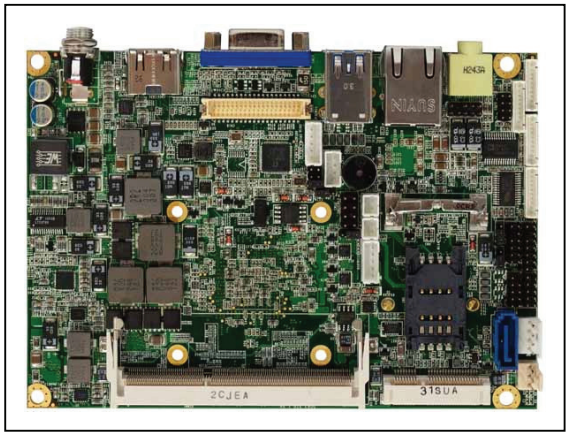
Custom Embedded Solutions

User Manual
PL-80910



3.5" Fanless Embedded System, 3.5" SBC Embedded Control Board
3.5" SBC with 2nd Gen. AMD® Embedded G-Series SOC, Steppe Eagle, with AMD Radeon™ HD Graphics, DDR3 up to 8GB, 1 x Intel® GbE LAN, Onboard VGA, 24-bit LVDS, HDMI, audio, SATA, USB3.0, 4 x COM, 8-bit GPIO, 2 x Mini-PCIe, LPC, DC 8V ~ 32V input

Ver.	Release Date	Update
1.0	2015.02	Released

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For more information or other WIN Enterprises products visit our website: http://www.win-ent.com.

For technical supports, please send your inquiry to consultants@win-ent.com.

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Packing list

Before use this product, please make sure that the following materials have been shipped.

- 1 x MB-80910 3.5” SBC
- 1 x CPU cooling Fan (* Note) (P/N: CB-F0056-00)
- 1 x SATA cable, L/ 200mm (P/N: CB-SATA11-00)
- 1 x 12V/5V SATA power cable , L/ 150mm (P/N: CB-IPOW41-00)
- 1 x COM port, DB9 type, L/ 180mm, without bracket (P/N: CB-ICOM34-01)
- 1 x dual USB 2.0 cable, L/ 245mm, without bracket (P/N: CB-IUSB03-00)
- 1 x CD Utility

Note: Customer needs to change high performance CPU cooling Fan when using MB-8091A.

CB-F0056-00	CB-SATA11-00	CB-IPOW41-00	CB-ICOM34-01	CB-IUSB03-00
				

Model Name	Description
MB-8091A	AMD® Embedded GX-212JC SOC (D/C 1.2 GHz), HDMI, VGA, LVDS, GbE, COM, USB, SATA, Mini-PCIe, DC 8V ~ 32V input
MB-8091B	AMD® Embedded GX-412HC SOC (Q/C 1.2 GHz), HDMI, VGA, LVDS, GbE, COM, USB, SATA, Mini-PCIe, DC 8V ~ 32V input
MB-8091C	AMD® Embedded GX-424CC SOC (Q/C 2.4 GHz), HDMI, VGA, LVDS, GbE, COM, USB, SATA, Mini-PCIe, DC 8V ~ 32V input

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* If any items are missing or damaged contact your sales representative or distributor.

Optional Accessories

Photo	Model Name	
	P/N:	CB-ICOM34-01
	Single COM port, DB9 type, L/ 180mm, without bracket	
	P/N:	CB-IUSB03-00
	Dual USB cable, L/ 245mm, without bracket	
	P/N:	CB-IAUD15-01
	Line-out , Line-In , Mic-In audio cable, L/ 180mm, without bracket	
	P/N:	CB-F00077-00 (39L-ZMAA000024A to work with)
	CPU cooling Fan for EM-6338A-Q24	
	P/N:	39L-ZMAA000024A
	Bracket for CB-F00077-00 CPU cooling Fan	

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Safety Information

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.
- Before connecting or removing signal cables from the motherboard ensure that all power cables are unplugged.
- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.
- Make sure that your power supply is set to the correct voltage in your area.
- If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

Operation Safety

- Before installing the motherboard and adding devices to it carefully read all the manuals that came with the package(s).
- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.

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Contents

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General Information

1.1 Introduction

MB-80910 is a 3.5" SBC with onboard 2nd Gen. AMD® Embedded G-Series SOC, Steppe Eagle, with AMD Radeon™ HD Graphics. Integrated graphics for three display options include HDMI, VGA and 24-bit dual-channel LVDS. One DDR3 SO-DIMM supports a maximum of 8GB DDR3 1600 of system memory.

There are two flexible Mini-PCIe sockets for expansion. One is the Full-size type and the other one is Half-size type. Both of them support standard Mini-PCIe cards for PCIe & USB signal-base, such as Wi-Fi. Besides that, A SIM card holder is included that can accept a SIM card when you install a Full-size Mini-PCIe 3G module for wireless connection. The Half-size Mini-PCIe socket also supports a mSATA SSD as a storage device.

Regarding I/O ports, MB-80910 provides plenty of connectivity, such as 1 x Intel® GbE Ethernet provided by Intel® i211AT controller, 1 x RS232/422/485 & 3 x RS232, 6 x USB, Audio, 1 x SATA 6Gb/s, 1 x LPC pin-header that could support WIN's TPM module if customer needs to better protect information.MB-80910 can accept a wide electrical range: DC 8V ~ 32V input, an feature an external DC locking power jack or a 4-pin internal power connector for easier power integration.

MB-80910 is a small form-factor embedded platform equip with AMD® high performance Radeon™ HD Graphics and also rich IO ports, make MB-80910 suitable for a wide range of applications in digital signage, POS, kiosks, and factory automation. Fanless design are allowed for high temperature and dusty environments.

WIN offers reliable and solid products which are produced under Management System Standards: ISO9001-2000 Certificate. The certificate keeps us focused on our quality objectives of management and environmental production. Its willingness to customize standard products for meet unique customer needs makes WIN different. All ODM projects are welcome. Years of experiences enables WIN to fulfill the customer's vision, by delivering products to exact specifications. WIN R&D team is proud of its strong engineering background. R&D professionals account for 25% of the WIN workforce. We focus on developing new products for both emerging and established markets. For more information about OEM/ODM projects contact us :

Email: mailto:consultants@win-ent.com TEL: +1-(978)-688-2000.

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1.2 MB-80910 Specifications

System	
From Factor	3.5" SBC
CPU	AMD Embedded **GX-212JC** SOC with AMD Radeon™ Graphics, 6W (**MB-8091A**)
	AMD Embedded **GX-412HC** SOC with AMD Radeon™ Graphics, 7W (**MB-8091B**)
	AMD Embedded **GX-422CC** SOC with AMD Radeon™ Graphics, 25W (**MB-8091C**)
Chipset	Integrated
Memory	1 x DDR3 SO-DIMM / 1600 MHz up to 8GB, without ECC support
BIOS	AMI SPI BIOS
SSD	1 x Half-size Mini-PCIe socket support mSATA
Watchdog timer	255 levels, 1 ~ 255 sec
Expansion	1 x Full-size Mini-PCIe socket w/SIM slot. With PCIe X1 & USB signal
	1 x Half-size Mini-PCIe socket. With PCIe X1 / SATA signal & USB single
Board Size	146mm x 101mm
Operating Temp.	MB-80910Board : 0℃~60℃ (32℉~140℉)
	PL-80910 System : 0℃~40℃ (32℉~104℉)
Storage Temp.	-20℃~80℃ (-4℉~176℉)
Operating Hum.	10%~90% (non-condensing)

Display	
Chipset	2nd Gen. AMD Embedded G-series SOC integrated
Display interface	1 x external VGA
	1 x external HDMI 1.4a w/ lockable connector
	1 x internal 18/24-bit Dual Channel LVDS

I/O	
Series Port	Internal : 1 x RS232/422/485 (COM2), 3 x RS232 (COM 1/3/4)
SATA	1 x SATAIII-600MB/s
USB	External : 2 x USB3.0 (compatible with USB 2.0)
	Internal : 4 x USB2.0
Ethernet	External : 1 x Intel I211AT Gigabit Ethernet

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Audio	External : 1 x Line-out Internal : Line-in/out , Mic-in
Digital I/O	8-bit GPIO interface
LPC	1 x LPC header for Optional TPM module
Others	1 x 3-pin PWM Fan header 1 x Front Panel header for power on/off, reset, HDD/power LED indicator 1 x 2-pin header for battery, 1 x 4-pin 12V/5V DC out for SATA HDD 1 x LVDS Backlight/inverter pin-header, LVDS voltage select. 2 x 2-pin for Full-size/Half-size Mini-PCIe LED indicator header

Power	
Power in	DC 8V - 32V input (AT/ATX mode jumper selectable)
Power connector	1 x external DC Jack connector with lockable (Optional for P4 4-pin internal header)

Note: All specifications and photos are subject to change without notice.

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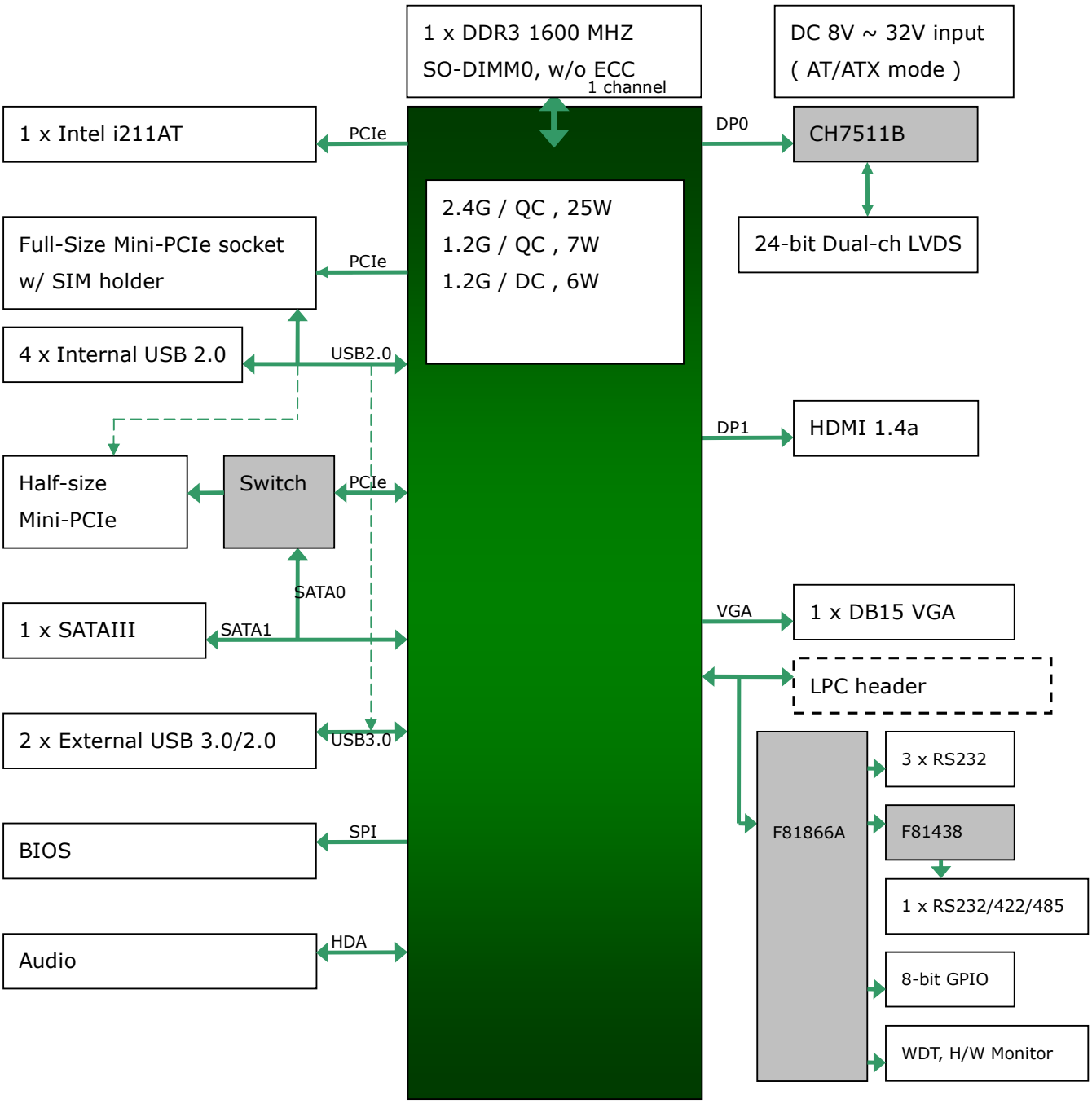
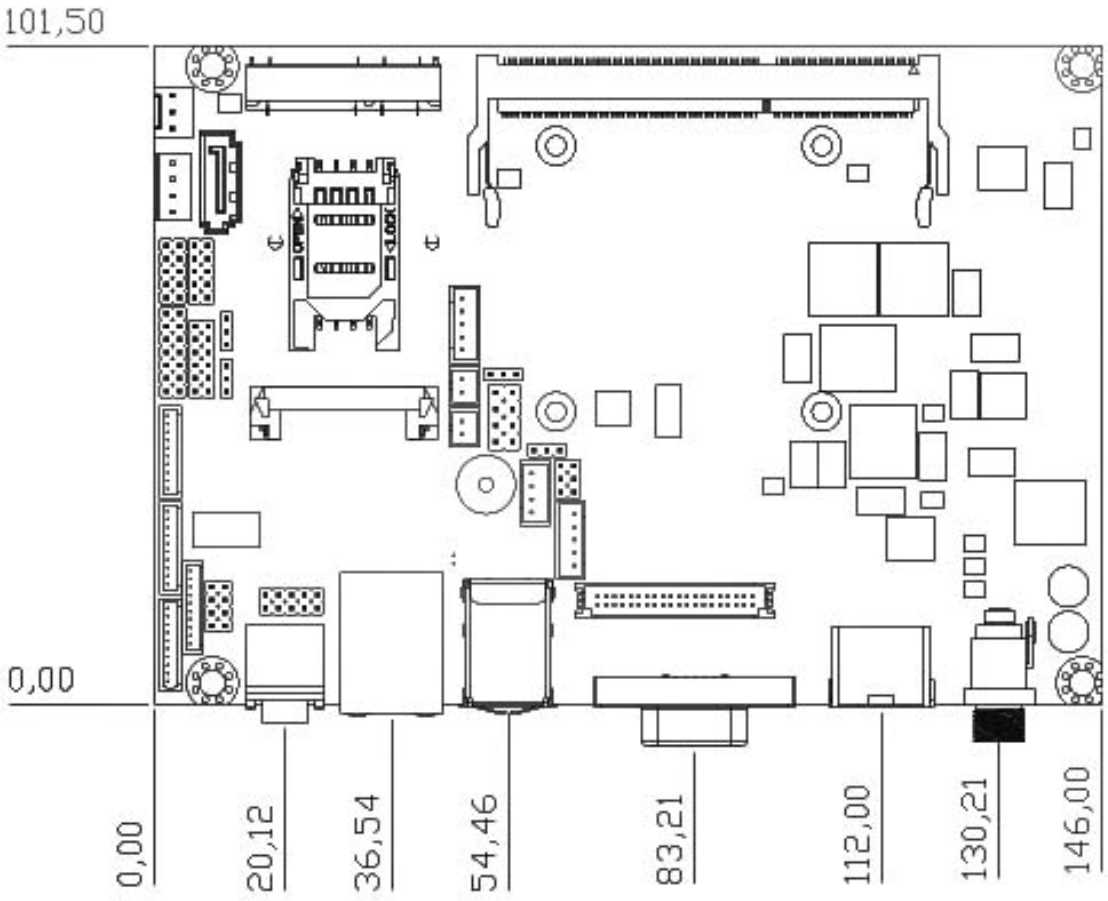
1.3 Block Diagram



1.4 Board and System Layout Dimensions



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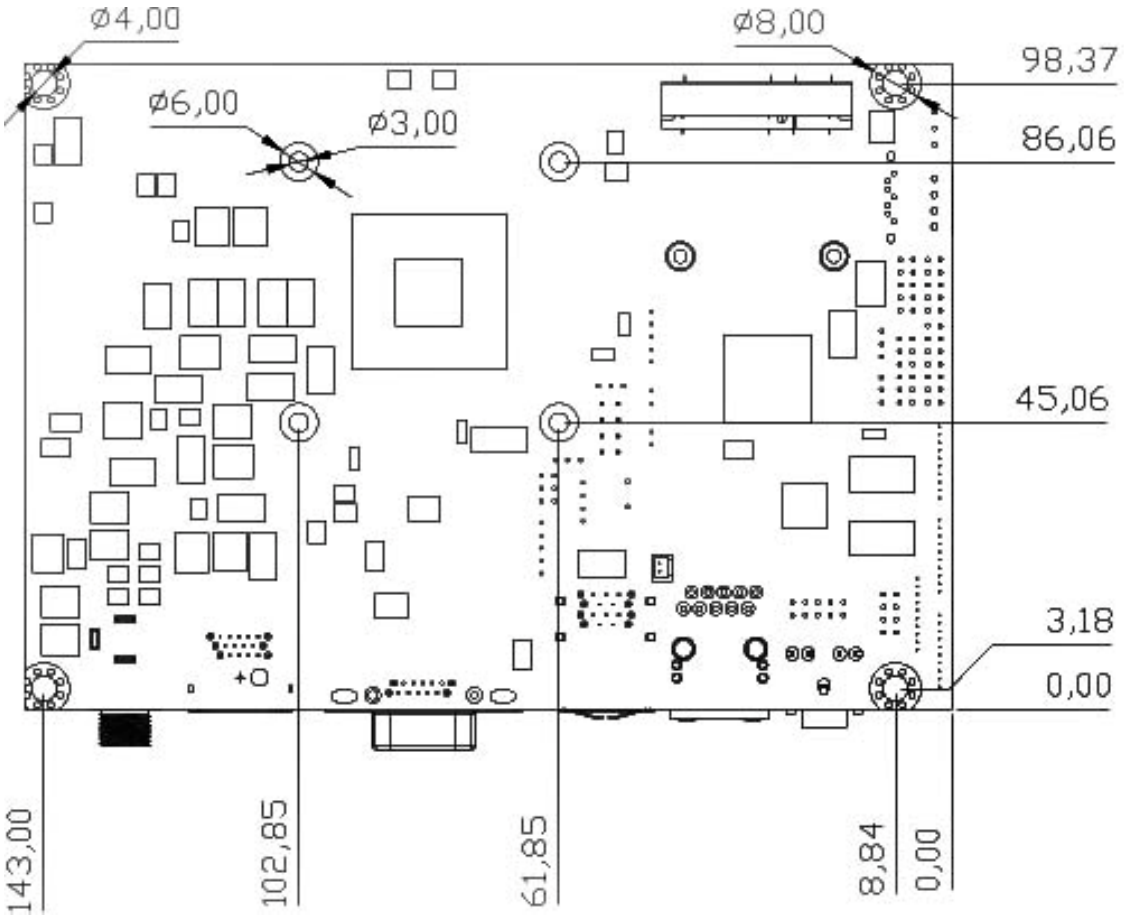
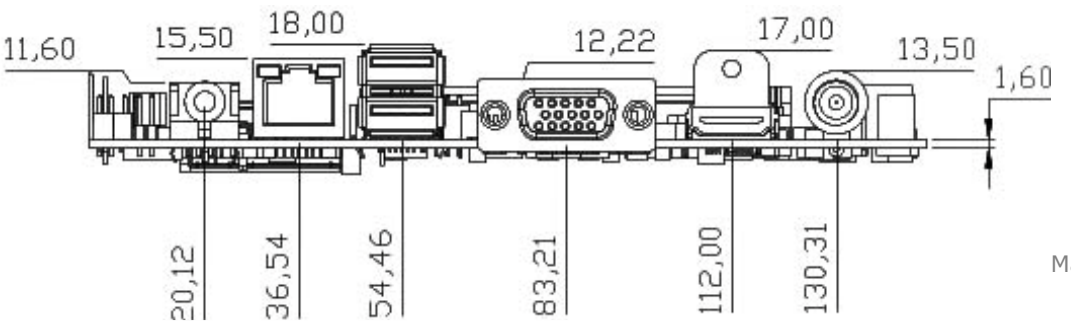
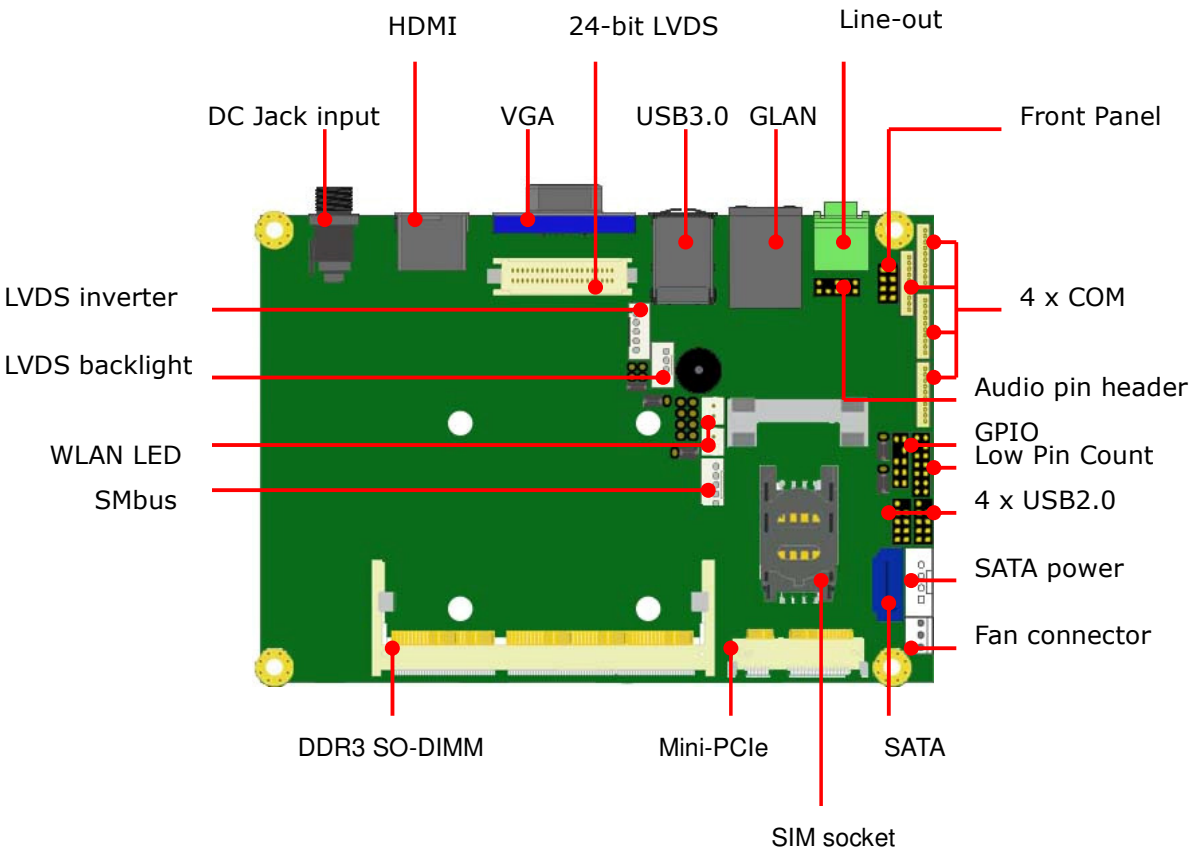


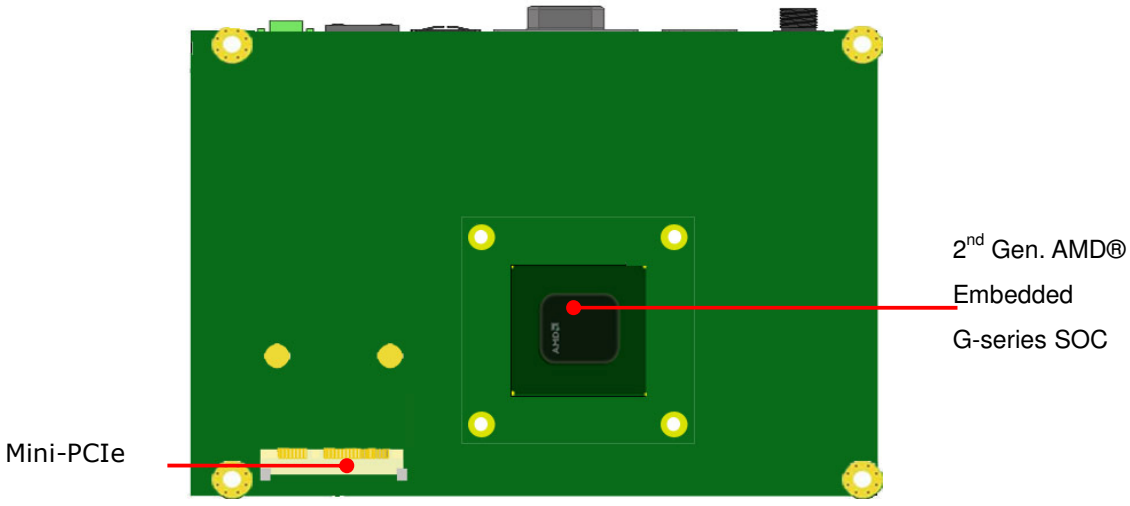


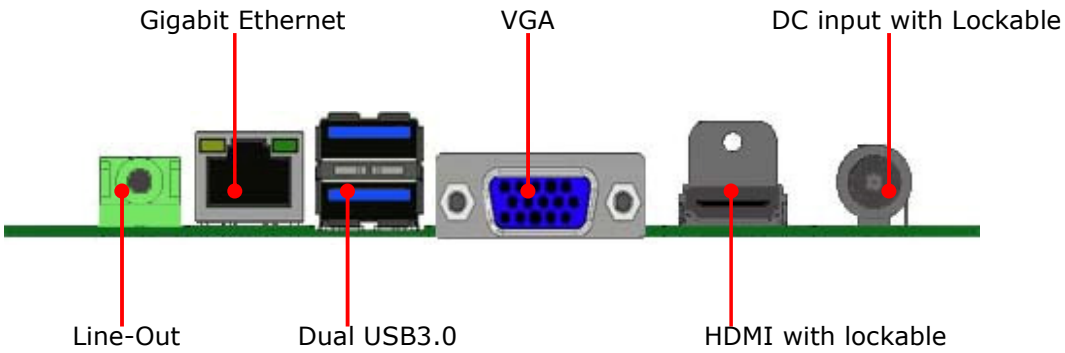

HDMI
VGA
USB3.0
GLAN
Line-out
ANT1
DC 8~32V In
ANT2


USB2.0
Power On/Off
COM1
COM2
COM3

1.5 IO ports


HDMI
24-bit LVDS
Line-out
DC Jack input
VGA
USB3.0
GLAN
Front Panel
LVDS inverter
LVDS backlight
WLAN LED
SMbus
4 x COM
Audio pin header
GPIO
Low Pin Count
4 x USB2.0
SATA power
Fan connector
DDR3 SO-DIMM
Mini-PCIe
SATA
SIM socket


2nd Gen. AMD®
Embedded
G-series SOC
Mini-PCIe


Gigabit Ethernet
VGA
DC input with Lockable
Line-Out
Dual USB3.0
HDMI with lockable

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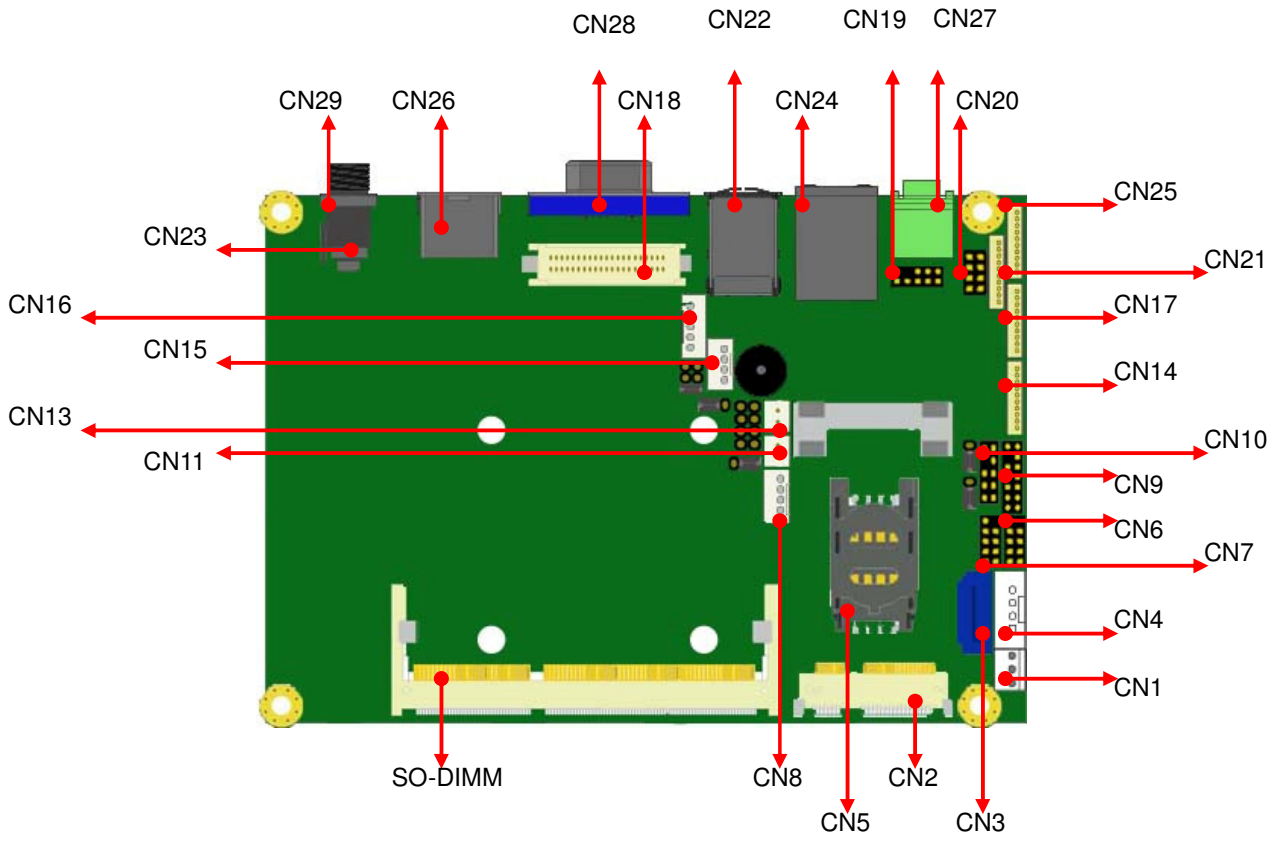
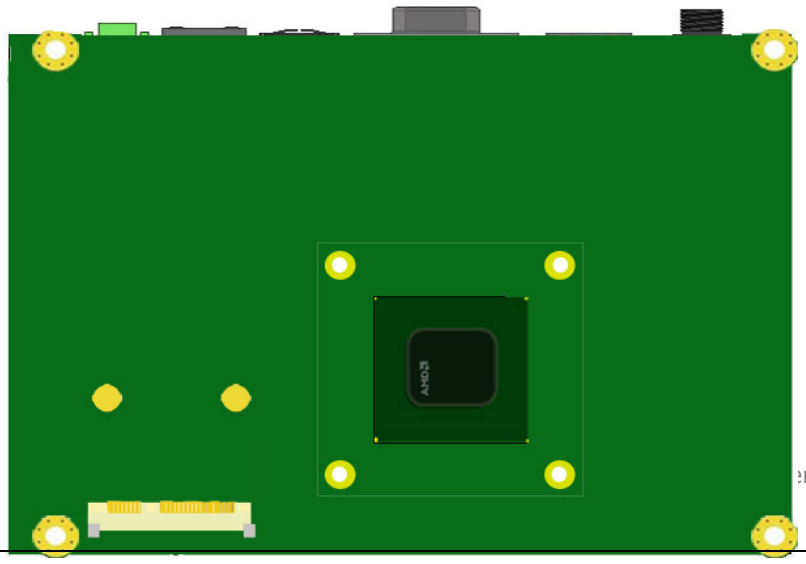
2. Hardware installation

2.1 Location of onboard connectors

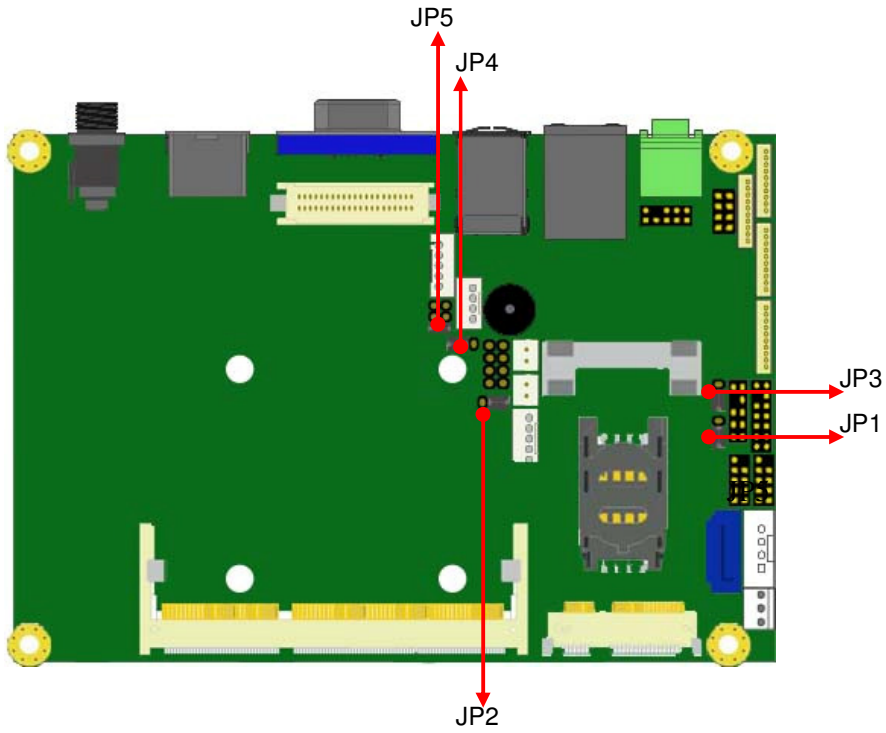




Label	Function
CN1	3-pin Fan connector
CN2	Full-size Mini-PCIe socket
CN3	SATA connector
CN4	SATA power connector
CN5	SIM card socket
CN6	USB2.0 port 4/5 pin header
CN7	USB2.0 port 2/3 pin header
CN8	5-pin SMbus pin header
CN9	Low Pin Count pin header
CN10	GPIO pin header
CN11	WLAN LED connector for Half-size
CN12	N/A
CN13	WLAN LED connector for Full-size
CN14	COM2 / RS232/422/485 Pin header
CN15	LVDS backlight adjustment connector
CN16	LVDS inverter connector

Label	Function
CN17	COM4 / RS232 Pin header
CN18	24-bit LVDS connector
CN19	Audio pin header
CN20	Front panel Pin header
CN21	COM1 / RS232 Pin header
CN22	Dual USB3.0 connector
CN23	P4 4-pin power connector (Optional)
CN24	RJ45 LAN connector
CN25	COM3 / RS232 Pin header
CN26	HDMI connector
CN27	Line-out connector
CN28	VGA connector
CN29	DC Jack power input connector
CN30	Half-size Mini-PCIe socket
CN31	Battery connector
N/A	

2.2 The location of onboard jumpers



Label	Function
JP1	AT/ATX mode select (1-2 short : *AT mode , 2-3 short : ATX mode)
JP2	DDR3 Voltage Select (1-2 short : *1.5V , 2-3 short : 1.35V)
JP3	Clear CMOS (1-2 short : *Normal , 2-3 short : Clear CMOS)
JP4	LVDS Panel backlight control mode select (1-2 short : PWM mode , *2-3 short : DC mode)
JP5	LVDS Panel power level select (1-2 short : *3.3V , 3-4 short : 5V , 5-6 short : 12V)

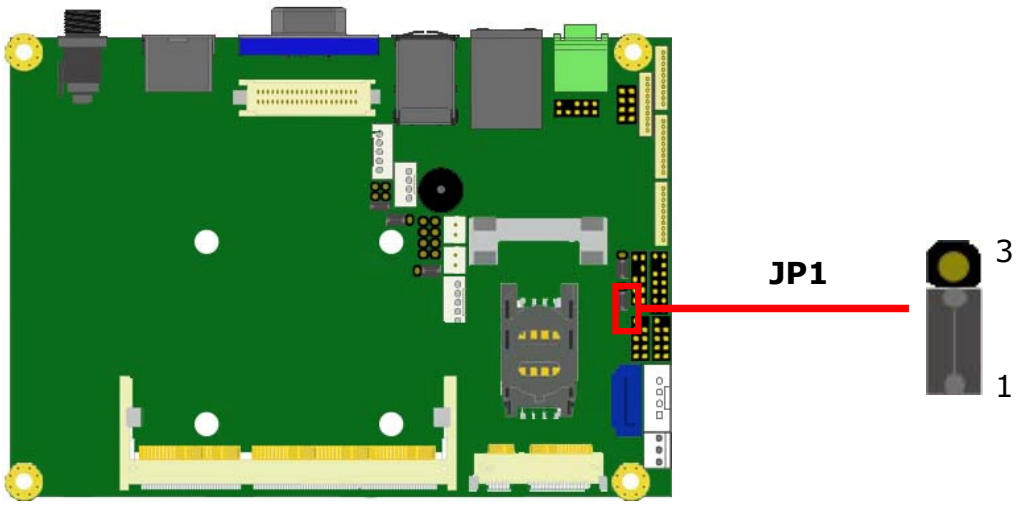
* Default setting

2.3 The function list for onboard jumpers settings

2.3.1 : JP1 for AT/ATX mode select

JP1 : 1 x 3 header , pitch 2.0 mm	
Closed Pin	Result
1-2 *	AT mode
2-3	ATX mode

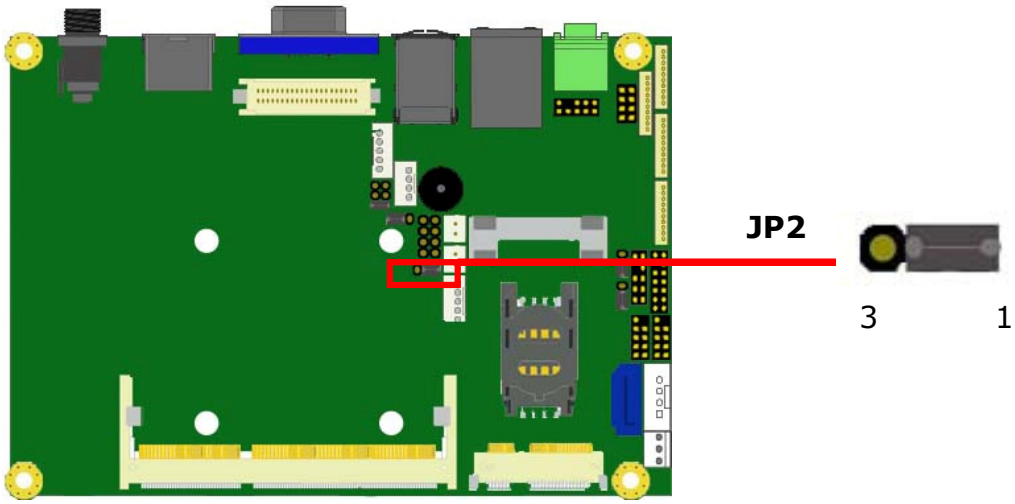
* Default setting



2.3.2 : JP2 for DDR3 voltage select

JP2 : 1 x 3 header , pitch 2.0 mm	
Closed Pin	Result
1-2 *	Support DDR3 /1.5V memory module
2-3	Support DDR3 /1.35V memory module

* Default setting

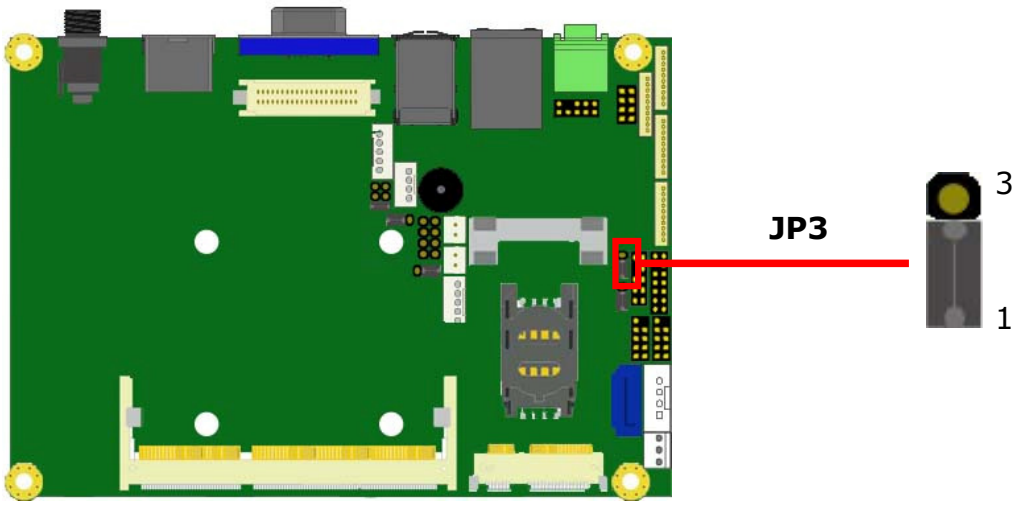


2.3.3: JP3 for Clear CMOS

If you want to clean the CMOS data, set jumper to 2-3 just for few seconds, Then move the jumper back to 1-2 pin.

JP3 : 1 x 3 header , pitch 2.0 mm	
Closed Pin	Result
1-2 *	Normal
2-3	Clear CMOS

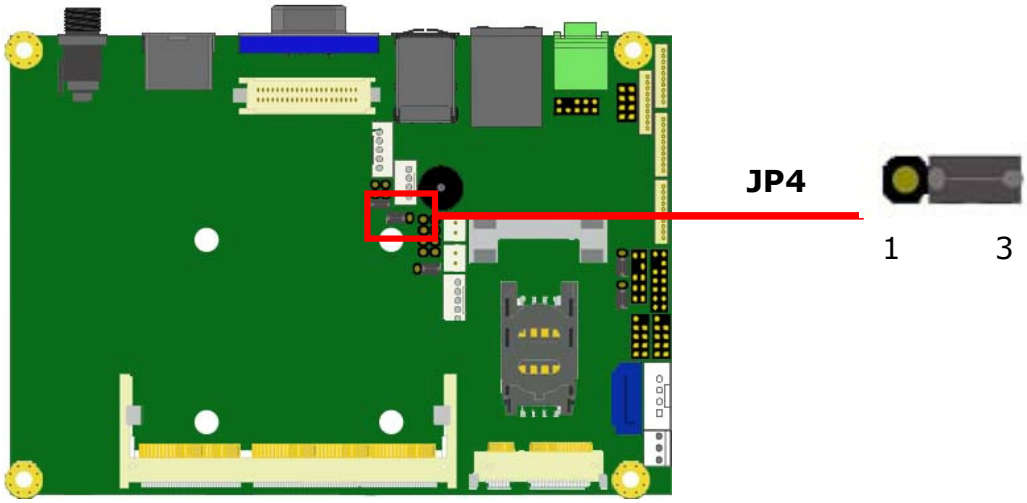
* Default setting



2.3.4: JP4 for LVDS panel backlight control mode select

JP4 : 1 x 3 header , pitch 2.0 mm	
Closed Pin	Result
1-2	PWM mode
2-3 *	DC mode

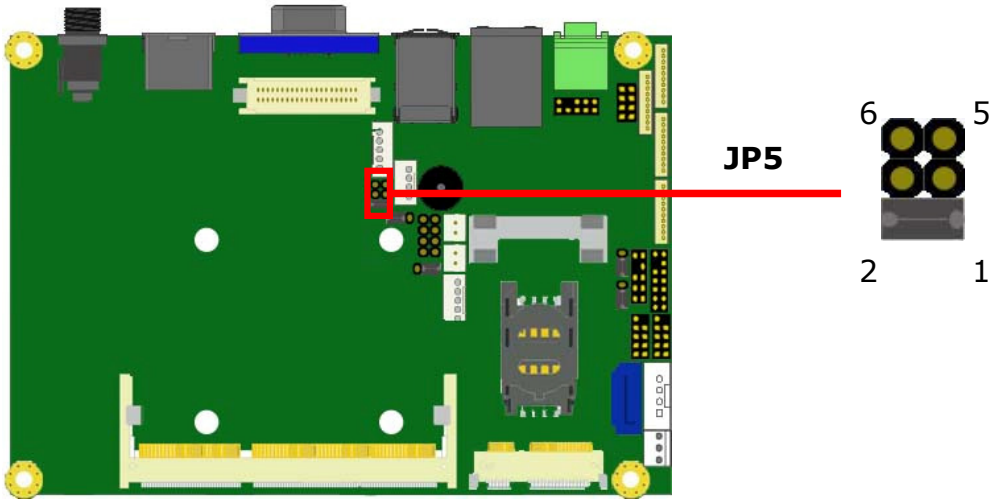
* Default setting



2.3.5: JP5 for LVDS panel power level select

JP5 : 2 x 3 header , pitch 2.0 mm	
Closed Pin	Result
1-2 *	+3.3V for LVDS_VCC
3-4	+5V for LVDS_VCC
5-6	+12V for LVDS_VCC

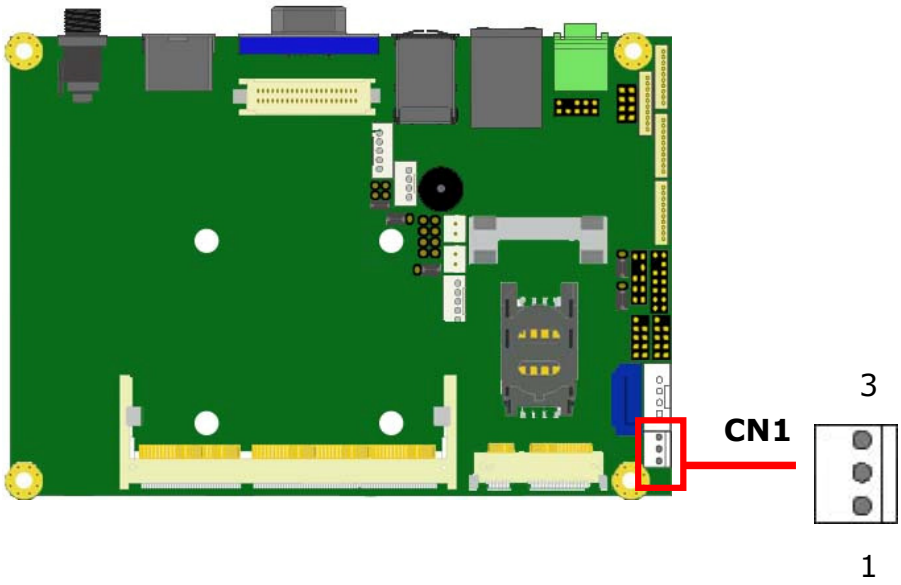
* Default setting



2.4 The pin define of onboard pin header

2.4.1: CN1 for 3-pin Fan connector

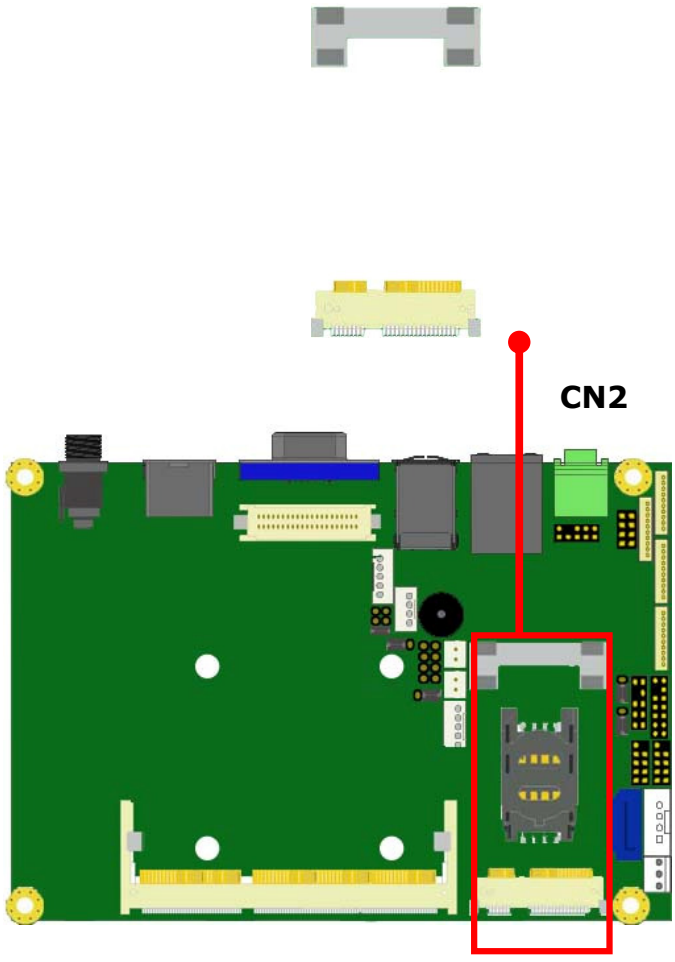
CN1: 1 x 3 wafer			
Pin	**Signal**	**Pin**	**Signal**
1	GND	2	+12V
3	Sensor		



2.4.2: CN2 for Full-size Mini-PCIe socket

Note: Full-size Mini-PCIe only supports PCIe + USB signal,
Does not support SATA signal, such as mSATA SSD …

Pin	Signal	Pin	Signal
1	WAKE	27	GND
2	+3.3V AUX	28	+1.5V
3	N/C	29	GND
4	GND	30	SMBCLK
5	N/C	31	PETN0
6	+1.5V	32	SMBDATA
7	CLKREQ	33	PETP0
8	UIM_PWR	34	GND
9	GND	35	GND
10	UIM_DATA	36	USB_D-
11	REFCLK-	37	GND
12	UIM_CLK	38	USB_D+
13	REFCLK+	39	+3.3V AUX
14	UIM_RESET	40	GND
15	GND	41	+3.3V AUX
16	UIM_VPP	42	LED_WWAN
17	UIM_C8	43	GND
18	GND	44	LED_WLAN
19	UIM_C4	45	N/C
20	W_Disable	46	N/C
21	GND	47	N/C
22	PERST	48	+1.5V
23	PERN0	49	N/C
24	+3.3V AUX	50	GND
25	PERP0	51	N/C
26	GND	52	+3.3V AUX

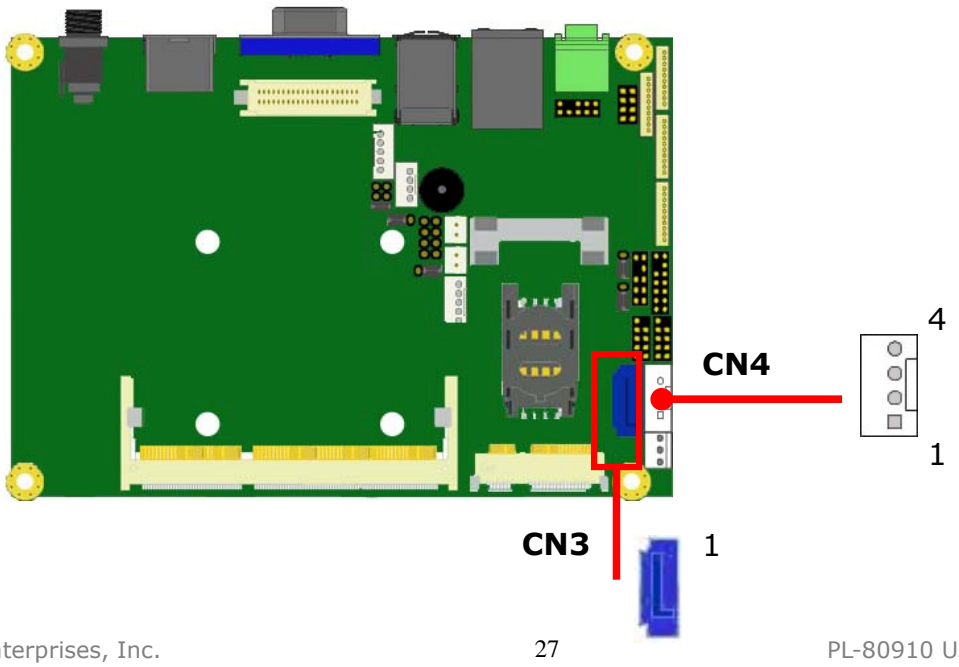


2.4.3 : CN3 & CN4 for SATA 3.0 connector and SATA power connector

CN3 : SATA 3.0 connector			
Pin	**Signal**	**Pin**	**Signal**
1	GND	2	SATA_TX_P0
3	SATA_TX_N0	4	GND
5	SATA_RX_N0	6	SATA_RX_P0
7	GND		

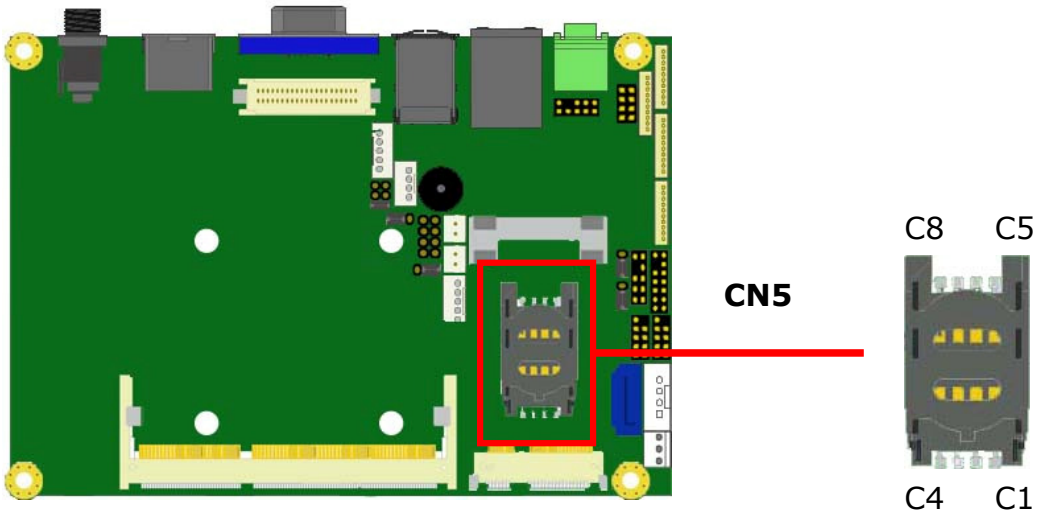
CN4 : 4-pin wafer for SATA power connector			
Pin	**Signal**	**Pin**	**Signal**
1	+12V	2	GND
3	GND	4	+5V

Note: Maximum output current 12V/1A, 5V/1A.



2.4.4 : CN5 for SIM card socket

CN5 : SIM card holder			
Pin	**Signal**	**Pin**	**Signal**
C1	SIM_PWR	C2	SIM_RESET
C3	SIM_CLK	C4	Reserved
C5	GND	C6	SIM_VPP
C7	SIM_DATA	C8	Reserved

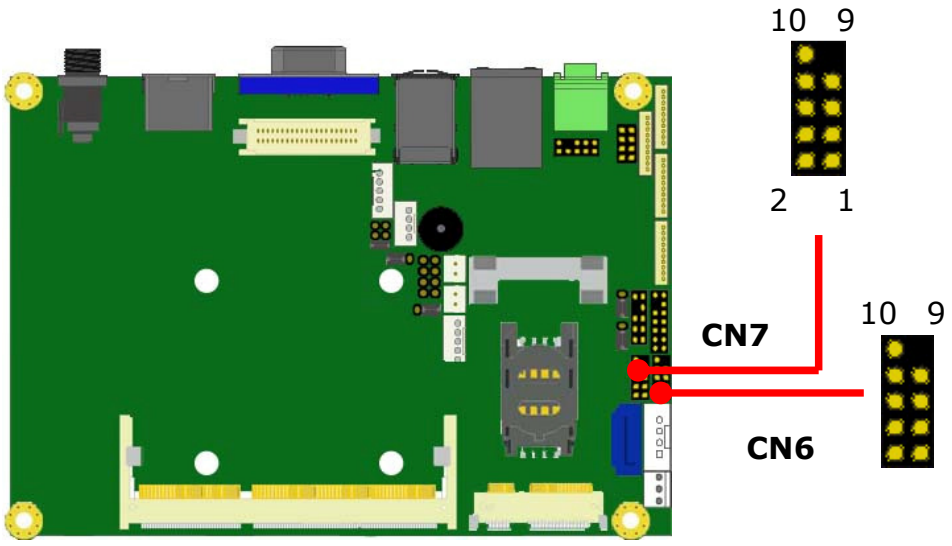


2.4.5: CN6 for USB2.0 port pin header

CN6: 2 x 5 header, pitch 2.0 mm			
Pin	**Signal**	**Pin**	**Signal**
1	+5V	2	+5V
3	USB D-	4	USB D-
5	USB D+	6	USB D+
7	GND	8	GND
9	Key	10	GND

CN7 for USB2.0 port pin header

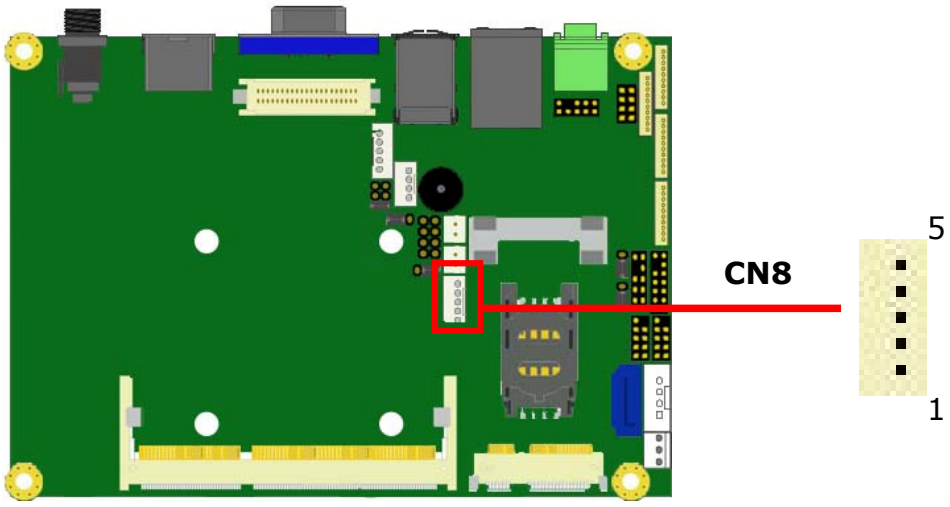
CN7: 2 x 5 header , pitch 2.0 mm			
Pin	**Signal**	**Pin**	**Signal**
1	+5V	2	+5V
3	USB D-	4	USB D-
5	USB D+	6	USB D+
7	GND	8	GND
9	Key	10	GND



2.4.6 : CN8 for SMbus pin header

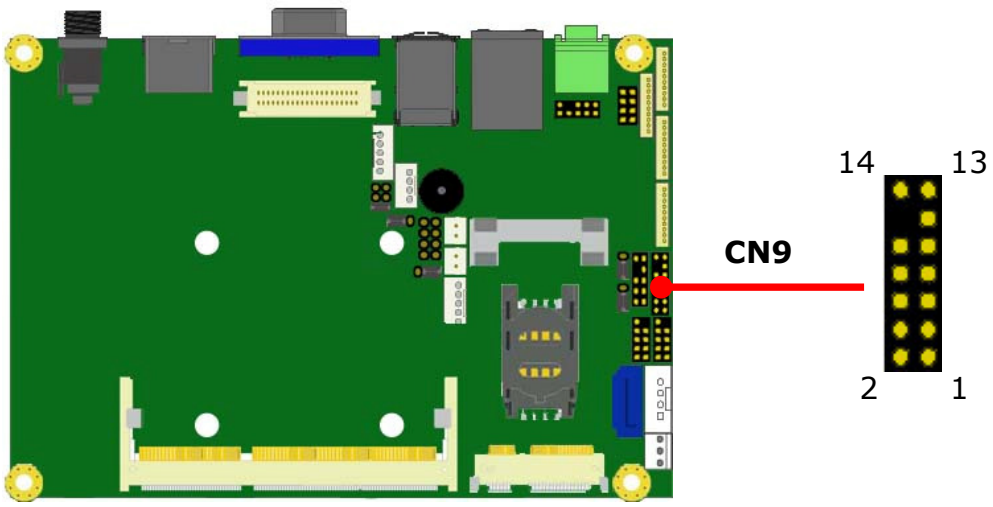
2 1

CN8 : 1 x 5 wafer			
Pin	**Signal**	**Pin**	**Signal**
1	+3.3V	2	Clock
3	Data	4	Key
5	GND		



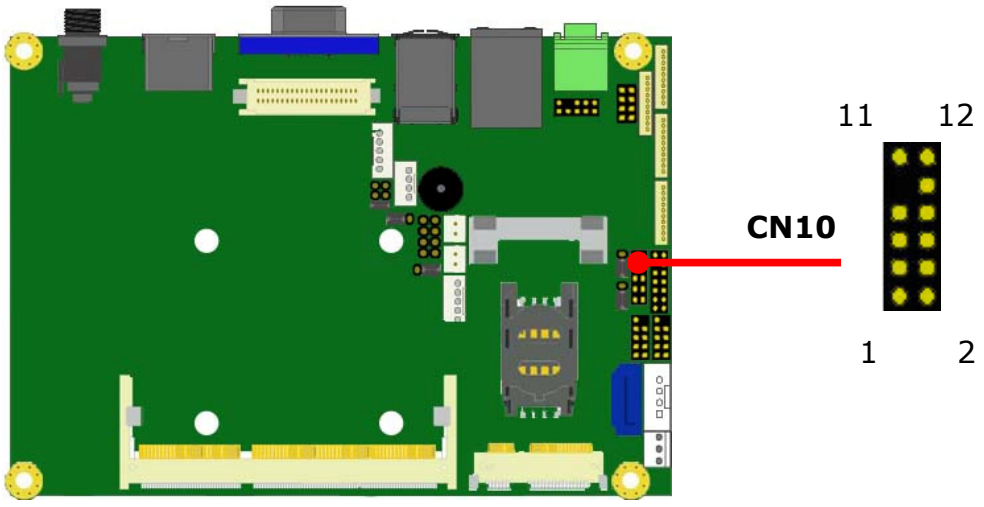
2.4.7: CN9 for Low Pin Count pin header

CN9 : 2 x 7 header , pitch 2.0 mm			
Pin	**Signal**	**Pin**	**Signal**
1	+3.3V	2	LAD0
3	LAD1	4	LAD2
5	LAD3	6	LFRAME_N
7	PLTRST_N	8	+5V
9	LPC_Clock	10	GND
11	GND	12	Key
13	SERIRQ	14	LPC_DREQ



2.4.8: CN10 for GPIO pin header

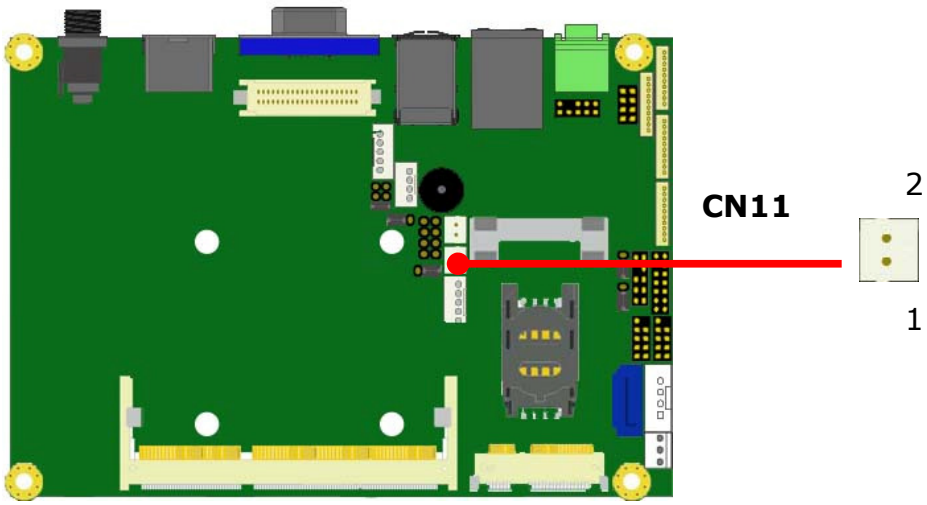
CN10 : 2 x 6 header , pitch 2.0 mm			
Pin	**Signal**	**Pin**	**Signal**
2	+3.3V	1	GPIO0
4	GPIO1	3	GPIO2
6	GPIO3	5	GPIO4
8	GPIO5	7	GPIO6
10	GPIO7	9	Key
12	+5V	11	GND



2.4.9: CN11 for WLAN LED connector for Half-size Mini-PCIe socket

CN11 : 1 x 2 wafer			
Pin	**Signal**	**Pin**	**Signal**
1	+3.3V	2	LED-

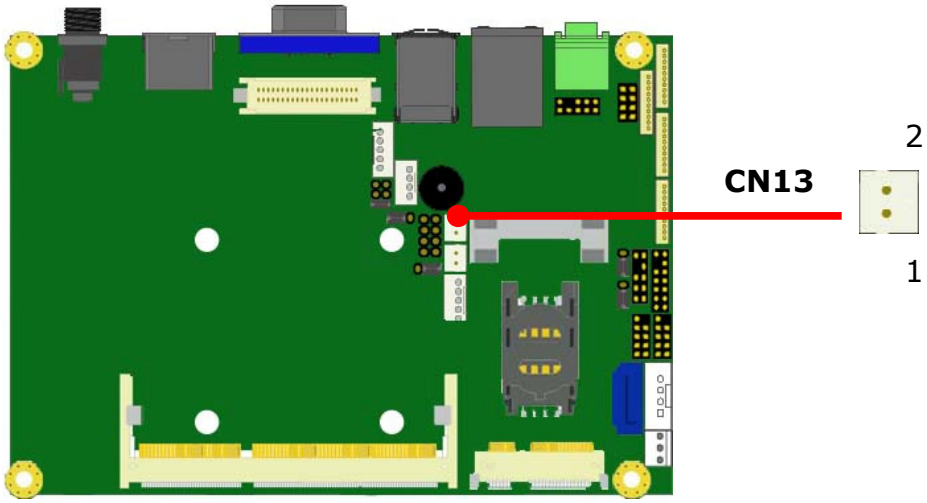
Note: Supports wireless LAN signal only



2.4.10: CN13 for WLAN LED connector for Full-size Mini-PCIe socket

CN13 : 1 x 2 wafer			
Pin	**Signal**	**Pin**	**Signal**
1	LED-	2	+3.3V

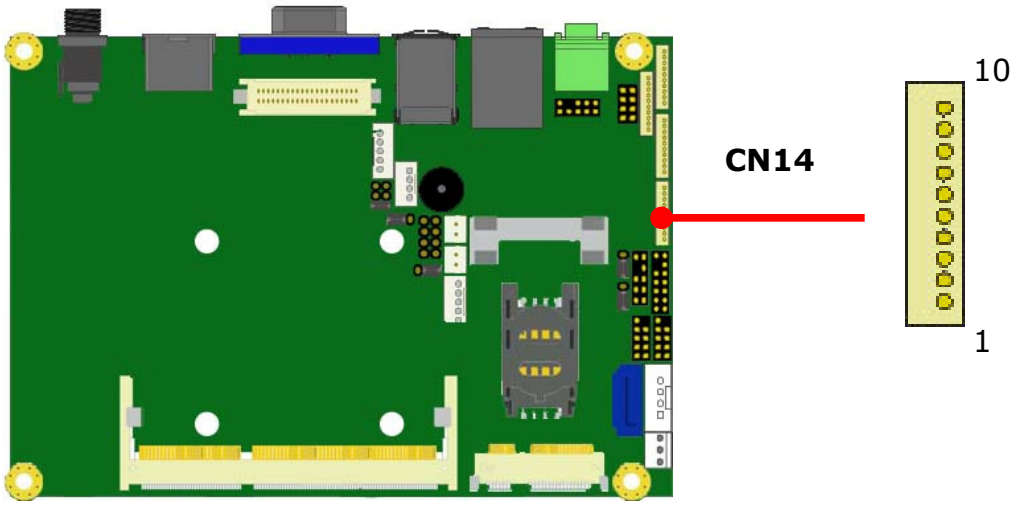
Note: Supports WWAN / wireless LAN signal



2.4.11: CN14 for COM 2 , RS232/422/485

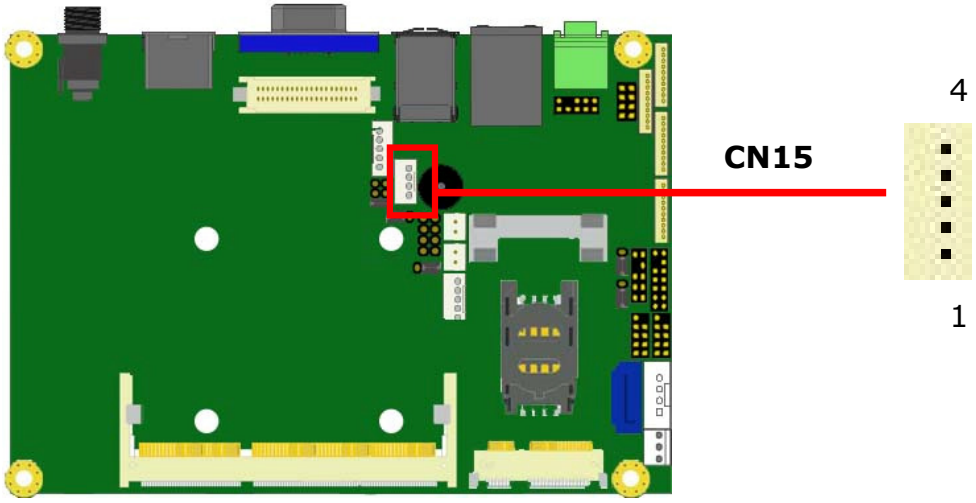
Note: COM2 RS-232/422/485 can be set by BIOS setting. Default is RS-232.

CN14 : Wafer 1 x 10 header, pitch 1.25 mm, connector type : YIMTEX 501MW1*10STR			
Pin	**RS232 mode**	**RS422 mode**	**RS485 mode**
1	DCD, Data carrier detect	TXD-	TXD-
2	DSR, Data set ready		
3	RXD, Received Data	TXD+	TXD+
4	RTS, Request to send		
5	TXD, Transmitted Data	RXD+	
6	CTS, Clear to sent		
7	DTR, Data terminal ready	RXD-	
8	RI, Ring indicator		
9	GND		
10	N/C		



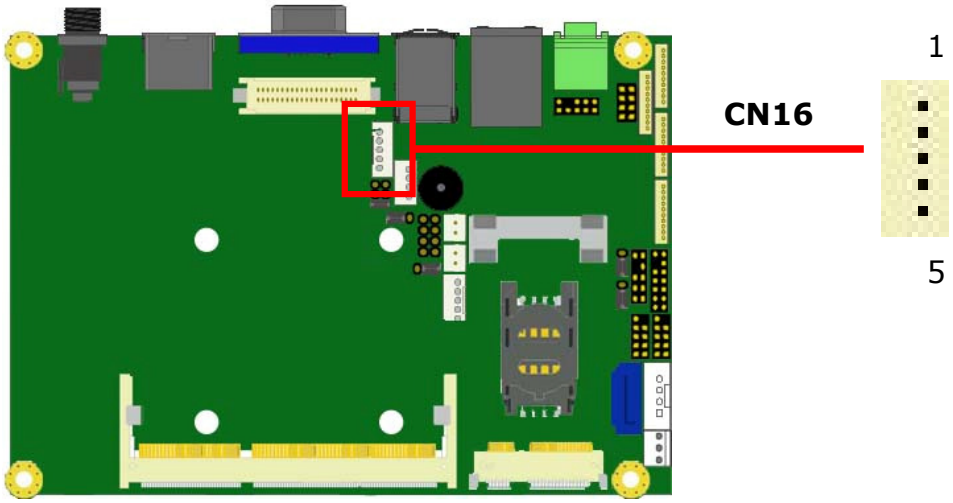
2.4.12: CN15 for LVDS panel backlight adjustment connector

CN15 : 1 x 4 wafer			
Pin	**Signal**	**Pin**	**Signal**
1	LVDS_BLUP	2	GND
3	GND	4	LVDS_BLDN



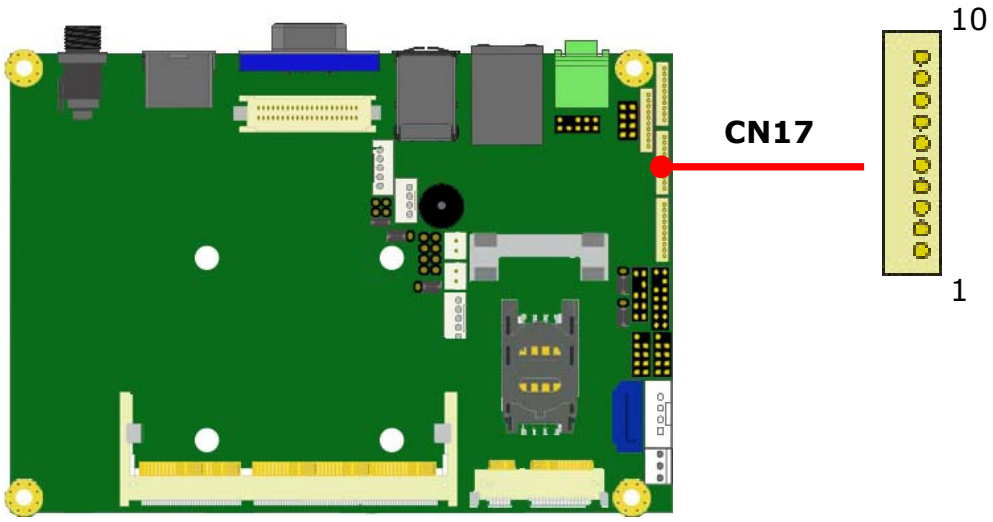
2.4.13: CN16 for LVDS panel inverter power connector

CN16 : 1 x 5 wafer , Pitch : Pitch 2.0 mm			
Pin	**Signal**	**Pin**	**Signal**
1	+12V	2	GND
3	Backlight Enable	4	Backlight control
5	+ 5V		



2.4.14: CN17 for COM 3 , RS232

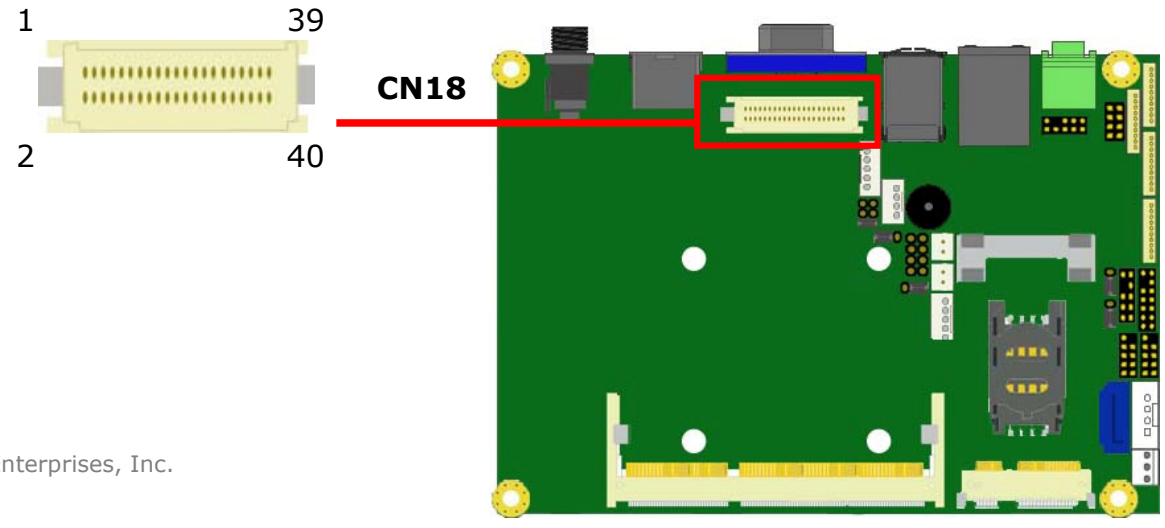
CN17 : Wafer 1 x 10 header, pitch 1.25 mm, connector type : YIMTEX 501MW1*10STR			
Pin	**Signal**	**Pin**	**Signal**
1	DCD, Data carrier detect	2	DSR, Data set ready
3	RXD, Receive data	4	RTS, Request to send
5	TXD, Transmit data	6	CTS, Clear to se
7	DTR, Data terminal ready	8	RI, Ring indicator
9	GND	10	+5V



2.4.15: CN18 for LVDS connector

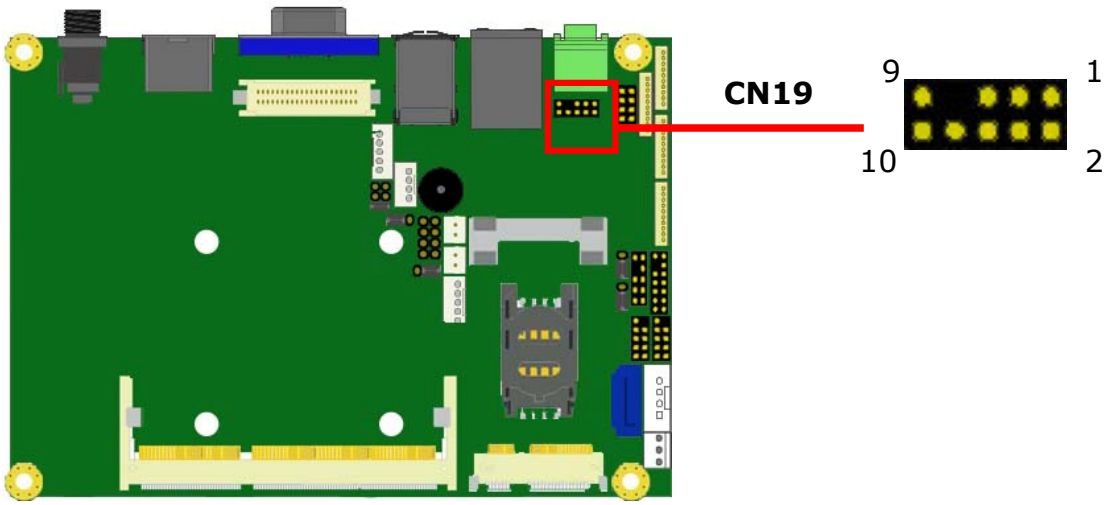
CN18 : connector type : DF13A-40DP-1.25V					
Pin	**Signal**	**Pin**	**Signal**	**Pin**	**Signal**
1	LVDS_VCC	15	LVDSA_1+	29	GND
2	LVDS_VCC	16	LVDSB_1+	30	GND
3	LVDS_VCC	17	GND	31	DDC_Clock
4	LVDS_VCC	18	GND	32	DDC_Data
5	GND	19	LVDSA_2-	33	GND
6	GND	20	LVDSB_2-	34	GND
7	LVDSA_0-	21	LVDSA_2+	35	LVDSA_3-
8	LVDSB_0-	22	LVDSB_2+	36	LVDSB_3-
9	LVDSA_0+	23	GND	37	LVDSA_3+
10	LVDSB_0+	24	GND	38	LVDSB_3+
11	GND	25	LVDSA_Clock-	39	SMB_Clock
12	GND	26	LVDSB_Clock-	40	SMB_Data
13	LVDSA_1-	27	LVDSA_Clock+		
14	LVDSB_1-	28	LVDSB_Clock+		

Note: Please select LVDS_VCC for 3.3V/5V/12V by JP5.



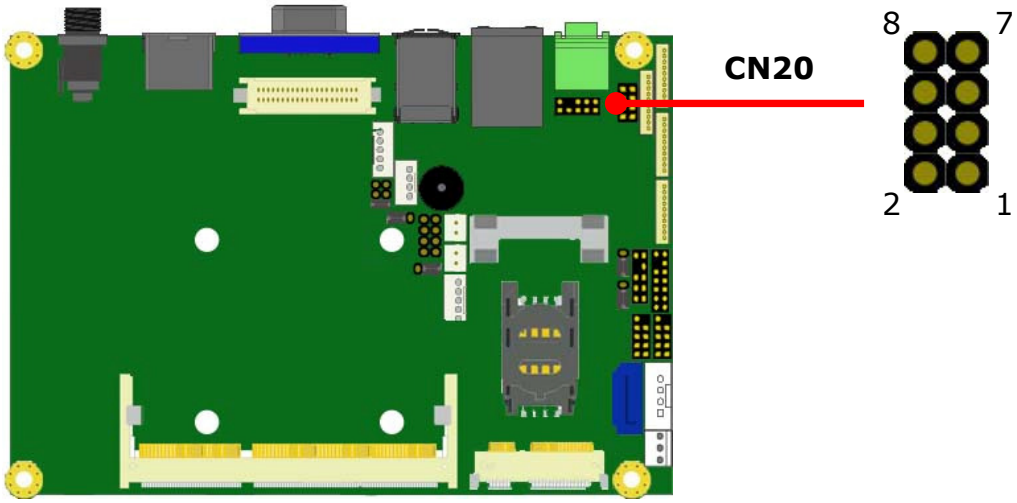
2.4.16: CN19 for Audio pin header

CN19: 2 x 5 header , Pitch 2.0mm			
Pin	**Signal**	**Pin**	**Signal**
1	LINE1-L	2	LINE1-R
3	GND	4	GND
5	MIC1_L	6	MIC1_R
7	key	8	GND
9	FRONT_L	10	FRONT_R



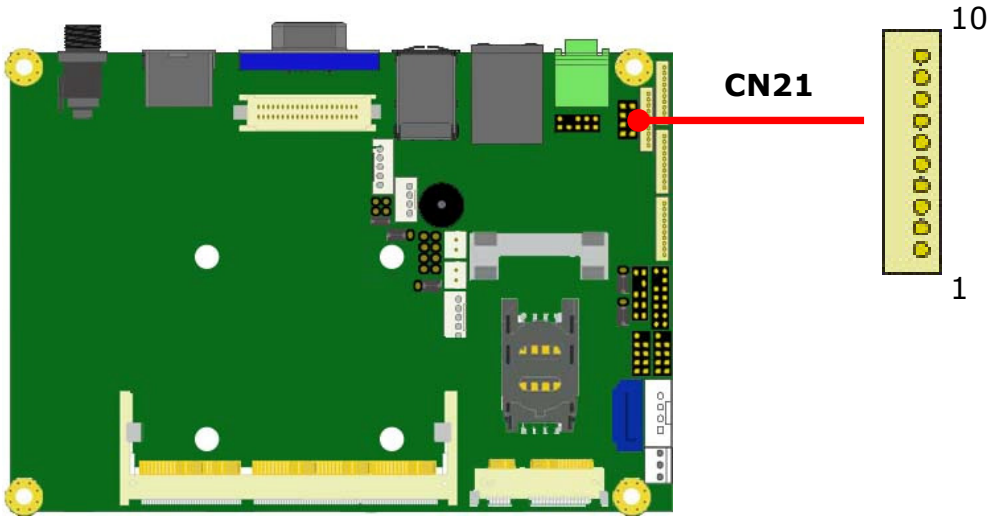
2.4.17: CN20 for front Panel pin header

CN20 : 2 x 4 header , pitch 2.00 mm			
Pin	**Signal**	**Pin**	**Signal**
1	Power_LED+	2	Power_LED-
3	HDD_LED+	4	HDD_LED-
5	GND	6	Power on/off
7	Reset	8	GND



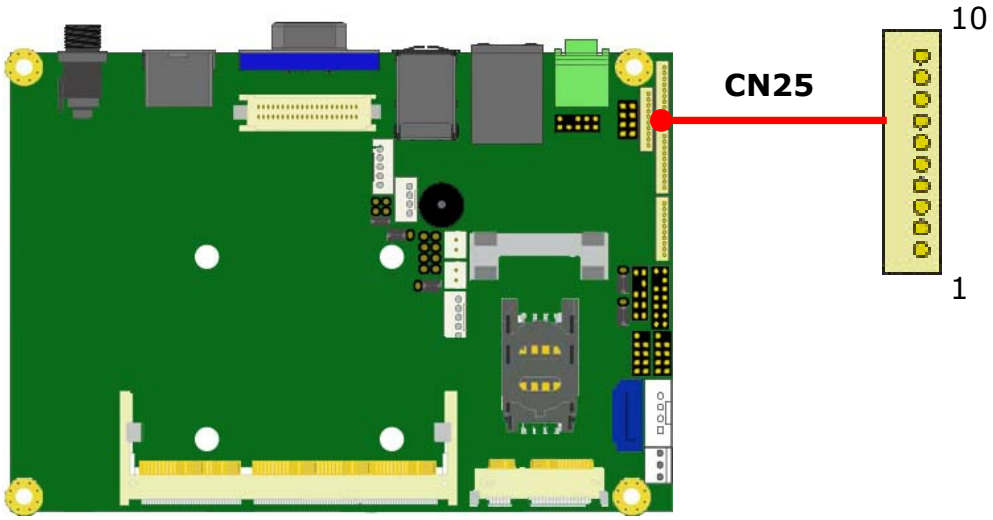
2.4.18: CN21 for COM 1, RS232

CN21 : Wafer 1 x 10 header, pitch 1.25 mm, connector type : YIMTEX 501MW1*10STR			
Pin	**Signal**	**Pin**	**Signal**
1	DCD, Data carrier detect	2	DSR, Data set ready
3	RXD, Receive data	4	RTS, Request to send
5	TXD, Transmit data	6	CTS, Clear to se
7	DTR, Data terminal ready	8	RI, Ring indicator
9	GND	10	+5V



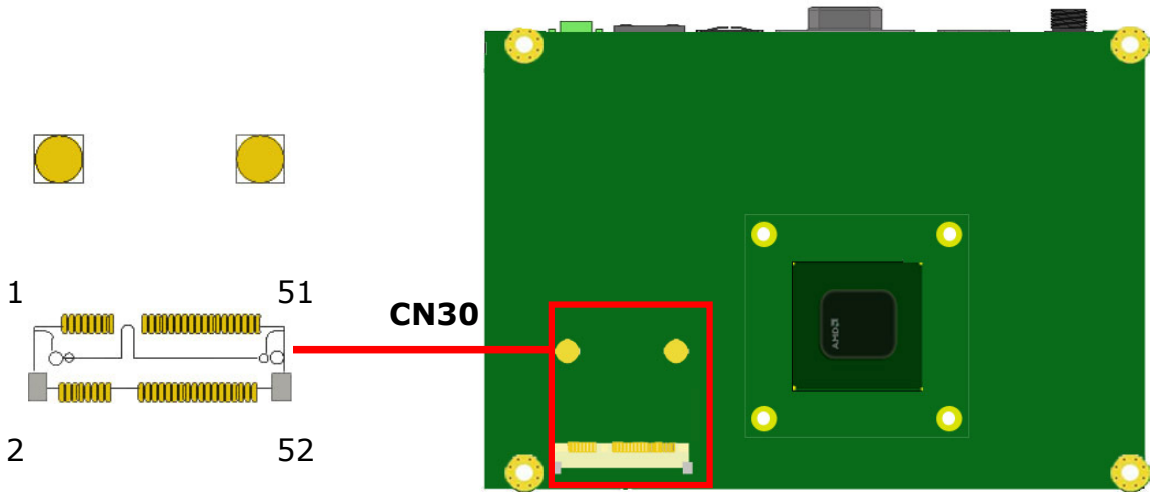
2.4.19: CN25 for COM 3, RS232

CN25 : Wafer 1 x 10 header, pitch 1.25 mm, connector type : YIMTEX 501MW1*10STR			
Pin	**Signal**	**Pin**	**Signal**
1	DCD, Data carrier detect	2	DSR, Data set ready
3	RXD, Receive data	4	RTS, Request to send
5	TXD, Transmit data	6	CTS, Clear to se
7	DTR, Data terminal ready	8	RI, Ring indicator
9	GND	10	+5V



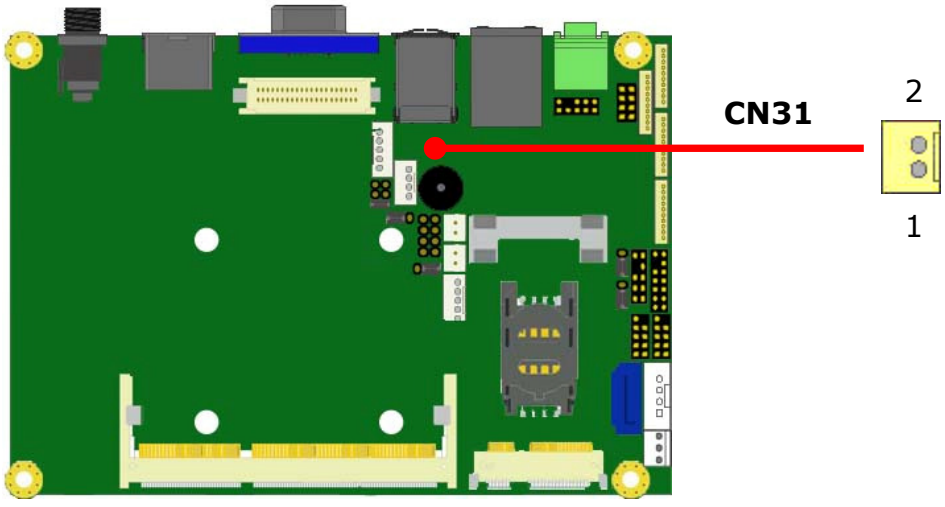
2.4.20: CN30 for half-size Mini-PCIe socket

CN30 : Half-size Mini-PCIe socket					
Pin	**Signal**	**Pin**	**Signal**	**Pin**	**Signal**
1	MSATA_WAKE	19	N/C	37	N/A
2	+3.3V	20	N/C	38	USB_D+
3	N/C	21	GND	39	V3P3_MSATA
4	GND	22	PLTRST_BUF1_N	40	GND
5	N/C	23	MSATA_RXN4	41	V3P3_MSATA
6	+1.5V	24	MSATA_AUX33	42	LED_WWAN
7	MCLKREQ	25	MSATA_RXP4	43	N/A
8	N/C	26	GND	44	LED_WLAN
9	GND	27	GND	45	N/A
10	N/C	28	+1.5V	46	LED_WPAN
11	MSATA_PE_CLKN	29	GND	47	N/A
12	N/C	30	ICH_SMBCLK	48	+1.5V
13	MSATA_PE_CLKP	31	MSATA_TXN4	49	N/A
14	N/C	32	ICH_SMBDATA	50	GND
15	GND	33	MSATA_TXP4	51	N/A
16	N/C	34	GND	52	+3.3V
17	N/C	35	GND	-	
18	N/C	36	USB_D-	-	



2.4.21: CN31 for Battery connector

CN31 : 1 x 2 header, pitch 2.0 mm			
Pin	**Signal**	**Pin**	**Signal**
1	+3V	2	GND



3. BIOS setting Menu

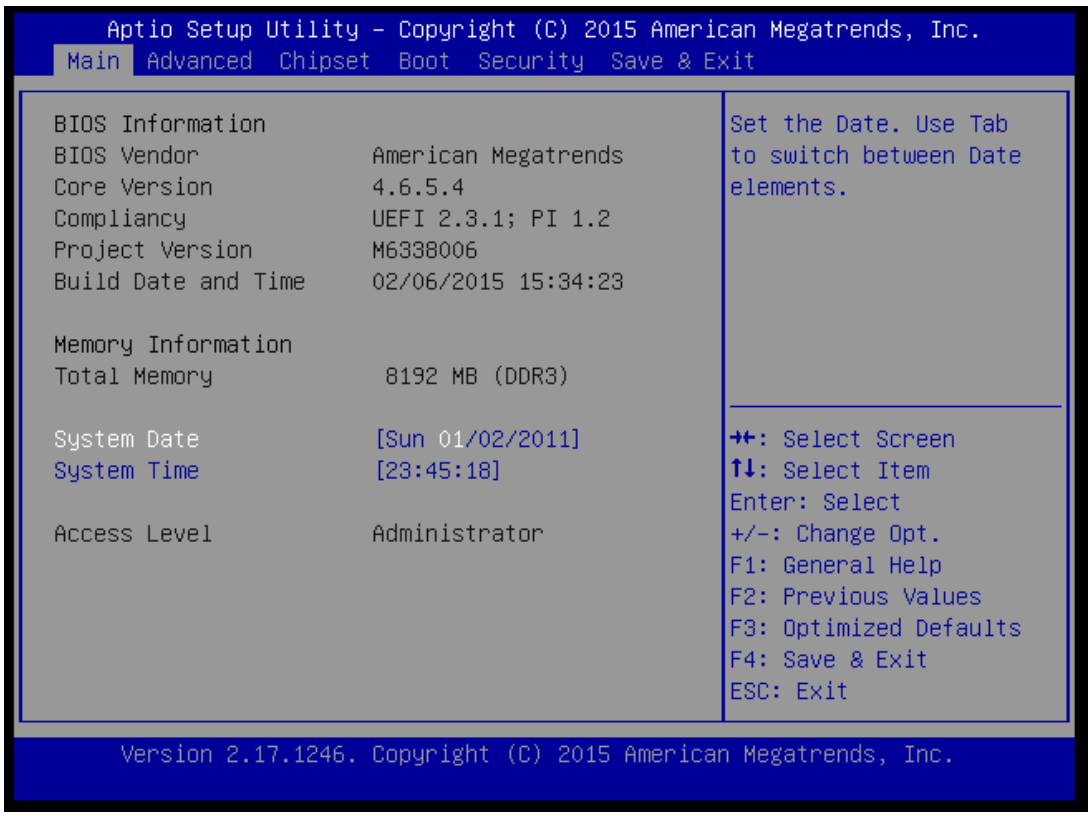
This section explains the BIOS, which displays system configuration settings and allows the changing of these settings to configure the system. The BIOS Utility consists of a menu-based interface that makes navigating and selecting various BIOS functions a simple process.

The BIOS Setup Utility can be utilized to view and change BIOS settings for the motherboard. Press <ESC> key on keyboard during the Power-On Self-Test (POST) routine to enter the Front Page and select the SCU item to enter the InsydeH2O BIOS Setup Utility.

Use <←> and <→> keys on the keyboard to navigate to each menu. The <↑> and <↓> arrow keys allow user to navigate to items within each menu. Press <Enter> key to select the item and navigate the item submenu (if available). Use <ESC> key at any time to return to the previous respective submenu or menu. You can also refer to the bottom portion of the BIOS Setup Utility screen for quick navigation instructions.

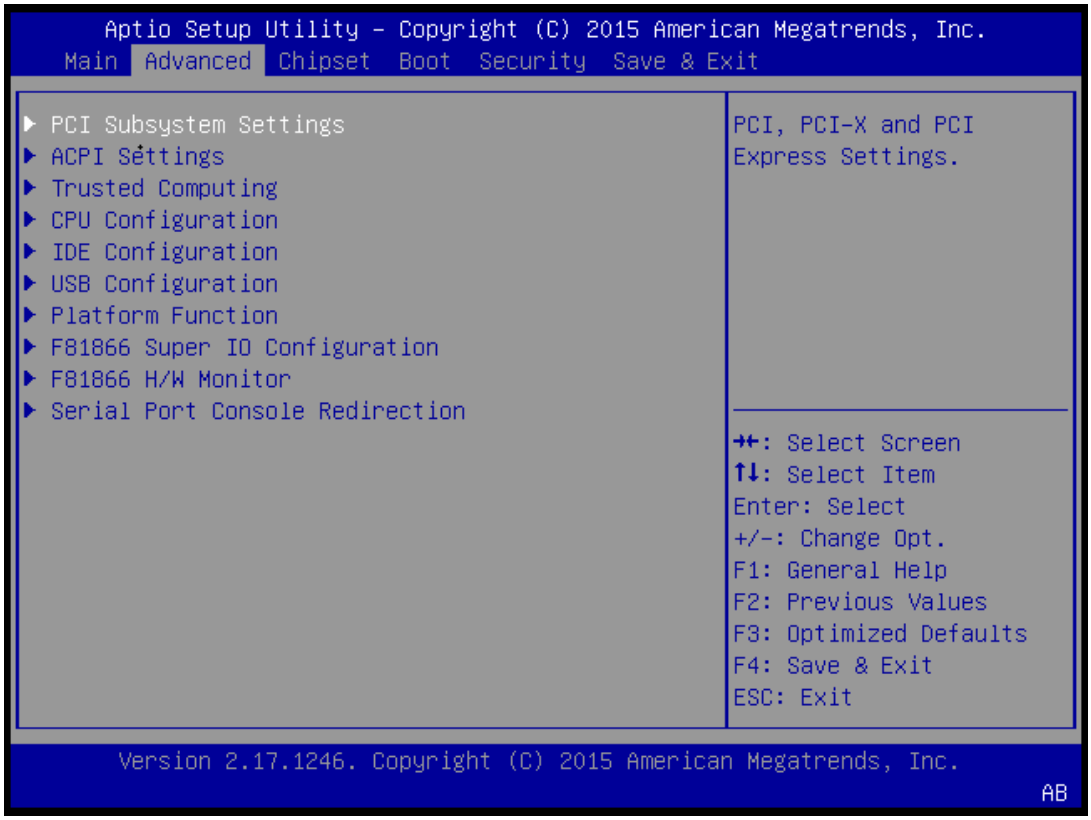
3.1 Main Menu

The Main Menu of BIOS Setup Utility provide a quick overview of basic system information and the ability to change the system Date, time….



3.2 Advanced Menu

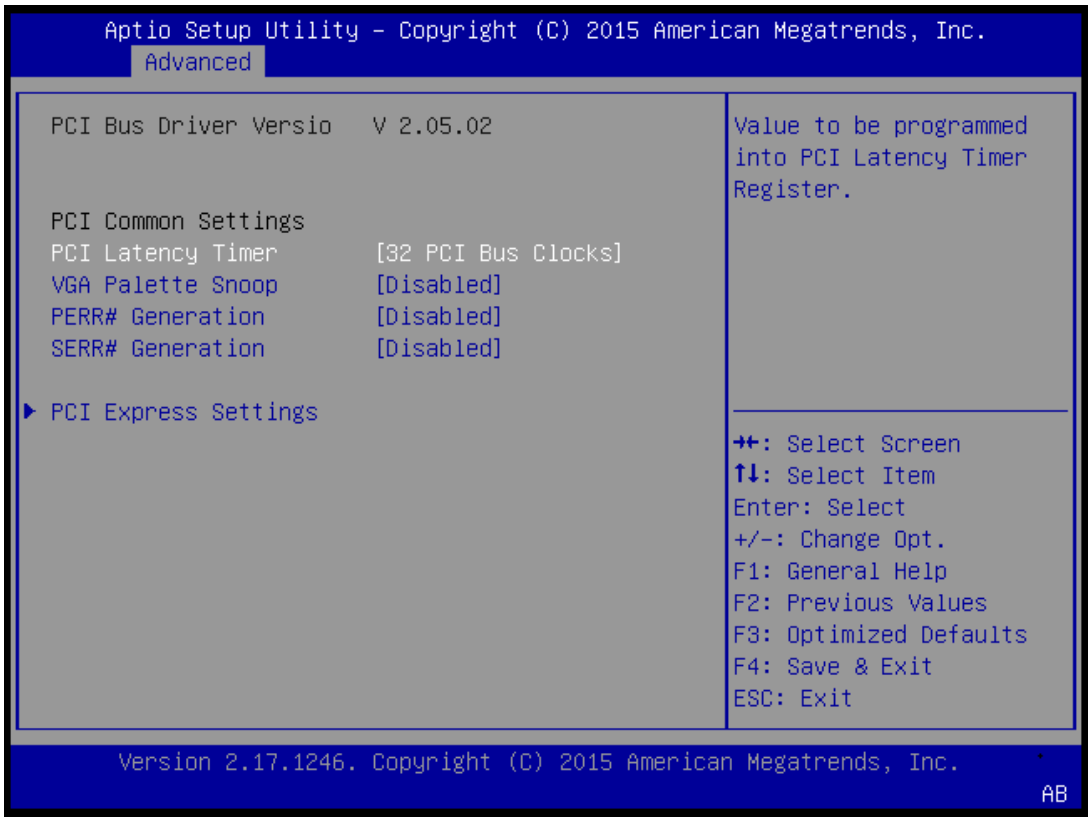
The Advanced Menu of BIOS Setup Utility allows users to configure advanced system settings.



3.2.1 PCI Subsystem Settings

PCI Subsystem Settings:

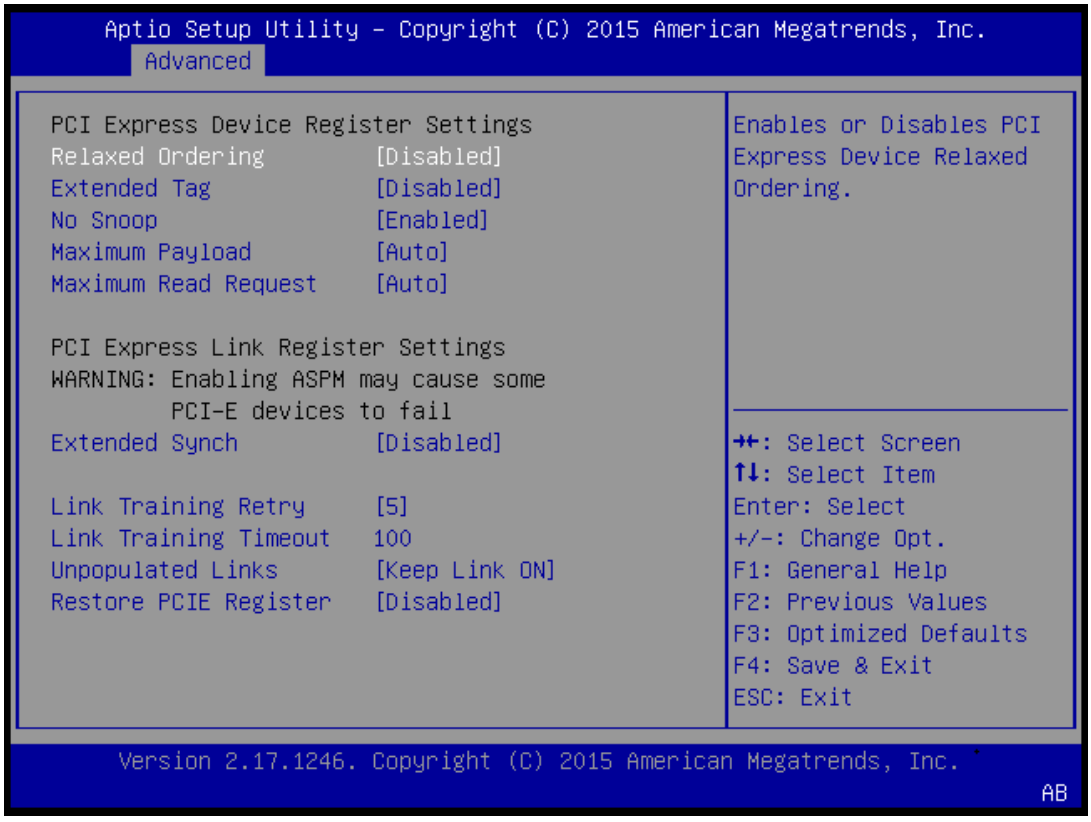
Description: Use this PCI sub-menu to configure relevant PCI setting



3.2.1.1 PCI Express Settings

PCI Express Settings

Description: This menu allow user to configure the PCI Express relevant parameter.

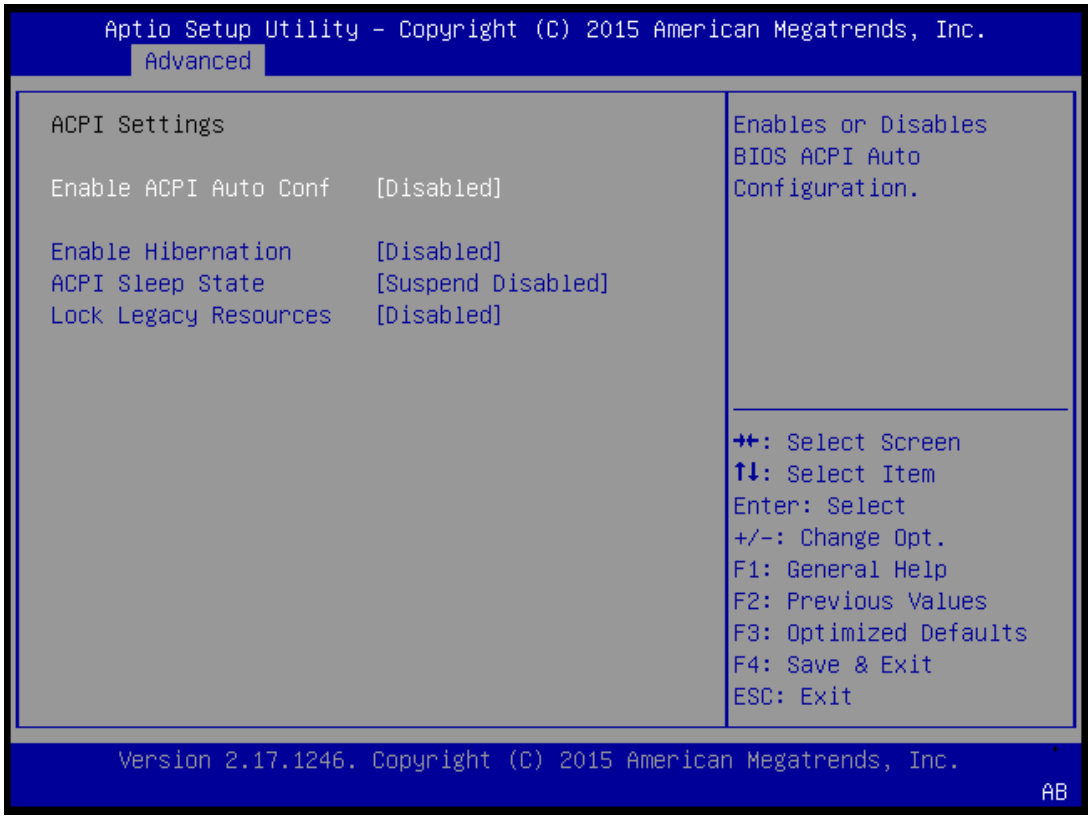


3.2.2 ACPI Settings

ACPI Setting:

Enable ACPI Auto Configuration < Enable >

Description: Use this feature to configure Advanced Configuration and Power Interface (ACPI) power management settings for your system.

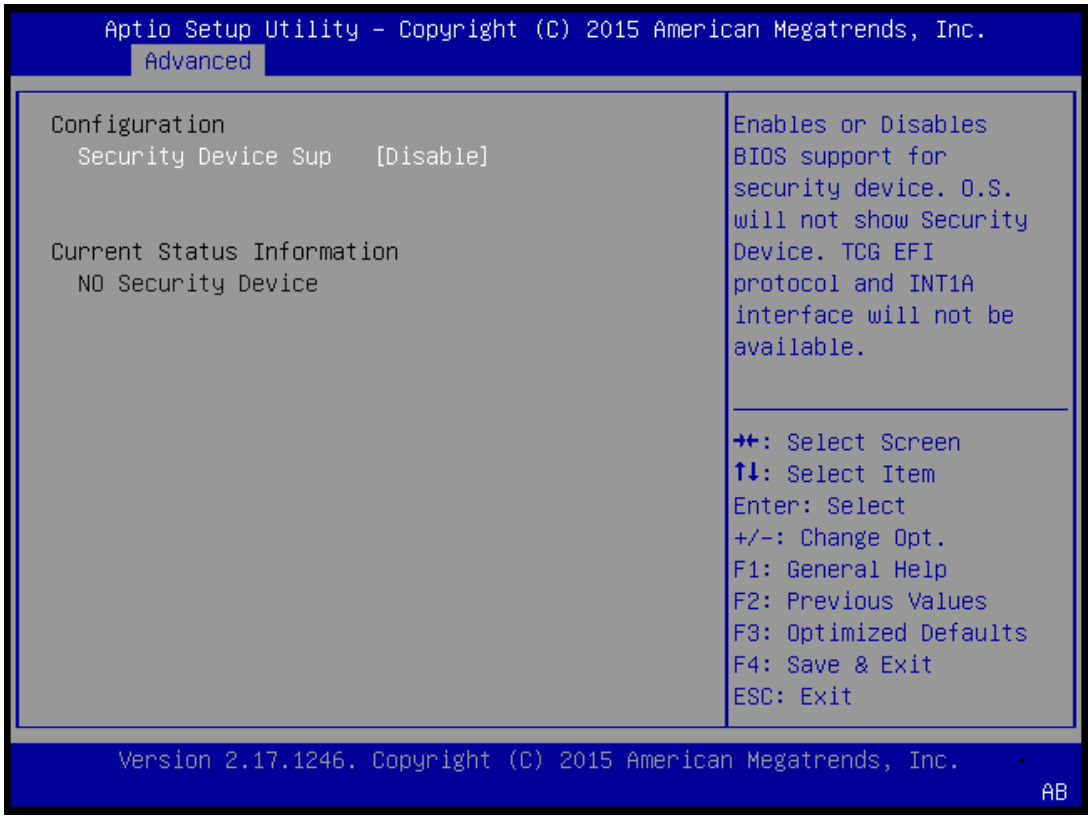


3.2.3 Trusted Computing

Trusted Computing:

TPM State *< Enable >*

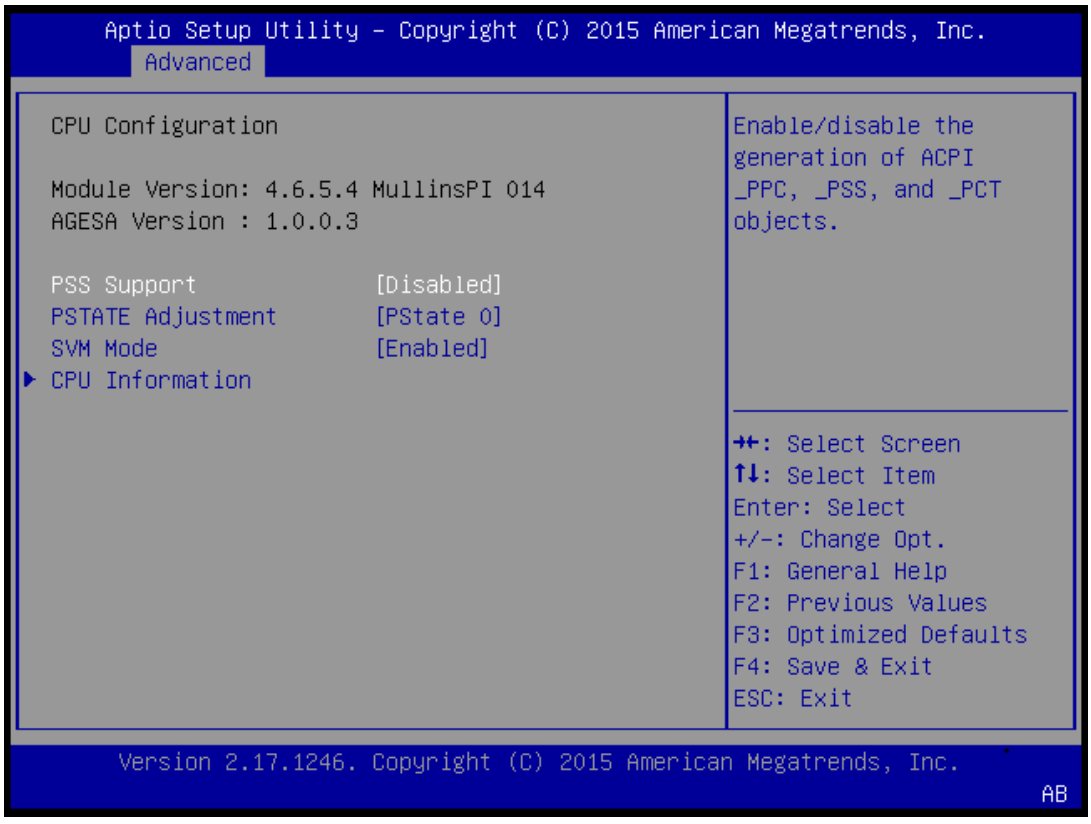
Description: Select Enabled to activate support for trusted platforms (TPM 1.1/1.2) and allow the BIOS to automatically download the drivers needed to provide support for the platforms specified. The options are Disable and Enable.



3.2.4 CPU Configuration

CPU Configuration

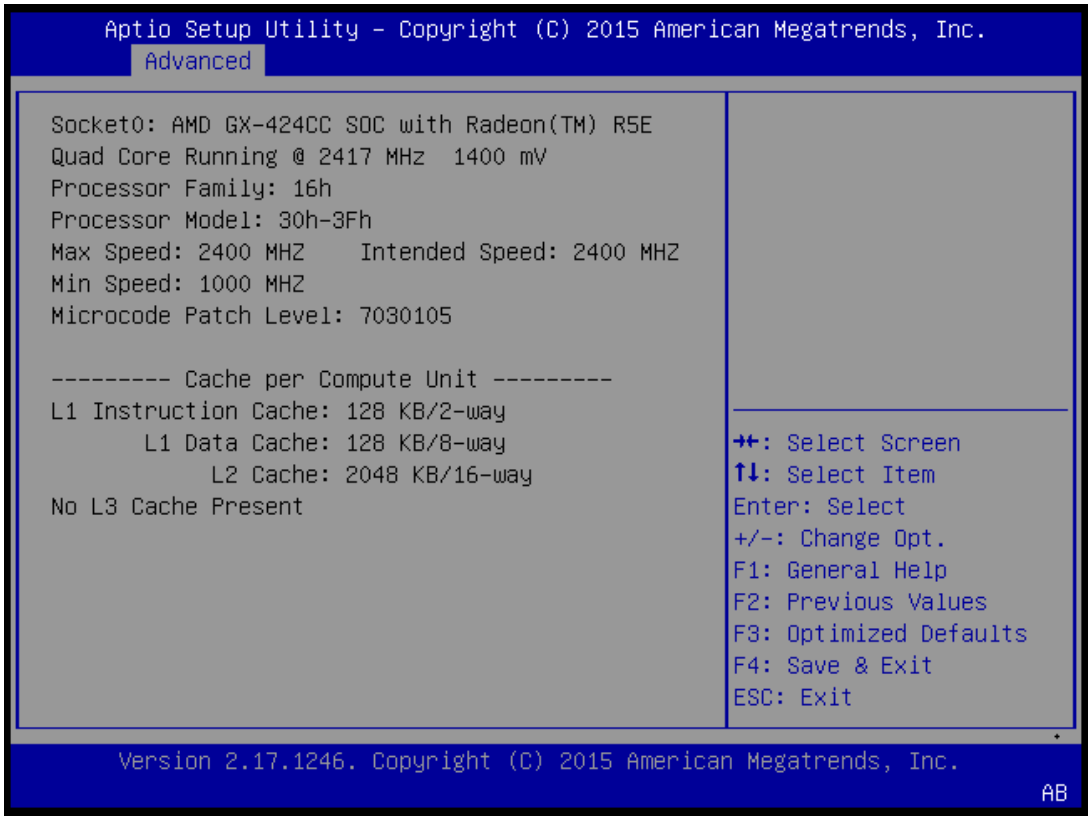
Description : This menu allow user to configure CPU with different operation mode and state.



3.2.4.1 CPU Information

CPU Information

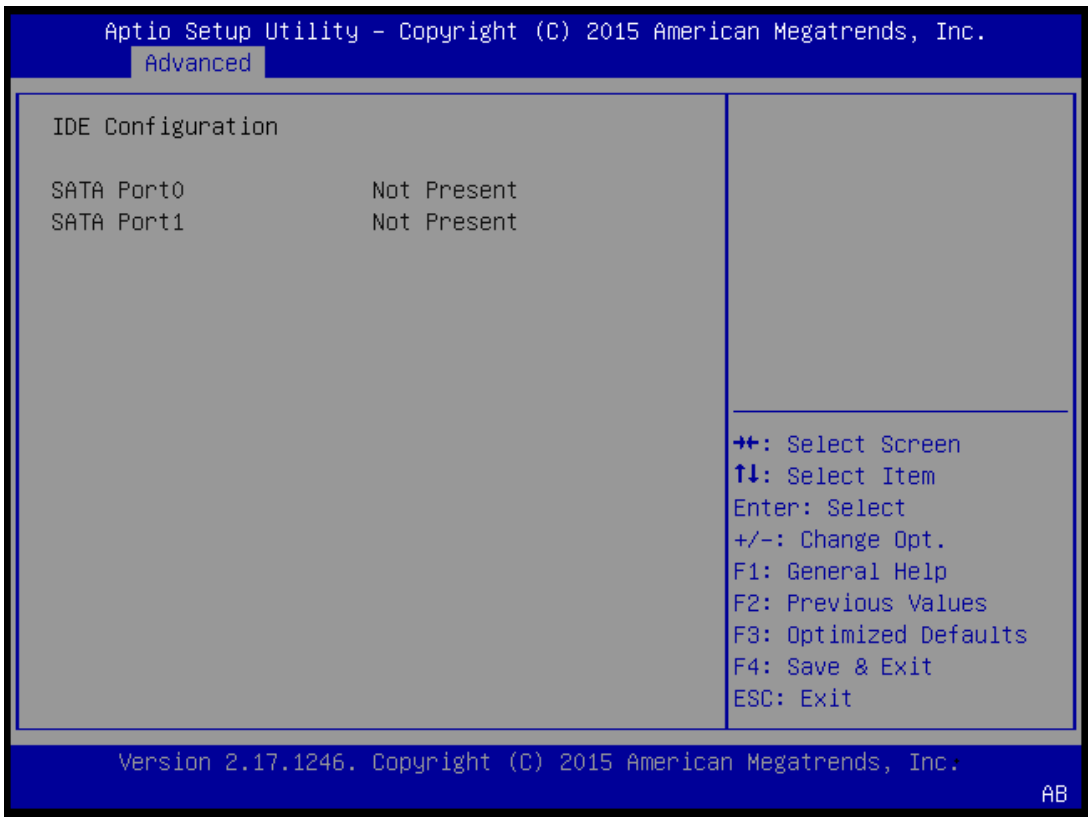
Description: CPU processor information can be found here



3.2.5 IDE Configuration

IDE Configuration:

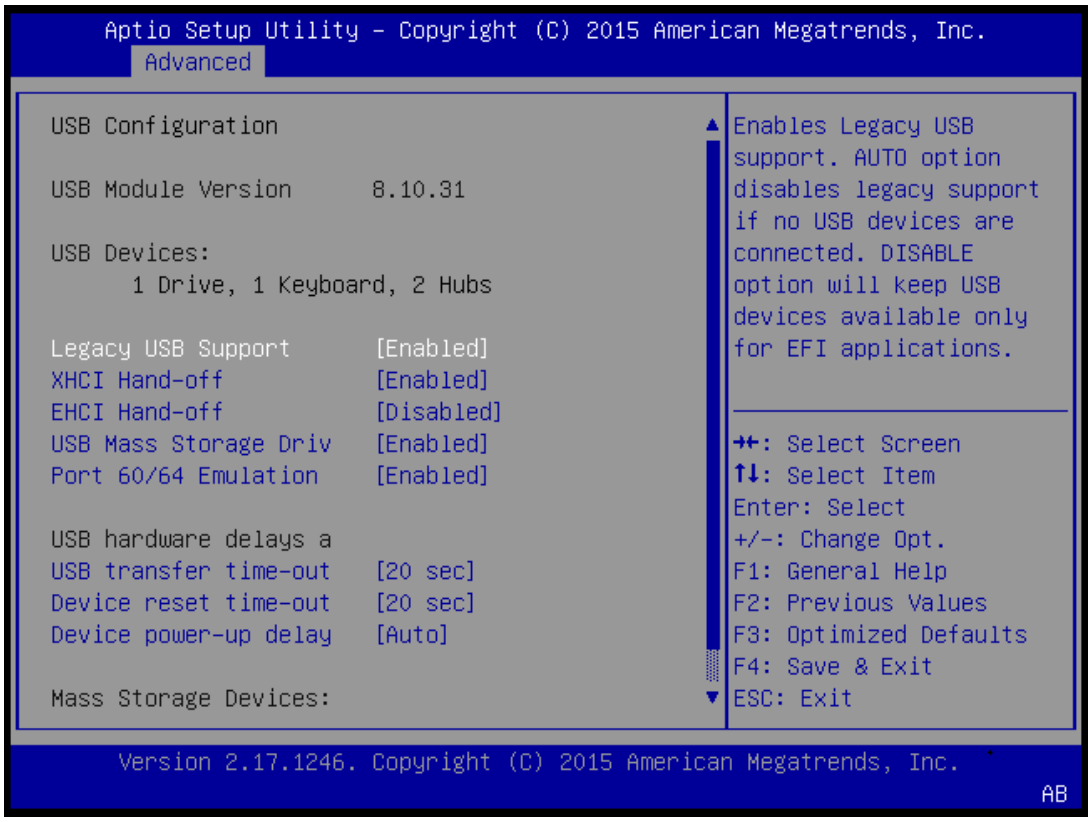
Description: When this submenu is selected, the AMI BIOS automatically detects the presence of the IDE Devices and displays the following items:



3.2.6 USB Configuration

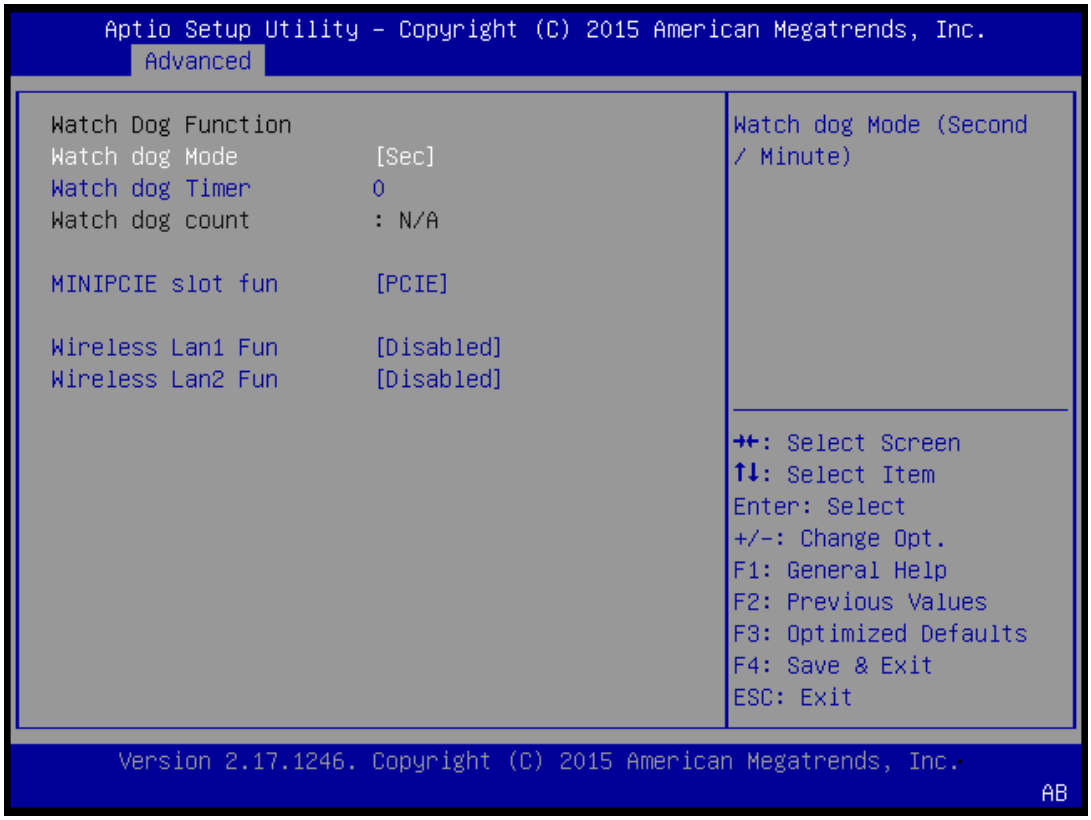
USB Configuration:

Description: Legacy USB support setup, this setting enable user to configure USB parameter, include whether support legacy USB.



3.2.7 Platform Function

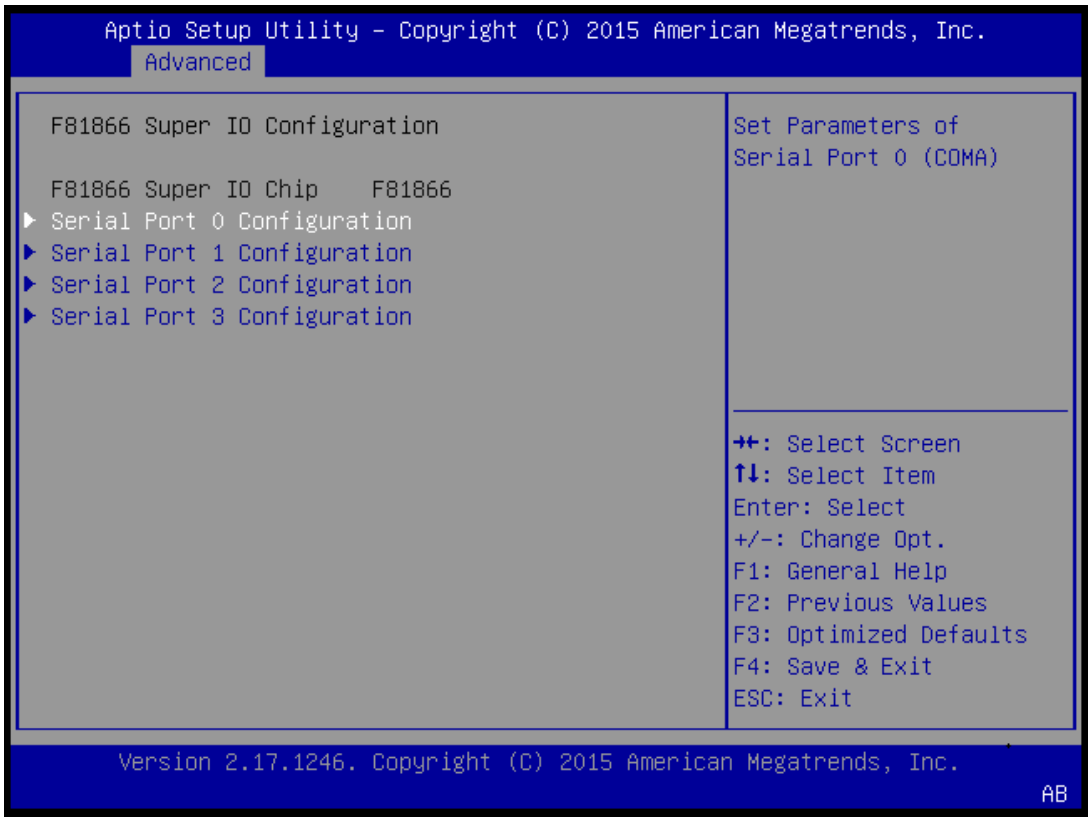
Platform Function Description: Enable user to configure WatchDog Timer.



3.2.8 F81866 Super IO Configuration

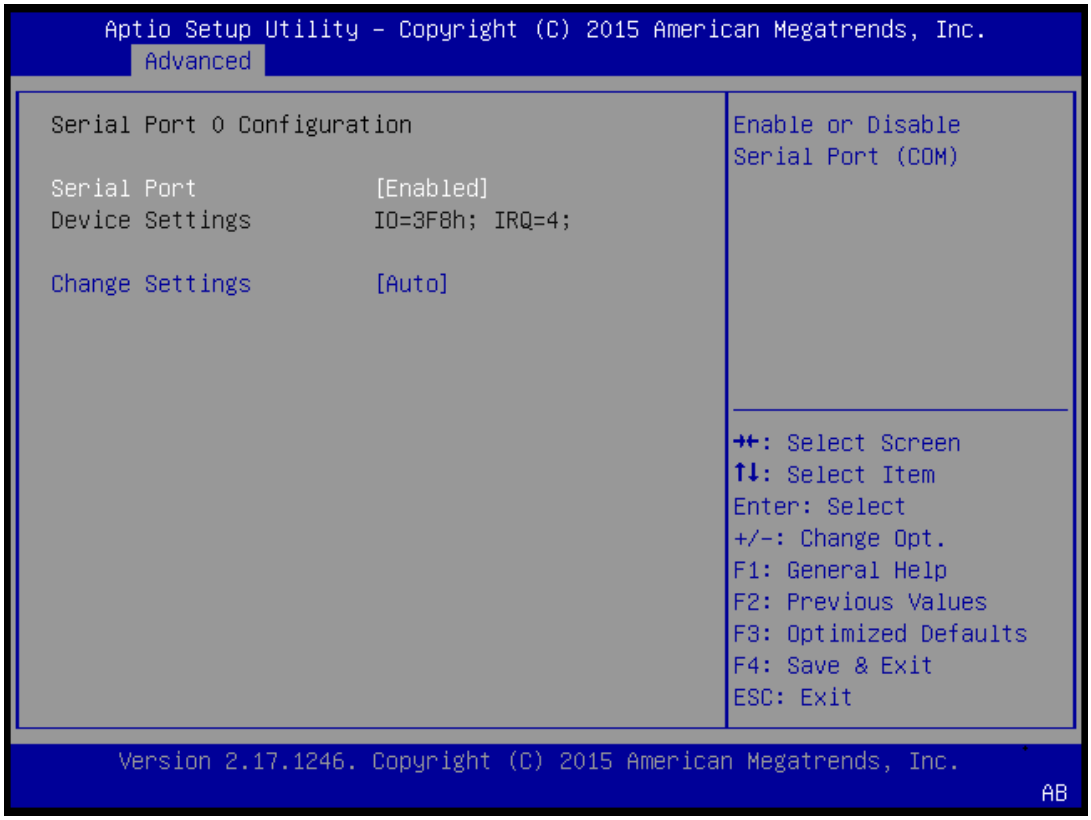
F81866 Super IO Configuration:

Description: Select Enabled to enable the onboard serial port. The options are Enabled and Disabled.



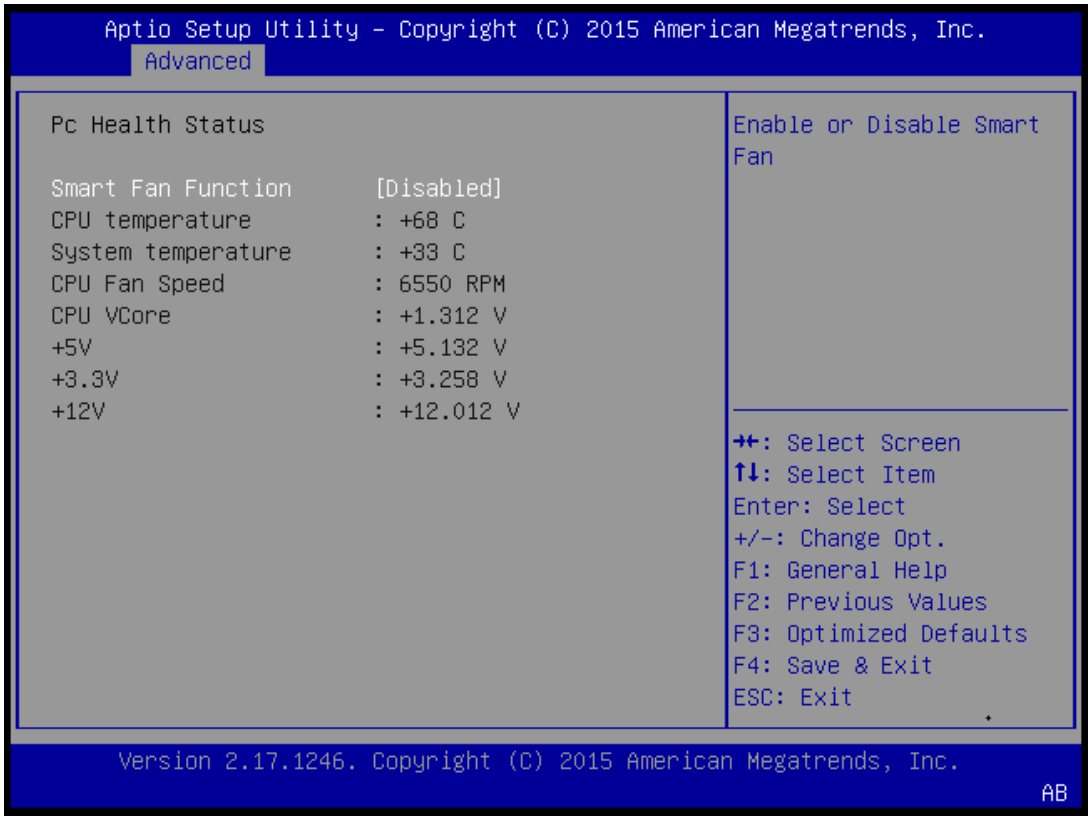
3.2.8.1 Serial Port 0, 1, 2, 3 Configuration

Serial Port 0, 1, 2, 3, 4, 5 Configuration Description: Enables user to setup address and IRQ for serial Port.



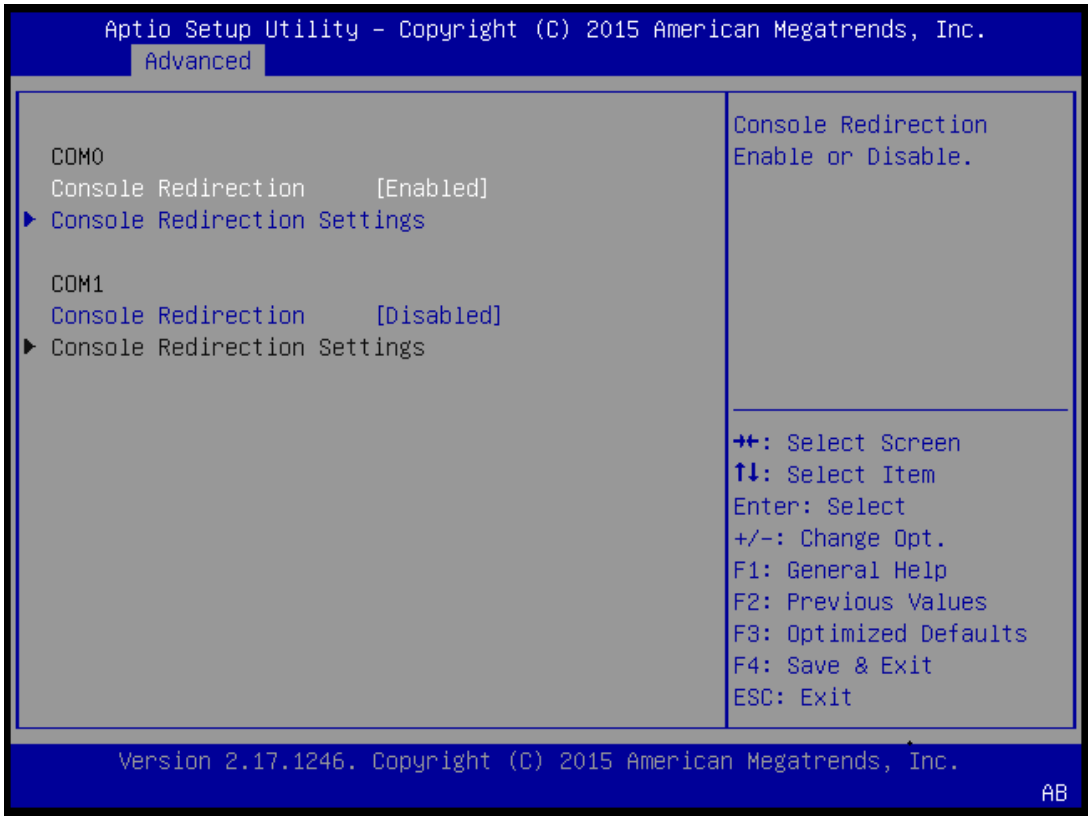
3.2.9 F81866 H/W Monitor

Hardware Monitor Description: Enables user to monitor processor and system status, smart FAN can be controlled by this menu.



3.2.10 Serial Port Console Redirection

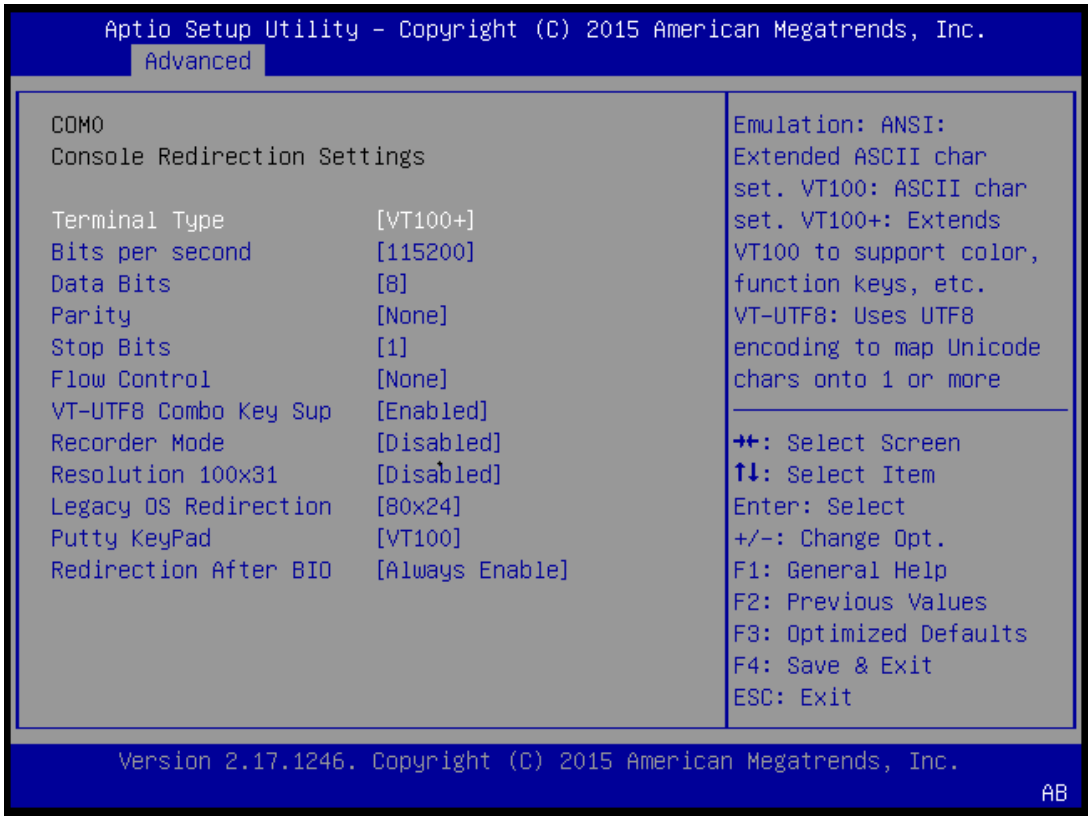
Serial Port Console Redirection Description: Enables user to redirection console port.



3.2.10.1 COM0, COM1 Setting

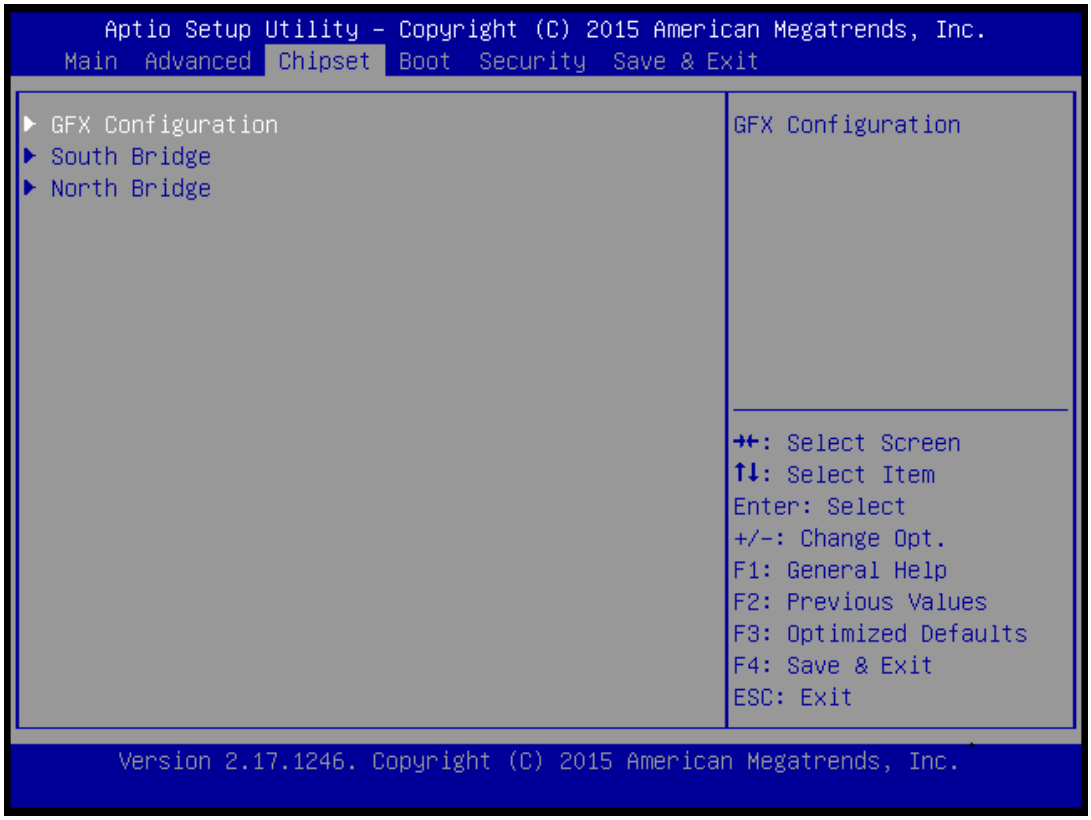
COM0 Setting

Description: Enables user to configure the setting for the console.



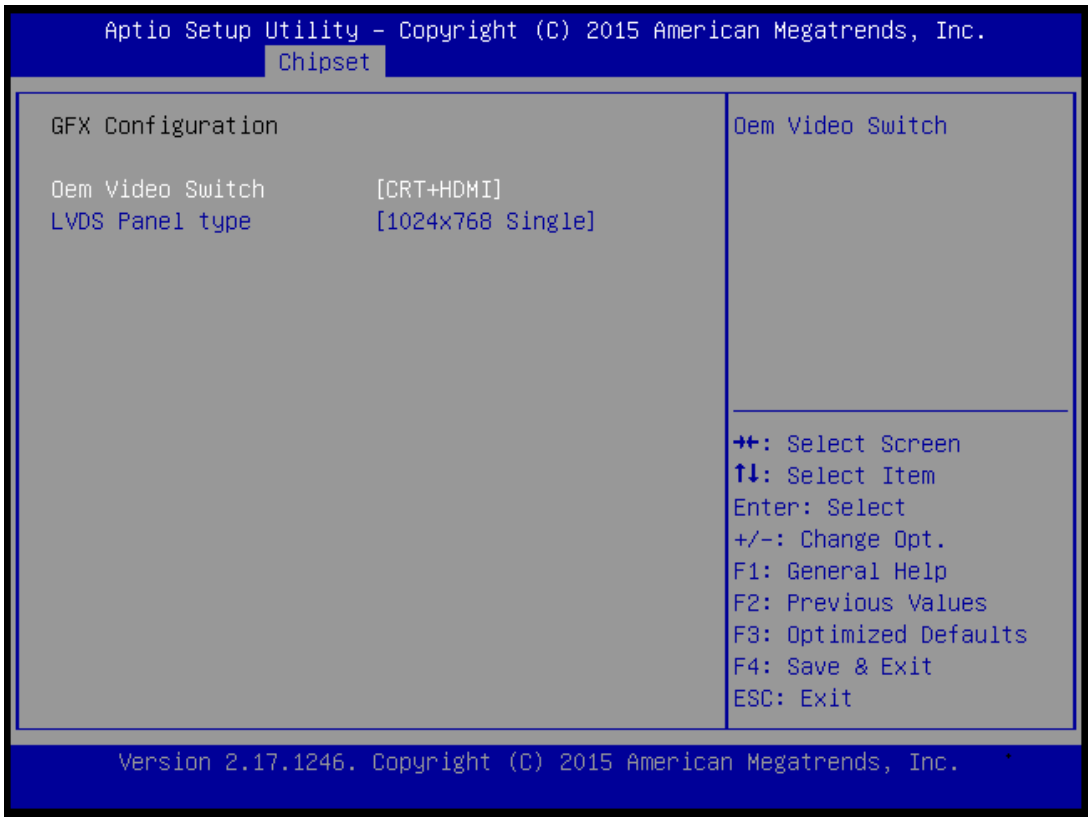
3.3 Chipset Menu

Chipset: Description: South Bridge & North Bridge Setting



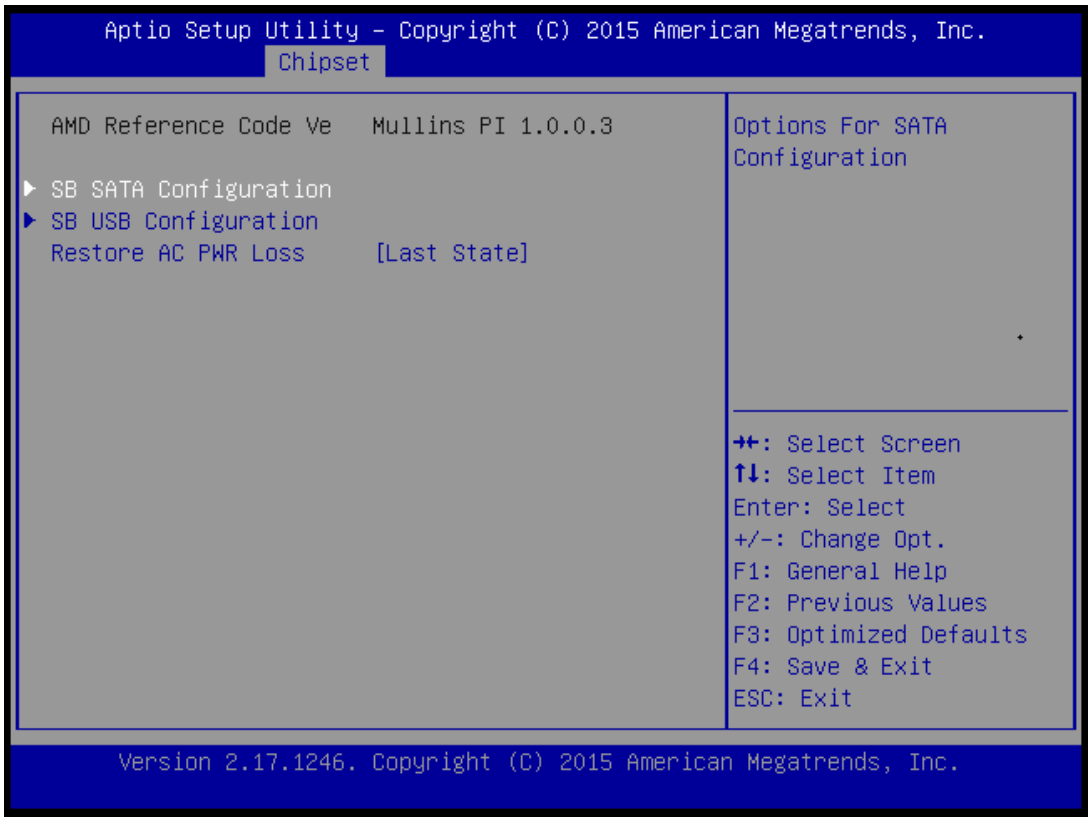
3.3.1 GFX Configuration

Description: Enables user to configure display method.



3.3.2 South Bridge

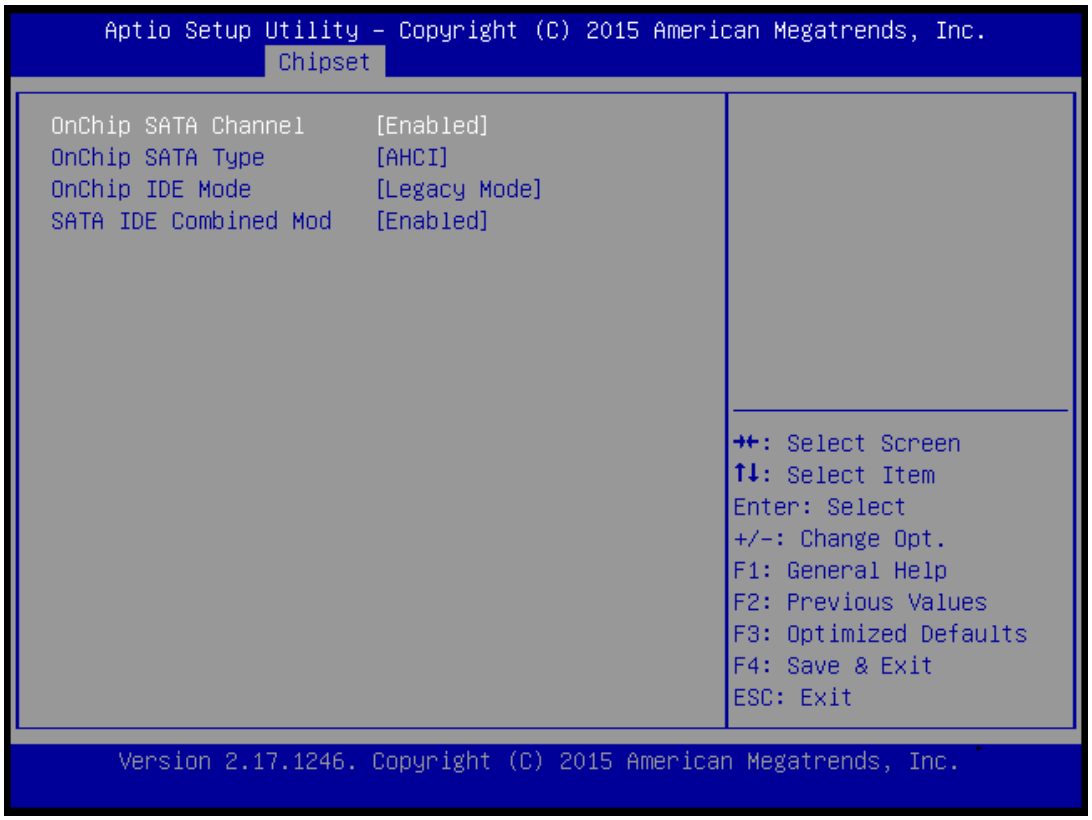
Description: Enables user to configure SATA & USB of south bridge.



3.3.2.1 SB SATA Configuration

South Bridge SATA Configuration:

Description: Customer could enable/disable SATA function here.
Default setting is <Enabled>
Onchip SATA Type selects the mode for the installed drives. The options are Disabled, IDE Mode, AHCI Mode and RAID Mode. Default setting is <AHCI>

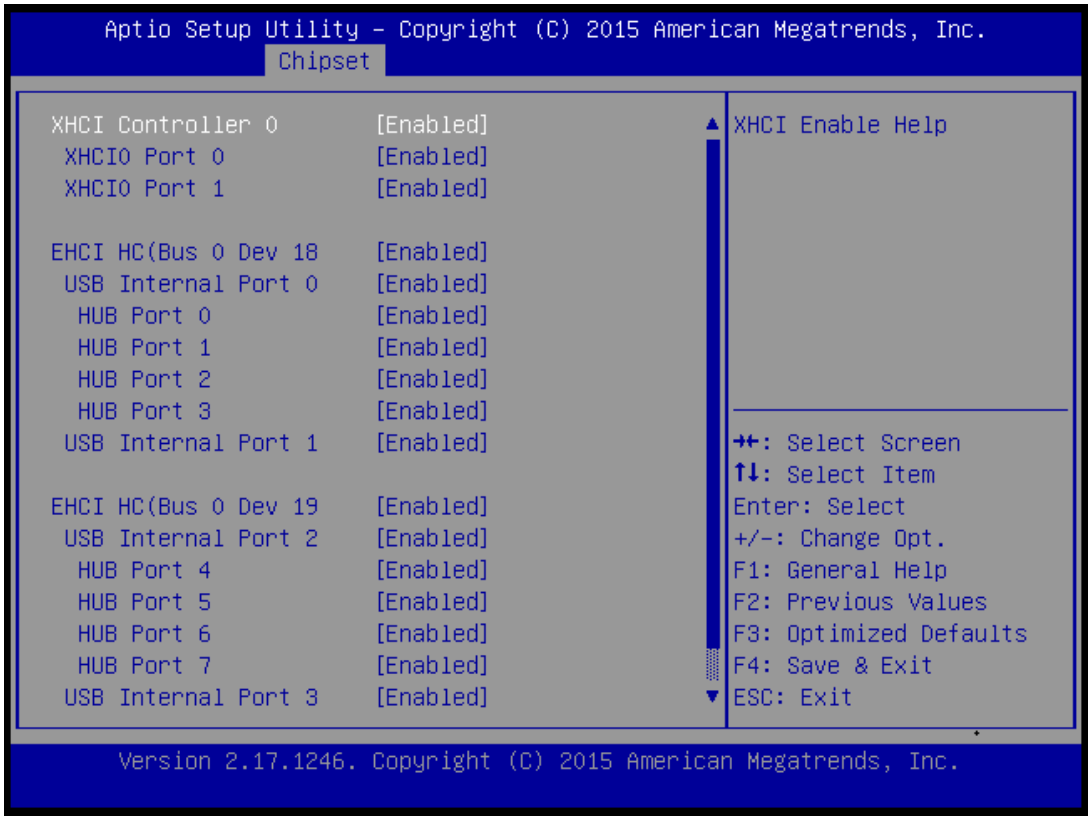


3.3.2.2 SB USB Configuration

South Bridge USB Configuration:

Description: Customer could enable/disable USB function here.

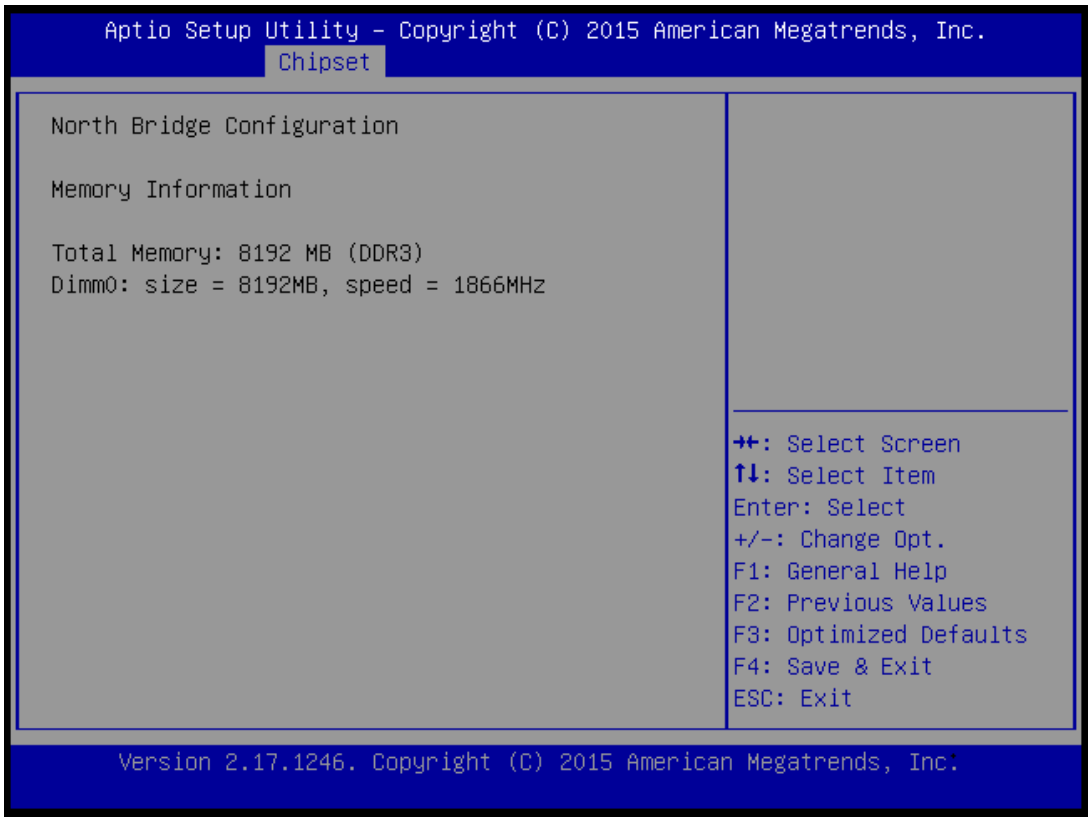
Default setting is <Enabled>



3.3.3 North Bridge Configuration

North Bridge Configuration:

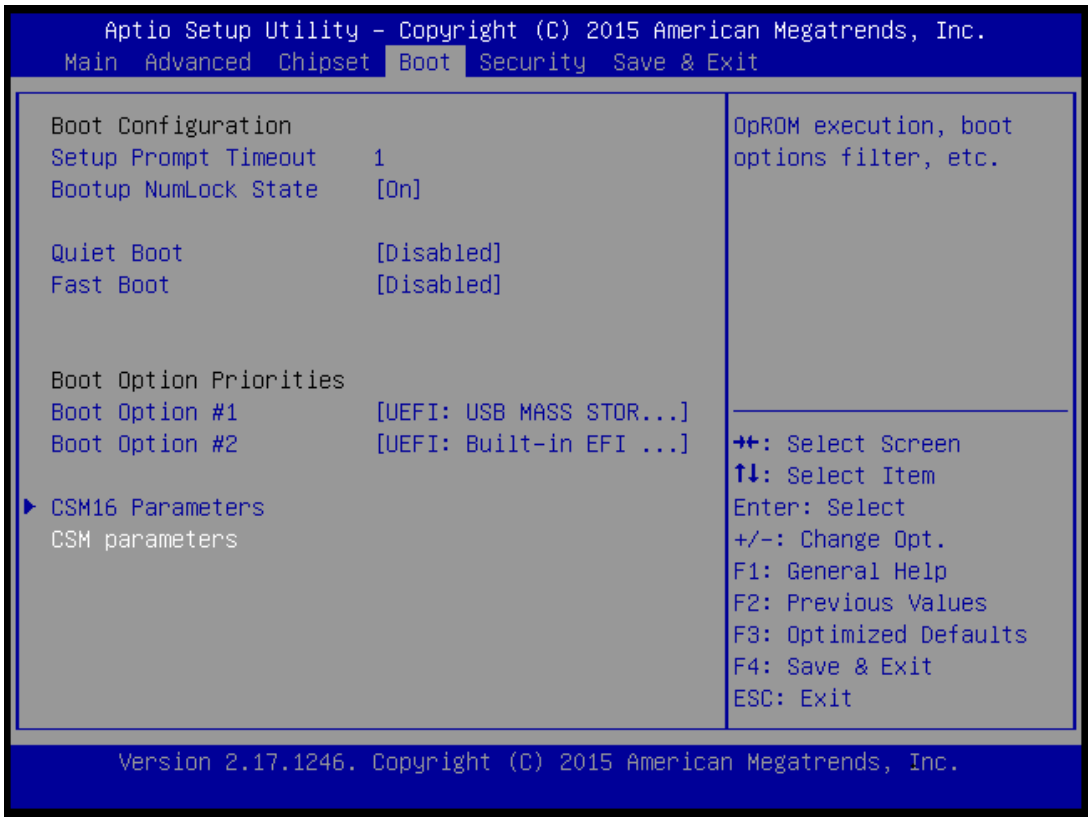
Description: Memory information can be found here



3.4 Boot Menu

Boot Configuration:

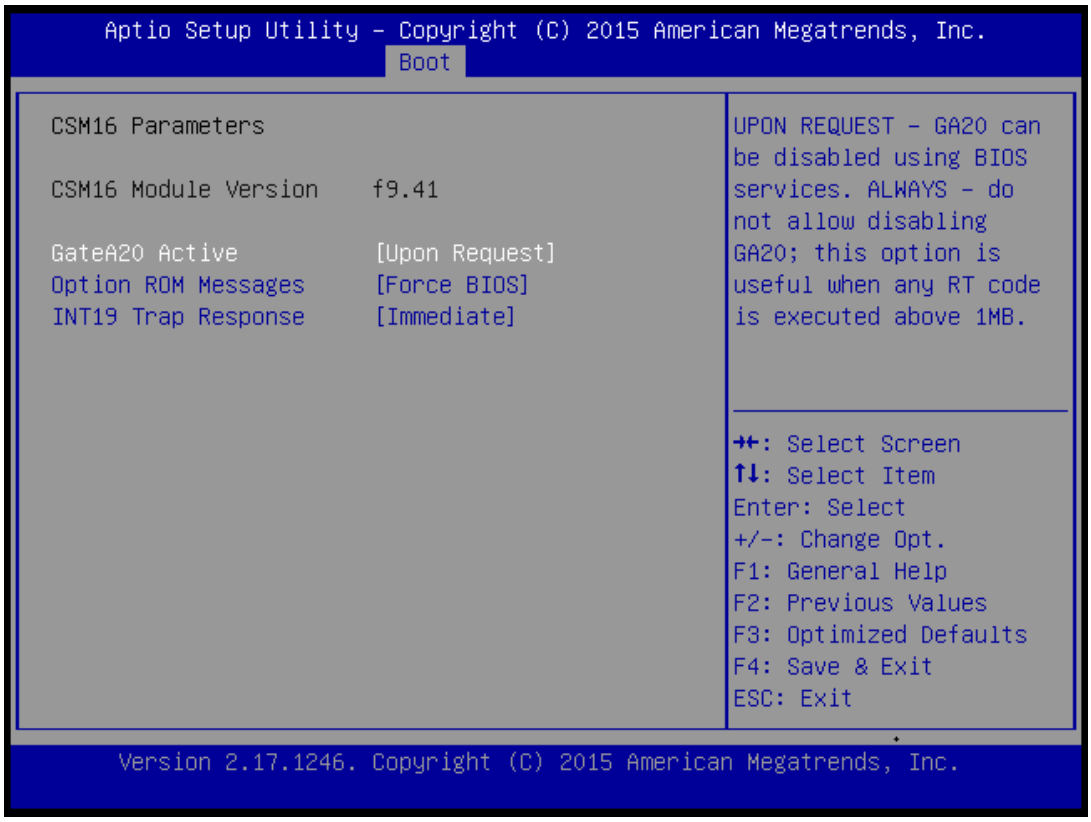
Description: This feature allows the user to specify which devices are boot devices and the order of priority from which the systems boots from during startup.



3.4.1 CSM16 Parameters

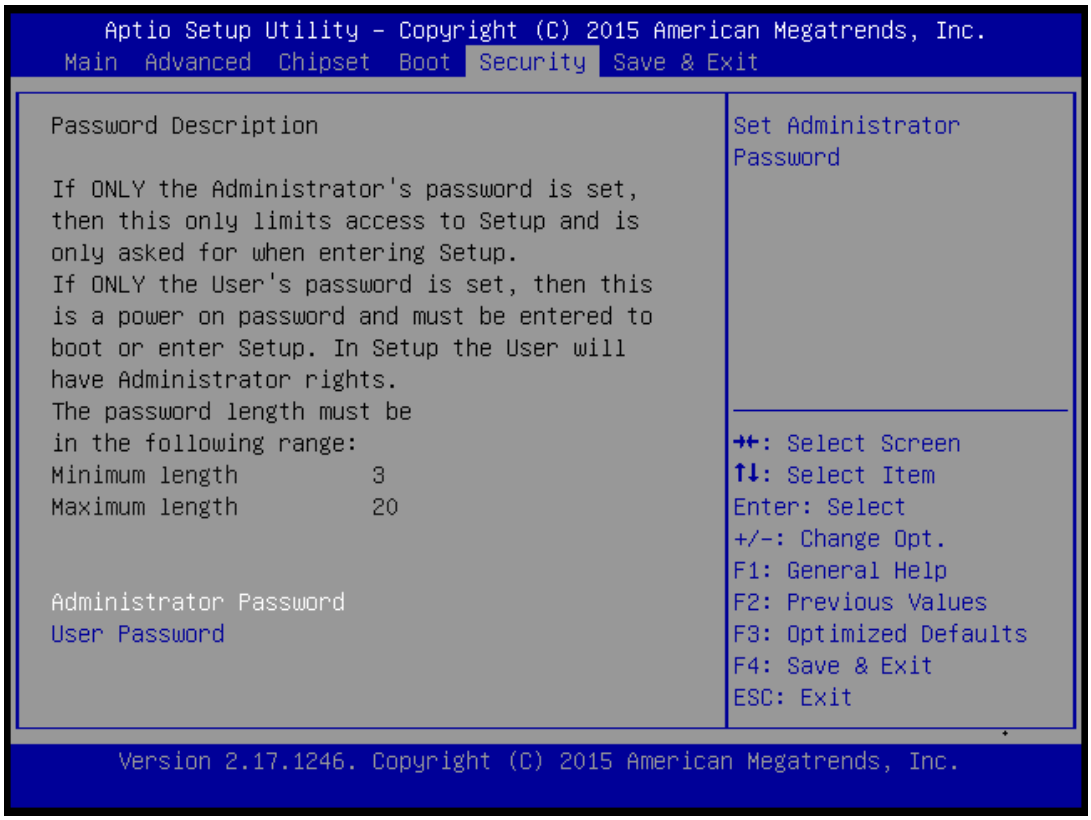
CSM16 Parameters:

Description: This feature allows the user to specify which devices are boot devices and the order of priority from which the systems boots from during startup.



3.5 Security Menu

Password Description: Description: Administrator Password: Press Enter to create a new, or change an existing Administrator password. User Password: Press Enter to create a new, or change an existing User password.



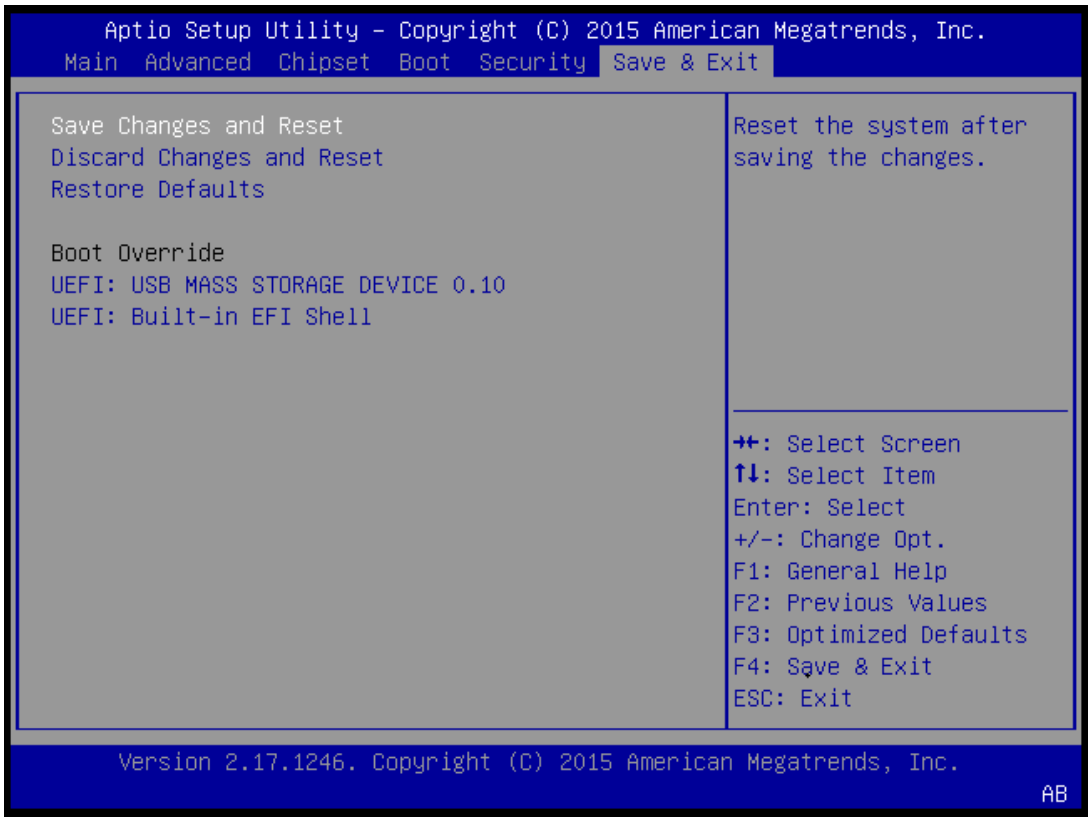
3.6 Save & Exit Menu

Description:

Save Change and Reset: When you have completed the system configuration changes, select this option to leave the BIOS Setup Utility and reboot the computer, so the new system configuration parameters can take effect. Select Save Changes and Exit from the Exit menu and press <Enter>

Discard Changes and Reset : Select this option to quit the BIOS Setup without making any permanent changes to the system configuration, and reboot the computer. Select Discard Changes and Exit from the Exit menu and press <Enter>.

Restored Defaults : To set this feature, select Restore Defaults from the Exit menu and press <Enter>. These are factory settings designed for maximum system stability, but not for maximum performance.



4. Design Resources (await update)

4.1 System Resources

Resource	Share	Device Description
DMA 04	Exclusive	Direct memory access controller
IRQ 00	Exclusive	High precision event timer
IRQ 00	Exclusive	System timer
IRQ 03	Exclusive	Communications Port (COM2)
IRQ 04	Exclusive	Communications Port (COM1)
IRQ 07	Exclusive	Communications Port (COM4)
IRQ 08	Exclusive	High precision event timer
IRQ 100	Exclusive	Microsoft ACPI-Compliant System

IRQ 101	Exclusive	Microsoft ACPI-Compliant System
IRQ 102	Exclusive	Microsoft ACPI-Compliant System
IRQ 103	Exclusive	Microsoft ACPI-Compliant System
IRQ 104	Exclusive	Microsoft ACPI-Compliant System
IRQ 105	Exclusive	Microsoft ACPI-Compliant System
IRQ 106	Exclusive	Microsoft ACPI-Compliant System
IRQ 107	Exclusive	Microsoft ACPI-Compliant System
IRQ 108	Exclusive	Microsoft ACPI-Compliant System
IRQ 109	Exclusive	Microsoft ACPI-Compliant System
IRQ 11	Shared	Communications Port (COM3)
IRQ 110	Exclusive	Microsoft ACPI-Compliant System
IRQ 111	Exclusive	Microsoft ACPI-Compliant System
IRQ 112	Exclusive	Microsoft ACPI-Compliant System
IRQ 113	Exclusive	Microsoft ACPI-Compliant System
IRQ 114	Exclusive	Microsoft ACPI-Compliant System
IRQ 115	Exclusive	Microsoft ACPI-Compliant System
IRQ 116	Exclusive	Microsoft ACPI-Compliant System
IRQ 117	Exclusive	Microsoft ACPI-Compliant System
IRQ 118	Exclusive	Microsoft ACPI-Compliant System
IRQ 119	Exclusive	Microsoft ACPI-Compliant System
IRQ 120	Exclusive	Microsoft ACPI-Compliant System
IRQ 121	Exclusive	Microsoft ACPI-Compliant System
IRQ 122	Exclusive	Microsoft ACPI-Compliant System
IRQ 123	Exclusive	Microsoft ACPI-Compliant System
IRQ 124	Exclusive	Microsoft ACPI-Compliant System
IRQ 125	Exclusive	Microsoft ACPI-Compliant System
IRQ 126	Exclusive	Microsoft ACPI-Compliant System
IRQ 127	Exclusive	Microsoft ACPI-Compliant System
IRQ 128	Exclusive	Microsoft ACPI-Compliant System
IRQ 129	Exclusive	Microsoft ACPI-Compliant System

IRQ 13	Exclusive	Numeric data processor
IRQ 130	Exclusive	Microsoft ACPI-Compliant System
IRQ 131	Exclusive	Microsoft ACPI-Compliant System
IRQ 131071	Exclusive	PCI Express standard Root Port
IRQ 132	Exclusive	Microsoft ACPI-Compliant System
IRQ 133	Exclusive	Microsoft ACPI-Compliant System
IRQ 134	Exclusive	Microsoft ACPI-Compliant System
IRQ 135	Exclusive	Microsoft ACPI-Compliant System
IRQ 136	Exclusive	Microsoft ACPI-Compliant System
IRQ 137	Exclusive	Microsoft ACPI-Compliant System
IRQ 138	Exclusive	Microsoft ACPI-Compliant System
IRQ 139	Exclusive	Microsoft ACPI-Compliant System
IRQ 140	Exclusive	Microsoft ACPI-Compliant System
IRQ 141	Exclusive	Microsoft ACPI-Compliant System
IRQ 142	Exclusive	Microsoft ACPI-Compliant System
IRQ 143	Exclusive	Microsoft ACPI-Compliant System
IRQ 144	Exclusive	Microsoft ACPI-Compliant System
IRQ 145	Exclusive	Microsoft ACPI-Compliant System
IRQ 146	Exclusive	Microsoft ACPI-Compliant System
IRQ 147	Exclusive	Microsoft ACPI-Compliant System
IRQ 148	Exclusive	Microsoft ACPI-Compliant System
IRQ 149	Exclusive	Microsoft ACPI-Compliant System
IRQ 150	Exclusive	Microsoft ACPI-Compliant System
IRQ 151	Exclusive	Microsoft ACPI-Compliant System
IRQ 152	Exclusive	Microsoft ACPI-Compliant System
IRQ 153	Exclusive	Microsoft ACPI-Compliant System
IRQ 154	Exclusive	Microsoft ACPI-Compliant System
IRQ 155	Exclusive	Microsoft ACPI-Compliant System
IRQ 156	Exclusive	Microsoft ACPI-Compliant System
IRQ 157	Exclusive	Microsoft ACPI-Compliant System

IRQ 158	Exclusive	Microsoft ACPI-Compliant System
IRQ 159	Exclusive	Microsoft ACPI-Compliant System
IRQ 16	Shared	SDA Standard Compliant SD Host Controller
IRQ 16	Shared	High Definition Audio Controller
IRQ 160	Exclusive	Microsoft ACPI-Compliant System
IRQ 161	Exclusive	Microsoft ACPI-Compliant System
IRQ 162	Exclusive	Microsoft ACPI-Compliant System
IRQ 163	Exclusive	Microsoft ACPI-Compliant System
IRQ 164	Exclusive	Microsoft ACPI-Compliant System
IRQ 165	Exclusive	Microsoft ACPI-Compliant System
IRQ 166	Exclusive	Microsoft ACPI-Compliant System
IRQ 167	Exclusive	Microsoft ACPI-Compliant System
IRQ 168	Exclusive	Microsoft ACPI-Compliant System
IRQ 169	Exclusive	Microsoft ACPI-Compliant System
IRQ 170	Exclusive	Microsoft ACPI-Compliant System
IRQ 171	Exclusive	Microsoft ACPI-Compliant System
IRQ 172	Exclusive	Microsoft ACPI-Compliant System
IRQ 173	Exclusive	Microsoft ACPI-Compliant System
IRQ 174	Exclusive	Microsoft ACPI-Compliant System
IRQ 175	Exclusive	Microsoft ACPI-Compliant System
IRQ 176	Exclusive	Microsoft ACPI-Compliant System
IRQ 177	Exclusive	Microsoft ACPI-Compliant System
IRQ 178	Exclusive	Microsoft ACPI-Compliant System
IRQ 179	Exclusive	Microsoft ACPI-Compliant System
IRQ 18	Shared	Standard Enhanced PCI to USB Host Controller
IRQ 18	Shared	Standard Enhanced PCI to USB Host Controller
IRQ 180	Exclusive	Microsoft ACPI-Compliant System
IRQ 181	Exclusive	Microsoft ACPI-Compliant System
IRQ 182	Exclusive	Microsoft ACPI-Compliant System
IRQ 183	Exclusive	Microsoft ACPI-Compliant System

IRQ 184	Exclusive	Microsoft ACPI-Compliant System
IRQ 185	Exclusive	Microsoft ACPI-Compliant System
IRQ 186	Exclusive	Microsoft ACPI-Compliant System
IRQ 187	Exclusive	Microsoft ACPI-Compliant System
IRQ 188	Exclusive	Microsoft ACPI-Compliant System
IRQ 189	Exclusive	Microsoft ACPI-Compliant System
IRQ 19	Shared	AMD SATA Controller
IRQ 190	Exclusive	Microsoft ACPI-Compliant System
IRQ 45	Shared	High Definition Audio Controller
IRQ 65536	Exclusive	Intel® I211 Gigabit Network Connection
IRQ 65536	Exclusive	Intel® I211 Gigabit Network Connection
IRQ 65536	Exclusive	Intel® I211 Gigabit Network Connection
IRQ 65536	Exclusive	Intel® I211 Gigabit Network Connection
IRQ 65536	Exclusive	Intel® I211 Gigabit Network Connection
IRQ 65536	Exclusive	Intel® I211 Gigabit Network Connection
IRQ 65536	Exclusive	AMD USB 3.0 Host Controller
IRQ 65536	Exclusive	AMD USB 3.0 Host Controller
IRQ 65536	Exclusive	AMD USB 3.0 Host Controller
IRQ 65536	Exclusive	AMD USB 3.0 Host Controller
IRQ 65536	Exclusive	AMD USB 3.0 Host Controller
IRQ 65536	Exclusive	AMD USB 3.0 Host Controller
IRQ 65536	Exclusive	AMD USB 3.0 Host Controller
IRQ 65536	Exclusive	AMD USB 3.0 Host Controller
IRQ 65536	Exclusive	AMD PSP 1.0 Device
IRQ 65536	Exclusive	AMD PSP 1.0 Device
IRQ 81	Exclusive	Microsoft ACPI-Compliant System
IRQ 82	Exclusive	Microsoft ACPI-Compliant System
IRQ 83	Exclusive	Microsoft ACPI-Compliant System
IRQ 84	Exclusive	Microsoft ACPI-Compliant System
IRQ 85	Exclusive	Microsoft ACPI-Compliant System

IRQ 86	Exclusive	Microsoft ACPI-Compliant System
IRQ 87	Exclusive	Microsoft ACPI-Compliant System
IRQ 88	Exclusive	Microsoft ACPI-Compliant System
IRQ 89	Exclusive	Microsoft ACPI-Compliant System
IRQ 90	Exclusive	Microsoft ACPI-Compliant System
IRQ 91	Exclusive	Microsoft ACPI-Compliant System
IRQ 92	Exclusive	Microsoft ACPI-Compliant System
IRQ 93	Exclusive	Microsoft ACPI-Compliant System
IRQ 94	Exclusive	Microsoft ACPI-Compliant System
IRQ 95	Exclusive	Microsoft ACPI-Compliant System
IRQ 96	Exclusive	Microsoft ACPI-Compliant System
IRQ 97	Exclusive	Microsoft ACPI-Compliant System
IRQ 98	Exclusive	Microsoft ACPI-Compliant System
IRQ 99	Exclusive	Microsoft ACPI-Compliant System
Memory 000A0000-000BFFFF	Shared	Pci Bus
Memory 000C0000-000DFFFF	Shared	Pci Bus
Memory 37000000-3EFFFFFF	Exclusive	Motherboard resources
Memory E0000000-EFFFFFFF	Exclusive	System board
Memory F0000000-FFFFFFFF	Shared	Pci Bus
Memory F8800000-F881FFFF	Exclusive	AMD PSP 1.0 Device
Memory FE800000-FE8FFFFF	Exclusive	AMD PSP 1.0 Device
Memory FE900000-FE91FFFF	Exclusive	Intel® I211 Gigabit Network Connection
Memory	Exclusive	PCI Express standard Root Port

FE900000-FE9FFFFF		
Memory FE920000-FE923FFF	Exclusive	Intel® I211 Gigabit Network Connection
Memory FEA60000-FEA63FFF	Exclusive	High Definition Audio Controller
Memory FEA64000-FEA67FFF	Exclusive	High Definition Audio Controller
Memory FEA68000-FEA69FFF	Exclusive	AMD USB 3.0 Host Controller
Memory FEA6A000-FEA6BFFF	Exclusive	AMD PSP 1.0 Device
Memory FEA6C000-FEA6C0FF	Exclusive	SDA Standard Compliant SD Host Controller
Memory FEA6D000-FEA6D0FF	Exclusive	Standard Enhanced PCI to USB Host Controller
Memory FEA6E000-FEA6E0FF	Exclusive	Standard Enhanced PCI to USB Host Controller
Memory FEA6F000-FEA6F3FF	Exclusive	AMD SATA Controller
Memory FEA70000-FEA70FFF	Exclusive	AMD PSP 1.0 Device
Memory FEC00000-FEC00FFF	Exclusive	Motherboard resources
Memory FEC10000-FEC10FFF	Exclusive	Motherboard resources
Memory FED00000-FED003FF	Exclusive	High precision event timer
Memory FED61000-FED70FFF	Exclusive	Motherboard resources
Memory FED80000-FED8FFFF	Exclusive	Motherboard resources
Memory	Exclusive	Motherboard resources

FEE00000-FEE00FFF		
Memory FF000000-FFFFFFFF	Exclusive	Motherboard resources
Port 0000-000F	Exclusive	Direct memory access controller
Port 0000-000F	Exclusive	Motherboard resources
Port 0000-03AF	Shared	Pci Bus
Port 0010-001F	Exclusive	Motherboard resources
Port 0010-001F	Exclusive	Motherboard resources
Port 0020-0021	Exclusive	Programmable interrupt controller
Port 0022-003F	Exclusive	Motherboard resources
Port 0022-003F	Exclusive	Motherboard resources
Port 0040-0043	Exclusive	System timer
Port 0044-005F	Exclusive	Motherboard resources
Port 0061-0061	Exclusive	System speaker
Port 0063-0063	Exclusive	Motherboard resources
Port 0065-0065	Exclusive	Motherboard resources
Port 0067-006F	Exclusive	Motherboard resources
Port 0070-0071	Exclusive	System CMOS/real time clock
Port 0072-007F	Exclusive	Motherboard resources
Port 0072-007F	Exclusive	Motherboard resources
Port 0080-0080	Exclusive	Motherboard resources
Port 0080-0080	Exclusive	Motherboard resources
Port 0081-0083	Exclusive	Direct memory access controller
Port 0084-0086	Exclusive	Motherboard resources
Port 0084-0086	Exclusive	Motherboard resources
Port 0087-0087	Exclusive	Direct memory access controller
Port 0088-0088	Exclusive	Motherboard resources
Port 0088-0088	Exclusive	Motherboard resources
Port 0089-008B	Exclusive	Direct memory access controller
Port 008C-008E	Exclusive	Motherboard resources

Port 008C-008E	Exclusive	Motherboard resources
Port 008F-008F	Exclusive	Direct memory access controller
Port 0090-009F	Exclusive	Motherboard resources
Port 0090-009F	Exclusive	Motherboard resources
Port 00A0-00A1	Exclusive	Programmable interrupt controller
Port 00A2-00BF	Exclusive	Motherboard resources
Port 00A2-00BF	Exclusive	Motherboard resources
Port 00B1-00B1	Exclusive	Motherboard resources
Port 00C0-00DF	Exclusive	Direct memory access controller
Port 00E0-00EF	Exclusive	Motherboard resources
Port 00E0-00EF	Exclusive	Motherboard resources
Port 00F0-00FF	Exclusive	Numeric data processor
Port 0200-020F	Exclusive	Motherboard resources
Port 02E8-02EF	Exclusive	Communications Port (COM4)
Port 02F8-02FF	Exclusive	Communications Port (COM2)
Port 03B0-03DF	Shared	Pci Bus
Port 03E0-0CF7	Shared	Pci Bus
Port 03E8-03EF	Exclusive	Communications Port (COM3)
Port 03F8-03FF	Exclusive	Communications Port (COM1)
Port 040B-040B	Exclusive	Motherboard resources
Port 04D0-04D1	Exclusive	Motherboard resources
Port 04D0-04D1	Exclusive	Motherboard resources
Port 04D6-04D6	Exclusive	Motherboard resources
Port 0800-089F	Exclusive	Motherboard resources
Port 0900-090F	Exclusive	Motherboard resources
Port 0910-091F	Exclusive	Motherboard resources
Port 0A00-0A0F	Exclusive	Motherboard resources
Port 0A10-0A1F	Exclusive	Motherboard resources
Port 0B20-0B3F	Exclusive	Motherboard resources
Port 0C00-0C01	Exclusive	Motherboard resources

Port 0C14-0C14	Exclusive	Motherboard resources
Port 0C50-0C51	Exclusive	Motherboard resources
Port 0C52-0C52	Exclusive	Motherboard resources
Port 0C6C-0C6C	Exclusive	Motherboard resources
Port 0C6F-0C6F	Exclusive	Motherboard resources
Port 0CD0-0CD1	Exclusive	Motherboard resources
Port 0CD2-0CD3	Exclusive	Motherboard resources
Port 0CD4-0CD5	Exclusive	Motherboard resources
Port 0CD6-0CD7	Exclusive	Motherboard resources
Port 0CD8-0CDF	Exclusive	Motherboard resources
Port 0D00-FFFF	Shared	Pci Bus
Port E000-EFFF	Exclusive	PCI Express standard Root Port
Port F100-F10F	Exclusive	AMD SATA Controller
Port F110-F113	Exclusive	AMD SATA Controller
Port F120-F127	Exclusive	AMD SATA Controller
Port F130-F133	Exclusive	AMD SATA Controller
Port F140-F147	Exclusive	AMD SATA Controller
Port FE00-FEFE	Exclusive	Motherboard resources