

# **EPIC-KBS8**

EPIC Board

User's Manual 1st Ed

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#### Packing List

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

ltem		Quantity
•	EPIC-KBS8	1
•	1702150155 SATA power cable	1
•	1709070500 SATA cable	1
•	9657666600 jumper cap	1
•	Product DVD with drivers	1

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

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

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

#### Safety Precautions

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

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

- 17. If any of the following situations arises, please the contact our service personnel:
  - i. Damaged power cord or plug
  - ii. Liquid intrusion to the device
  - iii. Exposure to moisture
  - iv. Device is not working as expected or in a manner as described in this manual
  - v. The device is dropped or damaged
  - vi. Any obvious signs of damage displayed on the device

# DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WITH TEMPERATURES BEYOND THE DEVICE'S PERMITTED STORAGE TEMPERATURES (SEE CHAPTER 1) TO PREVENT DAMAGE.



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

#### Caution:

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

#### Attention:

Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte. Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage. 产品中有毒有害物质或元素名称及含量

AAEON Main Board/ Daughter Board/ Backplane

	有毒有害物质或元素					
部件名称	铅	汞	镉	六价铬	多溴联苯	多溴二苯醚
	(Pb)	(Hg)	(Cd)	(Cr(VI))	(PBB)	(PBDE)
印刷电路板				0	0	0
及其电子组件	0	0	0	0	0	0
外部信号				0	0	0
连接器及线材		0		0	0	0
O:表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下。						
X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 标准规定的限量要求。						
备注:此产品所标示之环保使用期限,系指在一般正常使用状况下。						

EPIC Board

Poisonous or Hazardous Substances or Elements in Products

AAEON Main Board/ Daughter Board/ Backplane

	Poisonous or Hazardous Substances or Elements					
Component	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
PCB & Other Components	0	0	0	0	0	0
Wires & Connectors for External Connections	0	0	0	0	Ο	0

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

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

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

### Table of Contents

Chapter 1	- Produc	t Specifications	1
1.1	Specif	ications	2
Chapter 2	– Hardw	vare Information	1
2.1	Dimer	nsions	2
2.2	Jumpe	ers and Connectors	4
2.3	List of	Jumpers	6
	2.3.1	LVDS2 Operating VDD/BKLT Selection (JP1)	7
	2.3.2	LVDS1 and eDP Port Operating VDD/BKLT Selection (JP2)	7
	2.3.3	LVDS2 BLKT Control Mode Selection (JP3)	7
	2.3.4	LVDS and eDP Port BLKT Control Mode Selection (JP4)	8
	2.3.5	Clear CMOS Jumper (JP5)	8
	2.3.6	Auto Power Button Enable/Disable Selection (JP6)	8
	2.3.7	Auto Power Button Enable/Disable Selection (JP7)	9
2.4	List of	Connectors	10
	2.4.1	External +12V Input (CN1)	12
	2.4.2	LVDS1/eDP Port (CN2)	13
	2.4.3	LVDS2N (CN3)	15
	2.4.4	External +5VSB Input (CN4)	17
	2.4.5	LVDS and eDP Port Inverter / Backlight Connector (CN5, C	N6)
		17	
	2.4.6	3.0 SATA Port (CN7)	18
	2.4.7	+5V Output for SATA HDD (CN8)	18
	2.4.8	I2S I/O Port(Optional) (CN9)	19
	2.4.9	Speaker (Left) (CN10)	19
	2.4.10	Speaker (Right) (CN11)	19
	2.4.11	Audio I/O Port (CN12)	.20

	2.4.12	RTC Battery (CN13)	21
	2.4.13	8bit DIO Port (CN14)	21
	2.4.14	MiniCard Slot (Full-MiniCard) (CN15)	.22
	2.4.15	mSATA(Default) and MiniCard Slot (Half-MiniCard) (CN16	)24
	2.4.16	Micro SIM Card Socket (CN17)	.26
	2.4.17	USB 2.0 Port (CN18~CN21, CN29~CN31, CN35~CN37)	.27
	2.4.18	LPC Port (CN22)	.28
	2.4.19	CPU FAN (CN23)	.29
	2.4.20	LAN (RJ-45) (CN24, CN25)	.30
	2.4.21	COM Port (RS-232) (CN26, CN28, CN33, CN34, CN38)	31
	2.4.22	USB Ports 0 and 1 (CN27)	.32
	2.4.23	COM Port 2(RS232/422/485) (CN32)	.33
	2.4.24	VGA Port (CN39)	.35
	2.4.25	VGA connector (VGA1)	.36
	2.4.26	Buzzer Connector (BZ1)	.37
	2.4.27	DDR4 SO-DIMM Slot (DIMM1)	.37
2.5	CPU Installa	ition	.38
Chapter 3 -	BIOS Setup .		1
3.1	System Test	and Initialization	2
3.2	AMI BIOS S	etup	3
3.3	Setup subm	nenu: Main	4
3.4	Setup subm	nenu: Advanced	5
	3.4.1 CPU	Configuration	6
	3.4.2	SATA Configuration	7
	3.4.3	USB Configuration	9
	3.4.4	Hardware Monitor	10
	3.4.4.1	Smart Fan Mode Configuration	11
	3.4.5	SIO Configuration	13

			3.4.5.1	Serial Port 1 Configuration	14
			3.4.5.2	Serial Port 2 Configuration	15
			3.4.5.3	Serial Port 3 Configuration	16
			3.4.5.4	Serial Port 4 Configuration	17
			3.4.5.5	Serial Port 5 Configuration	18
			3.4.5.6	Serial Port 6 Configuration	19
		3.4.6	Powe	r Management	.20
		3.4.7	Digita	al IO Port Configuration	.22
	3.5	Setu	p submenu:	Chipset	.23
		3.5.1 9	System Agen	t (SA) Configuration	.24
			3.5.1.1 Grap	hics Configuration	.25
			3.5.1.2 LVDS	Panel Configuration	.27
		3.5.2	PCH-	O Configuration	31
	3.6	Secur	ity		.33
	3.7	Subm	enu: Boot		.34
		3.7.1	BBS Prioritie	25	.35
	3.8	Submenu: Exit			
Chapte	er 4 –	Driver	s Installation		1
4	4.1	Produ	ict CD/DVD.		2
Appen	dix A	– Mati	ing Connecto	ors	5
,	A.1	List of	Mating Cor	nectors and Cables	6

# Chapter 1

Product Specifications

# 1.1 Specifications

Syste	System			
•	Form Factor	EPIC Board		
•	Processor	6th/7th Generation Intel® Core™		
		i3/i5/i7/Celeron®		
•	System Memory	Up to 16 GB DDR4 (Non-ECC) SODIMM x 1,		
		2133MHz		
•	Chipset	H110/Q170 (6W)		
•	I/O Chipset			
•	Ethernet	LAN x 2 (Rear IO)		
•	BIOS	AMI		
•	Wake On LAN	Yes		
•	Watchdog Timer	255 Levels		
•	H/W Status Monitoring			
•	Expansion Interface	Mini-card x 1 (Full size)		
•	Battery			
•	Power Consumption (Typical)			
•	Board Size	4.53" x 6.50" (115mm x 165mm)		
•	Gross Weight			
•	Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)		
•	Storage Temperature	-40°F ~ 176°F (-40°C ~ 85°C)		

Operation Humidity

Disp	Display				
•	Chipset	6th/7th Generation Intel® Core™			
		i3/i5/i7/Celeron®			
•	Video Output	VGA/LVDS1 (Optional: LVDS2/eDP)			
•	Backlight Inverter Supply	Max 12V, 2A			
I/O					
•	SATA	SATA 3.0 x 1			
•	USB	Rear I/O: USB3.0 x 2			
		Internal: USB2.0 x 10 (for Q170 SKU)			
•	Serial Port	COM x 6 (All internal, COM2: RS-232/422/485,			
		COM2-5 5V/12V/RI)			
•	DI/O	8-bit			
•	Audio	REALTEK ALC892 (Optional: 2W Amp, I2S)			

# Chapter 2

Hardware Information

#### 2.1 Dimensions

#### Component Side





Solder Side



Solder Side

#### 2.2 Jumpers and Connectors

#### Component Side





Solder Side





Solder Side

#### List of Jumpers 2.3

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

Label	Function
JP1	LVDS2 Port VDD and BLKT VCC Selection
JP2	LVDS1/eDP VDD and BLKT VCC Selection
JP3	LVDS2 Port BLKT Control Mode Selection
JP4	LVDS1 Port BLKT Control Mode Selection
JP5	Clear CMOS Jumper
JP6	Auto Power Button Enable/Disable Selection
JP7	Front Panel Connector

-

#### 2.3.1 LVDS2 Operating VDD/BKLT Selection (JP1)



+12V LVDS2 BKLT (1-3) +5V LVDS2 VDD (2-4)



+5V LVDS2 BKLT (3-5) (Default) +3.3V LVDS2VDD (4-6) (Default)

#### 2.3.2 LVDS1 and eDP Port Operating VDD/BKLT Selection (JP2)





+12V LVDS / eDP BKLT (1-3)

+5V LVDS / eDP BKLT (3-5) (Default) +5V LVDS / eDP VDD (2-4) +3.3V LVDS / eDP VDD (4-6) (Default)

#### 2.3.3 LVDS2 BLKT Control Mode Selection (JP3)



LVDS2VR Mode (1-2) (optional)



LVDS2 PWM Mode (2-3)(Default)

#### 2.3.4 LVDS and eDP Port BLKT Control Mode Selection (JP4)





LVDS and eDP VR Mode (1-2) (optional) LVDS and eDP PWM Mode (2-3) (Default)

## 2.3.5 Clear CMOS Jumper (JP5)



Normal (1-2) (Default)



Clear CMOS (2-3)

#### 2.3.6 Auto Power Button Enable/Disable Selection (JP6)



ATX Mode (1-2)



AT Mode (2-3) (Default)

### 2.3.7 Auto Power Button Enable/Disable Selection (JP7)

1		2
3		4
5		6
7		8
9		10

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

#### 2.4 List of Connectors

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

Label	Function
CN1	External +12V Input
CN2	LVDS1/eDP Port
CN3	LVDS2 Port
CN4	+5V_SBY Input
CN5	LVDS1 Port Inverter / Backlight Connector
CN6	LVDS2 Port Inverter / Backlight Connector
CN7	SATA Port
CN8	+5V Output for SATA HDD
CN9	I2S I/O Port (optional)
CN10	Speaker (Left)
CN11	Speaker (Right)
CN12	Audio I/O Port
CN13	RTC Battery
CN14	8bit DIO Port
CN15	MiniCard Slot(Full-MiniCard)
CN16	mSATA(Default) and MiniCard Slot(Half-MiniCard)
CN17	Micro SIM Card Socket
CN18	USB Port 9 (optional)
CN19	USB Port 10 (optional)
CN20	USB Port 11 (optional)
CN21	USB Port 8 (optional)
CN22	LPC and I2C Port
CN23	CPU FAN

CN24	LAN (RJ-45) Port1
CN25	LAN (RJ-45) Port2
CN26	COM Port 3
CN27	USB 3.0 Ports 0 and 1
CN28	COM Port 6
CN29	USB Port 6
CN30	USB Port 4
CN31	USB Port 3
CN32	COM Port 2
CN33	COM Port 5
CN34	COM Port 4
CN35	USB Port 7
CN36	USB Port 5
CN37	USB Port 2
CN38	COM Port 1
CN39	VGA Port
VGA1	VGA Pin Header
BZ1	Buzzer Connector
DIMM1	DDR4 SO-DIMM Slot

#### 2.4.1 External +12V Input (CN1)

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

+12V GND

+

#### 2.4.2 LVDS1/eDP Port (CN2)



Pin	Pin Name	Signal Type	Signal Level
1	BKL_ENABLE	OUT	
2	BKL_CONTROL	OUT	
3	LCD_PWR	PWR	+3.3V/+5V
4	GND	GND	
5	LVDS_A_CLK-/eDP_TXN3	DIFF	
6	LVDS_A_CLK+/eDP_TXP3	DIFF	
7	LCD_PWR	PWR	+3.3V/+5V
8	GND	GND	
9	LVDS_DA0-/eDP_TXN2	DIFF	
10	LVDS_DA0+/eDP_TXP2	DIFF	
11	LVDS_DA1-/eDP_TXN1	DIFF	
12	LVDS_DA1+/eDP_TXP1	DIFF	

13	LVDS_DA2-/eDP_TXN0	DIFF	
14	LVDS_DA2+/eDP_TXP0	DIFF	
15	LVDS_DA3-	DIFF	
16	LVDS_DA3+/eDP_HPD	DIFF	
17	DDC_DATA/eDP_AUXN	I/O	+3.3V
18	DDC_CLK/eDP_AUXP	I/O	+3.3V
19	LVDS_DB0-	DIFF	
20	LVDS_DB0+	DIFF	
21	LVDS_DB1-	DIFF	
22	LVDS_DB1+	DIFF	
23	LVDS_DB2-	DIFF	
24	LVDS_DB2+	DIFF	
25	LVDS_DB3-	DIFF	
26	LVDS_DB3+	DIFF	
27	LCD_PWR	PWR	+3.3V/+5V
28	GND	GND	
29	LVDS_B_CLK-	DIFF	
30	LVDS_B_CLK+	DIFF	

#### 2.4.3 LVDS2N (CN3)



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

13	LVDS_DA2-	DIFF	
14	LVDS_DA2+	DIFF	
15	LVDS_DA3-	DIFF	
16	LVDS_DA3+	DIFF	
17	DDC_DATA	1/0	+3.3V
18	DDC_CLK	1/0	+3.3V
19	LVDS_DB0-	DIFF	
20	LVDS_DB0+	DIFF	
21	LVDS_DB1-	DIFF	
22	LVDS_DB1+	DIFF	
23	LVDS_DB2-	DIFF	
24	LVDS_DB2+	DIFF	
25	LVDS_DB3-	DIFF	
26	LVDS_DB3+	DIFF	
27	LCD_PWR	PWR	+3.3V/+5V
28	GND	GND	
29	LVDS_B_CLK-	DIFF	
30	LVDS_B_CLK+	DIFF	

#### 2.4.4 External +5VSB Input (CN4)



※Please make sure ATX power is full discharge when a system that use this connector(CN4) power off. Discharge time is relative to power supply and it may be 3∼5s or more seconds.

#### 2.4.5 LVDS and eDP Port Inverter / Backlight Connector (CN5, CN6)



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

#### 2.4.6 3.0 SATA Port (CN7)



Pin 1 Pin 7

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

### 2.4.7 +5V Output for SATA HDD (CN8)



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

# 2.4.8 I2S I/O Port(Optional) (CN9)

Pin	Pin Name	Signal Type	Signal Level
1	I2S_MCLK		
2	I2S_SFRM		
3	+V3.3A	PWR	+3.3V
4	I2S_TXD	OUT	
5	I2S_RXD	IN	
6	GND	GND	GND

# 2.4.9 Speaker (Left) (CN10)



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

# 2.4.10 Speaker (Right) (CN11)



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

#### 2.4.11 Audio I/O Port (CN12)



Pin	Pin Name	Signal Type	Signal Level
1	MIC_L	IN	
2	MIC_R	IN	
3	GND_AUDIO	GND	
4	LINE_L_IN	IN	
5	LINE_R_IN	IN	
6	GND_AUDIO	GND	
7	LEFT_OUT	OUT	
8	GND_AUDIO	GND	
9	RIGHT_OUT	OUT	
10	+5V_AUDIO	PWR	+5V


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

# 2.4.13 8bit DIO Port (CN14)

DIO1 DIO3 DIO5 DIO7 GND
GND

Pin	Pin Name	Signal Type	Signal Level
3	GPIO0	I/O	+5V
5	GPIO1	I/O	+5V
7	GPIO2	I/O	+5V
9	GPIO3	I/O	+5V
11	GPIO4	I/O	+5V
13	GPIO5	I/O	+5V
15	GPIO6	1/0	+5V
17	GPIO7	I/O	+5V

# 2.4.14 MiniCard Slot (Full-MiniCard) (CN15)

Pin	Pin Name	Signal Type	Signal Level
1	PCIE_WAKE#	IN	
2	+3.3VSB	PWR	+3.3V
3	NC		
4	GND	GND	
5	NC		
6	+1.5V	PWR	+1.5V
7	PCIE_CLK_REQ#	IN	
8	NC	PWR	
9	GND	GND	
10	NC	I/O	
11	PCIE_REF_CLK-	DIFF	
12	NC	IN	
13	PCIE_REF_CLK+	DIFF	
14	NC		
15	GND	GND	
16	NC	PWR	
17	NC		
18	GND	GND	
19	NC		
20	W_DISABLE#	OUT	+3.3V
21	GND	GND	
22	PCIE_RST#	OUT	+3.3V
23	PCIE_RX-	DIFF	

24	+3.3VSB	PWR	+3.3V	
25	PCIE_RX+	DIFF		
26	GND	GND		
27	GND	GND		
28	+1.5V	PWR	+1.5V	
29	GND	GND		
30	SMB_CLK	I/O	+3.3V	
31	PCIE_TX-	DIFF		
32	SMB_DATA	I/O	+3.3V	
33	PCIE_TX+	DIFF		
34	GND	GND		
35	GND	GND		
36	USB_D-	DIFF		
37	GND	GND		
38	USB_D+	DIFF		
39	+3.3VSB	PWR	+3.3V	
40	GND	GND		
41	+3.3VSB	PWR	+3.3V	
42	NC			
43	GND	GND		
44	NC			
45	NC			
46	NC			
47	NC			
48	+1.5V	PWR	+1.5V	

49	NC		
50	GND	GND	
51	NC		
52	+3.3VSB	PWR	+3.3V

# 2.4.15 mSATA(Default) and MiniCard Slot (Half-MiniCard) (CN16)

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

19	NC		
20	W_DISABLE#	OUT	+3.3V
21	GND	GND	
22	PCIE_RST#	OUT	+3.3V
23	SATA_RX-	DIFF	
24	+3.3VSB	PWR	+3.3V
25	SATA_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	SATA_TX-	DIFF	
32	SMB_DATA	I/O	+3.3V
33	SATA_TX+	DIFF	
34	GND	GND	
35	GND	GND	
36	USB_D-	DIFF	
37	GND	GND	
38	USB_D+	DIFF	
39	+3.3VSB	PWR	+3.3V
40	GND	GND	
41	+3.3VSB	PWR	+3.3V
42	NC		
43	GND	GND	

EPIC Board

EPIC-KBS8

44	NC		
45	NC		
46	NC		
47	NC		
48	+1.5V	PWR	+1.5V
49	NC		
50	GND	GND	
51	NC		
52	+3.3VSB	PWR	+3.3V

# 2.4.16 Micro SIM Card Socket (CN17)

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

## 2.4.17 USB 2.0 Port (CN18~CN21, CN29~CN31, CN35~CN37)



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



Pin	Pin Name	Signal Type	Signal Level
1	LAD0	I/O	+3.3V
2	LAD1	I/O	+3.3V
3	LAD2	I/O	+3.3V
4	LAD3	I/O	+3.3V
5	+3.3V	PWR	+3.3V
6	LFRAME#	IN	
7	LRESET#	OUT	+3.3V
8	GND	GND	
9	LCLK	OUT	
10	SMB DATA	I/O	+3.3V
11	SMB CLK	I/O	+3.3V
12	SMB_Alert#	I/O	+3.3V

# 2.4.19 CPU FAN (CN23)

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

3

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FAN\_TAC

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GND

# 2.4.20 LAN (RJ-45) (CN24, CN25)



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

## 2.4.21 COM Port (RS-232) (CN26, CN28, CN33, CN34, CN38)



		RS-232	
Pin	Pin Name	Signal Type	Signal Level
1	DCD	IN	
2	DSR	IN	
3	RX	IN	
4	RTS	OUT	±9V
5	ТХ	OUT	±9V
6	CTS	IN	
7	DTR	OUT	±9V
8	RI/+5V/+12V	IN/ PWR	+5V/+12V
9	GND	GND	

# 2.4.22 USB Ports 0 and 1 (CN27)



Pin	Pin Name	Signal Type	Signal Level
1	+5VSB	PWR	+5V
2	USB0_D-	DIFF	
3	USB0_D+	DIFF	
4	GND	GND	
5	USBO_SSRX-	DIFF	
6	USB0_SSRX+	DIFF	
7	GND	GND	
8	USBO_SSTX-	DIFF	
9	USB0_SSTX+	DIFF	
10	+5VSB	PWR	+5V
11	USB1_D-	DIFF	
12	USB1_D+	DIFF	
13	GND	GND	
14	USB1_SSRX-		
15	USB1_SSRX+		
16	GND	GND	

17	USB1_SSTX-	
18	USB1_SSTX+	

2.4.23 COM Port 2(RS232/422/485) (CN32)



		RS-232	
Pin	Pin Name	Signal Type	Signal Level
1	DCD	IN	
2	RX	IN	
3	ТХ	OUT	±9V
4	DTR	OUT	±9V
5	GND	GND	
6	DSR	IN	
7	RTS	OUT	±9V
8	CTS	IN	
9	RI/+5V/+12V	IN/ PWR	RI/+5V/+12V

RS-422(only COM2)			
Pin	Pin Name	Signal Type	Signal Level
1	RS422_TX-	OUT	±5V
2	RS422_TX+	OUT	±5V
3	RS422_RX+	IN	
4	RS422_RX-	IN	
5	GND	GND	
6			
7			
8			
9	NC/+5V/+12V	PWR	+5V/+12V

RS-485(only COM2)			
Pin	Pin Name	Signal Type	Signal Level
1	RS485_D-	I/O	±5V
2	RS485_D+	I/O	±5V
3			
4			
5	GND	GND	
6			
7			
8			
9	NC/+5V/+12V	PWR	+5V/+12V

# 2.4.24 VGA Port (CN39)



Pin	Pin Name	Signal Type	Signal Level
1	RED	OUT	Analog
2	GREEN	OUT	Analog
3	BLUE	OUT	Analog
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	CRT_PLUG#		
11	NC		
12	DDC_DATA	1/0	+5V
13	HSYNC	OUT	
14	VSYNC	OUT	
15	DDC_CLK	I/O	+5V



Pin	Pin Name	Signal Type	Signal Level
1	VSYNC	OUT	
2	HSYNC	OUT	
3	GND	GND	
4	DDC_CLK	I/O	
5	DDC_DAT	I/O	
6	GND	GND	
7	BLUE	Out	Analog
8	GND	GND	
9	GREEN	Out	Analog
10	GND	GND	
11	RED	Out	Analog
12	GND	GND	
13	+5V	PWR	

# 2.4.26 Buzzer Connector (BZ1)

Pin	Pin Name	Signal Type	Signal Level
1	+3.3V	PWR	3.3V
2	Buzzer Speaker	GND	

-1 -2

# 2.4.27 DDR4 SO-DIMM Slot (DIMM1)

Standard Specification

# 2.5 CPU Installation

\* Turn off the system, unplug the power cord and make sure the system is off.

\* Have the Intel Kabylake or Intel SkyLake-S FCLGA1151 Processor (Max. TDP 35W)

ready.



Step 1: Remove the plastic cover as instructed below.





## Step 2: Assemble the CPU.



L5458624 € 28216 2.40GHZ 17-67001E 14761€ CORE

Step 3: Assemble the cover, and make sure the corners align.



#### Step 4: Slide the cover so that it fits to the stud.



Step 5: Stick the sponge on the PCB in order to fix the metal cover.



• Better fix the CPU in place

The cover benefit is better to fix the CPU when disassembling cooler.

• Better compatibility

It is also good for heat spreading. If the CPU is better fixed, the board will perform better and be more reliable.

# Chapter 3

**BIOS Setup** 

## 3.1 System Test and Initialization

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

System configuration verification

These routines check the current system configuration stored in the CMOS memory and BIOS NVRAM. If system configuration is not found or system configuration data error is detected, system will load optimized default and re-boot with this default system configuration automatically.

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

- 1. You are starting your system for the first time
- 2. You have changed the hardware attached to your system
- 3. The system configuration is reset by Clear-CMOS jumper

4. The CMOS memory has lost power and the configuration information has been erased.

The EPIC-KBS8 CMOS memory has an integral lithium battery backup for data retention. However, you will need to replace the complete unit when it finally runs down.

## 3.2 AMI BIOS Setup

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

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

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

Advanced – Enable/ Disable boot option for legacy network devices

Chipset - For hosting bridge parameters

Boot - Enable/ Disable quiet Boot Option

Security - The setup administrator password can be set here

Save & Exit – Save your changes and exit the program

## 3.3 Setup submenu: Main



# 3.4 Setup submenu: Advanced

Aptio Setup Utility – Copyright (C) 2018 American Main <mark>Advanced</mark> Chipset Security Boot Save & Exit	Megatrends, Inc.
<ul> <li>OPU Configuration</li> <li>SATA Configuration</li> <li>USB Configuration</li> <li>Hardware Monitor</li> <li>SIO Configuration</li> <li>Power Management</li> <li>Digital IO Port Configuration</li> </ul>	CPU Configuration Parameters ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.18.1263. Copyright (C) 2018 American Me	egatrends, Inc.

# 3.4.1 CPU Configuration

Aptio Setup Utility Advanced	– Copyright (C) 2018 Americar	n Megatrends, Inc.
Advanced CPU Configuration Type ID Speed L1 Data Cache L1 Instruction Cache L2 Cache	Intel(R) Core(TM) 15-7500 CPU @ 3.40GHz 0x906E9 3400 MHz 32 KB x 4 32 KB x 4 256 KB x 4	When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.
L3 Cache L4 Cache VMX SMX/TXT	6 MB N/A Supported Supported	
		<pre>++: Select Screen  ↓: Select Item Enter: Select</pre>
Intel(R) SpeedStep(tm)	[Disabled]	+/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2 18 1263	Conuright (C) 2018 American M	legatrends Inc

Intel (VMX)	Enabled	Optimal Default, Failsafe Default
Virtualization	Disabled	
Technology		
When enabled, a VMM can utilize the additional hardware capabilities provided by		
Vanderpool Technology.		
Intel® SpeedStep™	Disabled	Optimal Default, Failsafe Default
	Enabled	
Allows more than two frequency ranges to be supported.		

# 3.4.2 SATA Configuration

Aptio Se Advanced	etup Utility – Copyright (	C) 2018 American Megatrends, Inc.
SATA Configuration		Enable/Disable SATA Device.
SATA Controller(s) SATA Mode Selection SATA Port 0 Serial ATA Port 0 Hot Plug SATA Port 1 Serial ATA Port 1	(Enabled) (AHCI) Empty (Disabled) (Enabled) Empty	
Serial ATA Port 1 Hot Plug	Empty [Disabled]	++: Select Screen 1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version	n 2.18.1263. Copyright (C)	2018 American Megatrends, Inc.

SATA Controller(s)	Enabled	Optimal Default, Failsafe Default
	Disabled	
Enable or disable SA	TA Device.	
SATA Mode	АНСІ	Optimal Default, Failsafe Default
selection		
Port 0	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable or Disable SA	TA Port.	
Hot Plug	Disabled	Optimal Default, Failsafe Default
	Enabled	
Designates this port	as Hot Pluggable.	

Port 1	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable or Disable SA	TA Port.	
Hot Plug	Disabled	Optimal Default, Failsafe Default
	Enabled	
Designates this port a	as Hot Pluggable.	•

# 3.4.3 USB Configuration

Aptio Setup Utility - ( Advanced	Copyright (C) 2018 American	Megatrends, Inc.
USB Configuration USB Devices: 1 Drive, 1 Keyboard, 1 Mouse		Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will hear USP devices available.
Legacy USB Support		<pre>#### A construction of the second secon</pre>
Version 2.18.1263. Co	pyright (C) 2018 American M	egatrends, Inc.

Options summary:

Legacy USB Support	Enabled	Optimal Default, Failsafe Default
	Disabled	
	Auto	

Enables BIOS Support for Legacy USB Support. When enabled, USB can be functional

in legacy environment like DOS.

AUTO option disables legacy support if no USB devices are connected

# 3.4.4 Hardware Monitor

Aptio Setup Utility – Advanced	Copyright (C) 2018 Americar	Megatrends, Inc.
Pc Health Status		Enable or Disable Smart Fan
CPU Temperature(DTS) System Temperature1 System Temperature2 Fan1 Speed VCORE +12V +5V VMEM	: +37 % : +23 % : +20 % : 5747 RPM : +1.040 V : +11.968 V : +15.045 V : +1.224 V	
Smart Fan ▶ Smart Fan Mode Configuration		++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.18.1263. C	opyright (C) 2018 American ⊧	legatrends, Inc.

Smart Fan	Enabled	Optimal Default, Failsafe Default
	Disabled	
Enable or Disable Smart Fan		

# 3.4.4.1 Smart Fan Mode Configuration

Aptio Setup Utility - Advanced	Copyright (C) 2018 American	Megatrends, Inc.
Smart Fan Mode Configuration		Smart Fan Mode Select
Fan 1 Smart Fan Control Temperature Source Temperature 1 Temperature 2 Temperature 3 Temperature 4 Duty Cycle 1 Duty Cycle 1 Duty Cycle 3 Duty Cycle 3 Duty Cycle 5	[Auto Duty-Cycle Mode] [CPU(external)] 50 40 30 85 70 60 50 40	++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
	ppyright (C) 2018 American M	egatrends, Inc.

Fan 1 Smart Fan	Manual RPM Mode	
Control	Manual Duty Mode	
	Auto RPM Mode	
	Auto Duty-Cycle Mode	Optimal Default, Failsafe Default
Smart Fan Mode Sele	ect	
Temperature Source	CPU	
	CPU(external)	Optimal Default, Failsafe Default
	System	
Temperature 1	60	Optimal Default, Failsafe Default
Auto fan speed contr	rol. Fan speed will follow differe	nt temperature by different RPM
1-100.		

Temperature 2	50	Optimal Default, Failsafe Default	
Auto fan speed con	Auto fan speed control. Fan speed will follow different temperature by different RPM		
1-100			
Temperature 3	40	Optimal Default, Failsafe Default	
Auto fan speed con	rol. Fan speed will follow differe	nt temperature by different RPM	
1-100			
Temperature 4	30	Optimal Default, Failsafe Default	
Auto fan speed con	rol. Fan speed will follow differe	nt temperature by different RPM	
1-100			
Duty Cucle 1	85	Optimal Default, Failsafe Default	
Auto fan speed con	rol. Fan speed will follow differe	nt temperature by different RPM	
1-100			
Duty Cucle 2	70	Optimal Default, Failsafe Default	
Auto fan speed control. Fan speed will follow different temperature by different RPM			
1-100			
Duty Cucle 3	60	Optimal Default, Failsafe Default	
Auto fan speed control. Fan speed will follow different temperature by different RPM			
1-100	1-100		
Duty Cucle 4	50	Optimal Default, Failsafe Default	
Auto fan speed control. Fan speed will follow different temperature by different RPM			
1-100			
Duty Cucle 5	40	Optimal Default, Failsafe Default	
Auto fan speed control. Fan speed will follow different temperature by different RPM			
1-100			

# 3.4.5 SIO Configuration

Aptio Setup Utility – Copyright (C) 2018 American Megatrends, Inc. Advanced			
AMI SIO Driver Version : A5.07.03 Super IO Chip Logical Device(s) Configuration [ HACTIVE#] Serial Port 1 [ HACTIVE#] Serial Port 2 [ HACTIVE#] Serial Port 3 [ HACTIVE#] Serial Port 4 [ HACTIVE#] Serial Port 5 [ HACTIVE#] Serial Port 6 WARNING: Logical Devices state on the left side of the	View and Set Basic properties of the SIO Logical device. Like IO Base, IRQ Range, DMA Channel and Device Mode.		
made during Setup Session will be shown after you restart the system.	++: Select Screen 14: Select Itm Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit		

# 3.4.5.1 Serial Port 1 Configuration



Use This Device	Disabled			
	Enabled	Optimal Default, Failsafe Default		
En/Disable Serial Port (COM)				
Possible:	Use Automatic Settings	Optimal Default, Failsafe Default		
	10=3F8; IRQ=4;			
	IO=2F8; IRQ=3;			
Allows the user to change the device resource settings. New settings will be reflected				
on this setup page after system restarts.				

# 3.4.5.2 Serial Port 2 Configuration



Use This Device	Disabled			
	Enabled	Optimal Default, Failsafe Default		
En/Disable Serial Port (COM)				
Possible:	Use Automatic Settings	Optimal Default, Failsafe Default		
	10=2F8; IRQ=3			
	10=3F8; IRQ=4;			
Allows the user to change the device resource settings. New settings will be reflected				
on this setup page after system restarts.				
Mode:	RS232;	Optimal Default, Failsafe Default		
	RS422;			
	RS485;			
UART RS232, 422, 485 selection				

# 3.4.5.3 Serial Port 3 Configuration



Use This Device	Disabled			
	Enabled	Optimal Default, Failsafe Default		
En/Disable Serial Port (COM)				
Possible:	Use Automatic Settings	Optimal Default, Failsafe Default		
	IO=3E8; IRQ=11;			
	10=2E8; IRQ=11;			
Allows the user to change the device resource settings. New settings will be reflected				
on this setup page after system restarts.				
## 3.4.5.4 Serial Port 4 Configuration



Use This Device	Disabled	
	Enabled	Optimal Default, Failsafe Default
En/Disable Serial Port (COM)		
Possible:	Use Automatic Settings	Optimal Default, Failsafe Default
	10=2E8; IRQ=11;	
	10=3E8; IRQ=11;	
Allows the user to change the device resource settings. New settings will be reflected		
on this setup page after system restarts.		

## 3.4.5.5 Serial Port 5 Configuration



Use This Device	Disabled	
	Enabled	Optimal Default, Failsafe Default
En/Disable Serial Port (COM)		
Possible:	Use Automatic Settings	Optimal Default, Failsafe Default
	IO=2E8; IRQ=11;	
	10=3E8; IRQ=11;	
Allows the user to change the device resource settings. New settings will be reflected		
on this setup page after system restarts.		

## 3.4.5.6 Serial Port 6 Configuration



Use This Device	Disabled	
	Enabled	Optimal Default, Failsafe Default
En/Disable Serial Po	rt (COM)	
Possible:	Use Automatic Settings	Optimal Default, Failsafe Default
	10=2E8; IRQ=11;	
	10=3E8; IRQ=11;	
Allows the user to change the device resource settings. New settings will be reflected		
on this setup page after system restarts.		

## 3.4.6 Power Management

Aptio Setup Util Advanced	Lity – Copyright (C) 2018 Am	erican Megatrends, Inc.
Power Management		Select system power mode.
Power Mode Restore AC Power Loss	[ATX Type] [∟ast State]	
Wake Events RI Wake Event RTC wake system from S5	[Enabled] [Disabled]	
		++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.18.12	263. Copyright (C) 2018 Amer	ican Megatrends, Inc.

Power Mode	АТХ Туре	Optimal Default, Failsafe Default
	АТ Туре	
Select system power	r mode.	
Restore on Power	Last State	Optimal Default, Failsafe Default
Loss	Power On	
	Power Off	
Select power state when power is re-applied after a power failure.		
RI Wake Event	Enabled	Optimal Default, Failsafe Default
	Disabled	
System wake up from RI# Enabled/Disabled		
RTC wake system	Disabled	Optimal Default, Failsafe Default
from S5	Fixed Time	

Enable or disable System wake on alarm event. When enabled, System will wake on the

hr::min::sec specified

# 3.4.7 Digital IO Port Configuration

Aptio Set Advanced	up Utility – Copyright (C) 2018 f	American Megatrends, Inc.
Digital IO Port Configu DIO Port1 Output Level DIO Port2 Output Level DIO Port3 Output Level DIO Port4 Output Level DIO Port5 DIO Port5 DIO Port5 DIO Port7 DIO Port8	ration [Output] [High ] [Output] [High ] [Output] [High ] [Output] [High ] [Input ] [Input ] [Input ] [Input ]	Set DIO as Input or Output +: Select Screen 1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.18.1263. Copyright (C) 2018 American Megatrends, Inc.		

DIO Port*	Output	
	Input	
Set DIO as Input or	Output	
Output Level	High	Optimal Default, Failsafe Default
	Low	
Set output level whe	en DIO pin is output	

# 3.5 Setup submenu: Chipset

Aptio Setup Utility – Copyright (C) 2018 American Main Advanced <mark>Chipset</mark> Security Boot Save & Exit	Megatrends, Inc.
Main Hovenced Cripsel Security Boot Save & Exit > System Agent (SA) Configuration > PCH-IO Configuration	System Agent (SA) Parameters ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help
	F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

# 3.5.1 System Agent (SA) Configuration

Aptio Setup Utility — Chipset	Copyright (C) 2018 American	Megatrends, Inc.
System Agent (SA) Configuration		Graphics Configuration
Memory Configuration Memory Frequency Total Memory Channel O Slot O Size Number of Ranks	2400 MHz 8192 MB Populated & Enabled 8192 MB (DDR4) 1	
▶ Graphics Configuration		
		+: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.18.1263. Co	pyright (C) 2018 American Me	egatrends, Inc.

## 3.5.1.1 Graphics Configuration

Aptio Setup ( Chipset	Jtility – Copyright (C) 2018 Americar	Megatrends, Inc.
Graphics Configuration Primary Display Primary TGEX Boot Display	[Auto] [VBIDS Default]	Select which of IGFX/PEG/PCI Graphics device should be Primary Display Or select SG for Switchable Gfx.
▶ LVDS Panel Configuration		
		++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.10	3.1263. Copyright (C) 2018 American ⊦	Megatrends, Inc.

Options summary:

Primary IGFX Boot	Auto	Optimal Default, Failsafe Default
Display	IGFX	
	PEG	

Select which of IGFX/PEG/PCI Graphics device should be Primary Display Or select SG

for Switchable Gfx.

Primary IGFX Boot	VBIOS Default	Optimal Default, Failsafe Default
Display	eDP/LVDS1	
	LVDS2	
	CRT	

Select the Video Device which will be activated during POST. This has no effect if

external graphic present.

Secondary boot display selection will appear based on your selection.

Secondary IGFX Boot	Disabled	Optimal Default, Failsafe Default
Display	eDP/LVDS1	
	LVDS2	
	CRT	
Select Secondary Display Device		

\*The Secondary IGFX Boot Display option will different based on Primary IGFX Boot

 Primary IGFX Boot Display
 Secondary IGFX Boot Display

 eDP/LVDS1
 Disabled

 LVDS2
 CRT

 LVDS2
 Disabled

 CRT
 Disabled

 CRT
 Disabled

Display option.

# 3.5.1.2 LVDS Panel Configuration

Aptio Setup Utility - Chipset	Copyright (C) 2018 America	n Megatrends, Inc.
LVDS Panel Configuration		Enable/Disabled this panel
LVDS Panel Type Color Depth Backlight Type Backlight Level Backlight PMM Freq LVDS2 Panel Type Color Depth Backlight Type Backlight Level Backlight PMM Freq	[Enabled] [1024x768060Hz] [18-Bit] [Normal] [ 220Hz] [Enabled] [1024x768060Hz] [18-Bit] [Normal] [ 80%] [ 220Hz]	++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.18.1263. C	opyright (C) 2018 American	Megatrends, Inc.

		-
LVDS	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enabled/Disabled this par	nel.	
Panel Type	640x480@60Hz	
	800x480@60Hz	
	800x600@60Hz	
	1024x600@60Hz	
	1024x768@60Hz	Optimal Default, Failsafe Default
	1280x768@60Hz	
	1366x768@60Hz	
Select LCD panel used by Internal Graphics Device by selecting the appropriate setup		
item.		

Color Depth	18-bit	Optimal Default, Failsafe Default
	24-bit	
Select panel type	·	
Backlight Type	Normal	Optimal Default, Failsafe Default
	Inverted	
Select backlight contro	l signal type	
Backlight Level	0%	
	10%	
	20%	
	30%	
	40%	
	50%	
	60%	
	70%	
	80%	Optimal Default, Failsafe Default
	90%	
	100%	
Select backlight control	level	
Backlight PWM Freq	100Hz	
	200Hz	
	220Hz	Optimal Default, Failsafe Default
	500Hz	
	1KHz	
	2.2KHz	
	6.5KHz	
Select PWM frequency	of backlight control	signal

LVDS2	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enabled/Disabled thi	is panel.	
Panel Type	640x480@60Hz	
	800x480@60Hz	
	800x600@60Hz	
	1024x600@60Hz	
	1024x768@60Hz	Optimal Default, Failsafe Default
	1280x768@60Hz	
	1366x768@60Hz	
Select LCD panel use	ed by Internal Graphics Dev	vice by selecting the appropriate setup
item.		
Color Depth	18-bit	Optimal Default, Failsafe Default
	24-bit	
Select panel type		
Backlight Type	Normal	Optimal Default, Failsafe Default
	Inverted	
Select backlight cont	rol signal type	
Backlight Level	0%	
	10%	
	20%	
	30%	
	40%	
	50%	
	60%	
	70%	

	80%	Optimal Default, Failsafe Default
	90%	
	100%	
Select backlight control	level	
Backlight PWM Freq	100Hz	
	200Hz	
	220Hz	Optimal Default, Failsafe Default
	500Hz	
	1KHz	
	2.2KHz	
	6.5KHz	
Select PWM frequency	of backlight control signal	

## 3.5.2 PCH-IO Configuration

Aptio Setup Chipset	Utility – Copyright (C) 2018 America	n Megatrends, Inc.
HD Audio Mini-Card Gen Speed(Full) Mini-Card Gen Speed(Half)	[Auto] [Auto] [Auto]	Control Detection of the HD-Audio device. Disabled = HOA will be unconditionally disabled Enabled = HDA will be unconditionally enabled Auto = HDA will be enabled if present, disabled otherwise.
		++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.1	l8.1263. Copyright (C) 2018 American	Megatrends, Inc.

Options summary:

HD Audio	Auto	Optimal Default, Failsafe Default	
	Enabled		
	Disabled		
Control Detertion of the UD Audio device			

Control Detection of the HD-Audio device.

Disabled = HDA will be unconditionally disabled

Enabled = HDA will be unconditionally enabled

Auto = HDA will be enabled if present, disabled otherwise.

Mini-Card Gen	Auto	Optimal Default, Failsafe Default
Speed(Full)	Gen1	
	Gen2	
	Gen3	
Configure PCIe Speed		

EPIC Board

Mini-Card Gen	Auto	Optimal Default, Failsafe Default
Speed(Half)	Gen1	
	Gen2	
	Gen3	
Configure PCIe Spee	ed	

## 3.6 Security

Aptio Setup Utilit Main Advanced Chipset Securi	y – Copyright (C) 2018 American ty Boot Save & Exit	Megatrends, Inc.
Password Description		Set Administrator Password
If ONLY the Administrator's pass then this only limits access to only asked for when entering Set If ONLY the User's password is a is a power on password and must boot or enter Setup. In Setup th have Administrator rights. The password length must be in the following range: Minimum length	word is set, Setup and is up. et, then this be entered to e User will 3	
Maximum length	20	↔: Select Screen t∔: Select Item
Administrator Password User Password		Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.18.1263	. Copyright (C) 2018 American M	egatrends, Inc.

#### 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.

# 3.7 Submenu: Boot

Aptio Setup Utili Main Advanced Chipset Secur	ty – Copyright (C) 2018 Ameri Yity Boot Save & Exit	ican Megatrends, Inc.	
Boot Configuration		Enables or disables Quiet Boot	
Quiet Boot Launch PXE ROM	[Enabled] [Disabled]	operation	
Boot Option Priorities	[CopDick]		
Boot Option #2	[UEFI: SanDisk, Partition 1]		
Hard Drive BBS Priorities			
		++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	
Version 2.18.126	Version 2.18.1263. Copyright (C) 2018 American Megatrends, Inc.		

Quiet Boot	Disabled				
	Enabled	Optimal Default, Failsafe Default			
Enabled or Disable showing boot logo.					
Launch PXE OpROM	Disabled	Optimal Default, Failsafe Default			
	Enabled				
Controls the execution of UEFI and Legacy PXE OpROm					

# 3.7.1 BBS Priorities

Aptio Setup Utility -	Copyright (C) 2013 American Boot	Megatrends, Inc.
Boot Option #1	[Generic Flash Disk]	Sets the system boot order
		++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

# 3.8 Submenu: Exit

Aptio Setup Utility – Copyright (C) 2018 American Main Advanced Chipset Security Boot <mark>Save &amp; Exit</mark>	Megatrends, Inc.
Save Options	Reset the system after saving the changes
Save Changes and Reset Discard Changes and Exit	the changes.
Default Options Restore Defaults	
	++: Select Screen f↓: Select Item Enter: Select +/-: Change Opt. F1: General Help
	F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.18.1263. Copyright (C) 2018 American M	egatrends, Inc.

# Chapter 4

Drivers Installation

The EPIC-KBS8 comes with a product DVD that contains all the drivers and utilities you need to setup your product. Insert the DVD and follow the steps in the autorun program to install the drivers.

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

## Step 1 – Install Chipset Drivers

- 1. Open the Step 1 Chipset folder followed by infinst\_autol.exe
- 2. Follow the instructions
- 3. Drivers will be installed automatically

#### Step 2 - Install Graphics Driver

- 1. Open the STEP2 VGA folder and select your OS
- 2. Open the Setup.exe file in the folder
- 3. Follow the instructions
- 4. Drivers will be installed automatically

#### <u>Note 1:</u>

- This motherboard supports VGA and LVDS display devices. In Single Display mode. By default, press <Ctrl>+<Alt>+<F1> to switch to VGA device and press <Ctrl>+<Alt>+<F3> to switch to LVDS device.
- Before removing the current display device, connect the display device that you want to use, and then press the hot keys to switch to that device.

<u>Note 2:</u> If you are using Windows<sup>®</sup> XP, you have to install the driver of dotNet Framework first (dotnetfx35.exe in dotNet Framwork folder).

## Step 3 – Install LAN Driver

1. Open the STEP3 – LAN (Intel\_82579) folder and select your OS

- 2. Open the .exe file in the folder
- 3. Follow the instructions
- 4. Drivers will be installed automatically

#### Step 4 - Install Audio Driver

- 1. Open the STEP4 Audio folder and select your OS
- 2. Open the Setup.exe file in the folder
- 3. Follow the instructions
- 4. Drivers will be installed automatically

#### Step 5 – Install ME Drivers

- 1. Open the STEP5 ME SW folder and select your OS
- 2. Open the Setup.exe file in the folder
- 3. Follow the instructions
- 4. Drivers will be installed automatically

## Step 6 – Install RAID & AHCI Drivers

Please refer to Appendix E RAID & AHCI Settings

## Step 7 - Install TPM Driver

- 1. Open the STEP7 TPM folder and select your OS
- 2. Open the Setup.exe file in the folder
- 3. Follow the instructions
- 4. Drivers will be installed automatically

## Step 8 – Install Touch Driver

- 1. Open the STEP8 Touch folder and select your OS
- 2. Open the Setup.exe file in the folder
- 3. Follow the instructions

4. Drivers will be installed automatically

## Step 9 – Install USB 3.0 Driver

- 1. Open the STEP9 USB 3.0 folder and select your OS
- 2. Open the **Setup.exe** file in the folder
- 3. Follow the instructions
- 4. Drivers will be installed automatically

# Appendix A

Mating Connectors

# A.1 List of Mating Connectors and Cables

Connector Label	Function	Mating Connector		Available Cable	Cable P/N
		Vendor	Model no	Cubic	
CN5, CN6	LVDS Port Inverter	JST	PHR-5	N/A	N/A
CN2, CN3	LVDS	HIROSE	DF13-30DS-1.25C	N/A	N/A
CN12	Audio	Molex	51021-1000	Audio Cable	1709100254
CN10, CN11	Speaker	Molex	51021-0200	N/A	N/A
CN26,CN28, CN32,CN33, CN34,CN38	СОМ	Molex	51021-0900	UART Wafer Cable	1701090150
JP7	Front Panel	Molex	51110-1050	N/A	N/A
CN14	DIO	Molex	51110-1050	N/A	N/A
CN13	RTC Battery	Molex	51021-0200	Battery Cable	175011901C
CN18~CN21, CN29~CN31 ,CN35~CN37	USB	Molex	51021-0500	USB Wafer Cable	1700050207
CN8	SATA PWR	JST	PHR-2	2 Pins For SATA Power	1702150155
CN4	External +5VSB Input and PS_ON#	JST	PHR-3	ATX Cable	170220020B
CN22	LPC Port	JST	SHR-12V-S-B	AAEON LPC Cable	1703120130
BZ1	Buzzer	Molex	51021-0200	Buzzer Cable	170302010C
CN1	External +12V Input	Molex	19211-0003	Power Cable	170204010R

The table notes mating connectors and available cables.

VGA1	VGA	Molex	51021-1300	VGA	1709150151
	Header			Cable	