPP 1.0 Mode	

Smart Fan Mode Configuration

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Advanced

<p>Smart Fan Mode Configuration</p> <p>Fan 1 Smart Fan Control [Auto Duty-Cycle Mode]</p> <p>Temperature 1 60</p> <p>Temperature 2 50</p> <p>Temperature 3 40</p> <p>Temperature 4 30</p> <p>Duty Cycle 1 85</p> <p>Duty Cycle 2 70</p> <p>Duty Cycle 3 60</p> <p>Duty Cycle 4 50</p>	<p>Smart Fan Mode Select</p> <p> ++: Select Screen ↑: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit </p>
---	--

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Option Summary :

Fan 1 Smart Fan Control	Manual RPM Mode	
	Manual Duty Mode	
	Auto RPM Mode	
	Auto Duty-Cycle Mode	Default
Smart Fan Mode select		

S5 RTC Wake Settings

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Advanced

Wake system with Fixed Time	[Disabled]	Enable or disable System wake on alarm event. When enabled, System will wake on the hr::min::sec specified
Wake system with Dynamic Time	[Disabled]	
		+-: Select Screen ↑: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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Option Summary :

Wake system with Fixed Time	Disabled	Default
	Enabled	
Enable or disable System wake on alarm event. When enabled, System will wake on the hr::min::sec specified		
Wake system with Dynamic Time	Disabled	Default
	Enabled	
Enable or disable System wake on alarm event. When enabled, System will wake on the current time + Increase minute(s)		

Setup submenu: Chipset



Options Summary :

Host Bridge	Host Bridge Parameters
South Bridge	South Bridge Parameters

Host Bridge

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Chipset

<pre> ***** Memory Information ***** Memory Frequency 800 MHz(DDR3) Total Memory 2048 MB ▶ Graphics Configuration </pre>	<p>Graphics Configuration Settings.</p> <hr/> <pre> +/: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit </pre>
--	---

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Options Summary :

Graphics Configuration	Graphics Configuration Settings.
------------------------	----------------------------------

Graphics Configuration

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Chipset

<p>Graphics Configuration</p> <p>Fixed Graphics Memory Size [256MB]</p> <p>IGFX - Boot Type [VBIOS Default]</p> <p>Active LFP [Enabled]</p> <p>LCD Panel Type [VBIOS Default]</p> <p>LVDS1 Backlight Control [Normal]</p> <p>LVDS1 Backlight Level [80%]</p>	<p>Configure Fixed Graphics Memory Size</p> <p> ++: Select Screen ↑: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit </p>
---	---

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Options Summary :

Fixed Graphics Memory Size	128M	
	256M	Default
Configure Fixed Graphics Memory Size		
IGFX - Boot Type	VBIOS Default	Default
	CRT	
	LFP	
	CRT + LFP	
Select the Video Device which will be activated during POST. This has no effect if external graphics present. This product only supports single display in DOS mode.		
Active LFP	Disabled	
	Enabled	Default
Select the Active LFP Configuration. No LVDS:VBIOS enables LVDS driver by Integrated encoder. SDV0 LVDS:VBIOS enables LVDS driver by SDV0 encoder. eDP Port-a:LFP Driven by Inter0DisplayPort encoder from Port-A.		
LCD Panel Type	VBIOS Default	Default
	800x600 18 bit	

Options Summary :

Power Mode	ATX Type	Default
	AT Type	
Select power supply mode		
Azalia Controller	Disabled	
	HD Audio	Default
Azalia Controller		
PCI Express Port 0	Disabled	
	Enabled	Default
Enable / Disable PCI Express Root Port 0.		
PCI Express Port 1	Disabled	
	Enabled	
	Auto	Default
Enable / Disable PCI Express Root Port 1.		
PCI Express Port 2	Disabled	
	Enabled	
	Auto	Default
Enable / Disable PCI Express Root Port 2.		
PCI Express Port 3	Disabled	
	Enabled	
	Auto	Default
Enable / Disable PCI Express Root Port 3.		

Setup submenu: Boot

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
 Main Advanced Chipset **Boot** Security Save & Exit

<p>Boot Configuration</p> <p>Quiet Boot [Enabled] Launch RTL8111E PXE OpROM [Disabled]</p> <p>Boot Option Priorities Boot Option #1 [UEFI: Skymedi USB3...] Boot Option #2 [Skymedi USB3_Pen_D...]</p> <p>Hard Drive BBS Priorities</p>	<p>Enables or disables Quiet Boot option</p> <hr/> <p> ++: Select Screen T1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit </p>
--	--

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Options Summary :

Quiet Boot	Disabled	
	Enabled	Default
Enables or disables Quiet Boot option		
Launch RTL8111E PXE OpROM	Disabled	Default
	Enabled	
Enable or Disable Legacy Boot Option for RTL8111E		
Boot options #X	Your storage/disk devices	
Sets the system boot order		

Hard Drives BBS Priorities

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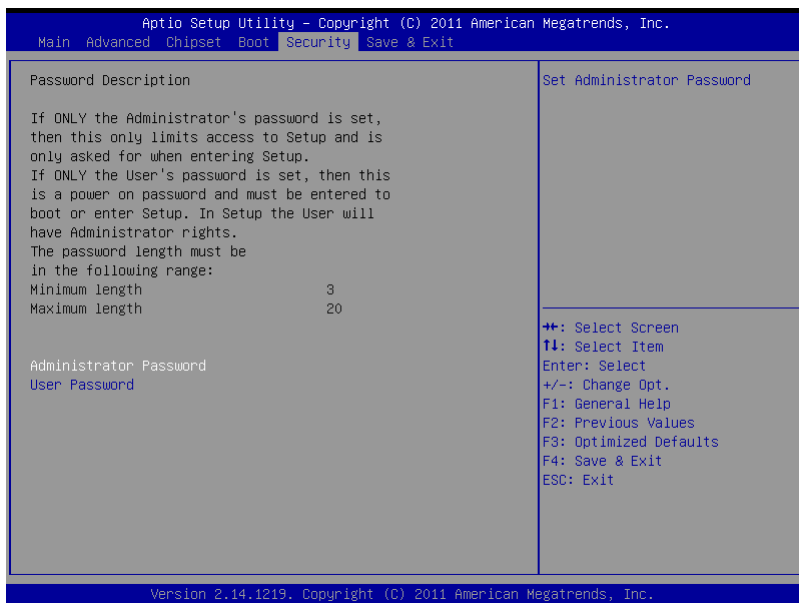
Boot

Boot Option #1	[Skymedi USB3_Pen_D...]	Sets the system boot order
----------------	-------------------------	----------------------------

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

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Submenu: Security



Change User/Supervisor Password

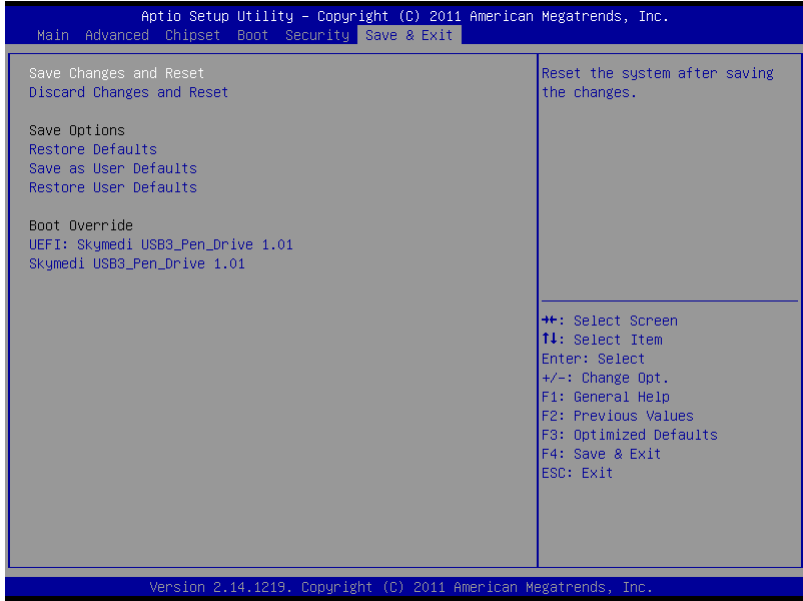
You can install a Supervisor password, and if you install a supervisor password, you can then install a user password. A user password does not provide access to many of the features in the Setup utility.

If you highlight these items and press Enter, 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



Chapter

4

**Driver
Installation**

The EPIC-CV07 comes with an AutoRun CD-ROM that contains all drivers and utilities that can help you to install the driver automatically.

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

Follow the sequence below to install the drivers:

- Step 1 – Install Chipset Driver
- Step 2 – Install VGA Driver
- Step 3 – Install LAN Driver
- Step 4 – Install Audio Driver
- Step 5 – Install Touch Driver
- Step 6 – Serial Port Driver (Optional)
- Step 7 – Rapid Storage Technology

Please read instructions below for further detailed installations.

4.1 Installation:

Insert the EPIC-CV07 CD-ROM into the CD-ROM drive. And install the drivers from Step 1 to Step 7 in order.

Step 1 – Install Chipset Driver

1. Click on the **Step1 - Chipset** folder and double click on the ***infinst_autol.exe*** file
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Step 2 – Install VGA Driver

1. Click on the **Step2 - VGA** folder and double click on the ***Setup.exe*** file
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Step 3 – Install LAN Driver

1. Click on the **Step3 - LAN** folder and double click on the ***setup.exe*** file
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Step 4 – Install Audio Driver

1. Click on the **Step4 - AUDIO** folder and select the OS folder your system is

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

Step 5 – Install Touch Driver

1. Click on the **Step5 - TOUCH** folder and double click on the **Setup.exe** file
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

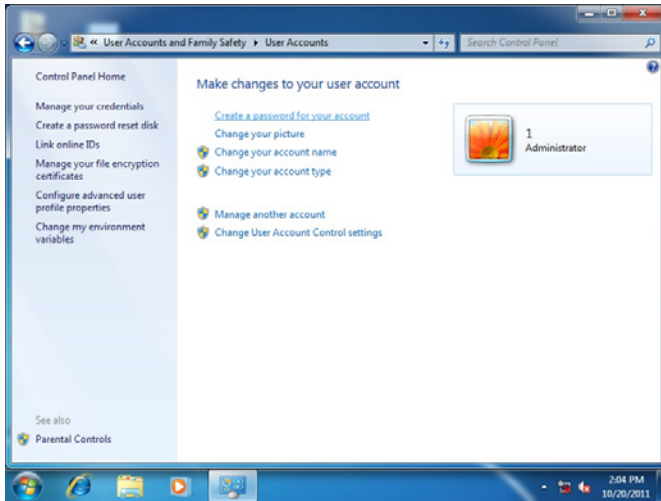
Step 6 – Serial Port Driver (Optional)

For Windows® XP:

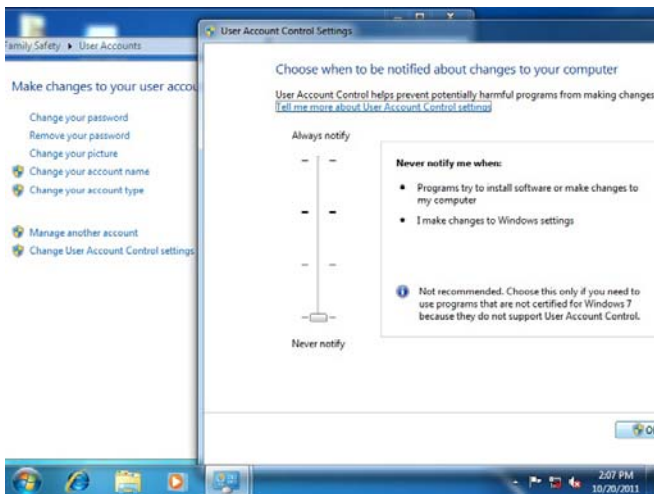
1. Click on the **Step6 - Serial Port Driver (Optional)** and select the folder of **WINXP_32**
2. Double click on **patch.bat** file
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

For Windows® 7:

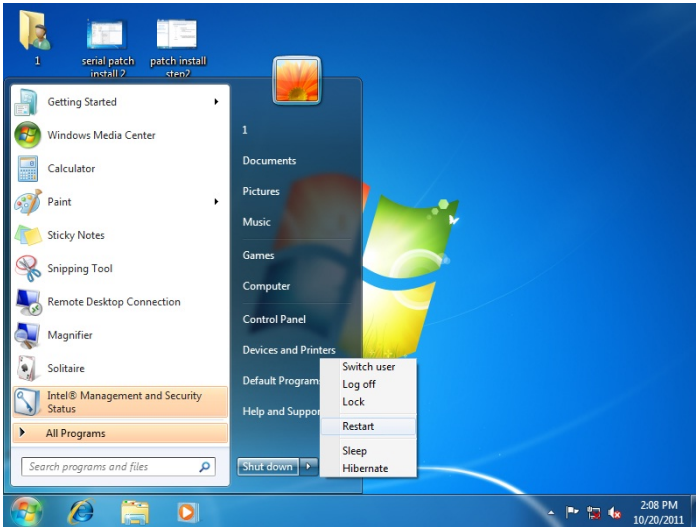
1. Create a password for Administrator account.



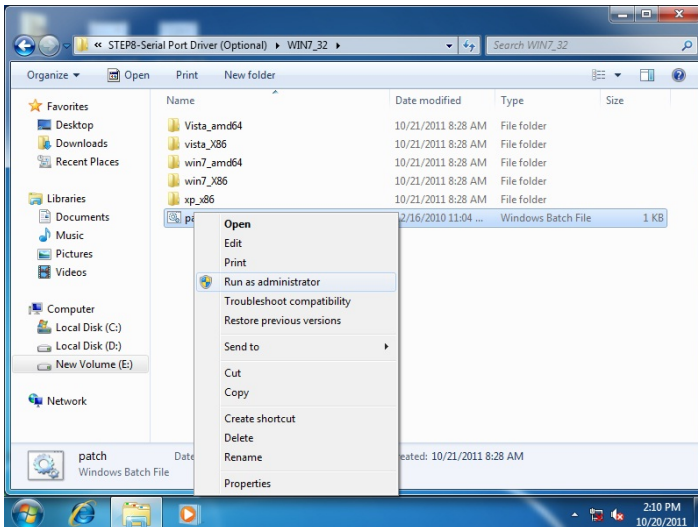
2. Change User Account Control Settings to [Never notify]



3. Reboot and Administrator login.



4. To run patch.bat with [Run as administrator].



Step 7 – Install Rapid Storage Technology Driver

1. Click on the **Step7 - Rapid Storage Technology** folder and double click on the **setup.exe** file
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Appendix

A

Programming the Watchdog Timer

A.1 Watchdog Timer Initial Program

Table 1 : SuperIO relative register table		
	Default Value	Note
Index	0x2E ^(Note1)	SIO MB PnP Mode Index Register 0x2E or 0x4E
Data	0x2F ^(Note2)	SIO MB PnP Mode Data Register 0x2F or 0x4F

Table 2 : Watchdog relative register table					
	LDN	Register	BitNum	Value	Note
Timer Counter	0x07 ^(Note3)	0xF6 ^(Note4)		(Note24)	Time of watchdog timer (0~255) This register is byte access
Counting Unit	0x07 ^(Note5)	0xF5 ^(Note6)	3 ^(Note7)	0 ^(Note8)	Select time unit. 0: second 1: minute
Watchdog Enable	0x07 ^(Note9)	0xF5 ^(Note10)	5 ^(Note11)	1 ^(Note12)	0: Disable 1: Enable
Timeout Status	0x07 ^(Note13)	0xF5 ^(Note14)	6 ^(Note15)	1	1: Clear timeout status
Output Mode	0x07 ^(Note16)	0xF5 ^(Note17)	4 ^(Note18)	1 ^(Note19)	Select WDTRST# output mode 0: level 1: pulse
WDTRST output	0x07 ^(Note20)	0xFA ^(Note21)	0 ^(Note22)	1 ^(Note23)	Enable/Disable time out output via WDTRST# 0: Disable 1: Enable

// SuperIO relative definition (Please reference to Table 1)

#define byte SIOIndex //This parameter is represented from **Note1**

#define byte SIOData //This parameter is represented from **Note2**

#define void IOWriteByte(**byte** IOPort, **byte** Value);

#define byte IOReadByte(**byte** IOPort);

// Watch Dog relative definition (Please reference to Table 2)

#define byte TimerLDN //This parameter is represented from **Note3**

#define byte TimerReg //This parameter is represented from **Note4**

#define byte TimerVal // This parameter is represented from **Note24**

#define byte UnitLDN //This parameter is represented from **Note5**

#define byte UnitReg //This parameter is represented from **Note6**

#define byte UnitBit //This parameter is represented from **Note7**

#define byte UnitVal //This parameter is represented from **Note8**

#define byte EnableLDN //This parameter is represented from **Note9**

#define byte EnableReg //This parameter is represented from **Note10**

#define byte EnableBit //This parameter is represented from **Note11**

#define byte EnableVal //This parameter is represented from **Note12**

#define byte StatusLDN // This parameter is represented from **Note13**

#define byte StatusReg // This parameter is represented from **Note14**

#define byte StatusBit // This parameter is represented from **Note15**

#define byte ModeLDN // This parameter is represented from **Note16**

#define byte ModeReg // This parameter is represented from **Note17**

#define byte ModeBit // This parameter is represented from **Note18**

#define byte ModeVal // This parameter is represented from **Note19**

#define byte WDRstLDN // This parameter is represented from **Note20**

#define byte WDRstReg // This parameter is represented from **Note21**

#define byte WDRstBit // This parameter is represented from **Note22**

#define byte WDRstVal // This parameter is represented from **Note23**

```
*****
VOID Main() {
    // Procedure : AaeonWDTConfig
    // (byte)Timer : Time of WDT timer.(0x00~0xFF)
    // (boolean)Unit : Select time unit(0: second, 1: minute).
    AaeonWDTConfig();

    // Procedure : AaeonWDTEnable
    // This procedure will enable the WDT counting.
    AaeonWDTEnable();
}
*****
```

```

*****
// Procedure : AaeonWDTEnable
VOID AaeonWDTEnable (){
    WDTEnableDisable(EnableLDN, EnableReg, EnableBit, 1);
}

// Procedure : AaeonWDTConfig
VOID AaeonWDTConfig (){
    // Disable WDT counting
    WDTEnableDisable(EnableLDN, EnableReg, EnableBit, 0);
    // Clear Watchdog Timeout Status
    WDTClearTimeoutStatus();
    // WDT relative parameter setting
    WDTParameterSetting();
}

VOID WDTEnableDisable(byte LDN, byte Register, byte BitNum, byte Value){
    SIOBitSet(LDN, Register, BitNum, Value);
}

VOID WDTParameterSetting(){
    // Watchdog Timer counter setting
    SIOByteSet(TimerLDN, TimerReg, TimerVal);
    // WDT counting unit setting
    SIOBitSet(UnitLDN, UnitReg, UnitBit, UnitVal);
    // WDT output mode setting, level / pulse
    SIOBitSet(ModeLDN, ModeReg, ModeBit, ModeVal);
    // Watchdog timeout output via WDTRST#
    SIOBitSet(WDTRstLDN, WDTRstReg, WDTRstBit, WDTRstVal);
}

VOID WDTClearTimeoutStatus(){
    SIOBitSet(StatusLDN, StatusReg, StatusBit, 1);
}
*****

```

```
VOID SIOEnterMBPnPMode(){
    IOWriteByte(SIOIndex, 0x87);
    IOWriteByte(SIOIndex, 0x87);
}

VOID SIOExitMBPnPMode(){
    IOWriteByte(SIOIndex, 0xAA);
}

VOID SIOSelectLDN(byte LDN){
    IOWriteByte(SIOIndex, 0x07); // SIO LDN Register Offset = 0x07
    IOWriteByte(SIOData, LDN);
}

VOID SIOBitSet(byte LDN, byte Register, byte BitNum, byte Value){
    Byte TmpValue;

    SIOEnterMBPnPMode();
    SIOSelectLDN(byte LDN);
    IOWriteByte(SIOIndex, Register);
    TmpValue = IOReadByte(SIOData);
    TmpValue &= ~(1 << BitNum);
    TmpValue |= (Value << BitNum);
    IOWriteByte(SIOData, TmpValue);
    SIOExitMBPnPMode();
}

VOID SIOByteSet(byte LDN, byte Register, byte Value){
    SIOEnterMBPnPMode();
    SIOSelectLDN(LDN);
    IOWriteByte(SIOIndex, Register);
    IOWriteByte(SIOData, Value);
    SIOExitMBPnPMode();
}
*****
```

Appendix

B

I/O Information

B.1 I/O Address Map

Input/output (IO)	
[00000000 - 0000001F]	Direct memory access controller
[00000000 - 00000CF7]	PCI bus
[00000010 - 0000001F]	Motherboard resources
[00000020 - 00000021]	Programmable interrupt controller
[00000022 - 0000003F]	Motherboard resources
[00000024 - 00000025]	Programmable interrupt controller
[00000028 - 00000029]	Programmable interrupt controller
[0000002C - 0000002D]	Programmable interrupt controller
[0000002E - 0000002F]	Motherboard resources
[00000030 - 00000031]	Programmable interrupt controller
[00000034 - 00000035]	Programmable interrupt controller
[00000038 - 00000039]	Programmable interrupt controller
[0000003C - 0000003D]	Programmable interrupt controller
[00000040 - 00000043]	System timer
[00000044 - 0000005F]	Motherboard resources
[0000004E - 0000004F]	Motherboard resources
[00000050 - 00000053]	System timer
[00000061 - 00000061]	Motherboard resources
[00000062 - 00000063]	Motherboard resources
[00000063 - 00000063]	Motherboard resources
[00000065 - 00000065]	Motherboard resources
[00000065 - 0000006F]	Motherboard resources
[00000067 - 00000067]	Motherboard resources
[00000070 - 00000070]	Motherboard resources
[00000070 - 00000077]	System CMOS/real time clock
[00000072 - 0000007F]	Motherboard resources
[00000080 - 00000080]	Motherboard resources
[00000080 - 00000080]	Motherboard resources
[00000081 - 00000091]	Direct memory access controller
[00000084 - 00000086]	Motherboard resources
[00000088 - 00000088]	Motherboard resources
[0000008C - 0000008E]	Motherboard resources
[00000090 - 0000009F]	Motherboard resources
[00000092 - 00000092]	Motherboard resources
[00000093 - 0000009F]	Direct memory access controller
[000000A0 - 000000A1]	Programmable interrupt controller
[000000A2 - 000000BF]	Motherboard resources
[000000A4 - 000000A5]	Programmable interrupt controller
[000000A8 - 000000A9]	Programmable interrupt controller
[000000AC - 000000AD]	Programmable interrupt controller














































[000000B0 - 000000B1]	Programmable interrupt controller
[000000B2 - 000000B3]	Motherboard resources
[000000B4 - 000000B5]	Programmable interrupt controller
[000000B8 - 000000B9]	Programmable interrupt controller
[000000BC - 000000BD]	Programmable interrupt controller
[000000C0 - 000000DF]	Direct memory access controller
[000000E0 - 000000EF]	Motherboard resources
[000000F0 - 000000F0]	Numeric data processor
[000003B0 - 000003BB]	Intel(R) Graphics Media Accelerator 3600 Series
[000003C0 - 000003DF]	Intel(R) Graphics Media Accelerator 3600 Series
[00000400 - 0000047F]	Motherboard resources
[00000400 - 0000047F]	Motherboard resources
[000004D0 - 000004D1]	Motherboard resources
[000004D0 - 000004D1]	Programmable interrupt controller
[00000500 - 0000053F]	Motherboard resources
[00000500 - 0000057F]	Motherboard resources
[00000600 - 0000061F]	Motherboard resources
[00000680 - 0000069F]	Motherboard resources
[000006A0 - 000006AF]	Motherboard resources
[000006B0 - 000006FF]	Motherboard resources
[00000A00 - 00000A0F]	Motherboard resources
[00000A10 - 00000A1F]	Motherboard resources
[00000A20 - 00000A2F]	Motherboard resources
[00000D00 - 0000FFFF]	PCI bus
[00001000 - 0000100F]	Motherboard resources
[0000D000 - 0000D0FF]	Realtek PCIe GBE Family Controller
[0000D000 - 0000DFFF]	Intel(R) N10/ICH7 Family PCI Express Root Port - 27D2
[0000E000 - 0000E0FF]	Realtek PCIe GBE Family Controller #2
[0000E000 - 0000EFFF]	Intel(R) N10/ICH7 Family PCI Express Root Port - 27D0
[0000F000 - 0000F01F]	Intel(R) N10/ICH7 Family SMBus Controller - 27DA
[0000F020 - 0000F03F]	Intel(R) N10/ICH7 Family USB Universal Host Controller - 27CB
[0000F040 - 0000F05F]	Intel(R) N10/ICH7 Family USB Universal Host Controller - 27CA
[0000F060 - 0000F07F]	Intel(R) N10/ICH7 Family USB Universal Host Controller - 27C9
[0000F080 - 0000F09F]	Intel(R) N10/ICH7 Family USB Universal Host Controller - 27C8
[0000F0A0 - 0000F0AF]	Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
[0000F0B0 - 0000F0B3]	Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
[0000F0C0 - 0000F0C7]	Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
[0000F0D0 - 0000F0D3]	Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
[0000F0E0 - 0000F0E7]	Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
[0000F0F0 - 0000F0F7]	Intel(R) Graphics Media Accelerator 3600 Series
[0000FFFF - 0000FFFF]	Motherboard resources
[0000FFFF - 0000FFFF]	Motherboard resources









































B.2 1st MB Memory Address Map

Memory	
[00000000 - 00000FFF]	Motherboard resources
[00000000 - 00000FFF]	Motherboard resources
[00000000 - 00003FFF]	Motherboard resources
[000A0000 - 000BFFFF]	Intel(R) Graphics Media Accelerator 3600 Series
[000A0000 - 000BFFFF]	PCI bus
[000C0000 - 000DFFFF]	PCI bus
[000E0000 - 000EFFFF]	PCI bus
[000F0000 - 000FFFFFF]	PCI bus
[7F800000 - 7FFFFFFF]	PCI bus
[80000000 - FEBFFFFFF]	PCI bus
[DFC00000 - DFCFFFFFF]	Intel(R) Graphics Media Accelerator 3600 Series
[DFD00000 - DFD03FFF]	Realtek PCIe GBE Family Controller
[DFD00000 - DFD0FFFF]	Intel(R) N10/ICH7 Family PCI Express Root Port - 27D2
[DFD04000 - DFD04FFF]	Realtek PCIe GBE Family Controller
[DFE00000 - DFE03FFF]	Realtek PCIe GBE Family Controller #2
[DFE00000 - DFE0FFFF]	Intel(R) N10/ICH7 Family PCI Express Root Port - 27D0
[DFE04000 - DFE04FFF]	Realtek PCIe GBE Family Controller #2
[DFF00000 - DFF03FFF]	High Definition Audio Controller
[DFF04000 - DFF043FF]	Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
[DFF05000 - DFF053FF]	Intel(R) N10/ICH7 Family USB2 Enhanced Host Controller - 27CC
[E0000000 - EFFFFFFF]	System board
[FEC00000 - FEC00FFF]	Motherboard resources
[FED14000 - FED19FFF]	System board
[FED1C000 - FED1FFFF]	Motherboard resources
[FED1C000 - FED1FFFF]	Motherboard resources
[FED20000 - FED8FFFF]	Motherboard resources
[FED45000 - FED8FFFF]	Motherboard resources
[FEE00000 - FEE00FFF]	Motherboard resources
[FF000000 - FFFFFFFF]	Intel(R) 82802 Firmware Hub Device
[FF000000 - FFFFFFFF]	Intel(R) 82802 Firmware Hub Device
[FFC00000 - FFFFFFFF]	Motherboard resources



B.3 IRQ Mapping Chart

Interrupt request (IRQ)	
(ISA) 0x00000000 (00)	System timer
(ISA) 0x00000008 (08)	System CMOS/real time clock
(ISA) 0x0000000D (13)	Numeric data processor
(ISA) 0x00000051 (81)	Microsoft ACPI-Compliant System
(ISA) 0x00000052 (82)	Microsoft ACPI-Compliant System
(ISA) 0x00000053 (83)	Microsoft ACPI-Compliant System
(ISA) 0x00000054 (84)	Microsoft ACPI-Compliant System
(ISA) 0x00000055 (85)	Microsoft ACPI-Compliant System
(ISA) 0x00000056 (86)	Microsoft ACPI-Compliant System
(ISA) 0x00000057 (87)	Microsoft ACPI-Compliant System
(ISA) 0x00000058 (88)	Microsoft ACPI-Compliant System
(ISA) 0x00000059 (89)	Microsoft ACPI-Compliant System
(ISA) 0x0000005A (90)	Microsoft ACPI-Compliant System
(ISA) 0x0000005B (91)	Microsoft ACPI-Compliant System
(ISA) 0x0000005C (92)	Microsoft ACPI-Compliant System
(ISA) 0x0000005D (93)	Microsoft ACPI-Compliant System
(ISA) 0x0000005E (94)	Microsoft ACPI-Compliant System
(ISA) 0x0000005F (95)	Microsoft ACPI-Compliant System
(ISA) 0x00000060 (96)	Microsoft ACPI-Compliant System
(ISA) 0x00000061 (97)	Microsoft ACPI-Compliant System
(ISA) 0x00000062 (98)	Microsoft ACPI-Compliant System
(ISA) 0x00000063 (99)	Microsoft ACPI-Compliant System
(ISA) 0x00000064 (100)	Microsoft ACPI-Compliant System
(ISA) 0x00000065 (101)	Microsoft ACPI-Compliant System
(ISA) 0x00000066 (102)	Microsoft ACPI-Compliant System
(ISA) 0x00000067 (103)	Microsoft ACPI-Compliant System
(ISA) 0x00000068 (104)	Microsoft ACPI-Compliant System
(ISA) 0x00000069 (105)	Microsoft ACPI-Compliant System
(ISA) 0x0000006A (106)	Microsoft ACPI-Compliant System
(ISA) 0x0000006B (107)	Microsoft ACPI-Compliant System
(ISA) 0x0000006C (108)	Microsoft ACPI-Compliant System
(ISA) 0x0000006D (109)	Microsoft ACPI-Compliant System
(ISA) 0x0000006E (110)	Microsoft ACPI-Compliant System
(ISA) 0x0000006F (111)	Microsoft ACPI-Compliant System
(ISA) 0x00000070 (112)	Microsoft ACPI-Compliant System
(ISA) 0x00000071 (113)	Microsoft ACPI-Compliant System
(ISA) 0x00000072 (114)	Microsoft ACPI-Compliant System
(ISA) 0x00000073 (115)	Microsoft ACPI-Compliant System
(ISA) 0x00000074 (116)	Microsoft ACPI-Compliant System
(ISA) 0x00000075 (117)	Microsoft ACPI-Compliant System
(ISA) 0x00000076 (118)	Microsoft ACPI-Compliant System

	(ISA) 0x00000077 (119)	Microsoft ACPI-Compliant System
	(ISA) 0x00000078 (120)	Microsoft ACPI-Compliant System
	(ISA) 0x00000079 (121)	Microsoft ACPI-Compliant System
	(ISA) 0x0000007A (122)	Microsoft ACPI-Compliant System
	(ISA) 0x0000007B (123)	Microsoft ACPI-Compliant System
	(ISA) 0x0000007C (124)	Microsoft ACPI-Compliant System
	(ISA) 0x0000007D (125)	Microsoft ACPI-Compliant System
	(ISA) 0x0000007E (126)	Microsoft ACPI-Compliant System
	(ISA) 0x0000007F (127)	Microsoft ACPI-Compliant System
	(ISA) 0x00000080 (128)	Microsoft ACPI-Compliant System
	(ISA) 0x00000081 (129)	Microsoft ACPI-Compliant System
	(ISA) 0x00000082 (130)	Microsoft ACPI-Compliant System
	(ISA) 0x00000083 (131)	Microsoft ACPI-Compliant System
	(ISA) 0x00000084 (132)	Microsoft ACPI-Compliant System
	(ISA) 0x00000085 (133)	Microsoft ACPI-Compliant System
	(ISA) 0x00000086 (134)	Microsoft ACPI-Compliant System
	(ISA) 0x00000087 (135)	Microsoft ACPI-Compliant System
	(ISA) 0x00000088 (136)	Microsoft ACPI-Compliant System
	(ISA) 0x00000089 (137)	Microsoft ACPI-Compliant System
	(ISA) 0x0000008A (138)	Microsoft ACPI-Compliant System
	(ISA) 0x0000008B (139)	Microsoft ACPI-Compliant System
	(ISA) 0x0000008C (140)	Microsoft ACPI-Compliant System
	(ISA) 0x0000008D (141)	Microsoft ACPI-Compliant System
	(ISA) 0x0000008E (142)	Microsoft ACPI-Compliant System
	(ISA) 0x0000008F (143)	Microsoft ACPI-Compliant System
	(ISA) 0x00000090 (144)	Microsoft ACPI-Compliant System
	(ISA) 0x00000091 (145)	Microsoft ACPI-Compliant System
	(ISA) 0x00000092 (146)	Microsoft ACPI-Compliant System
	(ISA) 0x00000093 (147)	Microsoft ACPI-Compliant System
	(ISA) 0x00000094 (148)	Microsoft ACPI-Compliant System
	(ISA) 0x00000095 (149)	Microsoft ACPI-Compliant System
	(ISA) 0x00000096 (150)	Microsoft ACPI-Compliant System
	(ISA) 0x00000097 (151)	Microsoft ACPI-Compliant System
	(ISA) 0x00000098 (152)	Microsoft ACPI-Compliant System
	(ISA) 0x00000099 (153)	Microsoft ACPI-Compliant System
	(ISA) 0x0000009A (154)	Microsoft ACPI-Compliant System
	(ISA) 0x0000009B (155)	Microsoft ACPI-Compliant System
	(ISA) 0x0000009C (156)	Microsoft ACPI-Compliant System
	(ISA) 0x0000009D (157)	Microsoft ACPI-Compliant System
	(ISA) 0x0000009E (158)	Microsoft ACPI-Compliant System
	(ISA) 0x0000009F (159)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A0 (160)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A1 (161)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A2 (162)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A3 (163)	Microsoft ACPI-Compliant System

	(ISA) 0x000000A4 (164)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A5 (165)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A6 (166)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A7 (167)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A8 (168)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A9 (169)	Microsoft ACPI-Compliant System
	(ISA) 0x000000AA (170)	Microsoft ACPI-Compliant System
	(ISA) 0x000000AB (171)	Microsoft ACPI-Compliant System
	(ISA) 0x000000AC (172)	Microsoft ACPI-Compliant System
	(ISA) 0x000000AD (173)	Microsoft ACPI-Compliant System
	(ISA) 0x000000AE (174)	Microsoft ACPI-Compliant System
	(ISA) 0x000000AF (175)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B0 (176)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B1 (177)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B2 (178)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B3 (179)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B4 (180)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B5 (181)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B6 (182)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B7 (183)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B8 (184)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B9 (185)	Microsoft ACPI-Compliant System
	(ISA) 0x000000BA (186)	Microsoft ACPI-Compliant System
	(ISA) 0x000000BB (187)	Microsoft ACPI-Compliant System
	(ISA) 0x000000BC (188)	Microsoft ACPI-Compliant System
	(ISA) 0x000000BD (189)	Microsoft ACPI-Compliant System
	(ISA) 0x000000BE (190)	Microsoft ACPI-Compliant System
	(PCI) 0x0000000A (10)	Intel(R) N10/ICH7 Family SMBus Controller - 27DA
	(PCI) 0x00000010 (16)	Intel(R) N10/ICH7 Family USB Universal Host Controller - 27CB
	(PCI) 0x00000012 (18)	Intel(R) N10/ICH7 Family USB Universal Host Controller - 27CA
	(PCI) 0x00000013 (19)	Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
	(PCI) 0x00000013 (19)	Intel(R) N10/ICH7 Family USB Universal Host Controller - 27C9
	(PCI) 0x00000016 (22)	High Definition Audio Controller
	(PCI) 0x00000017 (23)	Intel(R) N10/ICH7 Family USB Universal Host Controller - 27C8
	(PCI) 0x00000017 (23)	Intel(R) N10/ICH7 Family USB2 Enhanced Host Controller - 27CC
	(PCI) 0xFFFFF0FA (-6)	Realtek PCIe GBE Family Controller
	(PCI) 0xFFFFF0FB (-5)	Realtek PCIe GBE Family Controller #2
	(PCI) 0xFFFFF0FC (-4)	Intel(R) Graphics Media Accelerator 3600 Series
	(PCI) 0xFFFFF0FD (-3)	Intel(R) N10/ICH7 Family PCI Express Root Port - 27D2
	(PCI) 0xFFFFF0FE (-2)	Intel(R) N10/ICH7 Family PCI Express Root Port - 27D0

B.4 DMA Channel Assignments

	Direct memory access (DMA)
	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 number		
CN1	+12VSB Power Input Connector	N/A	N/A	N/A	N/A
CN2	Front Panel Connector	Molex	51021-1000	Front Panel Wafer Cable	1701010150
CN3	Power Connector	N/A	N/A	Power Cable	1702002010
CN4	Audio Connector	Molex	51021-1000	Audio Cable	1709100254
CN5	PCI104 Connector	N/A	N/A	N/A	N/A
CN6	USB Connector	Molex	51021-0500	USB Wafer Cable	1700050207
CN7	USB Connector	Molex	51021-0500	USB Wafer Cable	1700050207
CN8	Touch screen Connector	JST	JST SHR-09V-S-B	N/A	N/A
CN9	USB Connector	Molex	51021-0500	USB Wafer Cable	1700050207
CN10	USB Connector	Molex	51021-0500	USB Wafer Cable	1700050207
CN11	SATA Power Connector	JST	PHR-2	2 Pin For SATA Power	1702150155
CN12	SATA Power Connector	JST	PHR-2	2 Pin For SATA Power	1702150155
CN13	LPC Debug Connector	JST	SHR-12V-S-B	AAEON LPC Cable	1703120130
CN14	2 nd LCD Inverter Connector	JST	PHR-5	N/A	N/A
CN15	2 nd LCD Connector	HIROSE	DF13-20S-1.25C	N/A	N/A

CN16	LPT/Digital I/O Connector	Molex	51110-2650	Parallel Cable	1701260200
CN17	1 st LCD Connector	HIROSE	DF13-20S-1.25C	N/A	N/A
CN18	1 st LCD Inverter Connector	JST	PHR-5	N/A	N/A
CN19	1 st /2 nd Serial COM Port Connector	N/A	N/A	N/A	N/A
CN20	PS2 Keyboard / Mouse Connector	Molex	51021-0600	KB/MS Cable	1700060155
CN21	DVI-I/CRT Connector	N/A	N/A	N/A	N/A
CN22	8 th COM Port Connector	Molex	51021-0900	UART Wafer Cable	1701090150
CN23	7 th COM Port Connector	Molex	51021-0900	UART Wafer Cable	1701090150
CN24	6 th COM Port Connector	Molex	51021-0900	UART Wafer Cable	1701090150
CN25	5 th COM Port Connector	Molex	51021-0900	UART Wafer Cable	1701090150
CN26	4 th COM Port Connector	Molex	51021-0900	UART Wafer Cable	1701090150
CN27	3 th COM Port Connector	Molex	51021-0900	UART Wafer Cable	1701090150
CN28	Left Speaker Connector	Molex	51021-0200	N/A	N/A
CN29	Right Speaker Connector	Molex	51021-0200	N/A	N/A

EPIC Board**EPIC-CV07**

LAN1	10 /100 /1000 Base-Tx Ethernet Connector	Neltron	7001-8P8C	N/A	N/A
LAN2	10 /100 /1000 Base-Tx Ethernet Connector	Neltron	7001-8P8C	N/A	N/A
MINICARD 1	Mini PCI Express Connector	N/A	N/A	N/A	N/A
MINICARD 2	Mini PCI Express/mS ATA Connector	N/A	N/A	N/A	N/A
SATA1	SATA Connector	Molex	67582-0000	SATA Cable	1709070500
SATA2	SATA Connector	Molex	67582-0000	SATA Cable	1709070500
USB1	Stack USB Connector	N/A	N/A	N/A	N/A
USB2	Stack USB Connector	N/A	N/A	N/A	N/A
FAN1	FAN Connector	Catch	1190-700-03S	N/A	N/A
DIMM1	DIMM Connector	N/A	N/A	N/A	N/A
BT1	Battery Connector	Molex	51021-0200	Battery Cable	175011901C

Appendix

D

**Electrical Specifications
for I/O Ports**

D.1 DIO Programming

EPIC-CV07 utilizes FINTEK 81866 chipset as its Digital I/O 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. 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.(These three steps are the same as programming WDT)

D.2 Digital I/O Register

Table 1 : SuperIO relative register table		
	Default Value	Note
Index	0x2E ^(Note1)	SIO MB PnP Mode Index Register 0x2E or 0x4E
Data	0x2F ^(Note2)	SIO MB PnP Mode Data Register 0x2F or 0x4F

Table 2 : Digital Input relative register table					
	LDN	Register	BitNum	Value	Note
DIO-0 Pin Status	0x06 ^(Note3)	0x82 ^(Note4)	0 ^(Note5)		GPIO70
DIO-1 Pin Status	0x06 ^(Note6)	0x82 ^(Note7)	1 ^(Note8)		GPIO71
DIO-2 Pin Status	0x06 ^(Note9)	0x82 ^(Note10)	2 ^(Note11)		GPIO72
DIO-3 Pin Status	0x06 ^(Note12)	0x82 ^(Note13)	3 ^(Note14)		GPIO73
DIO-4 Pin Status	0x06 ^(Note15)	0x82 ^(Note16)	4 ^(Note17)		GPIO74
DIO-5 Pin Status	0x06 ^(Note18)	0x82 ^(Note19)	5 ^(Note20)		GPIO75
DIO-6 Pin Status	0x06 ^(Note21)	0x82 ^(Note22)	6 ^(Note23)		GPIO76
DIO-7 Pin Status	0x06 ^(Note24)	0x82 ^(Note25)	7 ^(Note26)		GPIO77

Table 3 : Digital Output relative register table					
	LDN	Register	BitNum	Value	Note
DIO-0 Output Data	0x06 ^(Note27)	0x81 ^(Note28)	0 ^(Note29)	^(Note30)	GPIO70
DIO-1 Output Data	0x06 ^(Note31)	0x81 ^(Note32)	1 ^(Note33)	^(Note34)	GPIO71
DIO-2 Output Data	0x06 ^(Note35)	0x81 ^(Note36)	2 ^(Note37)	^(Note38)	GPIO72
DIO-3 Output Data	0x06 ^(Note39)	0x81 ^(Note40)	3 ^(Note41)	^(Note42)	GPIO73
DIO-4 Output Data	0x06 ^(Note43)	0x81 ^(Note44)	4 ^(Note45)	^(Note46)	GPIO74
DIO-5 Output Data	0x06 ^(Note47)	0x81 ^(Note48)	5 ^(Note49)	^(Note50)	GPIO75
DIO-6 Output Data	0x06 ^(Note51)	0x81 ^(Note52)	6 ^(Note53)	^(Note54)	GPIO76
DIO-7 Output Data	0x06 ^(Note55)	0x81 ^(Note56)	7 ^(Note57)	^(Note58)	GPIO77

Table 4 : Digital Input relative register table

	LDN	Register	BitNum	Value	Note
DIO-8 Pin Status	0x06(Note59)	0x8A(Note60)	0(Note61)		GPIO80
DIO-9 Pin Status	0x06(Note62)	0x8A(Note63)	1(Note64)		GPIO81
DIO-10 Pin Status	0x06(Note65)	0x8A(Note66)	2(Note67)		GPIO82
DIO-11 Pin Status	0x06(Note68)	0x8A(Note69)	3(Note70)		GPIO83
DIO-12 Pin Status	0x06(Note71)	0x8A(Note72)	4(Note73)		GPIO84
DIO-13 Pin Status	0x06(Note74)	0x8A(Note75)	5(Note76)		GPIO85
DIO-14 Pin Status	0x06(Note77)	0x8A(Note78)	6(Note79)		GPIO86
DIO-15 Pin Status	0x06(Note80)	0x8A(Note81)	7(Note82)		GPIO87

Table 5 : Digital Output relative register table

	LDN	Register	BitNum	Value	Note
DIO-8 Output Data	0x06(Note83)	0x89(Note84)	0(Note85)	(Note86)	GPIO80
DIO-9 Output Data	0x06(Note87)	0x89(Note88)	1(Note89)	(Note90)	GPIO81
DIO-10 Output Data	0x06(Note91)	0x89(Note92)	2(Note93)	(Note94)	GPIO82
DIO-11 Output Data	0x06(Note95)	0x89(Note96)	3(Note97)	(Note98)	GPIO83
DIO-12 Output Data	0x06(Note96)	0x89(Note100)	4(Note101)	(Note102)	GPIO84
DIO-13 Output Data	0x06(Note103)	0x89(Note104)	5(Note105)	(Note106)	GPIO85
DIO-14 Output Data	0x06(Note107)	0x89(Note108)	6(Note109)	(Note110)	GPIO86
DIO-15 Output Data	0x06(Note111)	0x89(Note112)	7(Note113)	(Note114)	GPIO87

D.3 Digital I/O Sample Program

```
*****
// SuperIO relative definition (Please reference to Table 1)
#define byte SIOIndex //This parameter is represented from Note1
#define byte SIOData //This parameter is represented from Note2
#define void IOWriteByte(byte IOPort, byte Value);
#define byte IOReadByte(byte IOPort);
// Digital Input Status relative definition (Please reference to Table 2)
#define byte DInput1LDN // This parameter is represented from Note3
#define byte DInput1Reg // This parameter is represented from Note4
#define byte DInput1Bit // This parameter is represented from Note5
#define byte DInput2LDN // This parameter is represented from Note6
#define byte DInput2Reg // This parameter is represented from Note7
#define byte DInput2Bit // This parameter is represented from Note8
#define byte DInput3LDN // This parameter is represented from Note9
#define byte DInput3Reg // This parameter is represented from Note10
#define byte DInput3Bit // This parameter is represented from Note11
#define byte DInput4LDN // This parameter is represented from Note12
#define byte DInput4Reg // This parameter is represented from Note13
#define byte DInput4Bit // This parameter is represented from Note14
#define byte DInput5LDN // This parameter is represented from Note15
#define byte DInput5Reg // This parameter is represented from Note16
#define byte DInput5Bit // This parameter is represented from Note17
#define byte DInput6LDN // This parameter is represented from Note18
#define byte DInput6Reg // This parameter is represented from Note19
#define byte DInput6Bit // This parameter is represented from Note20
#define byte DInput7LDN // This parameter is represented from Note21
#define byte DInput7Reg // This parameter is represented from Note22
#define byte DInput7Bit // This parameter is represented from Note23
#define byte DInput8LDN // This parameter is represented from Note24
#define byte DInput8Reg // This parameter is represented from Note25
#define byte DInput8Bit // This parameter is represented from Note26
*****
```

```

*****
// Digital Output control relative definition (Please reference to Table 3)
#define byte DOutput1LDN // This parameter is represented from Note27
#define byte DOutput1Reg // This parameter is represented from Note28
#define byte DOutput1Bit // This parameter is represented from Note29
#define byte DOutput1Val // This parameter is represented from Note30
#define byte DOutput2LDN // This parameter is represented from Note31
#define byte DOutput2Reg // This parameter is represented from Note32
#define byte DOutput2Bit // This parameter is represented from Note33
#define byte DOutput2Val // This parameter is represented from Note34
#define byte DOutput3LDN // This parameter is represented from Note35
#define byte DOutput3Reg // This parameter is represented from Note36
#define byte DOutput3Bit // This parameter is represented from Note37
#define byte DOutput3Val // This parameter is represented from Note38
#define byte DOutput4LDN // This parameter is represented from Note39
#define byte DOutput4Reg // This parameter is represented from Note40
#define byte DOutput4Bit // This parameter is represented from Note41
#define byte DOutput4Val // This parameter is represented from Note42
#define byte DOutput5LDN // This parameter is represented from Note43
#define byte DOutput5Reg // This parameter is represented from Note44
#define byte DOutput5Bit // This parameter is represented from Note45
#define byte DOutput5Val // This parameter is represented from Note46
#define byte DOutput6LDN // This parameter is represented from Note47
#define byte DOutput6Reg // This parameter is represented from Note48
#define byte DOutput6Bit // This parameter is represented from Note49
#define byte DOutput6Val // This parameter is represented from Note50
#define byte DOutput7LDN // This parameter is represented from Note51
#define byte DOutput7Reg // This parameter is represented from Note52
#define byte DOutput7Bit // This parameter is represented from Note53
#define byte DOutput7Val // This parameter is represented from Note54
#define byte DOutput8LDN // This parameter is represented from Note55
#define byte DOutput8Reg // This parameter is represented from Note56
#define byte DOutput8Bit // This parameter is represented from Note57
#define byte DOutput8Val // This parameter is represented from Note58
*****

```

// Digital Input Status relative definition (Please reference to Table 4)

```
#define byte DInput9LDN // This parameter is represented from Note59
#define byte DInput9Reg // This parameter is represented from Note60
#define byte DInput9Bit // This parameter is represented from Note61
#define byte DInput10LDN // This parameter is represented from Note62
#define byte DInput10Reg // This parameter is represented from Note63
#define byte DInput10Bit // This parameter is represented from Note64
#define byte DInput11LDN // This parameter is represented from Note65
#define byte DInput11Reg // This parameter is represented from Note66
#define byte DInput11Bit // This parameter is represented from Note67
#define byte DInput12LDN // This parameter is represented from Note68
#define byte DInput12Reg // This parameter is represented from Note69
#define byte DInput12Bit // This parameter is represented from Note70
#define byte DInput13LDN // This parameter is represented from Note71
#define byte DInput13Reg // This parameter is represented from Note72
#define byte DInput13Bit // This parameter is represented from Note73
#define byte DInput14LDN // This parameter is represented from Note74
#define byte DInput14Reg // This parameter is represented from Note75
#define byte DInput14Bit // This parameter is represented from Note76
#define byte DInput15LDN // This parameter is represented from Note77
#define byte DInput15Reg // This parameter is represented from Note78
#define byte DInput15Bit // This parameter is represented from Note79
#define byte DInput16LDN // This parameter is represented from Note80
#define byte DInput16Reg // This parameter is represented from Note81
#define byte DInput16Bit // This parameter is represented from Note82
```

```

*****
// Digital Output control relative definition (Please reference to Table 5)
#define byte DOutput9LDN // This parameter is represented from Note83
#define byte DOutput9Reg // This parameter is represented from Note84
#define byte DOutput9Bit // This parameter is represented from Note85
#define byte DOutput9Val // This parameter is represented from Note86
#define byte DOutput10LDN // This parameter is represented from Note87
#define byte DOutput10Reg // This parameter is represented from Note88
#define byte DOutput10Bit // This parameter is represented from Note89
#define byte DOutput10Val // This parameter is represented from Note90
#define byte DOutput11LDN // This parameter is represented from Note91
#define byte DOutput11Reg // This parameter is represented from Note92
#define byte DOutput11Bit // This parameter is represented from Note93
#define byte DOutput11Val // This parameter is represented from Note94
#define byte DOutput12LDN // This parameter is represented from Note95
#define byte DOutput12Reg // This parameter is represented from Note96
#define byte DOutput12Bit // This parameter is represented from Note97
#define byte DOutput12Val // This parameter is represented from Note98
#define byte DOutput13LDN // This parameter is represented from Note99
#define byte DOutput13Reg // This parameter is represented from Note100
#define byte DOutput13Bit // This parameter is represented from Note101
#define byte DOutput13Val // This parameter is represented from Note102
#define byte DOutput14LDN // This parameter is represented from Note103
#define byte DOutput14Reg // This parameter is represented from Note104
#define byte DOutput14Bit // This parameter is represented from Note105
#define byte DOutput14Val // This parameter is represented from Note106
#define byte DOutput15LDN // This parameter is represented from Note107
#define byte DOutput15Reg // This parameter is represented from Note108
#define byte DOutput15Bit // This parameter is represented from Note109
#define byte DOutput15Val // This parameter is represented from Note110
#define byte DOutput16LDN // This parameter is represented from Note111
#define byte DOutput16Reg // This parameter is represented from Note112
#define byte DOutput16Bit // This parameter is represented from Note113
#define byte DOutput16Val // This parameter is represented from Note114
*****

```

```
*****
VOID Main() {
    Boolean PinStatus ;

    // Procedure : AaeonReadPinStatus
    // Input :
    //     Example, Read Digital I/O Pin 3 status
    // Output :
    //     InputStatus :
    //         0: Digital I/O Pin level is low
    //         1: Digital I/O Pin level is High
    PinStatus = AaeonReadPinStatus(DInput3LDN, DInput3Reg, DInput3Bit);

    // Procedure : AaeonSetOutputLevel
    // Input :
    //     Example, Set Digital I/O Pin 6 level
    AaeonSetOutputLevel(DOutput6LDN, DOutput6Reg, DOutput6Bit, DOutput6Val);
}
*****
```

```
*****
Boolean  AaeonReadPinStatus(byte LDN, byte Register, byte BitNum){
    Boolean PinStatus ;

    PinStatus = SIOBitRead(LDN, Register, BitNum);
    Return PinStatus ;
}
VOID  AaeonSetOutputLevel(byte LDN, byte Register, byte BitNum, byte Value){
    ConfigToOutputMode(LDN, Register, BitNum);
    SIOBitSet(LDN, Register, BitNum, Value);
}
*****
```

```
VOID SIOEnterMBPnPMode(){
    IOWriteByte(SIOIndex, 0x87);
    IOWriteByte(SIOIndex, 0x87);
}

VOID SIOExitMBPnPMode(){
    IOWriteByte(SIOIndex, 0xAA);
}

VOID SIOSelectLDN(byte LDN){
    IOWriteByte(SIOIndex, 0x07); // SIO LDN Register Offset = 0x07
    IOWriteByte(SIOData, LDN);
}

VOID SIOBitSet(byte LDN, byte Register, byte BitNum, byte Value){
    Byte TmpValue;

    SIOEnterMBPnPMode();
    SIOSelectLDN(byte LDN);
    IOWriteByte(SIOIndex, Register);
    TmpValue = IOReadByte(SIOData);
    TmpValue &= ~(1 << BitNum);
    TmpValue |= (Value << BitNum);
    IOWriteByte(SIOData, TmpValue);
    SIOExitMBPnPMode();
}

VOID SIOByteSet(byte LDN, byte Register, byte Value){
    SIOEnterMBPnPMode();
    SIOSelectLDN(LDN);
    IOWriteByte(SIOIndex, Register);
    IOWriteByte(SIOData, Value);
    SIOExitMBPnPMode();
}
```

```
Boolean SIOBitRead(byte LDN, byte Register, byte BitNum){
    Byte TmpValue;

    SIOEnterMBPnPMode();
    SIOSelectLDN(LDN);
    IOWriteByte(SIOIndex, Register);
    TmpValue = IOReadByte(SIOData);
    TmpValue &= (1 << BitNum);
    SIOExitMBPnPMode();
    If(TmpValue == 0)
        Return 0;
    Return 1;
}
VOID ConfigToOutputMode(byte LDN, byte Register, byte BitNum){
    Byte TmpValue, OutputEnableReg;

    OutputEnableReg = Register-1;
    SIOEnterMBPnPMode();
    SIOSelectLDN(LDN);
    IOWriteByte(SIOIndex, OutputEnableReg);
    TmpValue = IOReadByte(SIOData);
    TmpValue |= (1 << BitNum);
    IOWriteByte(SIOData, OutputEnableReg);
    SIOExitMBPnPMode();
}
```
