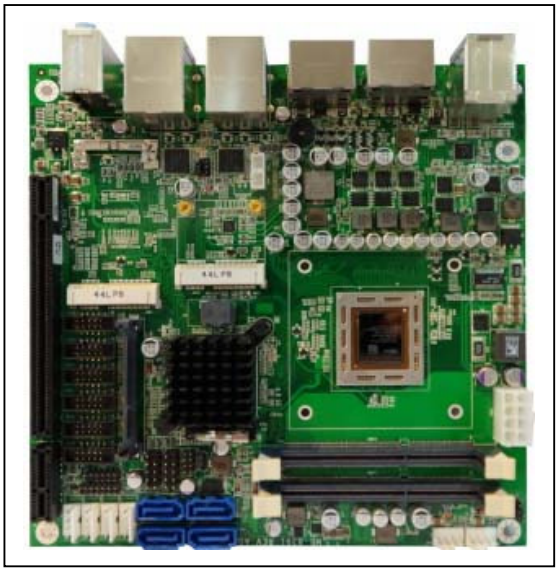
Custom Embedded Solutions

User's Manual

MB-83210

Mini-ITX with 2nd Gen AMD® R-series APU, AMD® A77E chipset, DDR3 up to 16GB, 2 x Intel® Giga LAN, Onboard 4 x DP++ ports, 4 x SATA, 10 x USB, 6 x COM, GPIO, PCI-Express X16 & X1 slots, CFast socket, 2 x Mini-PCIe sockets, DC 8V ~ 32V inputs



Ver.	Release Date	Update
1.0	2014.12	Release

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Trademark

Limitation of liability

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

For technical support send inquiries to sales@win-ent.com.

Packing list

Before using this product make sure that the following materials have been shipped.

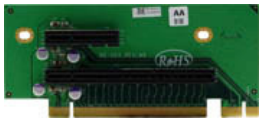
- 1 x MB-83210 board
- 1 x SATA cable, L/ 200mm (p/n: CB-SATA11-00)
- 1 x 12V/5V SATA power cable , L/ 150mm (p/n: CB-IPOW41-00)
- 1 x CPU cooling Fan (p/n: CB-F00050-00)
- 1 x CD Driver Utility

p/n: CB-SATA11-00	p/n: CB-IPOW41-00	p/n: CB-F00050-00
		

Model Name	Description
MB-8321A	Onboard AMD GX-427BB APU, GLAN,4 x DP++, COM, CFast, USB Mini-PCIe, SATA, 8V ~ 32V DC input, PCIe X16 slot
MB-8321B	Onboard AMD GX-225FB APU, GLAN,4 x DP++, COM, CFast, USB Mini-PCIe, SATA, 8V ~ 32V DC input, PCIe X16 slot
MB-8321C	Onboard AMD GX-427BB APU, GLAN,4 x DP++, COM, CFast, USB Mini-PCIe, SATA, 8V ~ 32V DC input, PCIe X16 & X1 slots
MB-8321D	Onboard AMD GX-225FB APU, GLAN,4 x DP++, COM, CFast, USB Mini-PCIe, SATA, 8V ~ 32V DC input, PCIe X16 & X1 slots

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

Optional Accessory :

Photo	Model Name	
	P/N:	IP-S01
	PCIe riser card support 1 x PCIe X16 & 1 x PCI slots Note: Work with MB-8321B Series only	
	P/N:	IP-S02
	PCIe riser card support 2 x PCI slots Note: Work with MB-8321B Series only	
	P/N:	IP-S03
	PCIe riser card support 1 x PCIe X16 & 1 x PCIe X1 slots Note: Work with MB-8321B Series only	
	P/N:	CB-ICOM38-00
	Dual D-Sub 9-pin COM port card, L/ 250mm, with bracket	
	P/N:	CB-IUSB07-AA
	Dual USB cable, L/ 250mm, with bracket	

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 yourself. Contact a qualified service technician or your retailer.

Before installing the motherboard and adding devices on it, carefully read all the manuals that came with the package. 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.

Contents

Chapter 1. Generation Information

1.1 Introduction

MB-83210 is a Mini-ITX motherboard support 2nd Gen. AMD® Embedded R-series APU with AMD Radeon™ HD 9000 series Graphics. Integrated graphics include 4 x DP port, Two DDR3 SO-DIMM supports a maximum of 16GB DDR3 2133 of system memory.

On the I/O ports, the MB-83210 provides plenty of connectivity with 2 x Intel® i211AT GbE LAN controller, 6 x RS232, 4 x USB3.0 + 6 x USB2.0, HD Audio, 4 x SATA, 8-bit GPIO. The MB-83210 accepts a wide range 8V ~ 32V DC input suitable for a variety of applications in digital signage, POS, kiosks.

Besides standard PCIe X16 and Mini-PCIe socket, WIN's Mini-ITX delivers flexible PCIe X1 expansion slot allowing customers to install WIN's riser card for an additional 1 ~ 3 PCIe + PCI slots for various application.

WIN also have our own firmware team that could provide customize BIOS service, such as security boot function for gaming application……..

About WIN Enterprises, Inc.

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, please contact us at:
Email: sales@win-ent.com TEL: +1 (978) 688-2000

1.2 Specifications

System	
From Factor	Mini-ITX motherboard
CPU	2nd Generation AMD Embedded R-Series APU, BGA package, support RX-427BB,Q/C,2.7GHz,35W RX-225FB,D/C,2.2GHz,17W
Chipset	AMD® A77E Controller Hub
Memory	Two 204-pin DDR3 SODIMM sockets, Supports up to DDR3 2133MHz
BIOS	AMI
SSD	1 x CFast socket
Watchdog timer	255 levels, 1 ~ 255 sec
Expansion	1 x PCI-Express X16 slot 1 x PCI-Express X1 slot 1 x Full-size Mini-PCIe socket with USB & PCIe signal 1 x Half-size Mini-PCIe socket with USB & SATA signal
Board Size	170mm x 170mm
Operating Temp.	0℃~60℃ (32℉~140℉)
Storage Temp.	.-20℃~80℃ (-4℉~176℉)
Operating Hum.	10%~90% (non-condensing)

Display	
Chipset	AMD® A77E Controller Hub integrated
Display interface	4 x DP++ Port

I/O	
Series Port	Internal : 6 x RS232
SATA	4 x SATA 6Gb/s
USB	External connector : 4 x USB3.0 + 2 x USB2.0 Internal pin-header : 4 x USB2.0
Ethernet	2 x Intel® I211AT PCIe GLAN controller
Audio	External connector : Line-in/out , Mic-in . Without Power Amplify
Digital I/O	8-bit GPIO interface .
TPM	Onboard TPM module (optional)

Other Features	1 x 4-pin cooling Fan header , 1 x 4-pin system Fan header 1 x Front Panel pin- header for power on/off, reset, HDD/power LED indicator. 2 x 4-pin 12V/5V DC output for HDD devices 1 x PS/2 Keyboard/mouse

Power	
Power in	DC 8V ~ 32V input (AT/ATX model by jumper select)
Connector	1 x internal P4 4-pin power connector (Molex 4-pin)

Certification	
Certifications	CE / FCC Class B

Operating system support	
Windows	Windows 7 / Embedded standard 7 , Windows 8
Linux	Supported

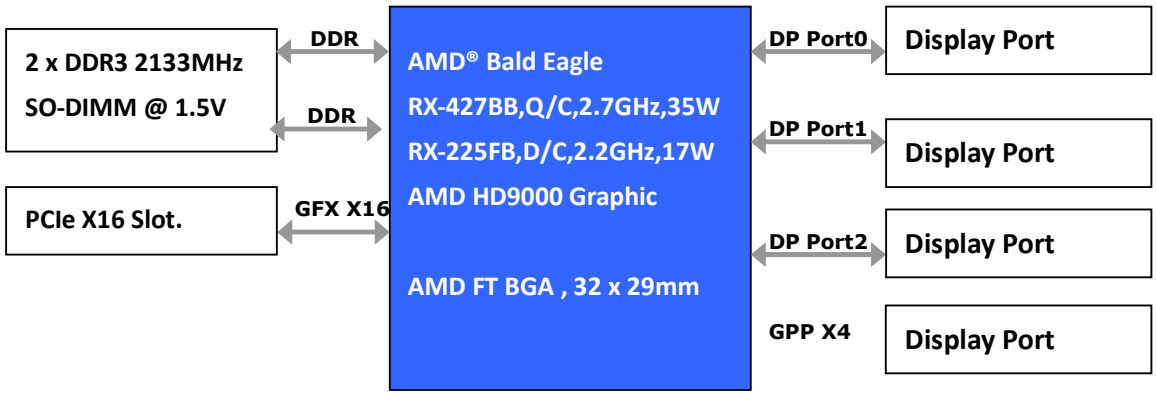
Packing	
CPU Fan	1 x CPU cooling Fan
Cable	1 x SATA cable , 1 x SATA power cable

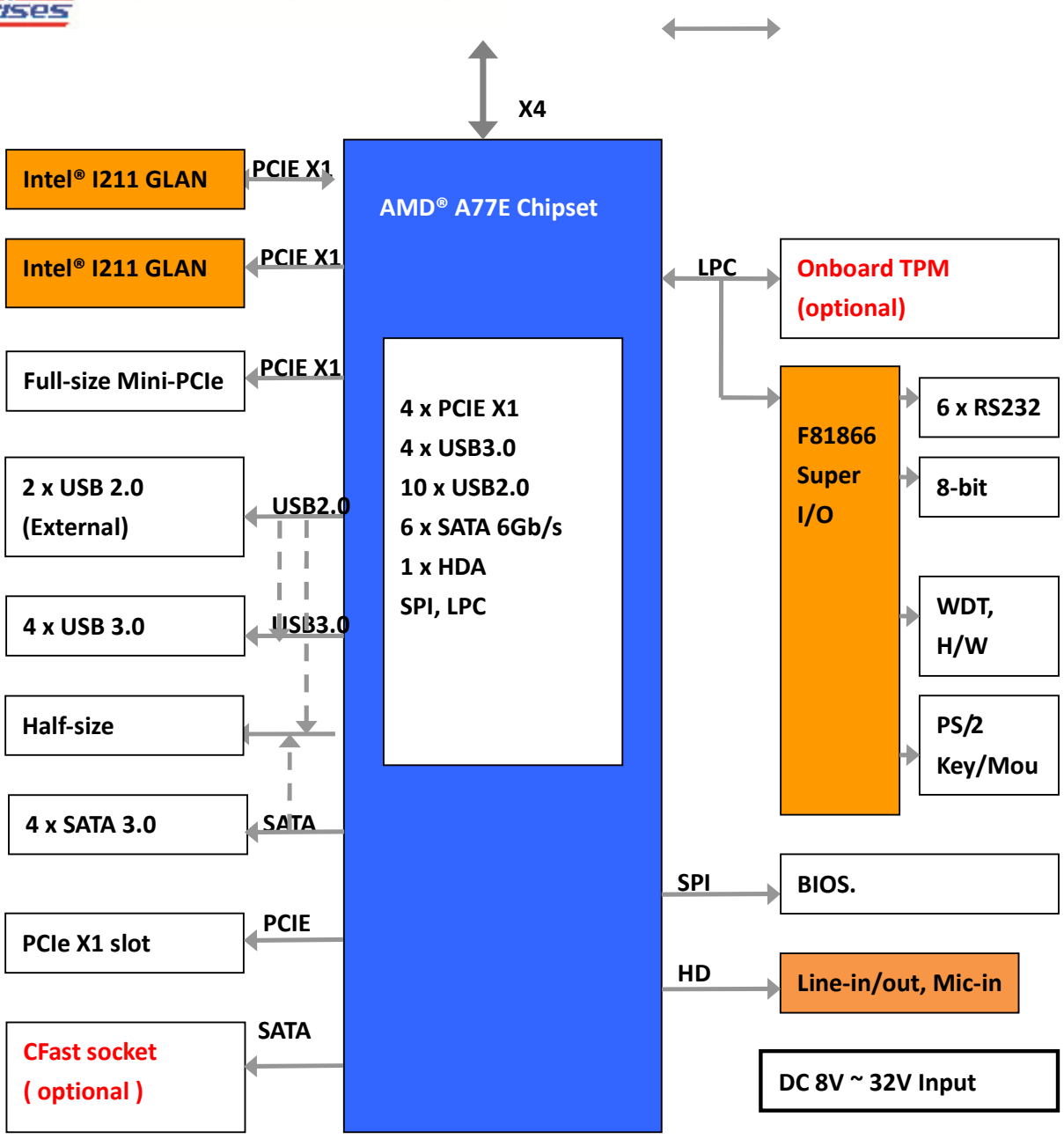
Optional	
Cable	Dual COM ports cable , Dual USB2.0 cable , SATA cable, SATA power cable

Ordering Code	
MB-8321A	Onboard AMD RX-427BB APU with 4 x DP ports, 2 x GLAN 6 x COM, DC 12V input, PCIe X16 slot
MB-8321B	Onboard AMD RX-225FB APU with 4 x DP ports, 2 x GLAN 6 x COM, DC 12V input, PCIe X16 slot

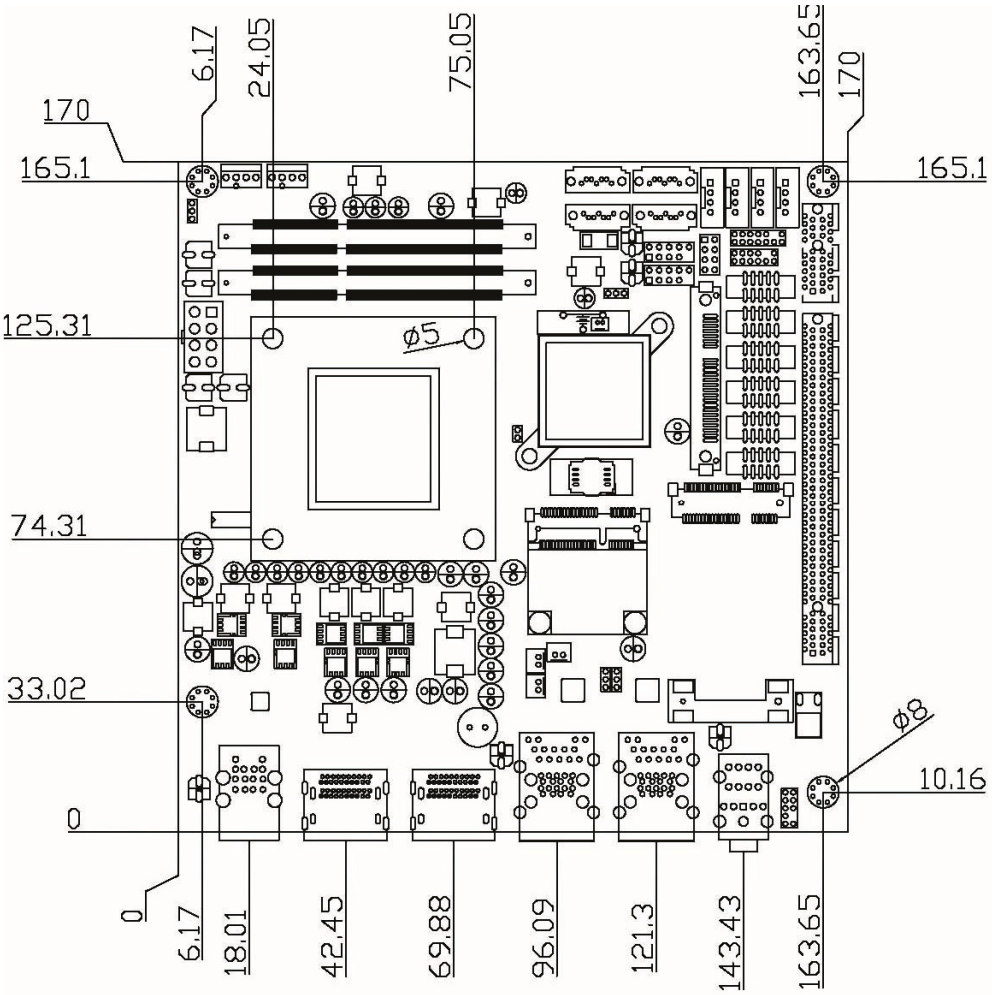
Note : All specifications and photos are subject to change without notice.

1.3 Block Diagram

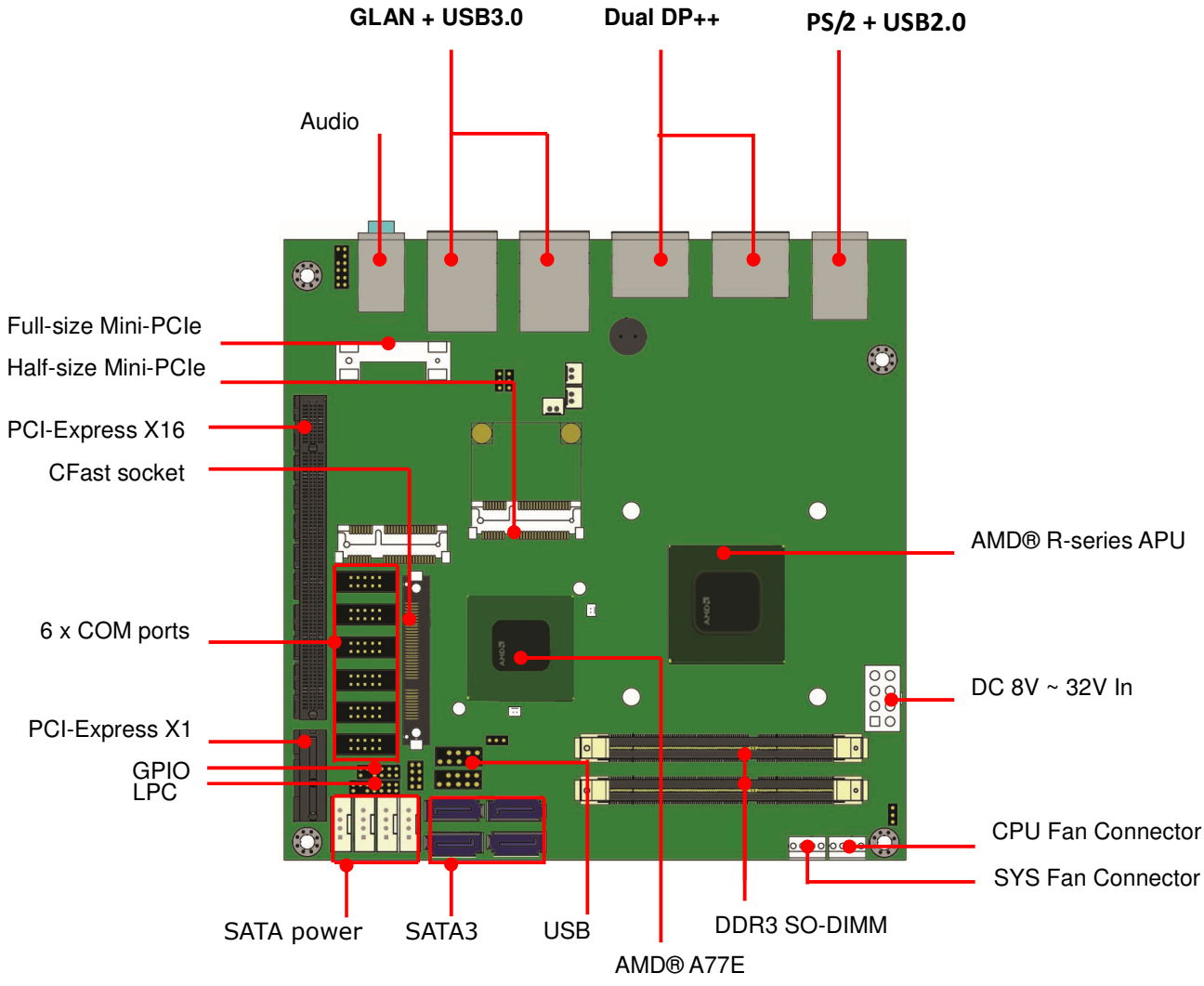


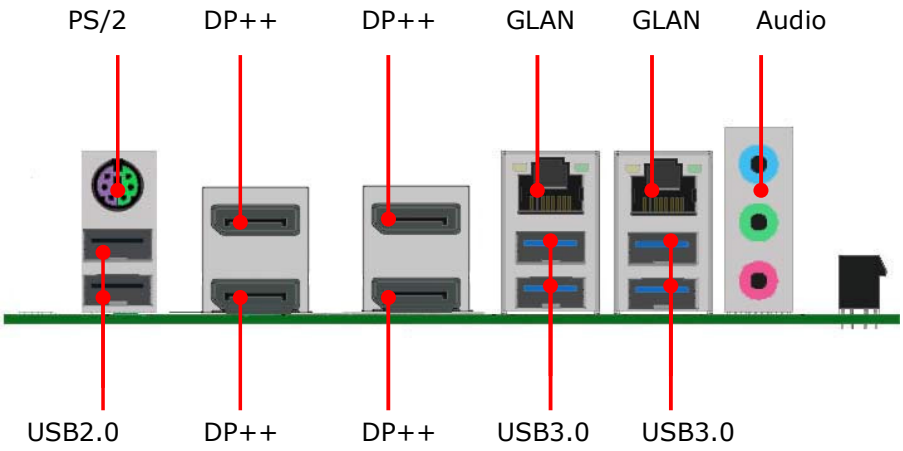

X4
Intel® I211 GLAN
PCIE X1
Intel® I211 GLAN
PCIE X1
Full-size Mini-PCIe
PCIE X1
2 x USB 2.0
(External)
USB2.0
4 x USB 3.0
USB3.0
Half-size
4 x SATA 3.0
SATA
PCIe X1 slot
PCIE
CFast socket
(optional)
SATA
AMD® A77E Chipset
4 x PCIE X1
4 x USB3.0
10 x USB2.0
6 x SATA 6Gb/s
1 x HDA
SPI, LPC
LPC
Onboard TPM
(optional)
F81866
Super
I/O
6 x RS232
8-bit
WDT,
H/W
PS/2
Key/Mou
SPI
BIOS.
HD
Line-in/out, Mic-in
DC 8V ~ 32V Input

1.4 Board Layout Dimensions



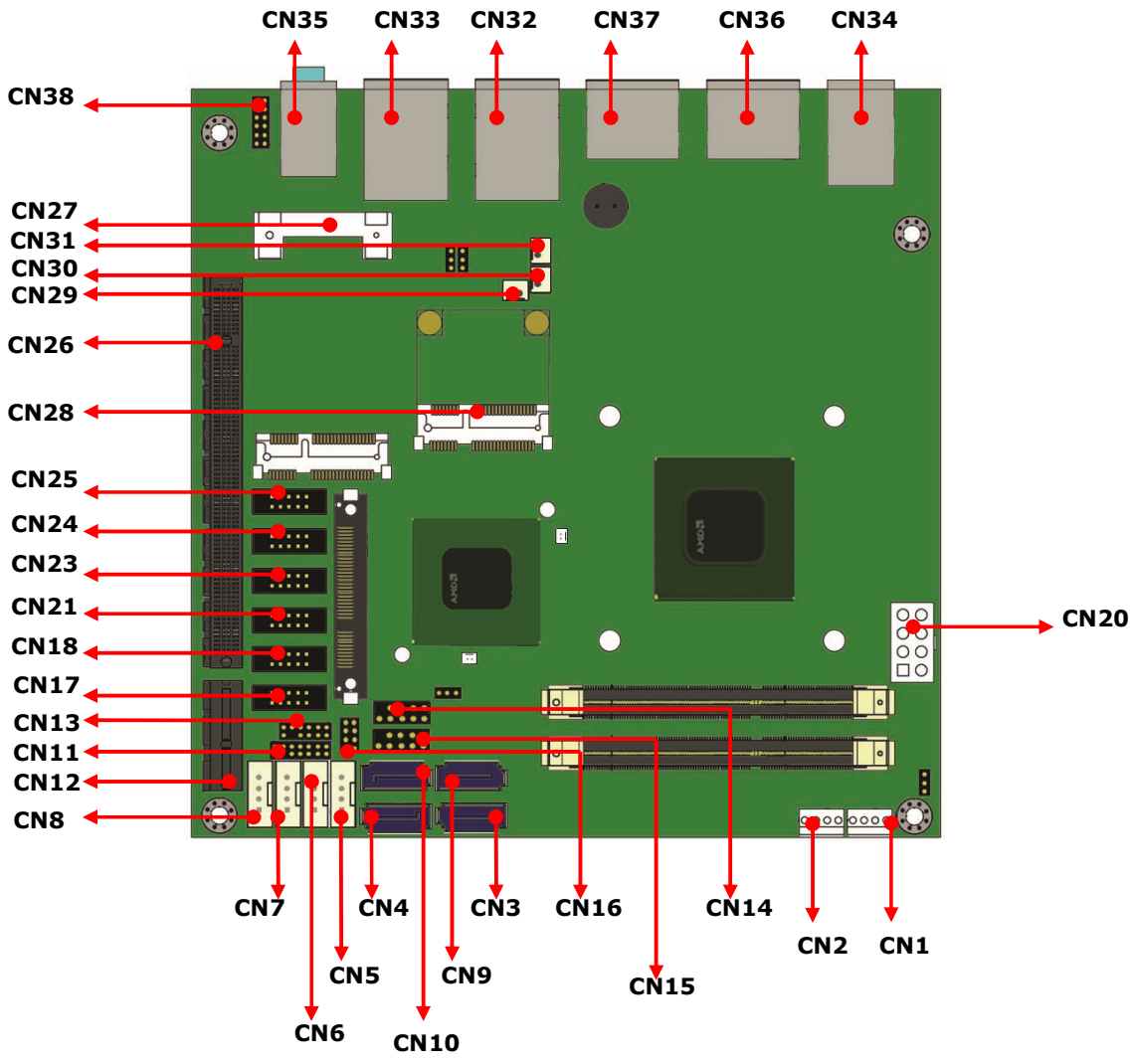
1.5 IO ports


GLAN + USB3.0
Dual DP++
PS/2 + USB2.0
Audio
Full-size Mini-PCIe
Half-size Mini-PCIe
PCI-Express X16
CFast socket
6 x COM ports
PCI-Express X1
GPIO
LPC
AMD® R-series APU
DC 8V ~ 32V In
CPU Fan Connector
SYS Fan Connector
SATA power
SATA3
USB
AMD® A77E
DDR3 SO-DIMM


PS/2
DP++
DP++
GLAN
GLAN
Audio
USB2.0
DP++
DP++
USB3.0
USB3.0

2 Hardware Installation

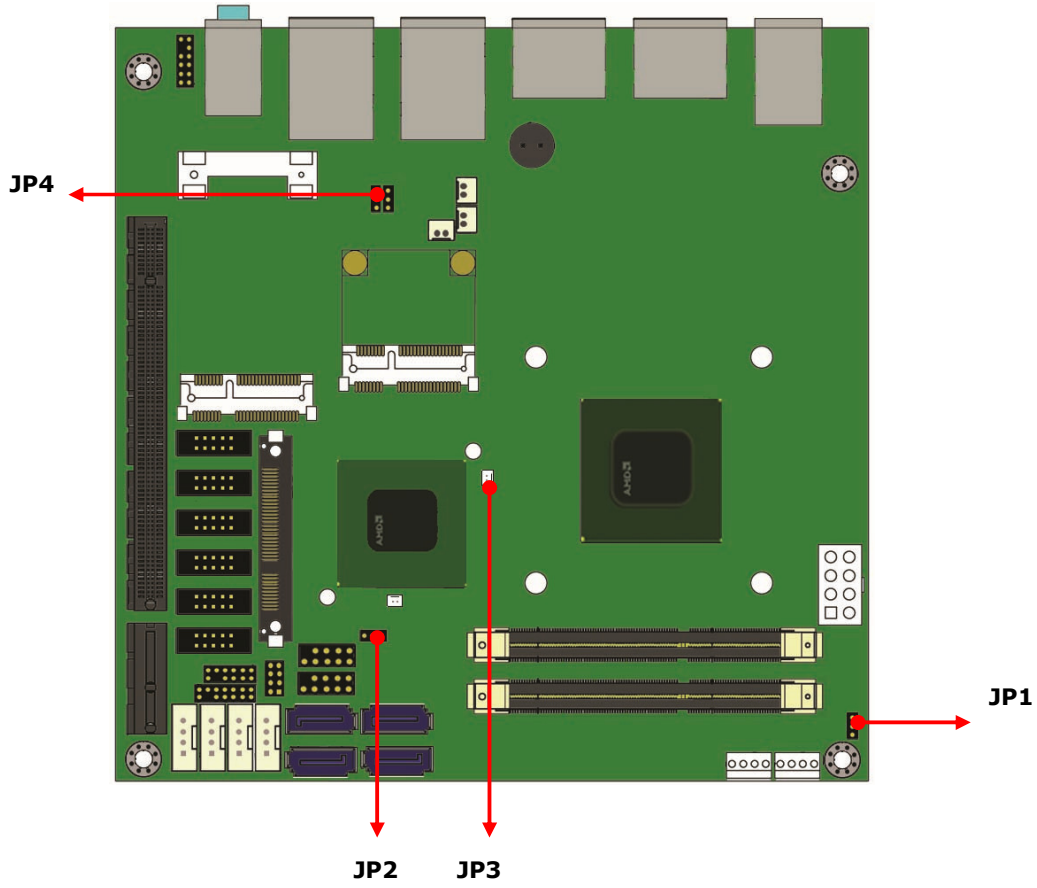
2.1 The location of onboard connectors



Label	Function
CN1	CPU Fan Connector
CN2	System Fan Connector
CN3	SATA port 2
CN4	SATA port 1
CN5	SATA power Connector 1
CN6	SATA power Connector 2
CN7	SATA power Connector 3
CN8	SATA power Connector 4
CN9	SATA port 4
CN10	SATA port 3
CN11	LPC pin header
CN12	PCI-Express X1 slot (Optional)
CN13	GPIO pin header
CN14	USB 2.0 port 4/5
CN15	UBS 2.0 port 2/3
CN16	Front Panel pin header
CN17	COM 6 Connector
CN18	COM 5 Connector
CN19	Battery Connector (Reserve)

Label	Function
CN20	DC power input
CN21	COM 4 Connector
CN22	CFast socket
CN23	COM 3 Connector
CN24	COM 2 Connector
CN25	COM 1 Connector
CN26	PCI-Express X16 slot
CN27	Full-size Mini-PCIe socket
CN28	Half-size Mini-PCIe socket
CN29	Debug Port (For testing only)
CN30	LED indictor of Half-size Mini-PCIe
CN31	LED indictor of Full-size Mini-PCIe
CN32	LAN1 + Dual USB 3.0 connector
CN33	LAN2 + Dual USB 3.0 connector
CN34	PS2 KB/MS + Dual USB2.0 connector
CN35	Audio Connector
CN36	Display Port 2/3
CN37	Display Port 0/1
CN38	Internal Audio pin header

2.2 The location of onboard jumpers



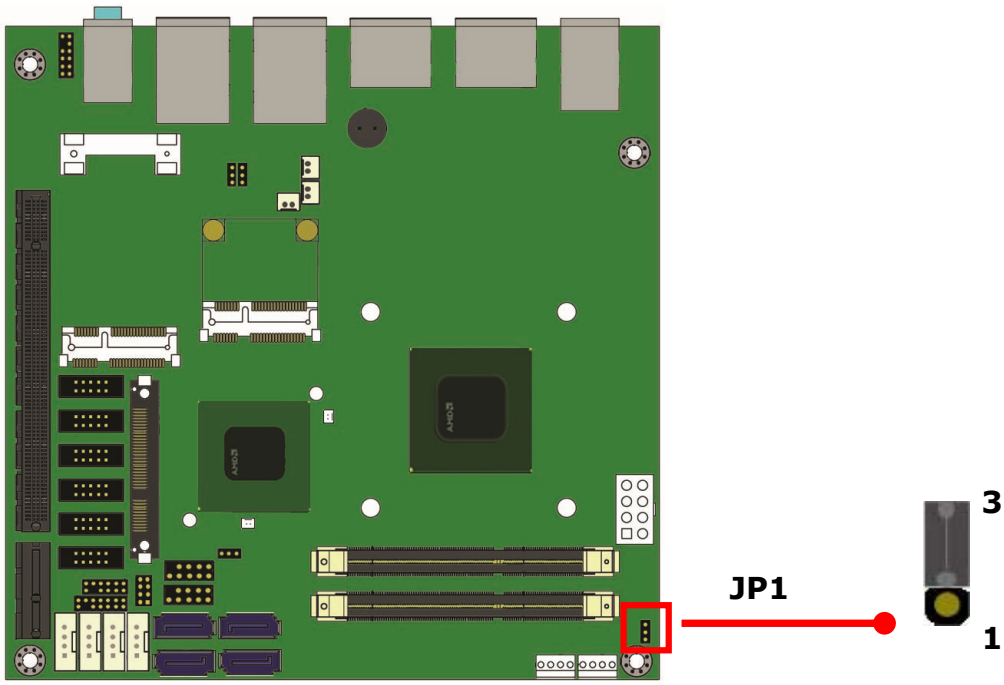
Label	Function
JP1	DDR3 voltage selection
JP2	CMOS Clear jumper
JP3	BIOS Write Protect (Reserve)
JP4	Power AT/ATX mode selection

2.3 The function list of onboard jumper settings

2.3.1 JP1 DDR3 voltage select

JP4	
Closed Pin	Result
1-2	+1.5V
2-3 *	+1.35V

* Default setting

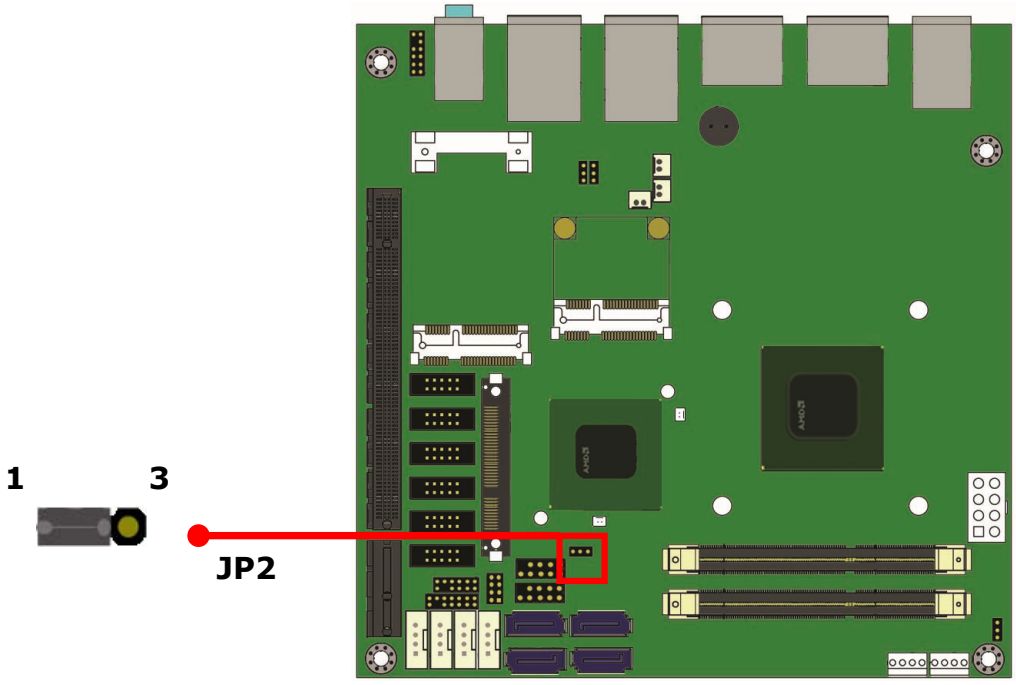


2.3.2 JP2 for Clear CMOS

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

JP2	
Closed Pin	Result
1-2 *	Normal
2-3	Clear CMOS

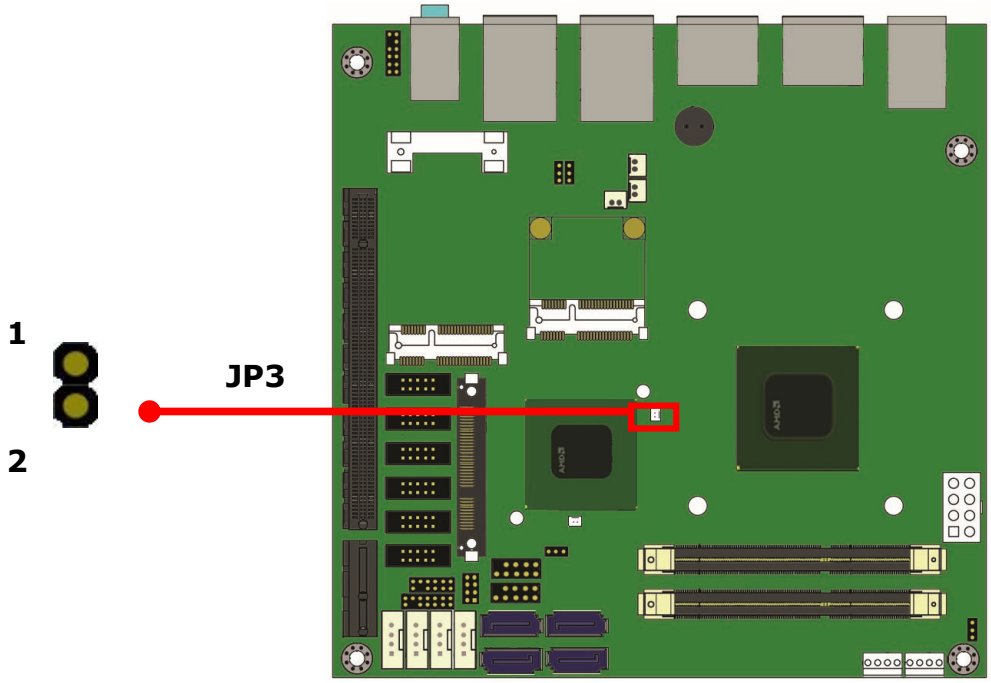
* Default setting



2.3.3 JP3 for BIOS write-protect (Reserve)

JP3	
Closed Pin	Result
1-2 Short	BIOS write protect
1-2 Open*	Normal

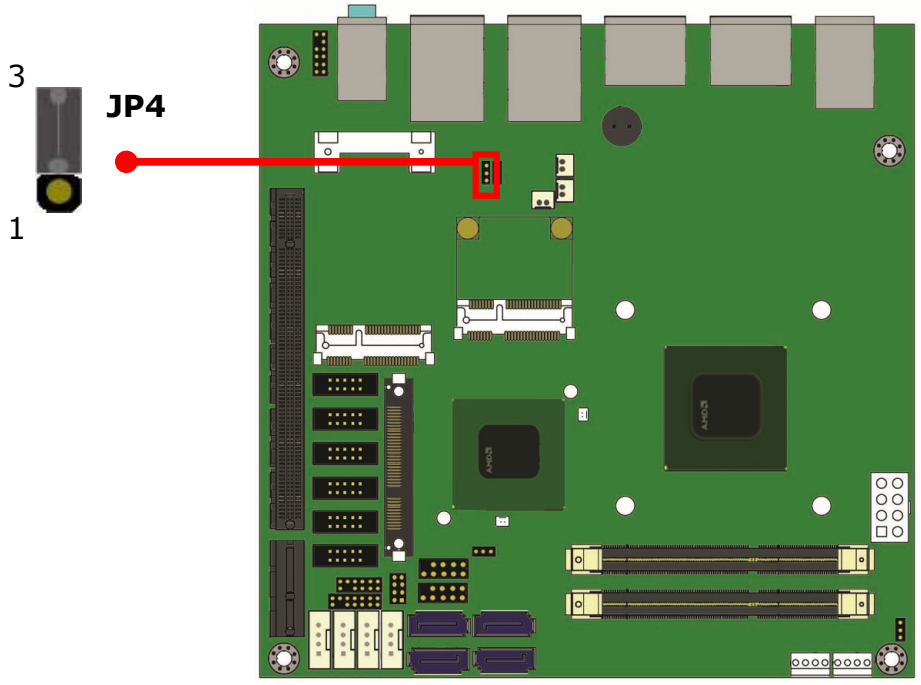
* Default setting



2.3.4 JP4 for AT/ATX power mode

JP4	
Closed Pin	Result
1-2	AT mode
2-3 *	ATX mode

* Default setting



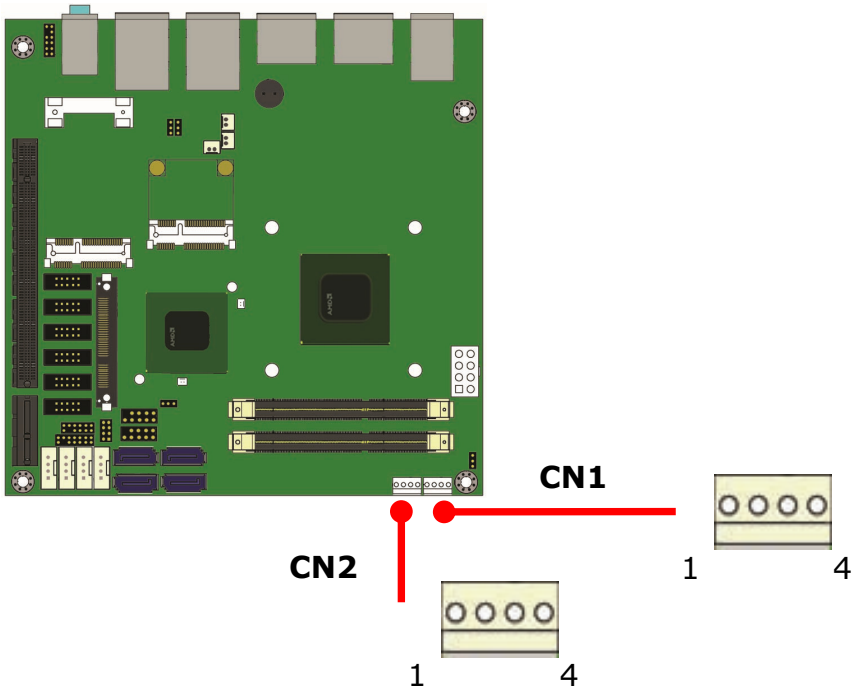
2.4 Function list of onboard connectors

2.4.1 CN1 for CPU Fan connector

CN1 : 1 x 4 wafer			
Pin	**Signal**	**Pin**	**Signal**
1	GND	2	+12V
3	Sense	4	Control

2.4.2 CN2 for System Fan connector

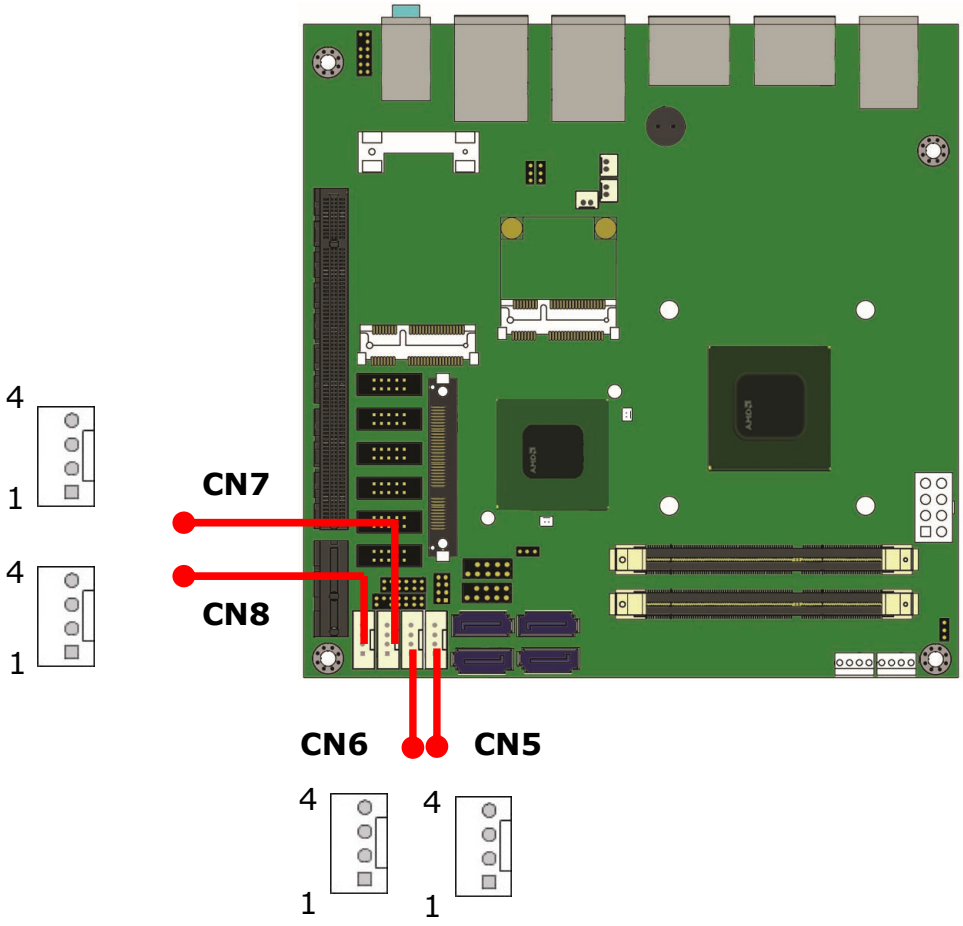
CN2: 1 x 4 wafer			
Pin	**Signal**	**Pin**	**Signal**
1	GND	2	+12V
3	Sense	4	Control



2.4.3 CN5 , CN6 , CN7 , CN8 for 4-pin HDD power

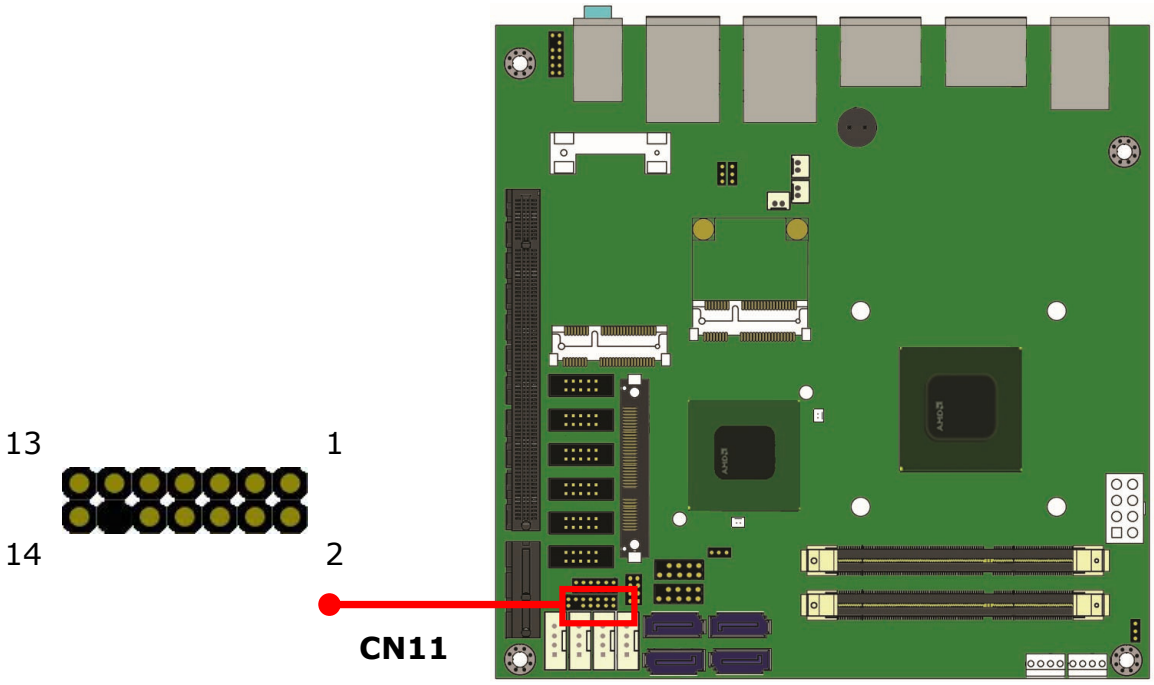
CN5~8 : 4-pin wafer for SATA power connector			
Pin	**Signal**	**Pin**	**Signal**
1	+12V	2	GND
3	GND	4	+5V

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



2.4.4 CN11 for Low Pin Count pin-header

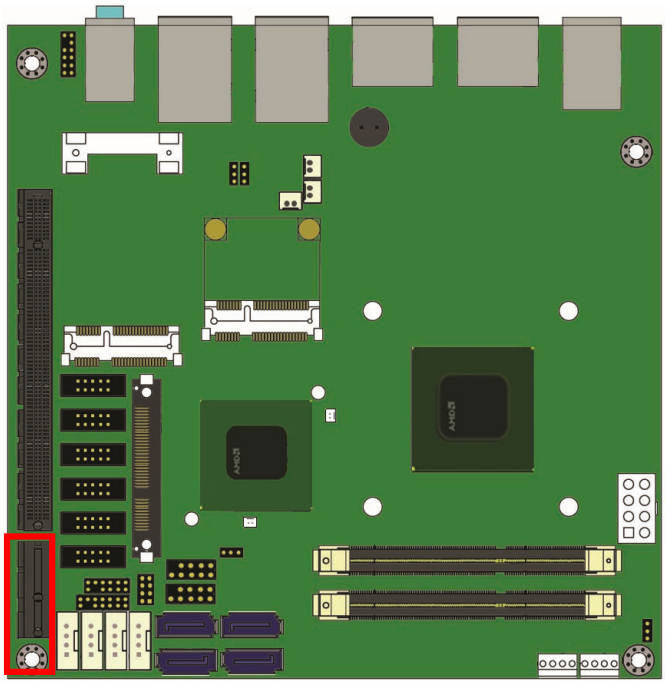
CN11 : 2 x 7 header , pitch 2.0 mm			
Pin	**Signal**	**Pin**	**Signal**
1	+3.3V	2	LAD0
3	LAD1	4	LAD2
5	LAD3	6	LFRAME
7	Reset	8	+5V
9	Clock	10	LPME
11	GND		Key
13	SERIRQ	14	LDRQ



2.4.5 CN12 for PCI-Express X1 slot

Note: This slot could work with WIN's IP-S0X series riser card to get PCIe X16 & PCI expansion slots And it's come with MB-8321B series only.

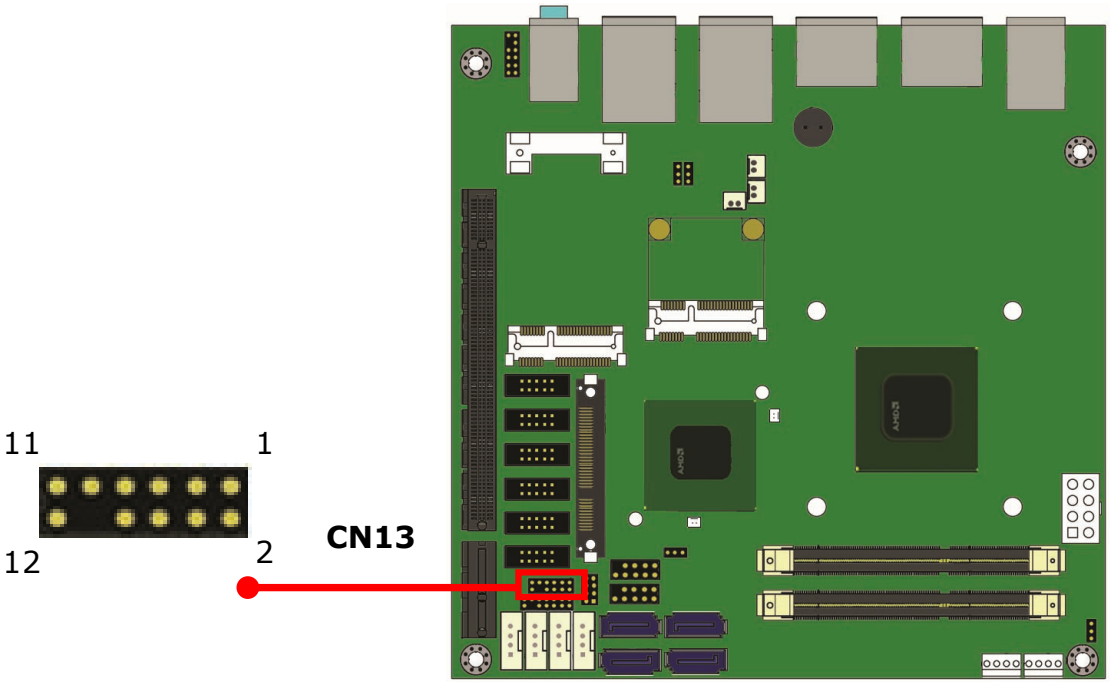
Pin	Side B	Side A
1	+12V	PRSNT1
2	+12V	+12V
3	+12V	+12V
4	GND	GND
5	SMCLK	TCK
6	SMDAT	TDI
7	GND	TOD
8	+3.3V	TMS
9	RST	+3.3V
10	+3.3V AUX	+3.3V
11	WAKE	PWRGD
	Key Notch	
12	Reserved	GND
13	GND	REFCLK+
14	HSOp	REFCLK-
15	HSOn	GND
16	GND	HSIp
17	PRSNT2	HSIn
18	GND	GND



Example for Configuration of with IP-S01 riser card

2.4.6 CN13 for 8-bit GPIO

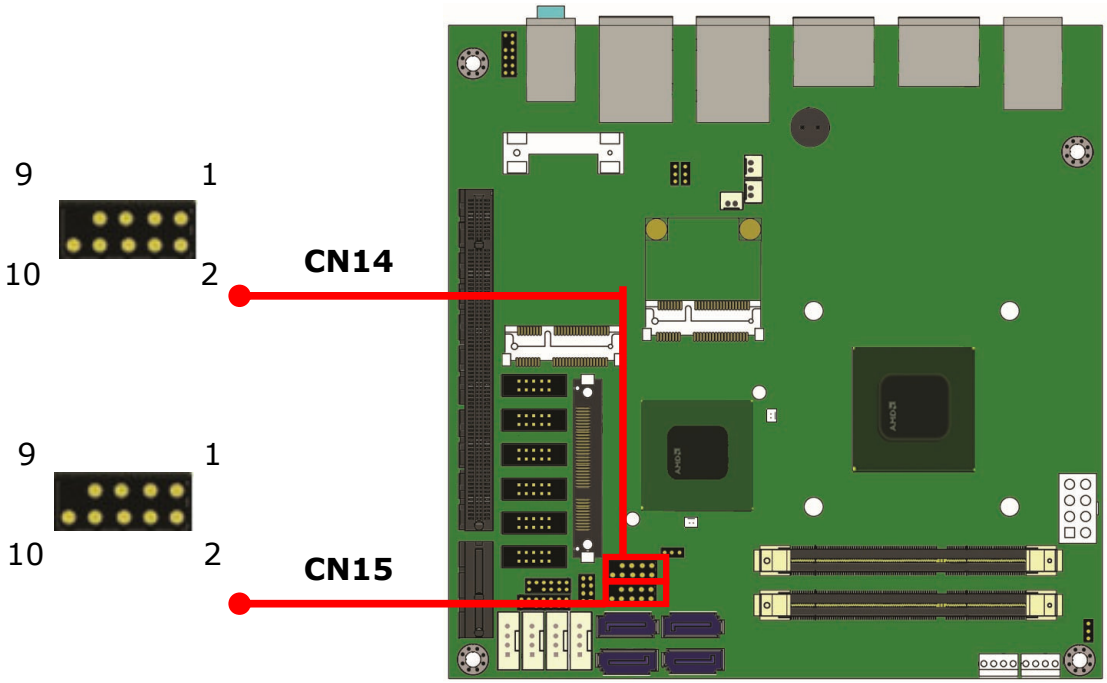
CN13 : 2 x 6 header , pitch 2.0 mm			
Pin	**Signal**	**Pin**	**Signal**
1	+3.3V	2	GPIO0
3	GPIO1	4	GPIO2
5	GPIO3	6	GPIO0
7	GPIO1	8	GPIO2
9	GPIO3	10	Key
11	+5V	12	GND



2.4.7 CN14 & CN15 for USB

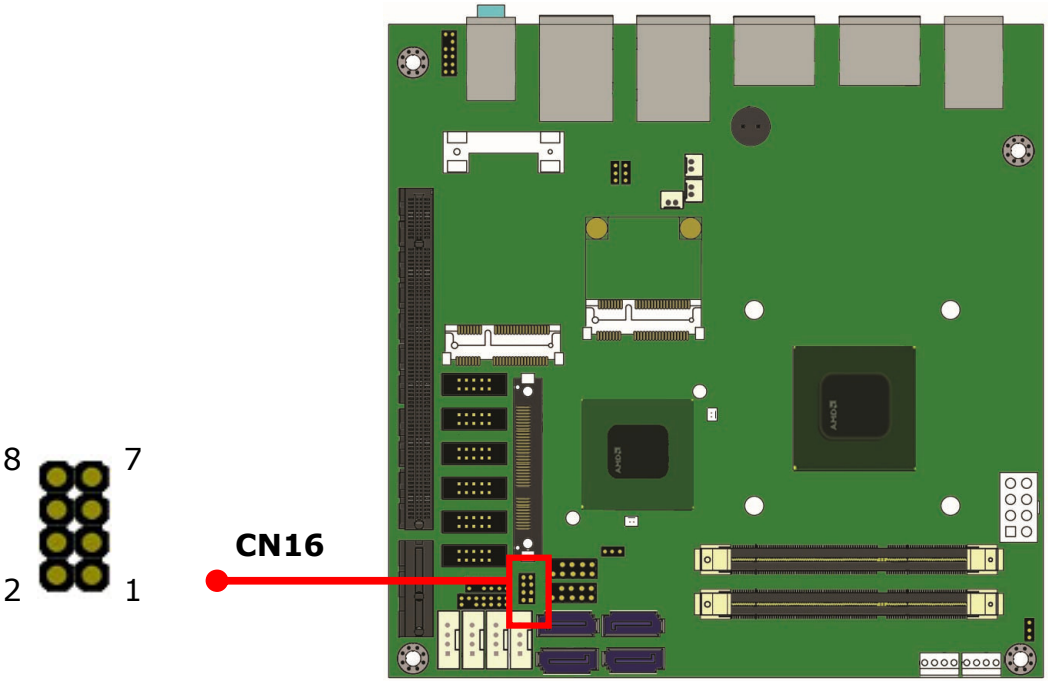
CN14: 2 x 5 header , pitch 2.54 mm			
Pin	**Signal**	**Pin**	**Signal**
1	+5V	2	+5V
3	USB_ data-	4	USB_data-
5	USB_ data+	6	USB_data+
7	GND	8	GND
9	Key	10	GND

CN15: 2 x 5 header , pitch 2.54 mm			
Pin	**Signal**	**Pin**	**Signal**
1	+5V	2	+5V
3	USB_ data-	4	USB_data-
5	USB_ data+	6	USB_data+
7	GND	8	GND
9	Key	10	GND



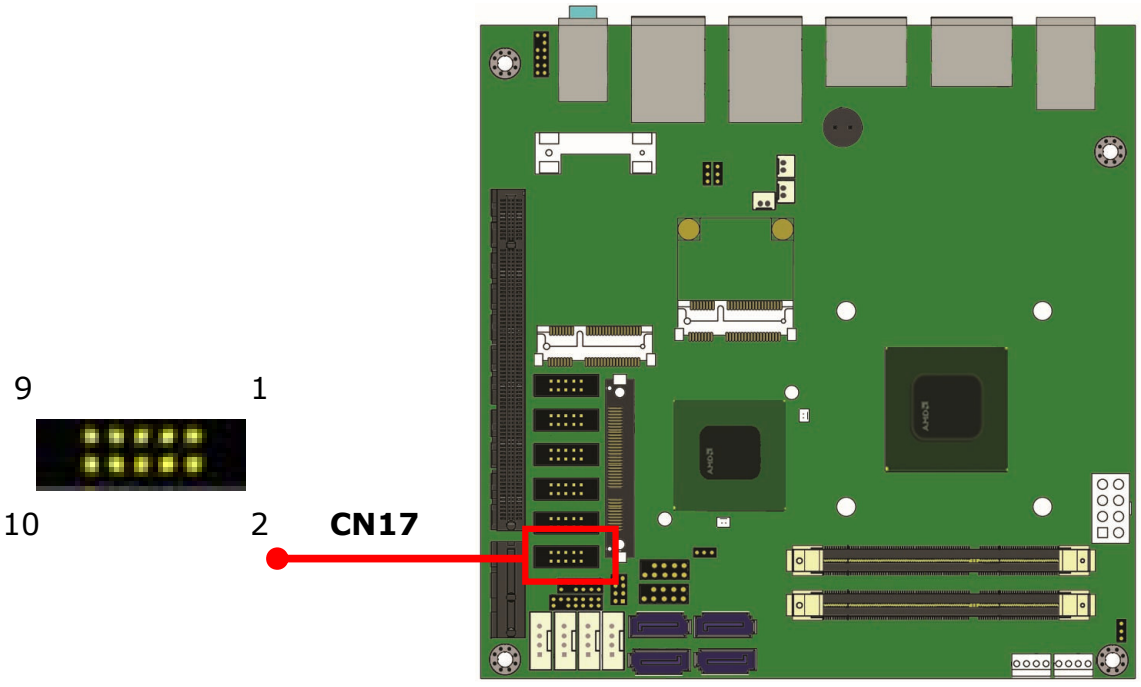
2.4.8 CN16 for front Panel pin header

CN16: 2 x 4 header , pitch 2.00 mm			
Pin	**Signal**	**Pin**	**Signal**
1	Power_LED+	2	GND
3	HDD_LED+	4	HDD_LED-
5	GND	6	Power on/off
7	RESET	8	GND



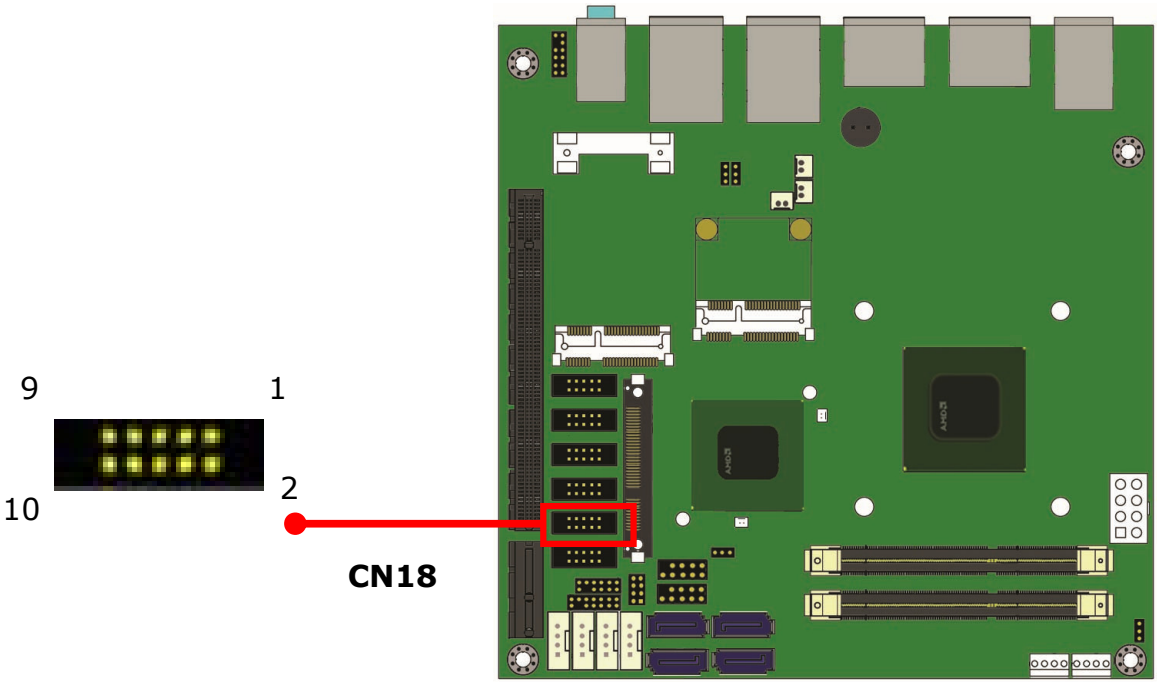
2.4.9 CN17 for COM6 box header

CN17: 2 x 5 header, pitch 2.00 mm			
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, Send Data	6	CTS, Clear to se
7	DTR, Data Terminal Ready	8	RI, Ring indicator
9	GND	10	N/C



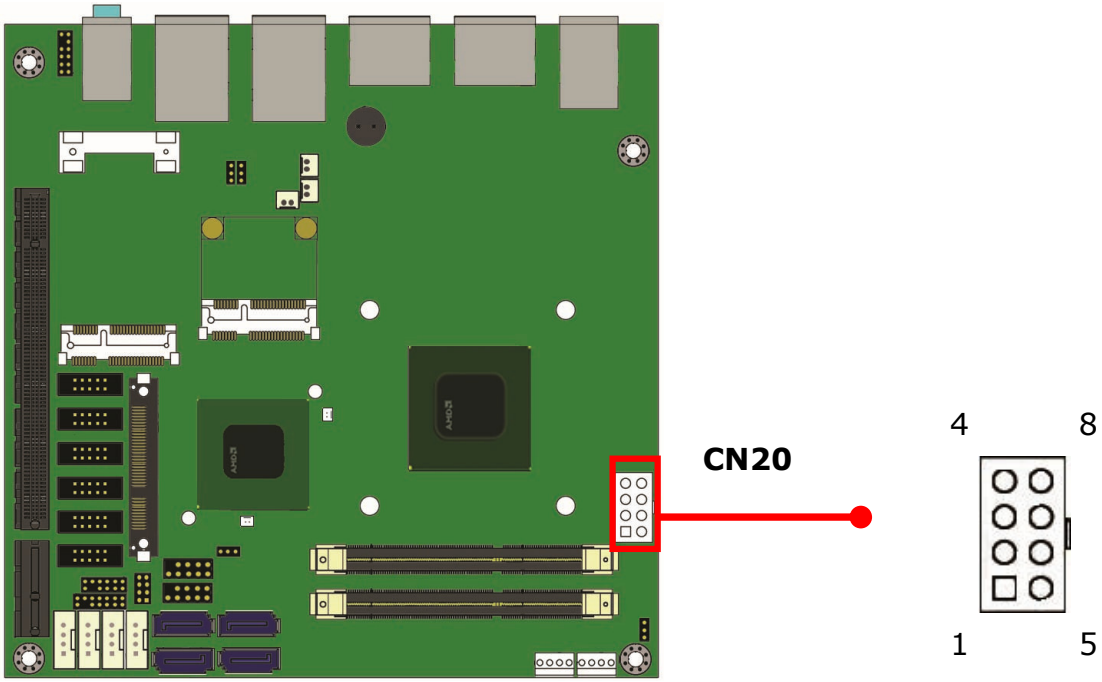
2.4.10 CN18 for COM5 box header

CN18 : 2 x 5 header, pitch 2.00 mm			
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, Send Data	6	CTS, Clear to se
7	DTR, Data Terminal Ready	8	RI, Ring indicator
9	GND	10	N/C



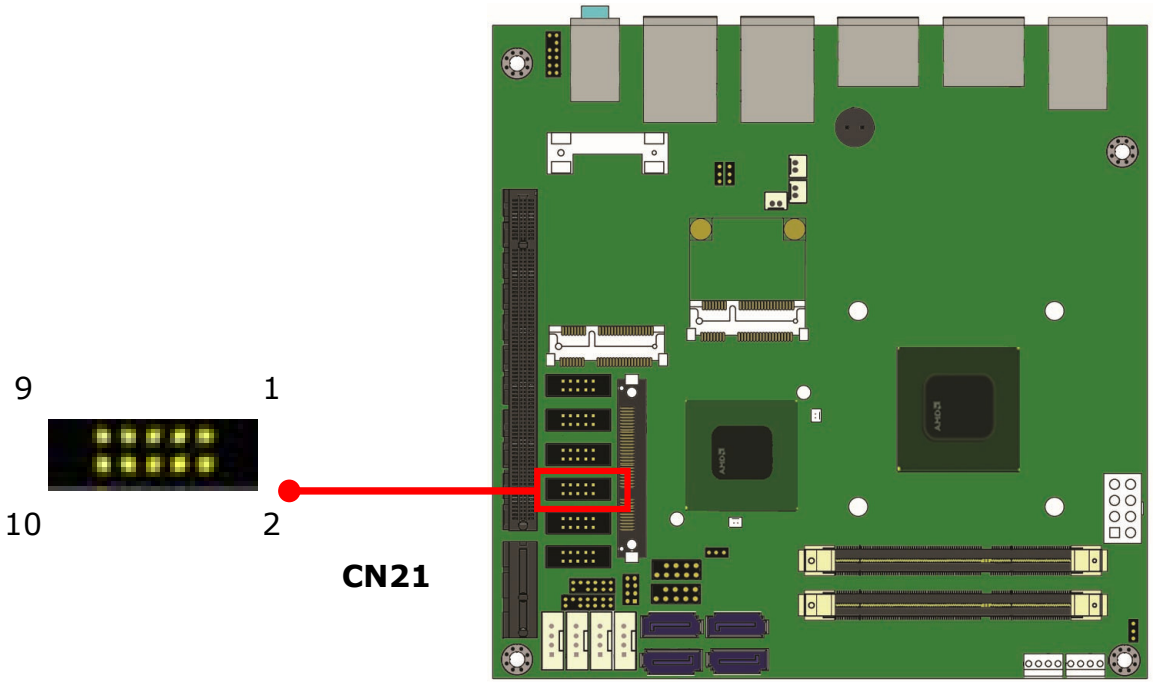
2.4.11 CN20 for internal 8-pin power input

CN20: ATX 4 x 2			
Pin	**Signal**	**Pin**	**Signal**
1	GND	2	GND
3	GND	4	GND
5	DC Power Input	6	DC Power Input
7	DC Power Input	8	DC Power Input



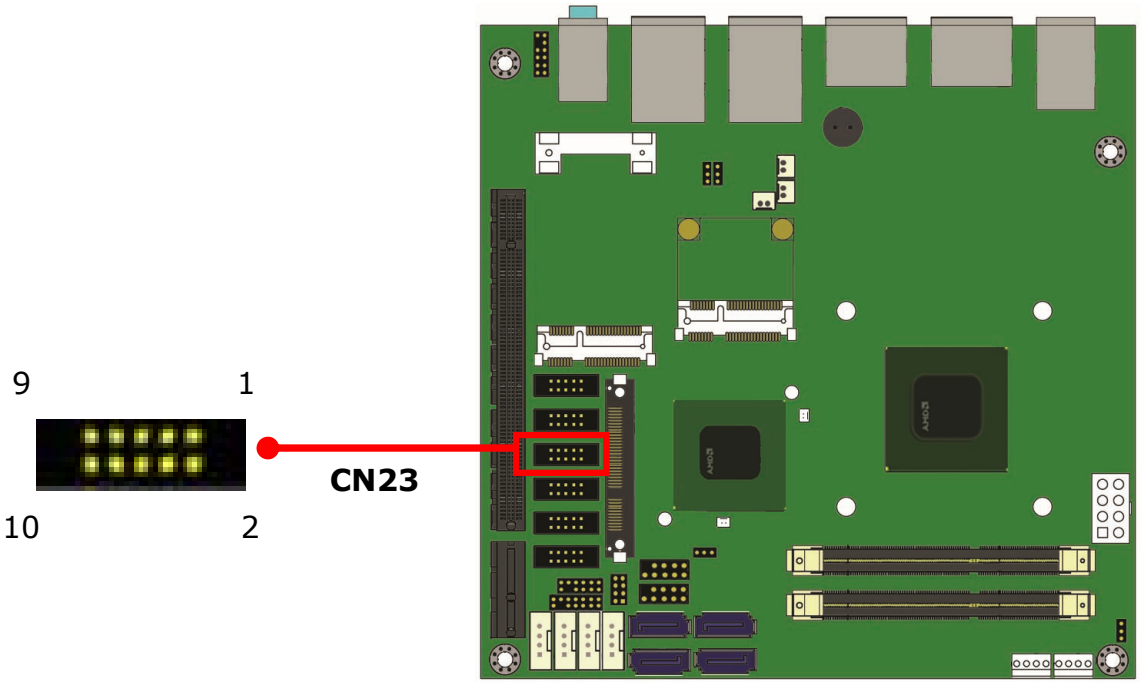
2.4.12 CN21 for COM4 box header

CN21 : 2 x 5 header, pitch 2.00 mm			
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, Send Data	6	CTS, Clear to se
7	DTR, Data Terminal Ready	8	RI, Ring indicator
9	GND	10	N/C



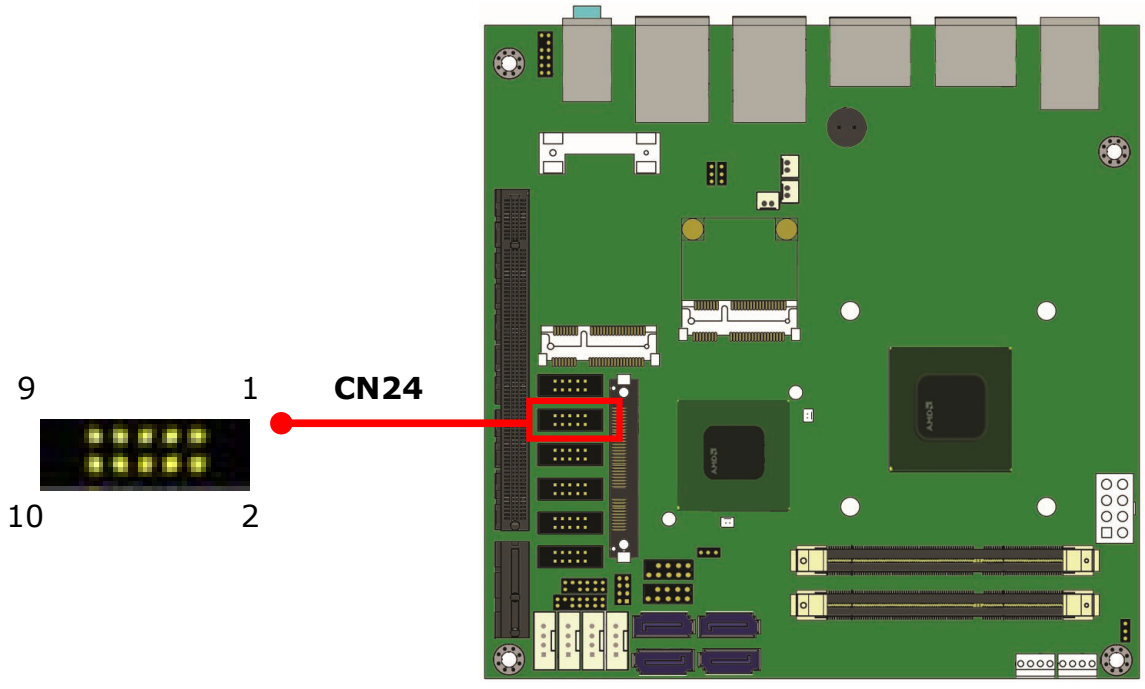
2.4.13 CN23 for COM3 box header

CN23 : 2 x 5 header, pitch 2.00 mm			
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, Send Data	6	CTS, Clear to se
7	DTR, Data Terminal Ready	8	RI, Ring indicator
9	GND	10	N/C



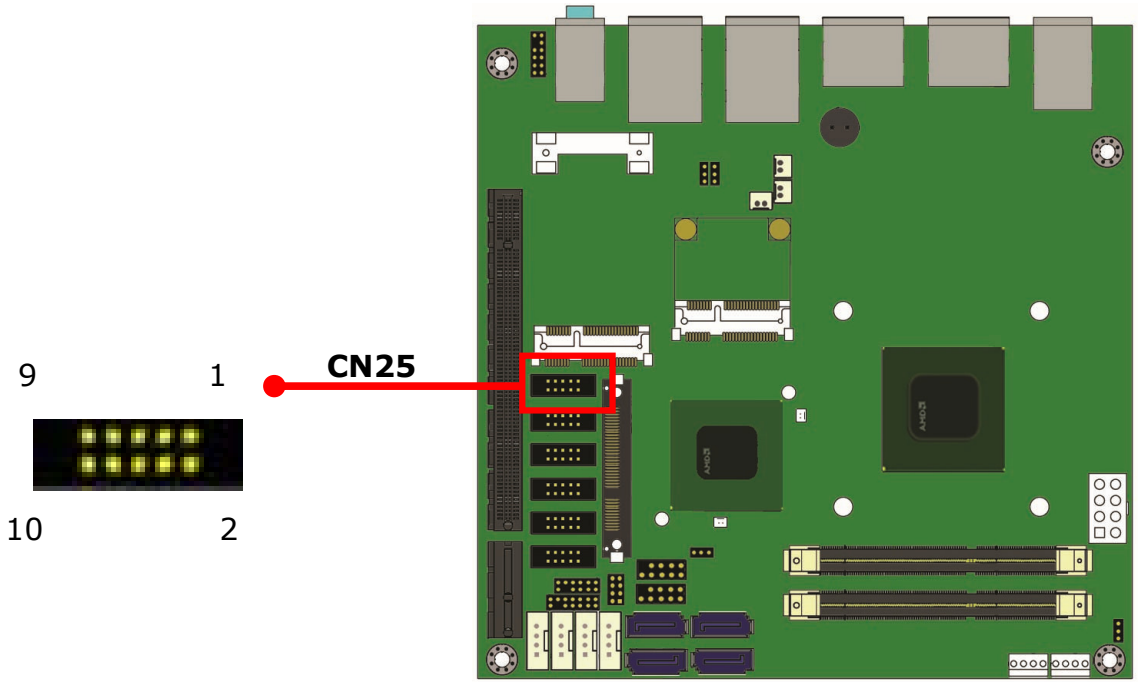
2.4.14 CN24 for COM2 box header

CN24 : 2 x 5 header, pitch 2.00 mm			
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, Send Data	6	CTS, Clear to se
7	DTR, Data Terminal Ready	8	RI, Ring indicator
9	GND	10	N/C



2.4.15 CN25 for COM1 box header

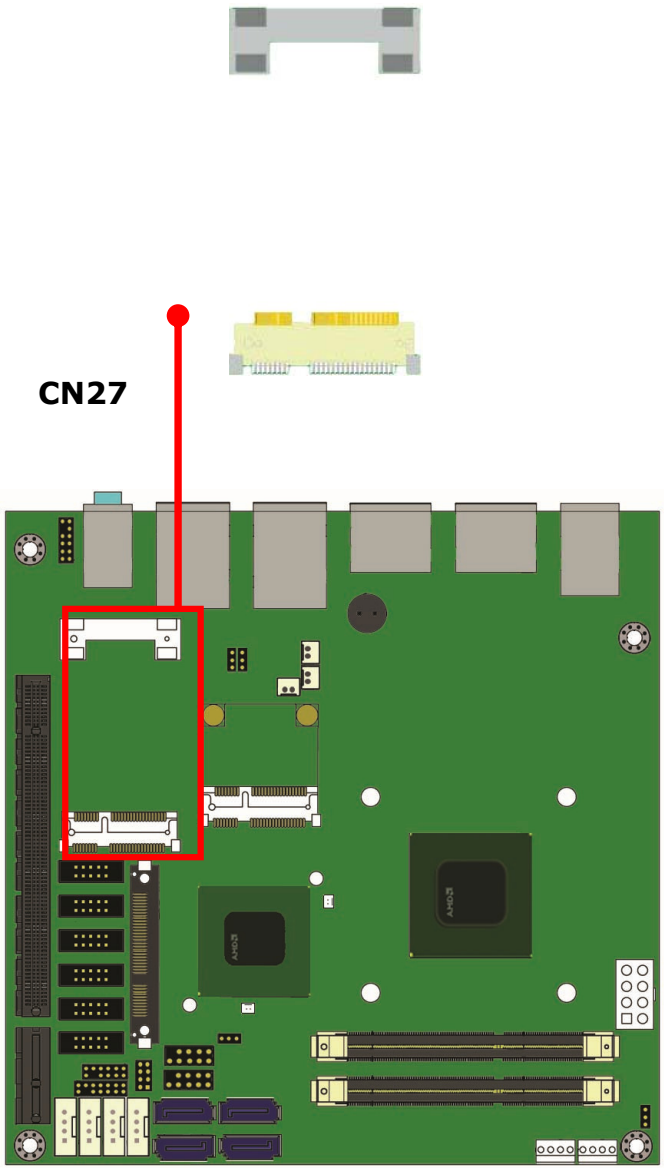
CN25 : 2 x 5 header, pitch 2.00 mm			
Pin	**Signal**	**Pin**	**Signal**
1	DCD, Data carrier detect	2	DSR, Data set ready
3	RXD, Receive Data	4	RTS, Request to send
5	TXD, Send Data	6	CTS, Clear to se
7	DTR, Data Terminal Ready	8	RI, Ring indicator
9	GND	10	N/C



2.4.16 CN27 for Full-size Mini-PCIe socket

Note: Fill-size Mini-PCIe card could support PCIe and USB signal.

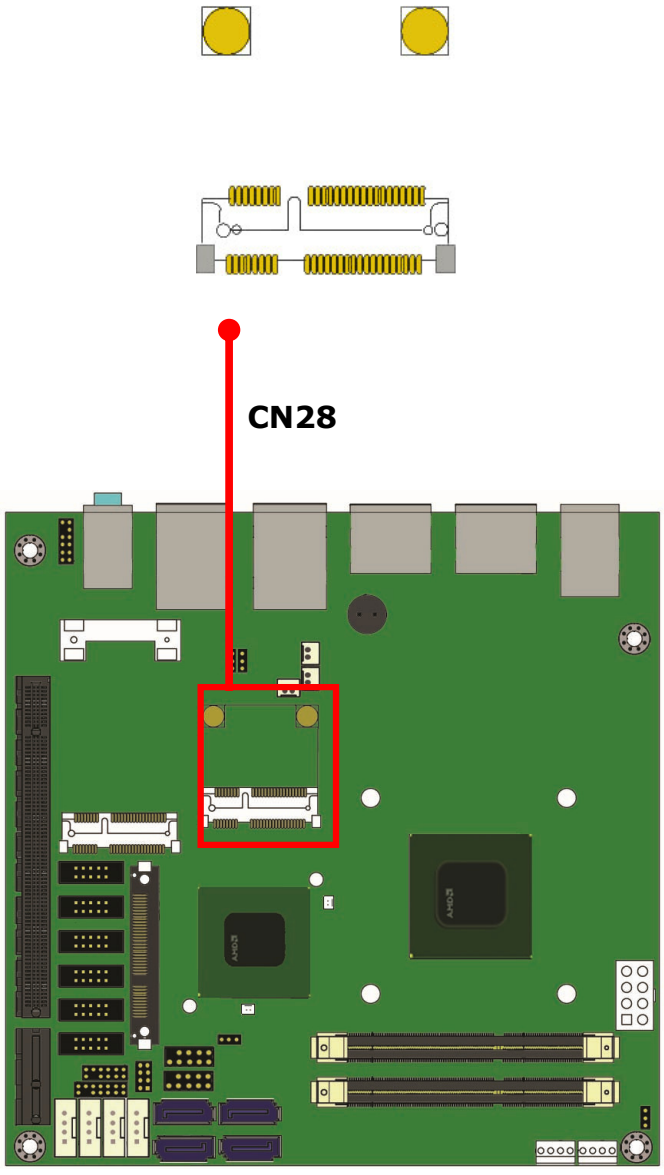
Pin	Signal	Pin	Signal
1	WAKE	27	GND
2	+3.3V AUX	28	+1.5V
3	N/C	29	GND
4	GND	30	SMBCLK
5	N/C	31	PETN0
6	+1.5V	32	SMBDATA
7	CLKREQ	33	PETP0
8	UIM_PWR	34	GND
9	GND	35	GND
10	UIM_DATA	36	USB_D-
11	REFCLK-	37	GND
12	UIM_CLK	38	USB_D+
13	REFCLK+	39	+3.3V AUX
14	UIM_RESET	40	GND
15	GND	41	+3.3V AUX
16	UIM_VPP	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



2.4.17 CN28 for Half-size Mini-PCIe socket.

Note: Half-size Mini-PCIe card could support SATA and USB signal.

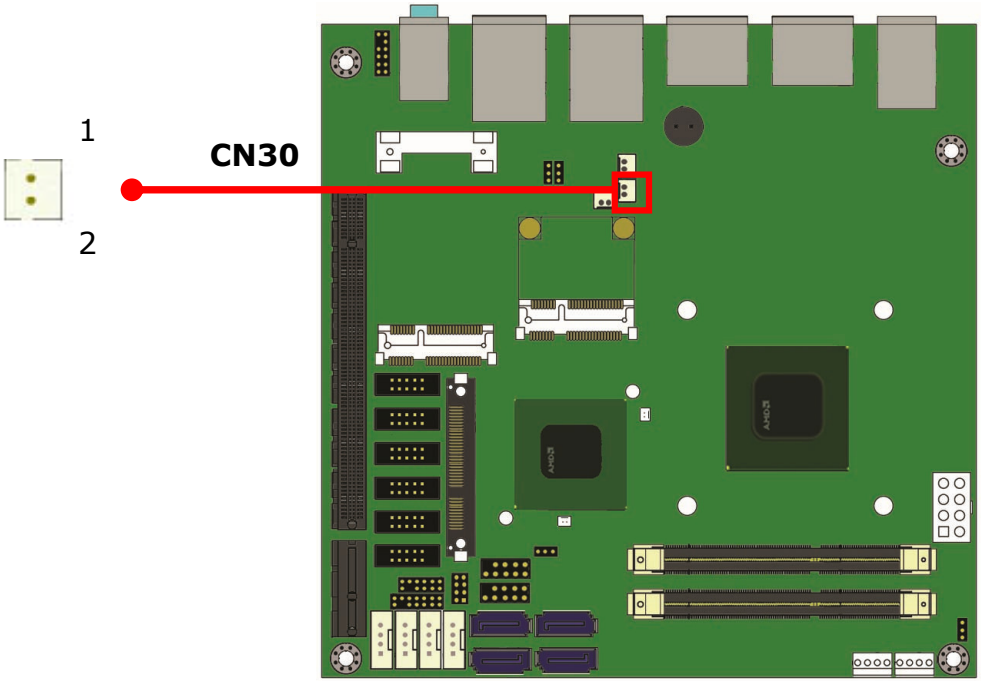
Pin	Signal	Pin	Signal
1	N/A	27	GND
2	+3.3V AUX	28	+1.5V
3	N/A	29	GND
4	GND	30	SMBCLK
5	N/A	31	SATA TX-
6	+1.5V	32	SMBDATA
7	N/A	33	SATA TX+
8	Reserved	34	GND
9	GND	35	GND
10	N/C	36	USB_D-
11	N/A	37	GND
12	N/C	38	USB_D+
13	N/A	39	3.3V
14	N/C	40	GND
15	GND	41	3.3V
16	N/C	42	LED_WWAN
17	N/A	43	GND
18	GND	44	LED_WLAN
19	N/A	45	N/C
20	Reserved	46	N/C
21	GND	47	N/C
22	PERST	48	+1.5V
23	STAT RX+	49	N/C
24	+3.3V AUX	50	GND
25	SATA RX-	51	N/C
26	GND	52	+3.3V



2.4.18 CN30 for Half-size Mini-PCIe LED indictor pin header

CN30 : 1x2 2-pin box header			
Pin	**Signal**	**Pin**	**Signal**
1	LED_WLAN	2	+3.3V

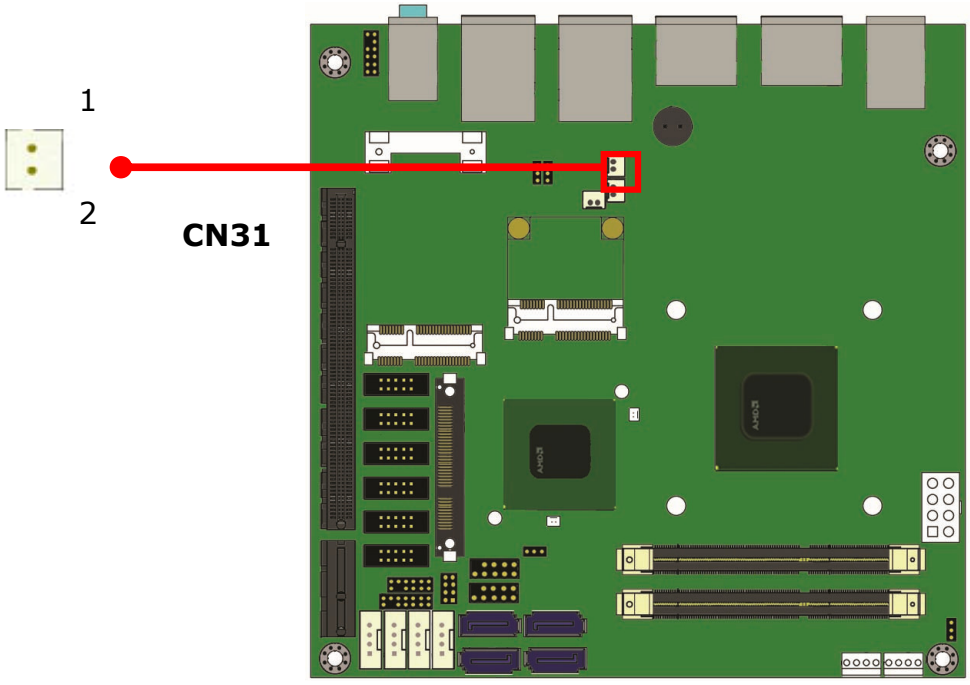
Note: Half-size Mini-PCIe socket support USB & SATA signal. DON'T support PCIE signal.



2.4.19 CN31 for Full-size Mini-PCIe LED indictor pin header

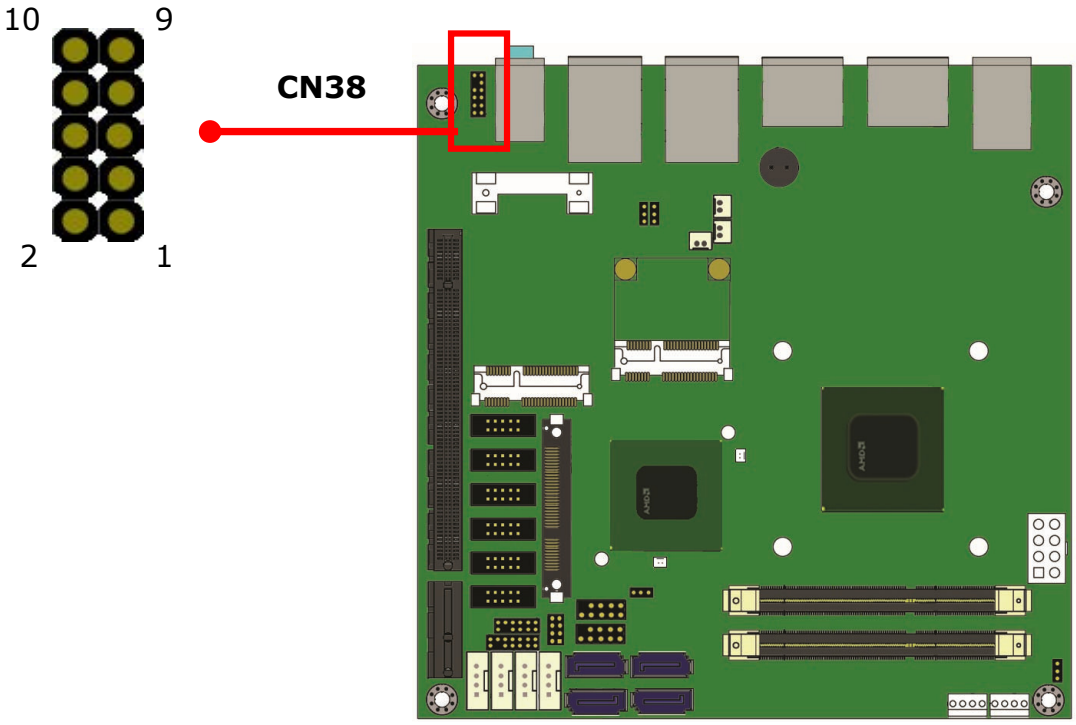
CN31 : 1x2 2-pin box header			
Pin	**Signal**	**Pin**	**Signal**
1	LED_WLAN	2	+3.3V

Note: Full-size Mini-PCIe socket support USB & PCIe signal.



2.4.20 CN38 for front panel Audio pin header

CN38 : 2 x 5 header, pitch 2.00 mm			
Pin	**Signal**	**Pin**	**Signal**
1	Mic-In_L	2	GND
3	Mic-In_R	4	N/C
5	Line-Out_R	6	Mic-In_JD
7	GND	8	Key
9	Line-Out_L	10	Line-Out_JD



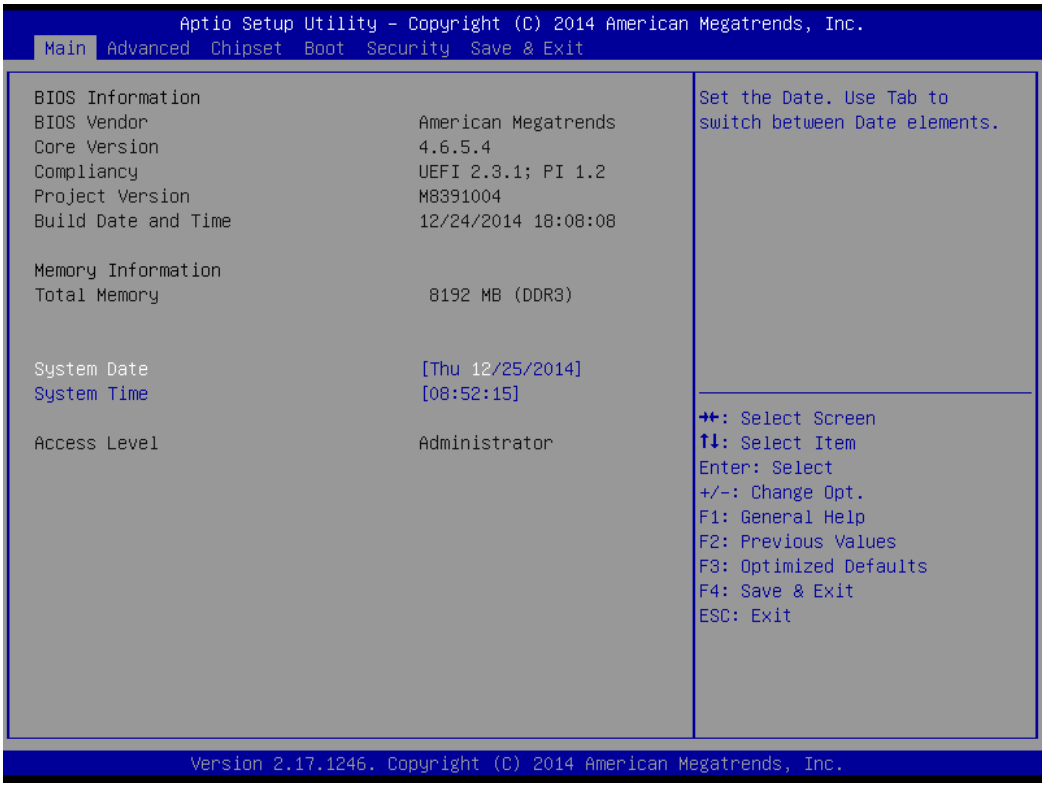
3. BIOS setting Menu

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, etc.

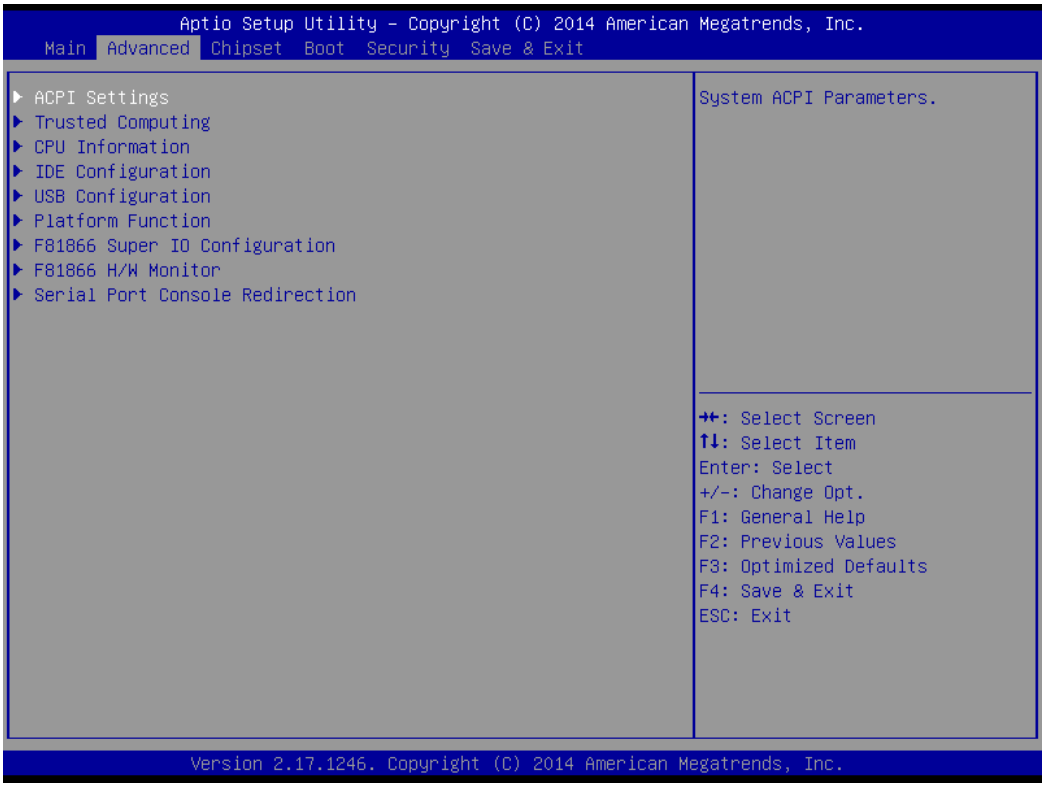
3.2 Advanced Menu

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



- 3.2 Advanced Menu

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

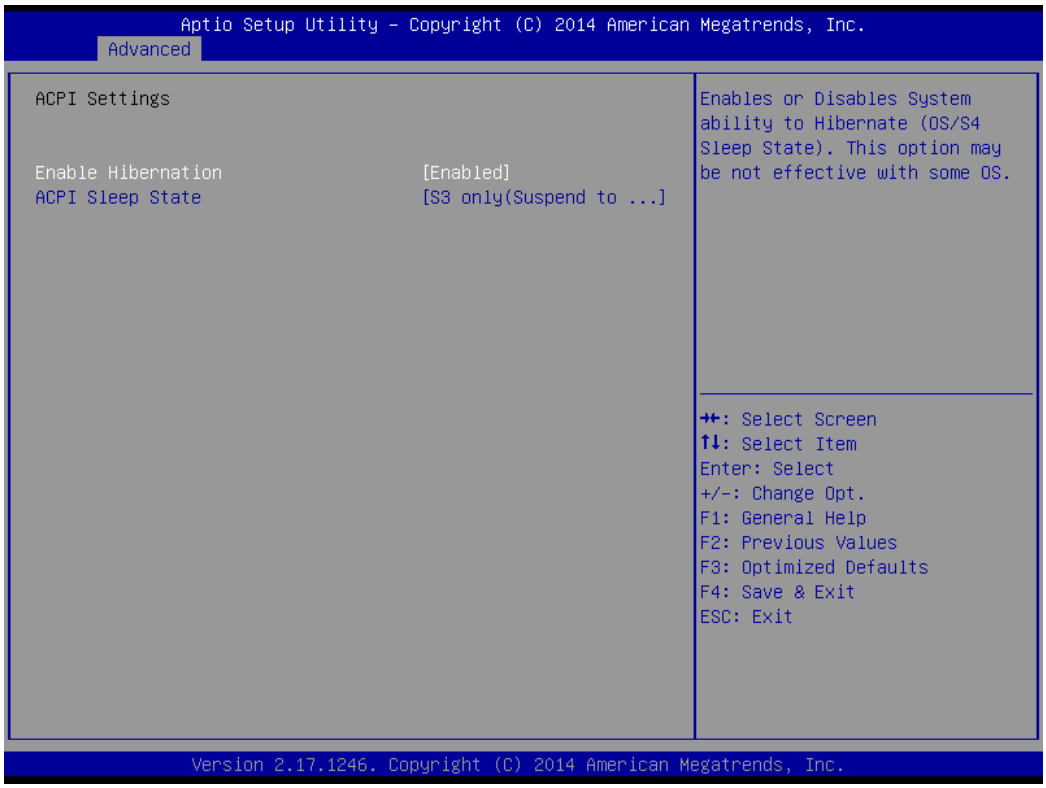


- 3.2.1 ACPI Settings

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.

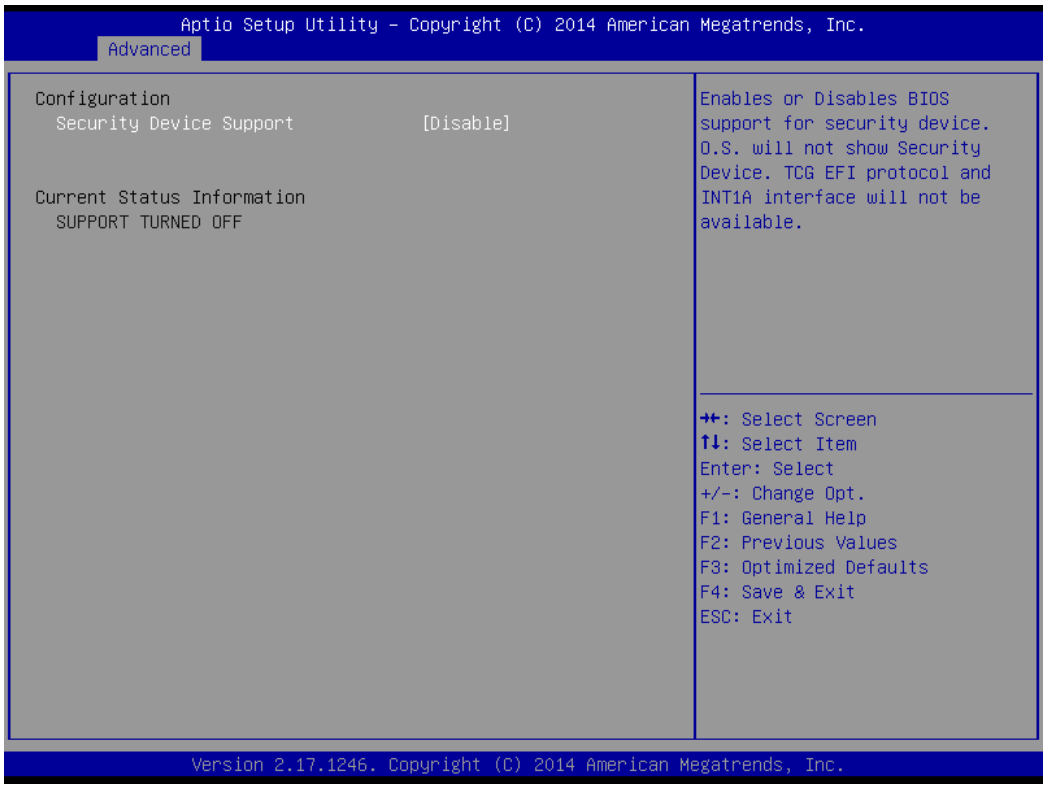


- 3.2.2 Trusted Computing

Trsuted 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.

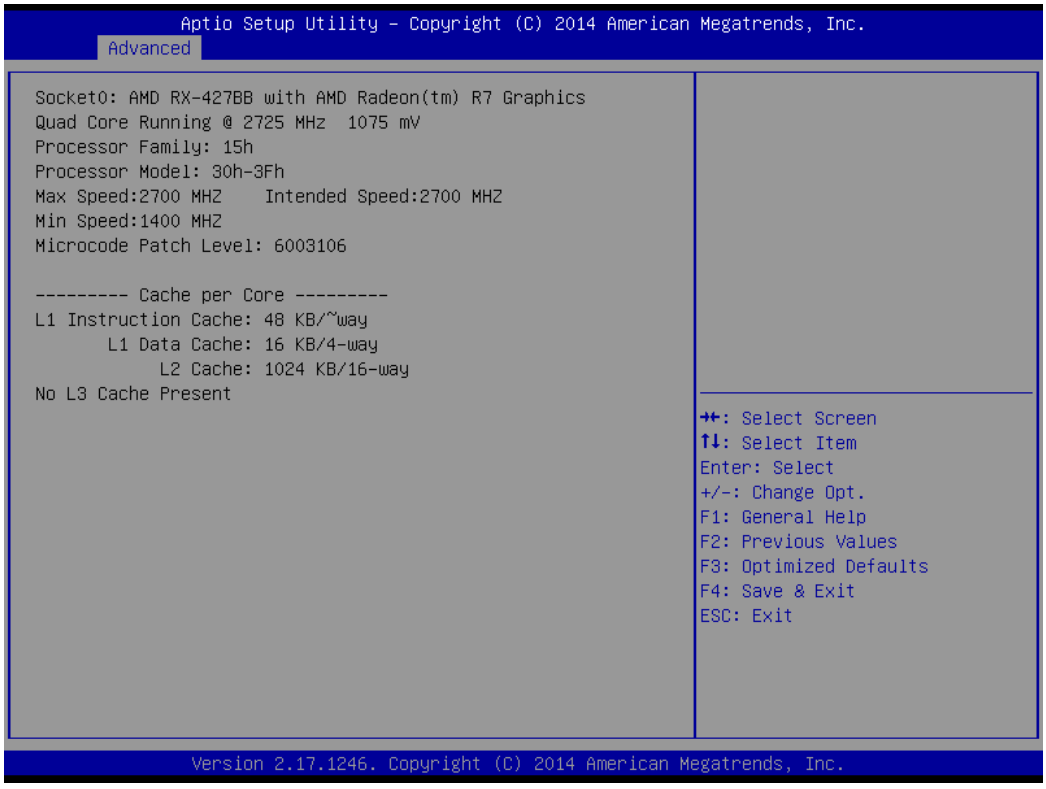


- 3.2.3 CPU Information

CPU Information:

This item displays the current CPU Revision, Current CPU1 Memory Frequency, Memory Type and Memory Reference Code Revision.

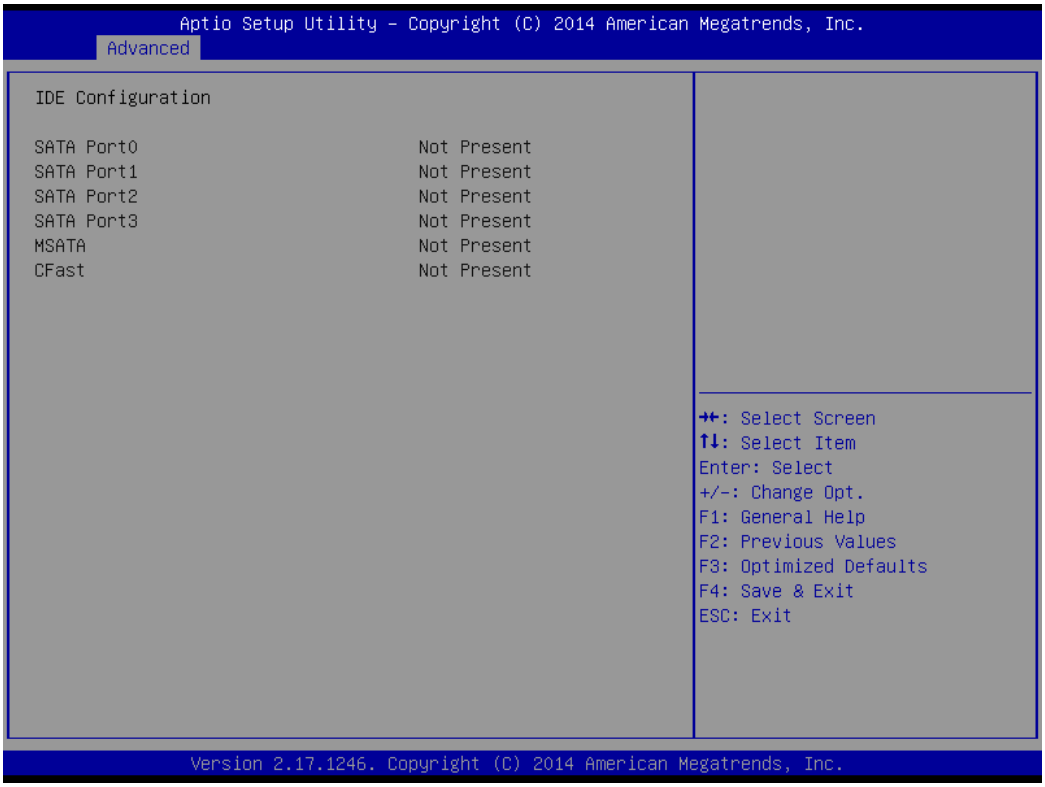
Description: This item displays the current CPU information.



- 3.2.4 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:



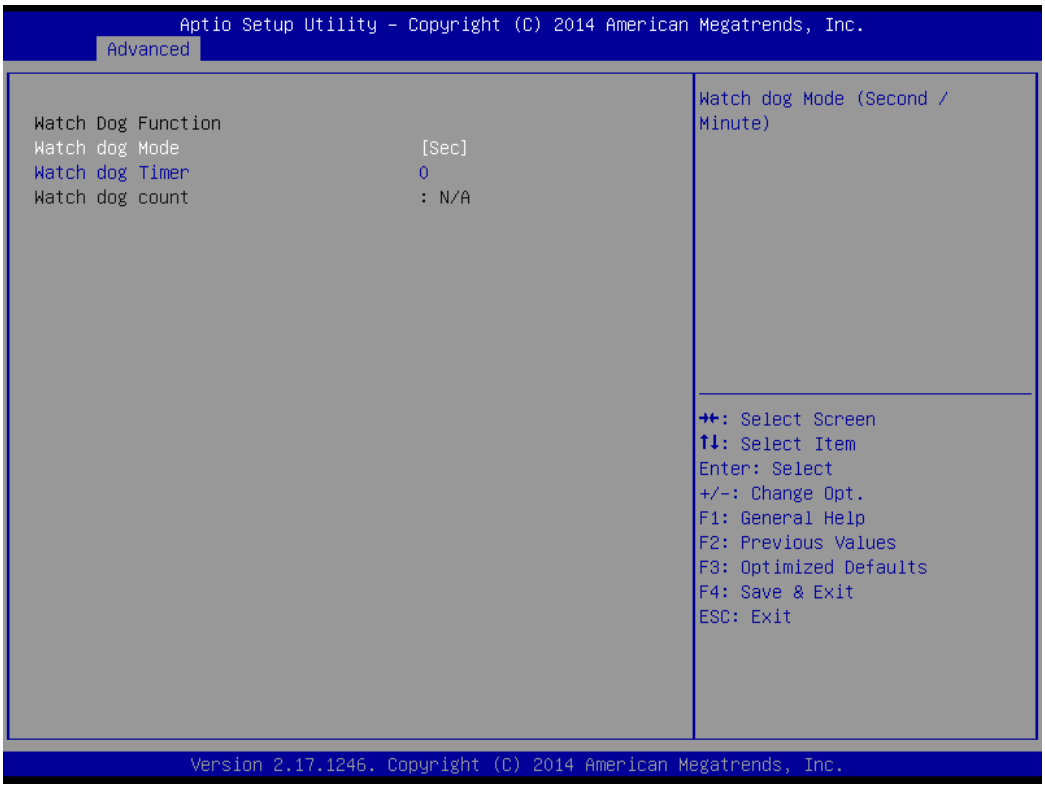
- 3.2.5 USB Configuration

USB Configuration:

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

- 3.2.6 Platform Function

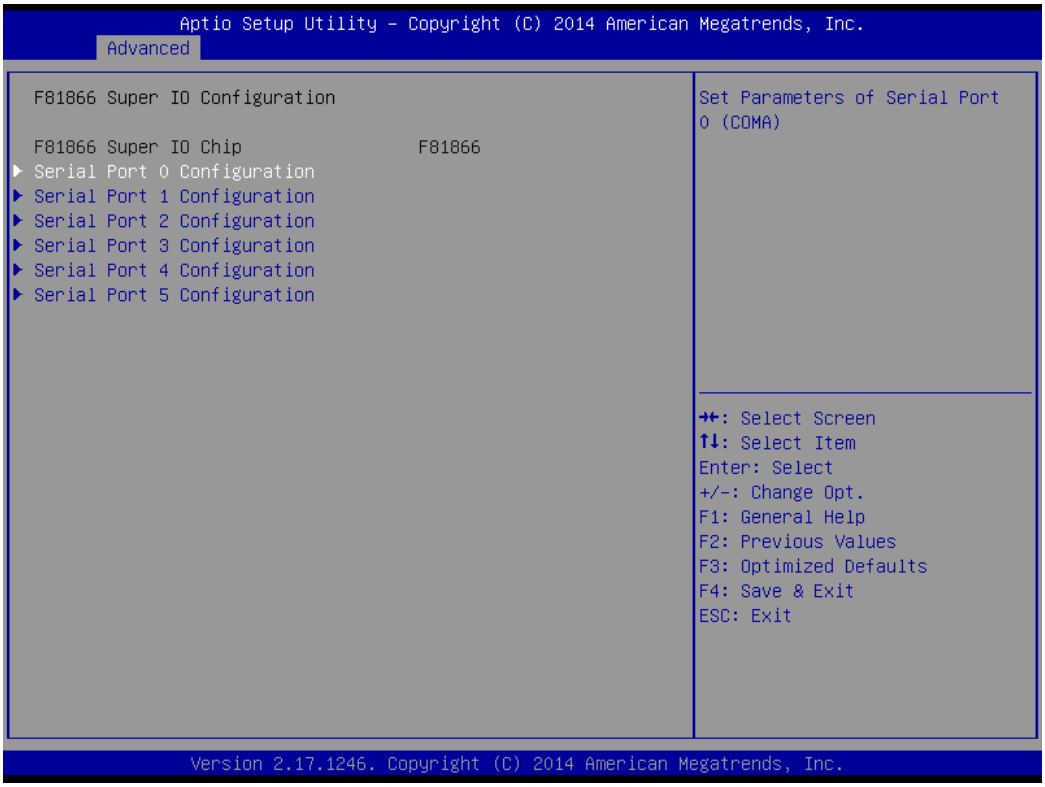
Platform Function Description: Enable user to configure WatchDog Timer.



- 3.2.7 F81866 Super IO Configuration

F81866 Super IO Configuration:

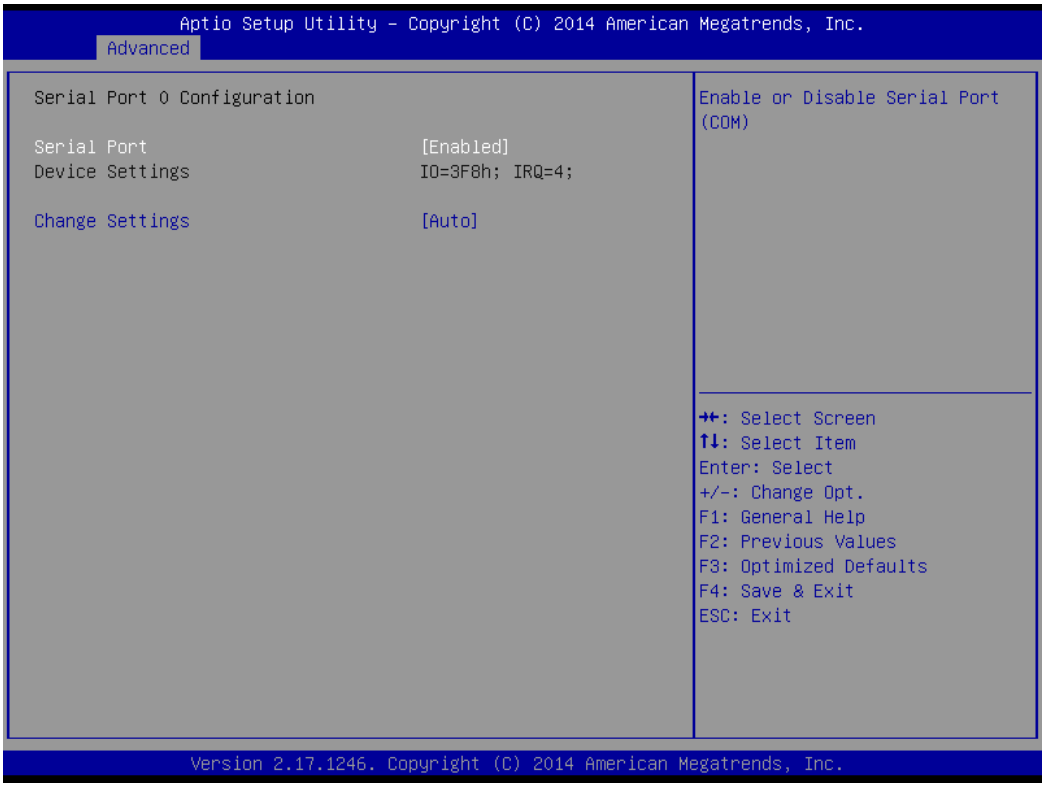
Description: Select Enabled to enable the onboard serial port. The options are Enabled and Disabled.



- 3.2.8 Serial Port 0 Configuration

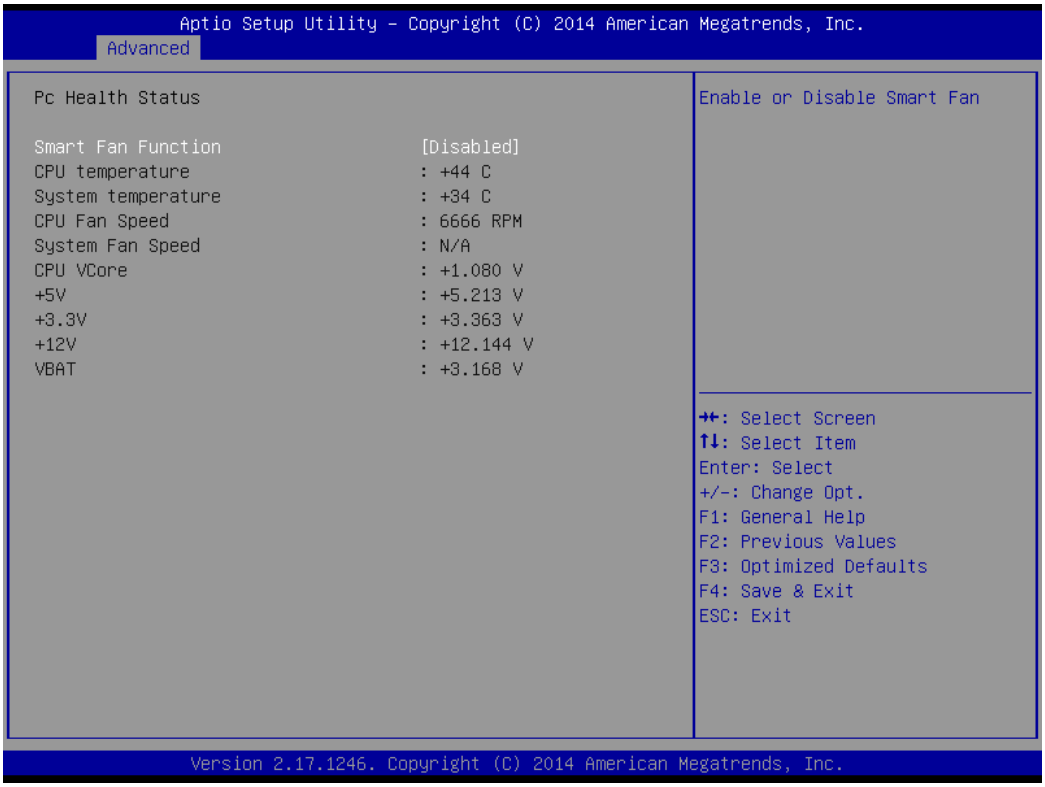
Serial Port 0 Configuration

Description: Enable user to setup address and IRQ for serial Port.



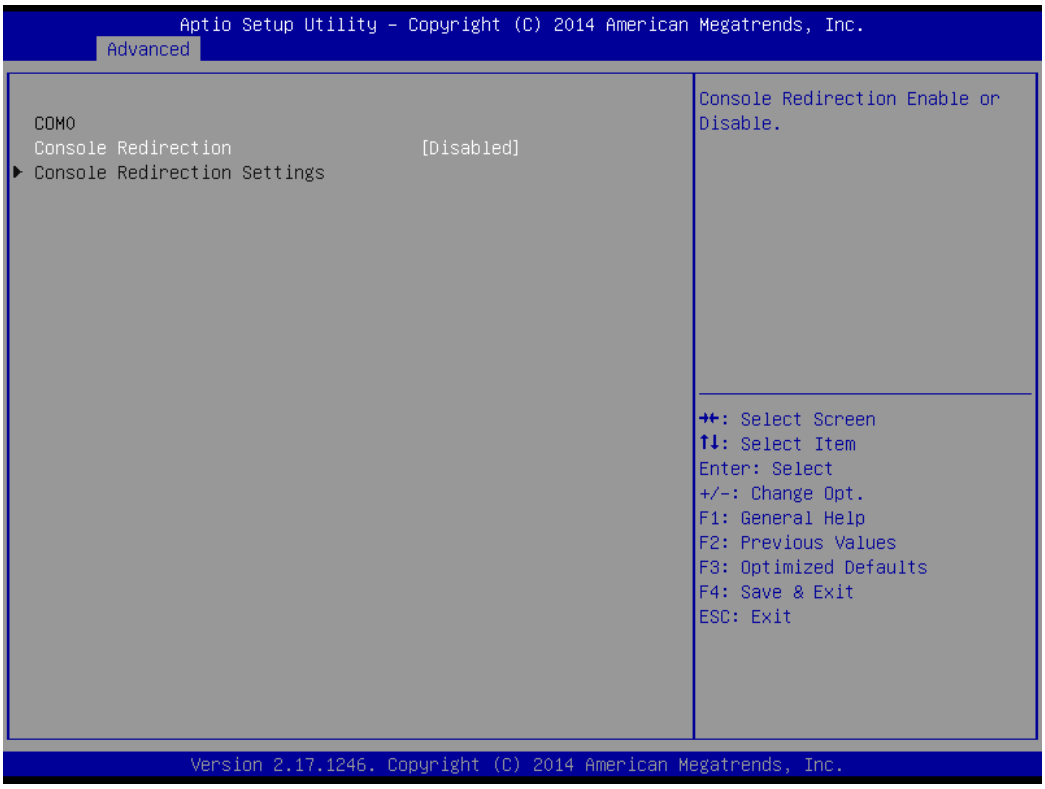
- 3.2.9 F81866 H/W Monitor

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



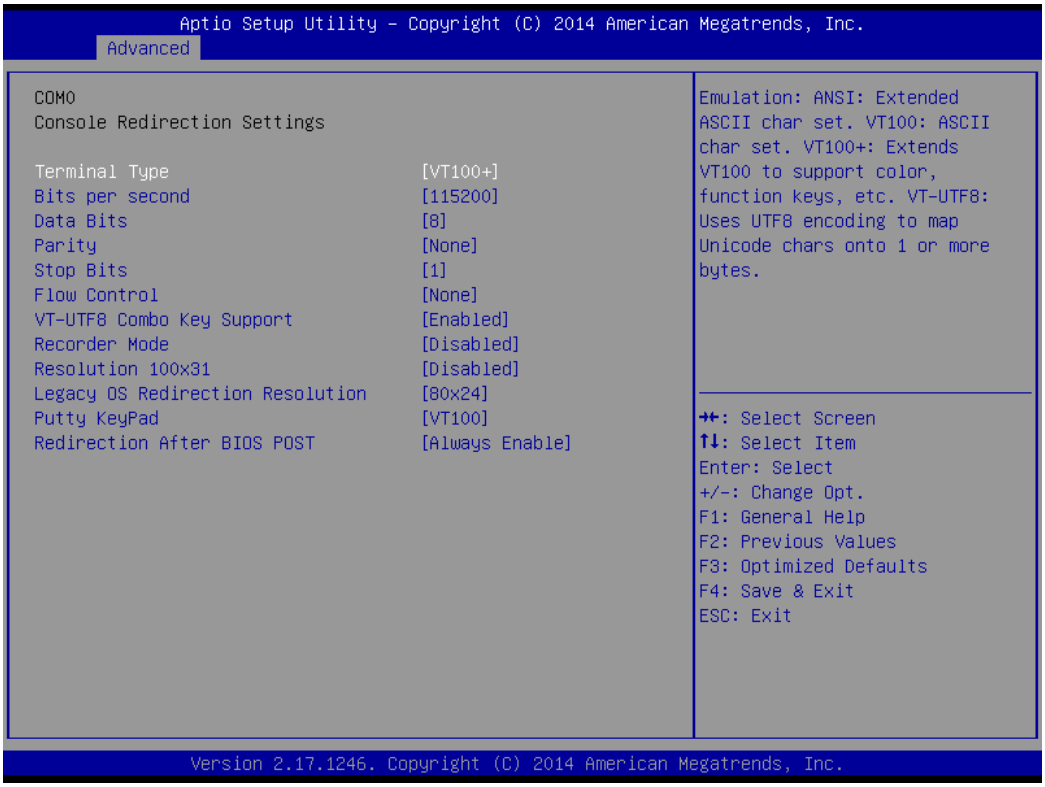
- 3.2.10 Serial Port Console Redirection

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



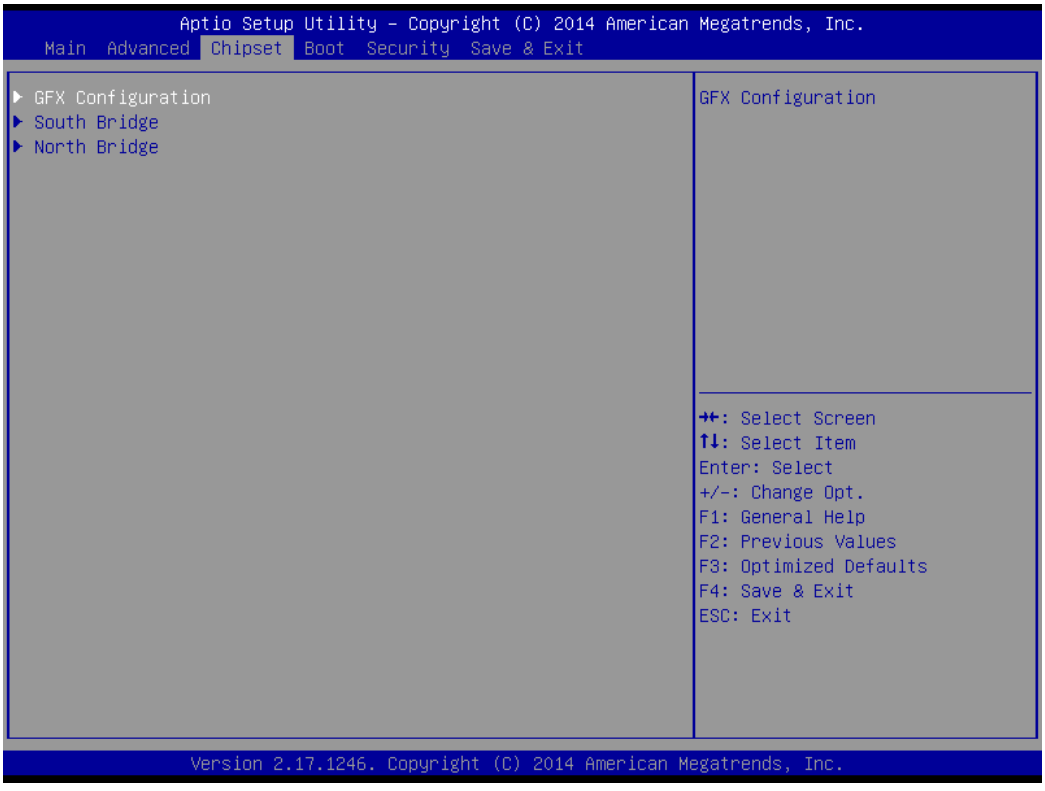
- 3.2.10 COM0

Serial Port Console Redirection Description: Enable user to configure parameter of COM 0 (console port).



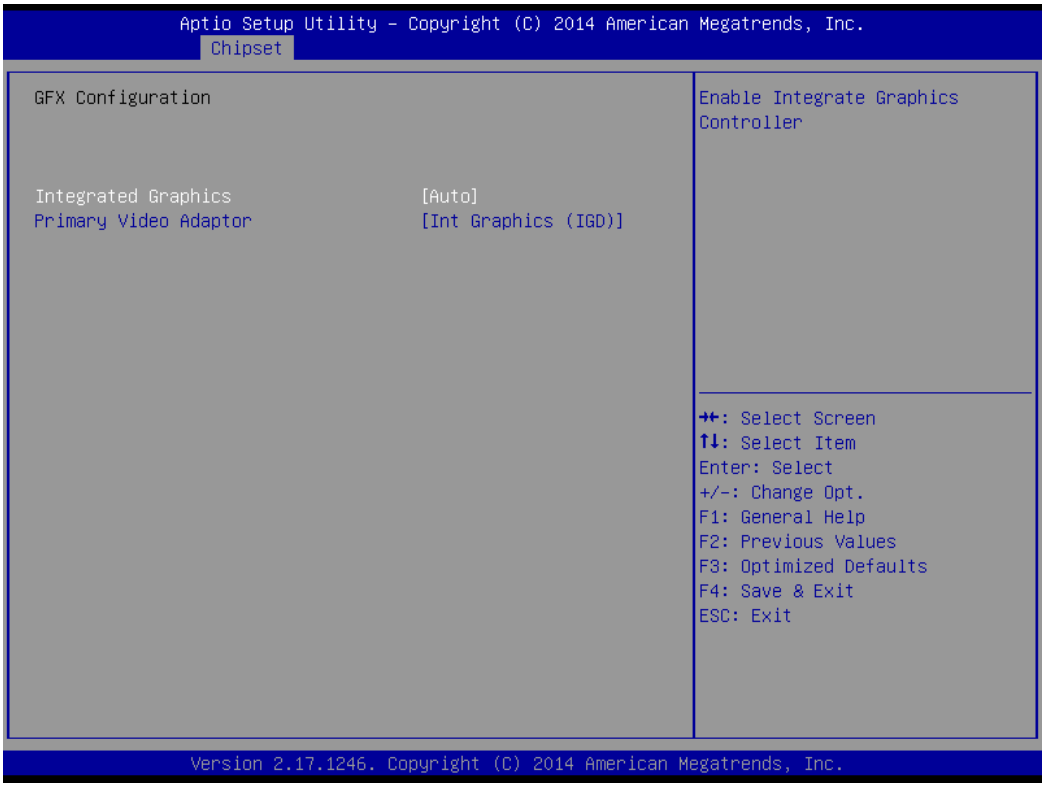
3.3 Chipset Menu

Chipset: Description: South Bridge & North Bridge Setting



- 3.3.1 GFX Configuration

Description: Enable user to enable/disable integrated graphic and display priority.

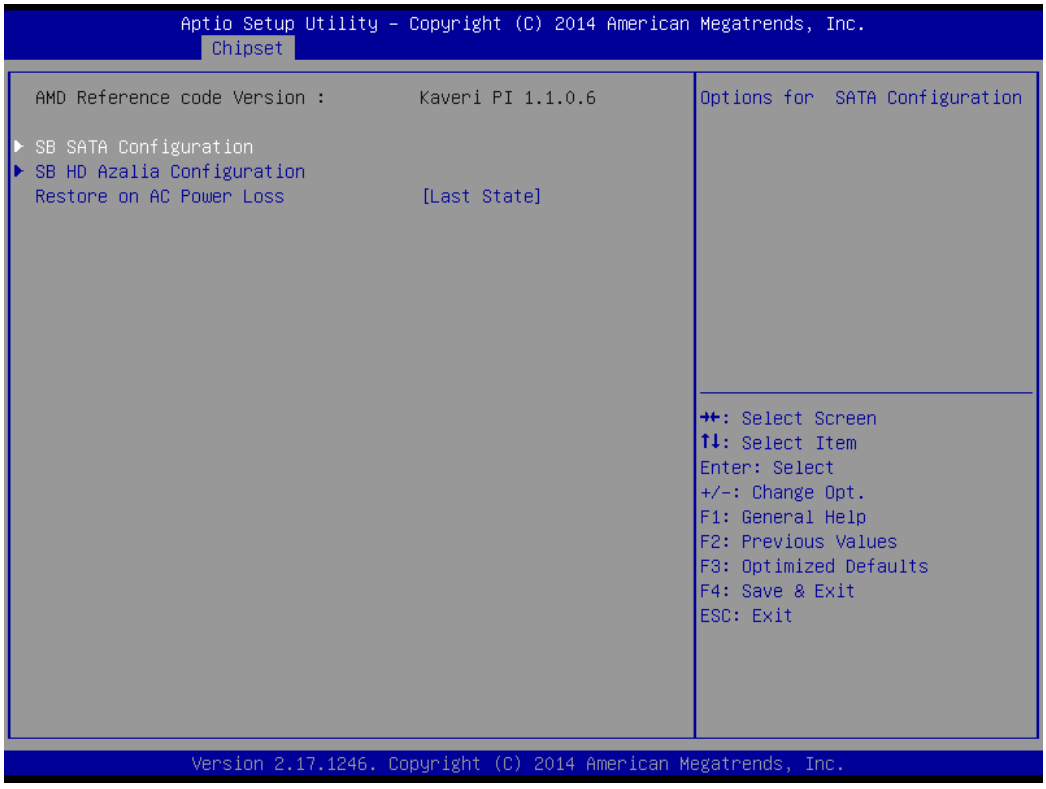


- 3.3.2 Chipset Menu

South Bridge:

OnChip SATA channel *< Disabled/enabled >*

Description: Customer can enable/disable SATA, HD audio Azalia functions here.



- 3.3.3 Chipset Menu

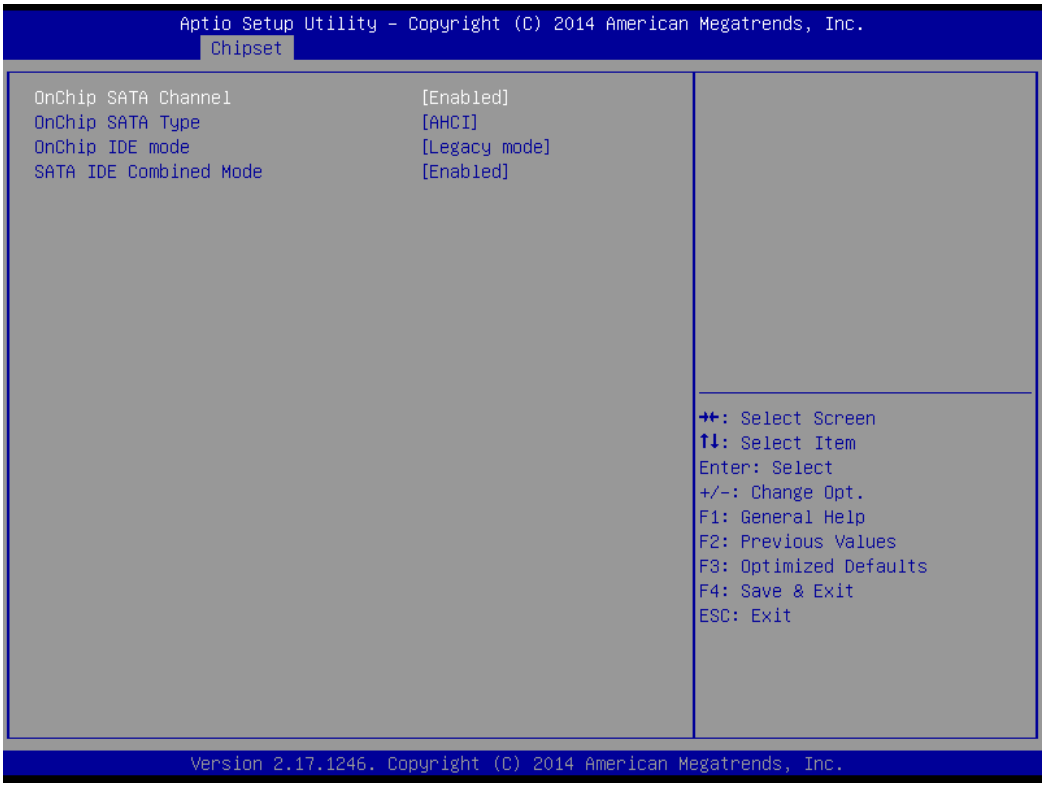
South Bridge:

OnChip SATA channel *< Disabled/enabled >*

Description: Customer can enable/disable SATA functions 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>

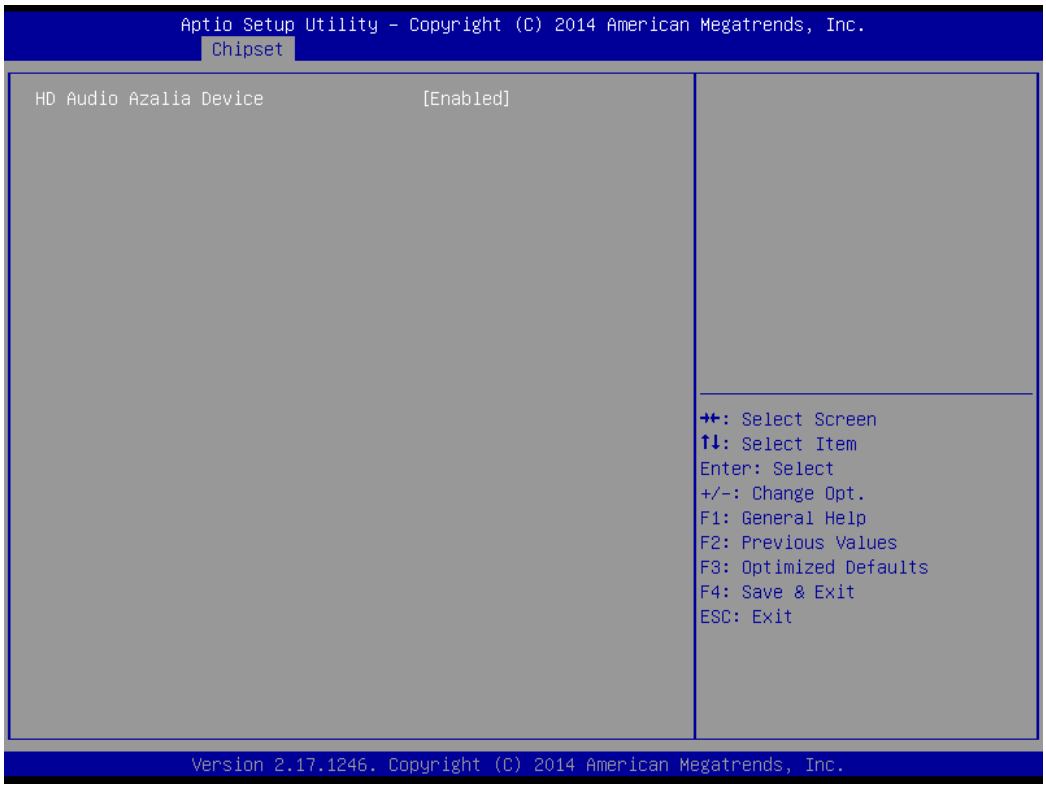


- 3.3.5 Chipset Menu

SB HD Azalia configuration:

HD Audio Azalia Device < Disabled/enabled >

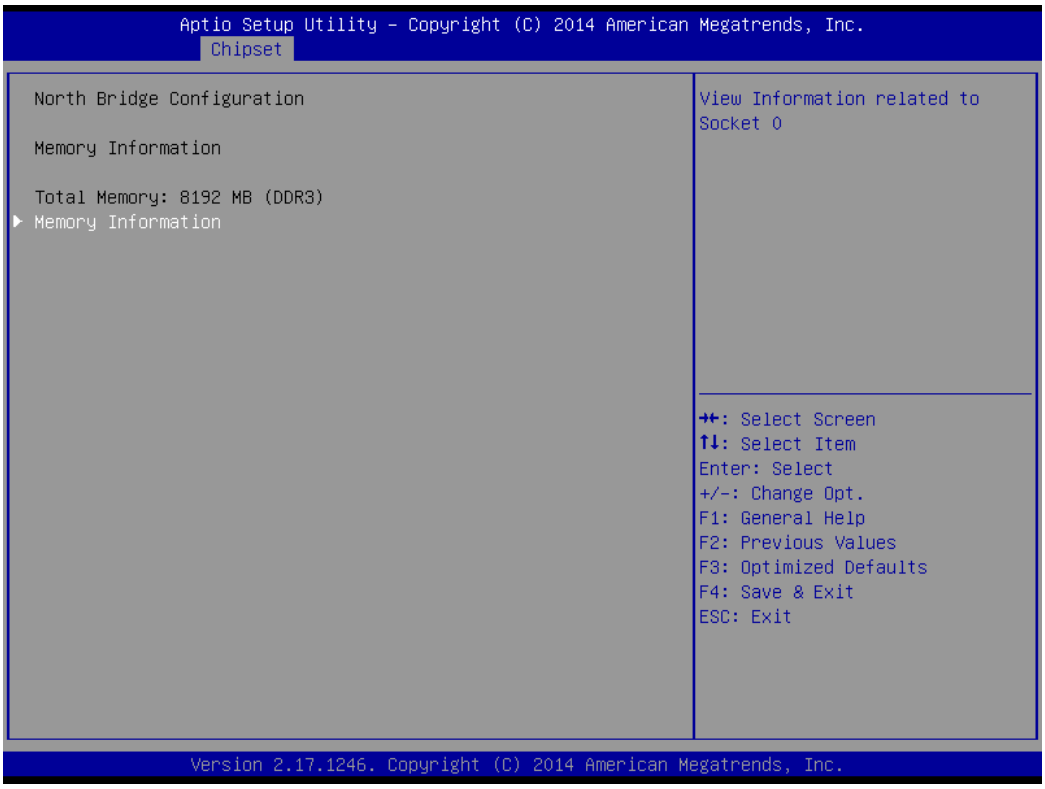
Description: Select Enabled to enable the Azalia High Definition Audio feature. The settings are Enabled and Disabled.
Default setting is <Enabled>

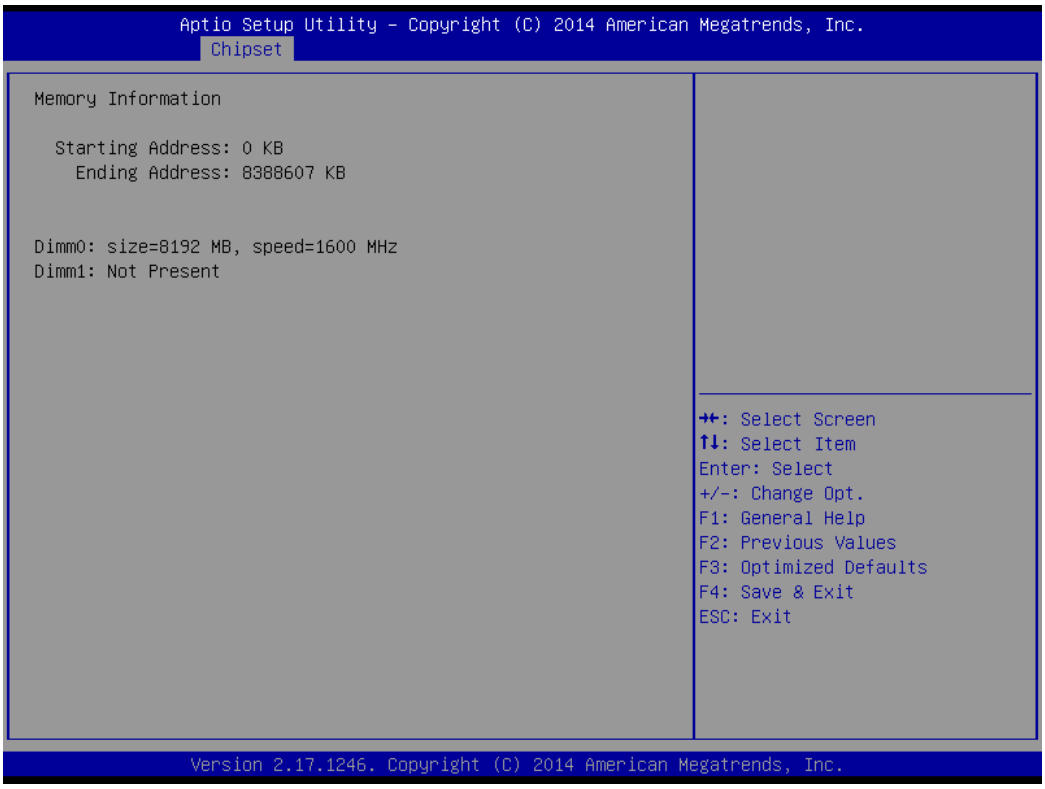


- 3.3.6 North Bridge

North Bridge:

Description: Memory size can be found at here, also a detail of memory information can be found by sub–menu

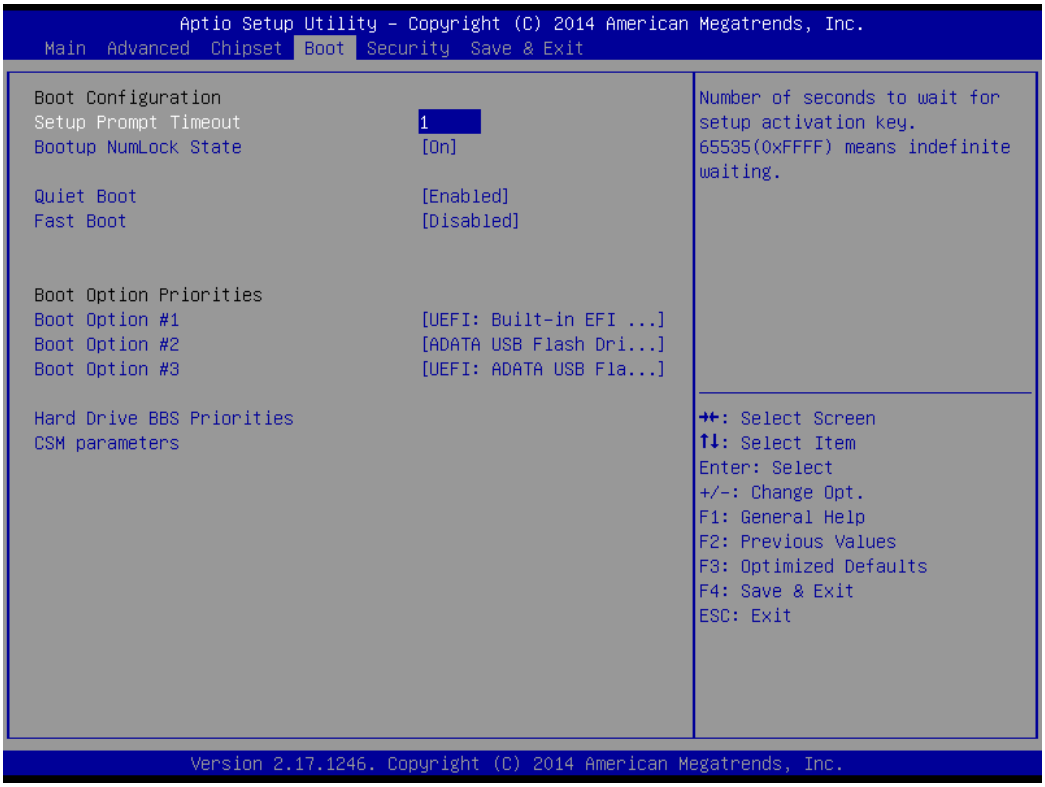



Aptio Setup Utility – Copyright (C) 2014 American Megatrends, Inc.
Chipset
Memory Information
Starting Address: 0 KB
Ending Address: 8388607 KB
Dimm0: size=8192 MB, speed=1600 MHz
Dimm1: Not Present
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1246. Copyright (C) 2014 American Megatrends, Inc.

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.



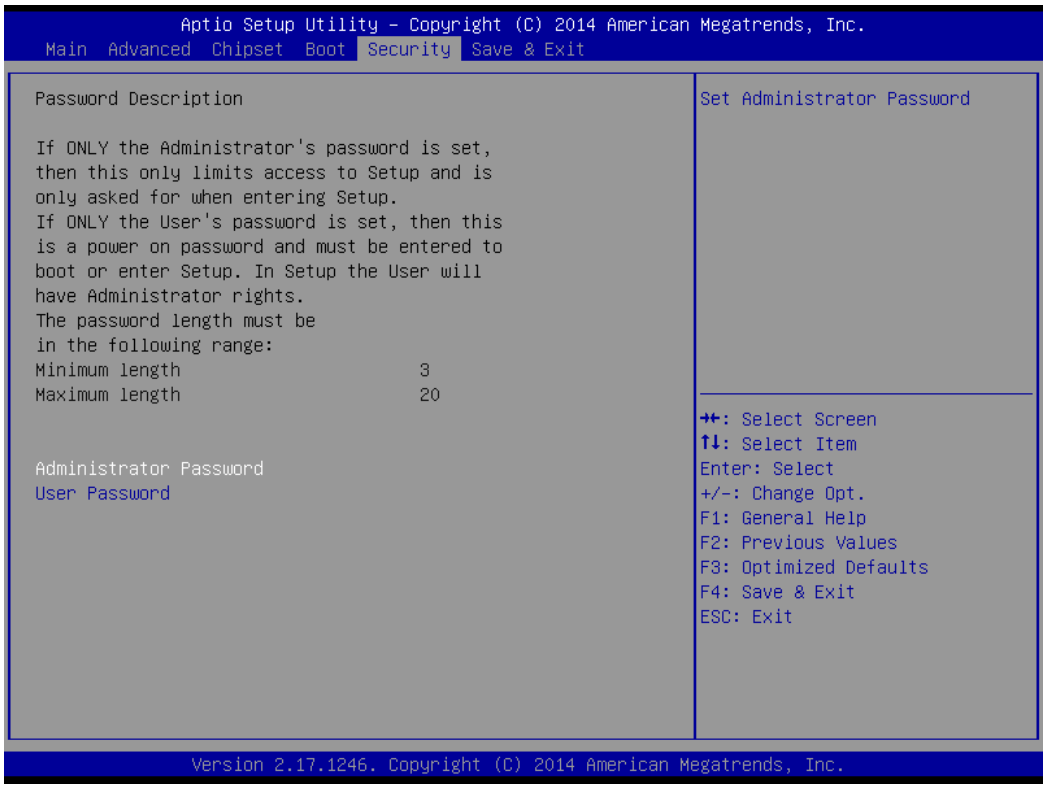
3.5 Security Menu

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.



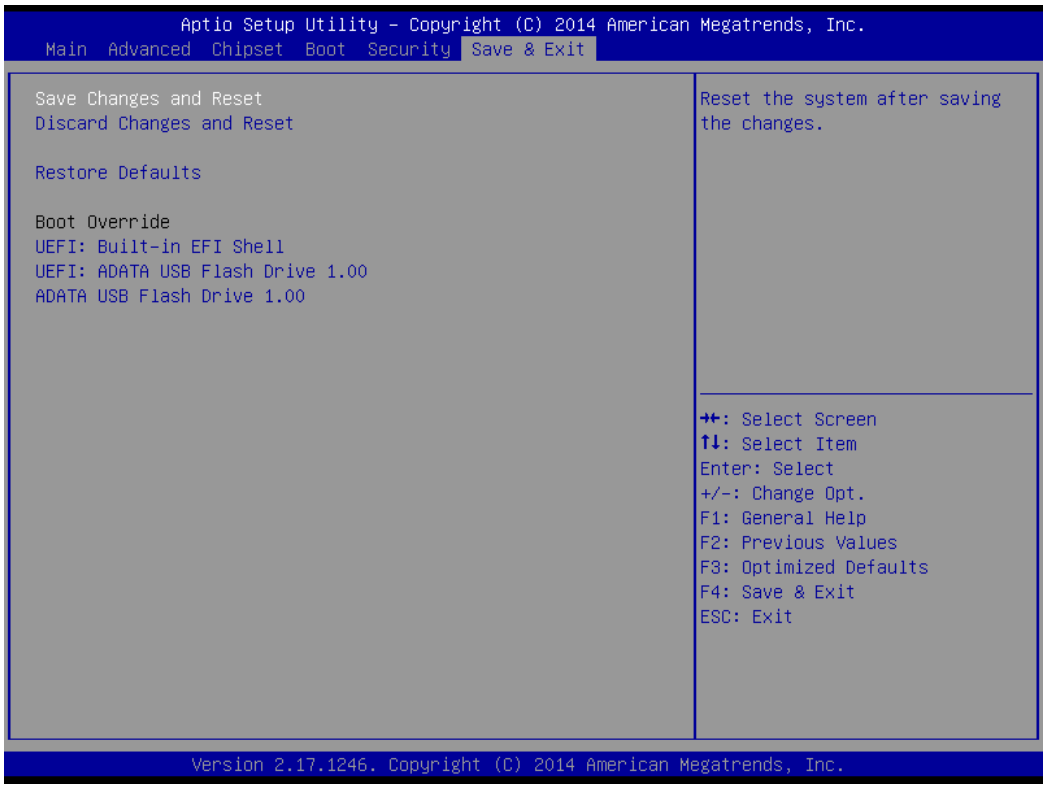
3.6 Save & Exit Menu

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

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 01	Exclusive	Standard PS/2 Keyboard
IRQ 03	Exclusive	Communications Port (COM2)
IRQ 04	Exclusive	Communications Port (COM1)
IRQ 05	Shared	Ethernet Controller
IRQ 08	Exclusive	High precision event timer
IRQ 10	Exclusive	Communications Port (COM6)
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	Ethernet Controller
IRQ 11	Shared	Universal Serial Bus (USB) Controller
IRQ 11	Shared	Universal Serial Bus (USB) Controller
IRQ 11	Shared	Communications Port (COM3)
IRQ 11	Shared	Communications Port (COM5)
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 12	Exclusive	PS/2 Compatible Mouse
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 131071	Exclusive	PCI Express standard Root Port
IRQ 131071	Exclusive	PCI Express standard Root Port
IRQ 131071	Exclusive	PCI Express standard Root Port
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 14	Exclusive	ATA Channel 0
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 15	Exclusive	ATA Channel 1
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 17	Shared	Standard Enhanced PCI to USB Host Controller
IRQ 17	Shared	Standard Enhanced PCI to USB Host Controller
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 OpenHCD USB Host Controller
IRQ 18	Shared	Standard OpenHCD USB Host Controller
IRQ 18	Shared	Standard OpenHCD 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	Standard AHCI 1.0 Serial ATA Controller

IRQ 190	Exclusive	Microsoft ACPI-Compliant System
IRQ 196615	Exclusive	Communications Port (COM4)
IRQ 27	Shared	High Definition Audio Controller
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	Standard VGA Graphics Adapter
Memory 000A0000-000BFFFF	Shared	PCI bus
Memory 000C0000-000DFFFF	Shared	PCI bus
Memory 70000000-7FFFFFFF	Exclusive	Motherboard resources
Memory 80000000-FFFFFFFF	Shared	PCI bus
Memory B0000000-BFFFFFFF	Exclusive	Standard VGA Graphics Adapter
Memory C0000000-C07FFFFF	Exclusive	Standard VGA Graphics Adapter
Memory C0800000-D07FFFFF	Exclusive	PCI Express standard Root Port
Memory E0000000-EFFFFFFF	Exclusive	System board
Memory FE800000-FE81FFFF	Exclusive	Ethernet Controller

Memory FE800000-FE8FFFFF	Exclusive	PCI Express standard Root Port
Memory FE820000-FE823FFF	Exclusive	Ethernet Controller
Memory FE900000-FE91FFFF	Exclusive	Ethernet Controller
Memory FE900000-FE9FFFFF	Exclusive	PCI Express standard Root Port
Memory FE920000-FE923FFF	Exclusive	Ethernet Controller
Memory FEA00000-FEAFFFFF	Exclusive	PCI Express standard Root Port
Memory FEB00000-FEB3FFFF	Exclusive	Standard VGA Graphics Adapter
Memory FEB60000-FEB63FFF	Exclusive	High Definition Audio Controller
Memory FEB64000-FEB67FFF	Exclusive	High Definition Audio Controller
Memory FEB68000-FEB69FFF	Exclusive	Universal Serial Bus (USB) Controller
Memory FEB6A000-FEB6BFFF	Exclusive	Universal Serial Bus (USB) Controller
Memory FEB6C000-FEB6C0FF	Exclusive	SDA Standard Compliant SD Host Controller
Memory FEB6D000-FEB6DFFF	Exclusive	Standard OpenHCD USB Host Controller
Memory FEB6E000-FEB6E0FF	Exclusive	Standard Enhanced PCI to USB Host Controller
Memory FEB6F000-FEB6FFFF	Exclusive	Standard OpenHCD USB Host Controller
Memory FEB70000-FEB700FF	Exclusive	Standard Enhanced PCI to USB Host Controller
Memory FEB71000-FEB71FFF	Exclusive	Standard OpenHCD USB Host Controller
Memory FEB72000-FEB727FF	Exclusive	Standard AHCI 1.0 Serial ATA Controller
Memory FEB80000-FEBFFFFF	Exclusive	Motherboard resources
Memory FEC00000-FEC00FFF	Exclusive	Motherboard resources
Memory FEC10000-FEC10FFF	Exclusive	Motherboard resources
Memory FED00000-FED003FF	Exclusive	High precision event timer
Memory FED40000-FED44FFF	Exclusive	Unknown
Memory FED61000-FED70FFF	Exclusive	Motherboard resources
Memory FED80000-FED8FFFF	Exclusive	Motherboard resources
Memory FEE00000-FEE00FFF	Exclusive	Motherboard resources
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 0060-0060	Exclusive	Standard PS/2 Keyboard
Port 0061-0061	Exclusive	System speaker
Port 0063-0063	Exclusive	Motherboard resources
Port 0064-0064	Exclusive	Standard PS/2 Keyboard
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 0170-0177	Exclusive	ATA Channel 1
Port 01F0-01F7	Exclusive	ATA Channel 0
Port 0220-0227	Exclusive	Communications Port (COM5)
Port 0228-022F	Exclusive	Communications Port (COM6)
Port 0290-029F	Exclusive	Motherboard resources
Port 02E8-02EF	Exclusive	Communications Port (COM4)
Port 02F8-02FF	Exclusive	Communications Port (COM2)
Port 0376-0376	Exclusive	ATA Channel 1
Port 03B0-03BB	Shared	Standard VGA Graphics Adapter
Port 03B0-03DF	Shared	PCI bus
Port 03C0-03DF	Shared	Standard VGA Graphics Adapter
Port 03E0-0CF7	Shared	PCI bus
Port 03E8-03EF	Exclusive	Communications Port (COM3)
Port 03F6-03F6	Exclusive	ATA Channel 0
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 C000-C01F	Exclusive	Ethernet Controller
Port C000-CFFF	Exclusive	PCI Express standard Root Port
Port D000-D01F	Exclusive	Ethernet Controller
Port D000-DFFF	Exclusive	PCI Express standard Root Port
Port E000-EFFF	Exclusive	PCI Express standard Root Port
Port F000-F0FF	Exclusive	Standard VGA Graphics Adapter
Port F100-F10F	Exclusive	Standard Dual Channel PCI IDE Controller
Port F150-F15F	Exclusive	Standard AHCI 1.0 Serial ATA Controller
Port F160-F163	Exclusive	Standard AHCI 1.0 Serial ATA Controller
Port F170-F177	Exclusive	Standard AHCI 1.0 Serial ATA Controller
Port F180-F183	Exclusive	Standard AHCI 1.0 Serial ATA Controller
Port F190-F197	Exclusive	Standard AHCI 1.0 Serial ATA Controller
Port FE00-FEFE	Exclusive	Motherboard resources

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