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SCB-1803

Networking Appliance

User's Manual

Version 1.2

SCB-1803 2U Rack-mount Intel® 22nm Haswell
Intel® core i3/i5/i7 and E3-1200V3 series with LGA1150 processors and 2 x GbE, SATA, CF, bypass function

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Reversion History			
Date	**Version**	**Modification**	**Editor**
2014/02/05	1.0	First Release	Denny Huang
2014/02/10	1.1	1. Fixed some error information 2. Update R323、R324、R325 photos	Denny Huang
2014/04/02	1.2	Add R318A order information	Denny Huang

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For more information on SCB-1803 or other AEWIN products, please visit our website
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For technical supports or free catalog, please send your inquiry to
info@aewin.com.tw

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Appendix A: Linux / DOS Sample code

Appendix B: Cable Development Kit

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Chapter 1. General Information

1.1 Introducing

The SCB-1803 is a 2U rack-mounted hardware platform designed for network service applications. Built with Intel® Embedded IA components with warranty of longevity, the SCB-1803 Support Single Intel® 22nm Haswell core i3/i5/i7 and E3-1200V3 processors. The platform supports four un-buffered and non-ECC or ECC DDR3 1333/1600 MHz DIMM sockets with max capacity up to 32 GB. In order to provide the best network performance and best utilization, the powerful storage interfaces include one 2.5" SATA HDD and one CompactFlash™. The SCB-1803 also supports one PCIe x4 expansion slot and affords 2 GbE and max 48 GbE Ethernet ports on the front-panel. The front panel also has one USB 2.0 ports, one RJ-45 console port and LED indicators that monitor power and storage device activities for local system management, maintenance and diagnostics. In addition, the SCB-1803 is RoHS, FCC and CE compliant.

1.2 Specification

Processor System	CPU	Intel® Haswell Core i7/i5/i3 and E3-1200V3 Series, LGA1150
	Chipset	Intel® C226 PCH
	BIOS	AMI® 64Mbit SPI BIOS
Memory	Technology	Dual-channel, DDR3 1333/1600 MHZ ECC, un-buffered memory or none ECC UDIMM
	Capacity	up to 32GB
Expansion	Expansion Slots	1.One SO-DIMM slot for IPMI card with VGA support 2.One PCIe x8 slot
Ethernet	Ethernet Modules for Option	**R323 :** 4 x SFP GbE and 4 RJ45 GbE ports, Intel 82580EB **R324 :** 8 x SFP GbE ports, Intel 82580EB **R325 :** 8 x RJ45 GbE ports, Intel 82599ES
Hardware Acceleration Module	Cryptographic	NA

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Storage	SATA HDD	One 2.5" SATA HDDs
	RAID	Support Software RAID 0,1,5,10
	Compact Flash Socket	One CompactFlash™ Type I/II
Front Accessible I/O	USB Port	One external USB 2.0
	Console Port	One RJ45 Console port (COM1, RS232)
	Management Port	One GbE port, Intel i211-AT One IPMI port support, Intel i210-IS（Need plug in R303）
	Display Port	One VGA pin header via R303（IPMI） (optional) One VGA pin header via processor
Power Supply	Watt	2U 300W ATX redundant power supply
Mechanical and Environment	Form Factor	2U rack-mount
	LCD Module	N/A
	Keypad	N/A
	LED	one Power LED (Green) one HDD LED (Yellow) one Status LED (Green/Yellow via programmable GPIO)
	Dimension（W x D x H）	426mm (W) x 510mm (D) x 89mm (H) (16.77"W x 20.07"D x 3.5"H)
	Operating Temperature	Operating: 0 ~ 40°C (32 ~ 104°F)
	Storage Temperature	-20 ~ 75°C (-4 ~ 167°F)
	Humidity	10 ~ 85% relative humidity, non-operating, non-condensing
Weight	1pc/CTN, 20 kgs	
Certification	CE/FCC	

1.3 Order Information

SCB-1803A-B	2U Rack-Mount, Intel Haswell processor with C226 PCH, DDR3, 6 PCIe slots for Expansion Module , 1 PCIe x4 slot, Console, USB, 2GbE, SATA, CF
R323A	Expansion module with 4 x SFP ports and 4 x RJ45 GbE ports, Intel82580EB
R323B	Expansion module with 4 x SFP ports and 4 x RJ45 GbE ports, Intel82580EB with two pairs bypass function
R324A	Expansion module with 8 SFP ports, Intel 82580EB
R325A	Expansion module with 8 RJ45 GbE ports, Intel 82580EB
R325B	Expansion module with 8 RJ45 GbE ports, Intel 82580EB with four pairs bypass function
R303A	IPMI card with VGA support
R318A	PCIe x4 to PCIe x4 Riser card
DK002	**Cable development kit:** 46L-CO5204-00 Cross over 2M 46L-DB9200-01 Null modem cable 2M 46L-EC5200-00 Ethernet cat.5 cable 2M 46L-IPS200-00 KBMS cable, 15CM 46L-IUSB2B-00 USB cable, 25CM 46L-IVGA01-00 VGA cable, 20CM 46L-RJDB91-00 RJ-45 to DB-9 cable 2M

1.4 Packaging

Please make sure that the following items have been included in the package before installation.

1. SCB-1803 Appliance
2. Cables (Optional)
3. CD-ROM that contains the following folders :
   - 4.1 Manual
   - 4.2 System Driver
   - 4.3 Ethernet Driver
   - 4.4 Utility Tools

If any item of above is missing or damaged, please contact your dealer or retailer from whom you purchased the SCB-1803. Keep the box and carton when you probably ship or store SCB-1803 in near future. After you unpack the goods, inspect and make sure the packaging is intact. Do not plug the power adapter to the appliance of SCB-1803 if you already find it appears damaged.

Note: *Keep the SCB-1803 in the original packaging until you start installation.*

1.5 Precautions

Please make sure you properly ground yourself before handling the SCB-1803 appliance or other system components. Electrostatic discharge can be easily damage the SCB-1803 appliance.

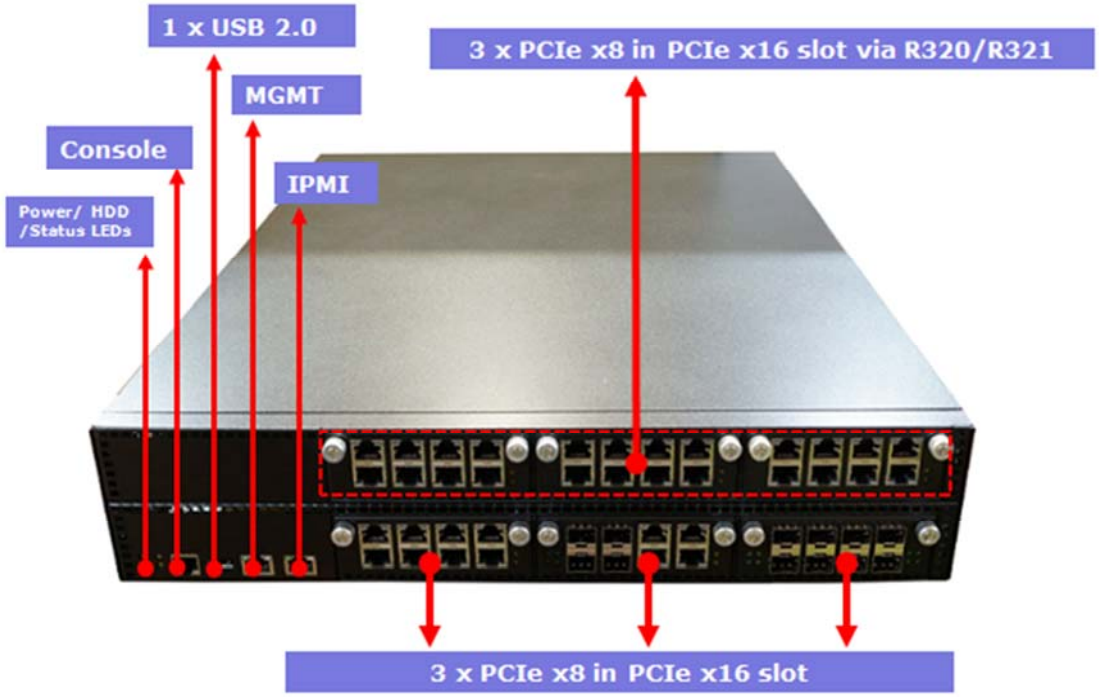
Do not remove the anti-static packing until you are ready to install the SCB-1803 appliance.

Ground yourself before removing any system component from it protective anti-static packaging. To ground yourself, grasp the expansion slot covers or other unpainted parts of the computer chassis.

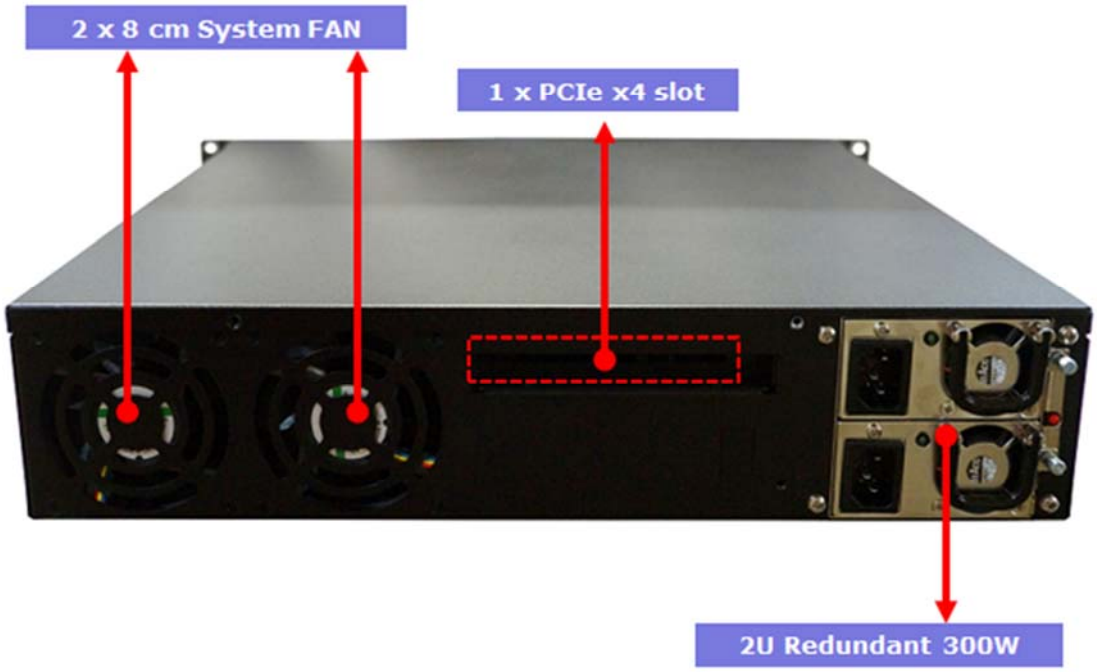
Handle the SCB-1803 appliance by its edges and avoid touching the components on it.

1.6 System Layout

<Front panel features>



<Rear panel features>



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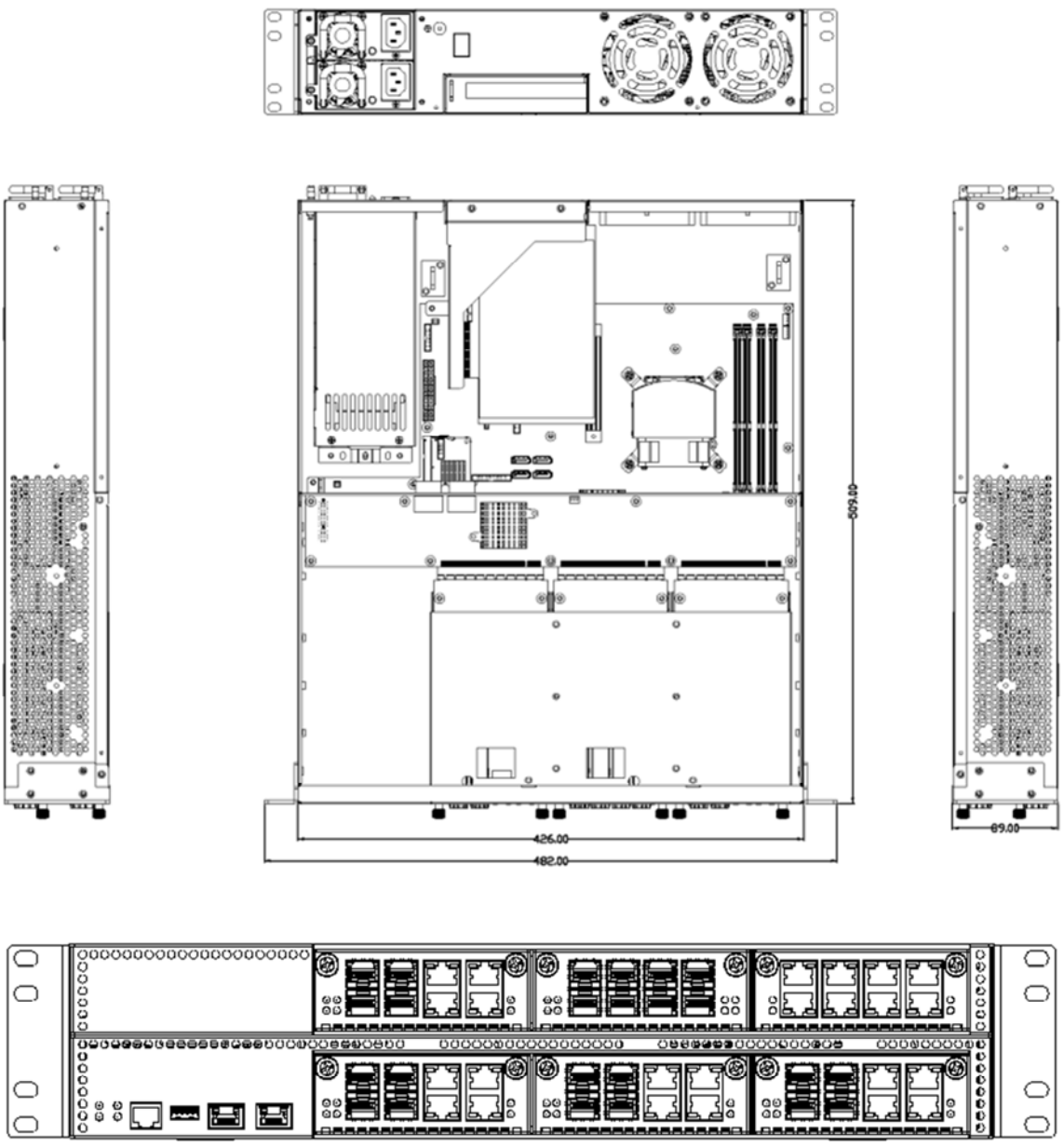
1.7 Dimension



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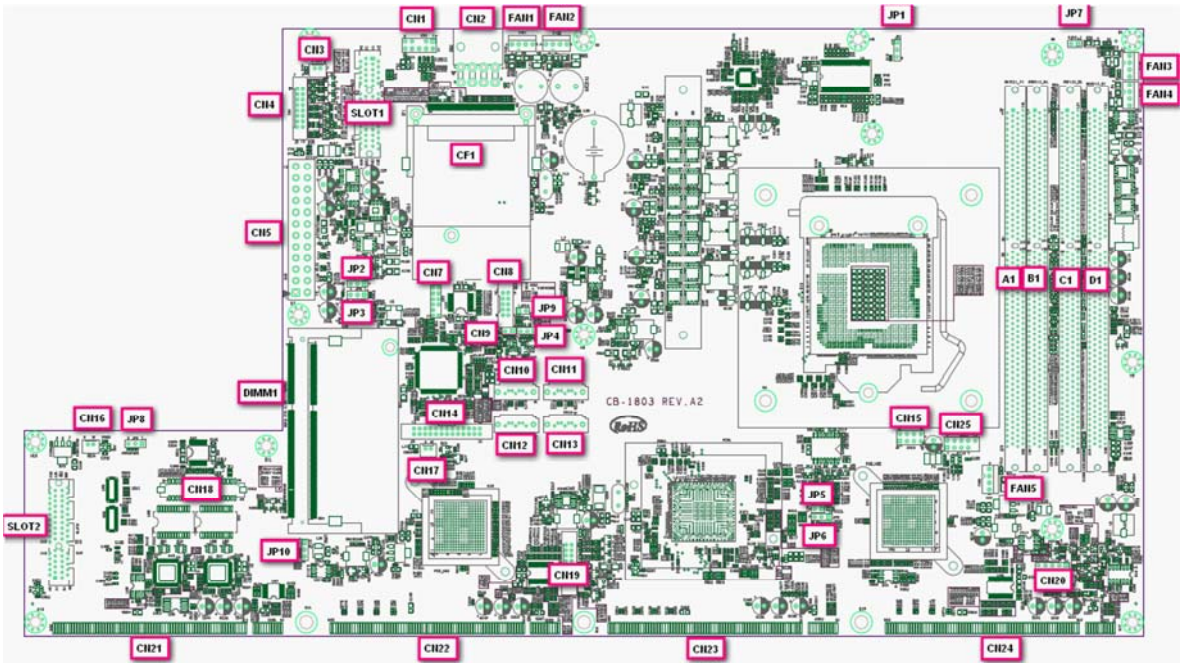
Chapter 2. Connector / Jumper Configuration

2.1 CB-1803 Connector / Jumper Location and Definition

Model Number： CB-1803 Rev.A2



Connector List			
Connector	**Description**	**Connector**	**Description**
CN1	KB/MS PIN HEADER	FAN1	FAN CONNECTOR
CN2	2X4 +12V POWER CONNECTOR	FAN2	FAN CONNECTOR
CN3	WAFER 1X2 POWER BUTTOM	FAN3	FAN CONNECTOR
CN4	VGA BOX HEADER (IPMI)	FAN4	FAN CONNECTOR
CN5	ATX POWER CONNECTOR	FAN5	FAN CONNECTOR
CN7	80 PORT PIN HEADER		
CN8	COM2 BOX HEADER		
CN9	1X2 RESET PIN HEADER	SLOT1	PCIE X4 SLOT
CN10	SATA CONNECTOR	SLOT2	PCIE X4 SLOT
CN11	SATA CONNECTOR	DIMM1	IPMI SOCKET

CN12	SATA CONNECTOR	CF1	CF SOCKET
CN13	SATA CONNECTOR		
CN14	LCM BOX HEADER		
CN15	2X4 SPI PIN HEADER		
CN16	WAFER 1X2 HDD LED		
CN17	WAFER 1X2 LCM BACKLIGHT		
CN18	IO CONNECTOR		
CN19	VGA BOX HEADER		
CN20	GPI PIN HEADER		
CN21	PCIE X16 夾板式 CONNECTOR		
CN22	PCIE X16 夾板式 CONNECTOR		
CN23	PCIE X16 夾板式 CONNECTOR		
CN24	PCIE X16 夾板式 CONNECTOR		
CN25	USB2.0 PIN HEADER		

Jumper List			
JP1	PCIE CONFIG SELECT (PEG)	JP7 DDR Voltage SEL	
	1-2: Normal (NC)		CLOSE: 1.5V
	2-3: PEG X8,X4,X4		OPEN: 1.35V

JP2	PS-ON SELECT	JP8	PLTRST_LAN_I210
	1-2: Normal		1-2: PCIE
	2-3: Force PS_ON		2-3: NCSI

JP3	ATX/AT MODE SELECT	JP9	POWER ON/OFF
	1-2: ATX MODE		CLOSE: RESERVED
	2-3: AT MODE		OPEN: RESERVED

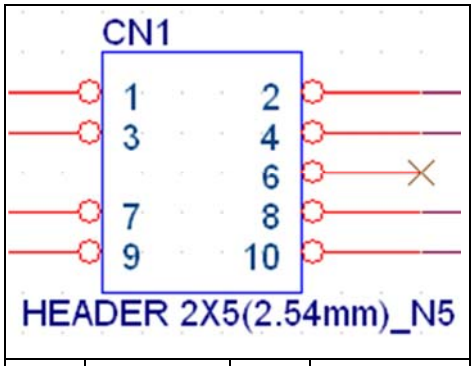
JP4	WDT FOR LAN BY-PASS OR RESET	JP10	PCIE SWITCHING
	1-2: RESET		1-2: PCIE SWITCHING to R321
	2-3: WD_BY#		2-3: PCIE SWITCHING to 1803

JP5	RESERVED

JP6	CLEAR CMOS
	1-2: Normal
	2-3: Clear CMOS

Connectors Location & Define

CN1 : KB/MS PIN HEADER

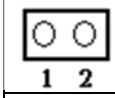


Pin	Define	Pin	Define
1	L_KCLK	2	L_MCLK
3	L_KDAT	4	L_MDAT
5	N/A	6	N/A
7	PS2_GND	8	PS2_GND
9	PS2_VCC	10	PS2_VCC

CN2 : 2X4 +12V POWER CONNECTOR

Standard ATX Power

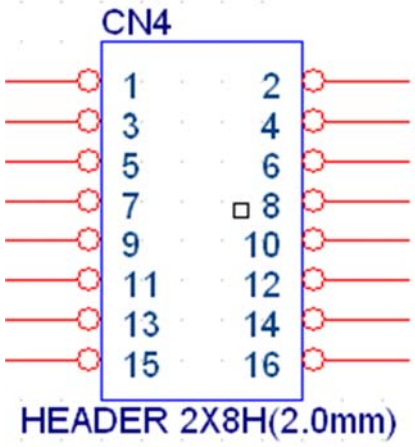
CN3 : WAFER 1X2 POWER BUTTOM



Pin	Define
1	GND
2	SIGNAL

CN4 : VGA BOX HEADER (IPMI)

1.



Pin	Define	Pin	Define
1	DACRO_VGA_C	2	DACGO_VGA_C
3	DACBO_VGA_C	4	NC
5	GND	6	GND
7	GND	8	GND
9	V5P0_VGA_VIN	10	GND
11	NC	12	DDCDAT_VGA_C
13	HSY_VGA_C	14	VSY_VGA_C
15	DDCCLK_VGA_C	16	NC

CN5 : 2X4 +12V POWER CONNECTOR

Standard ATX Power

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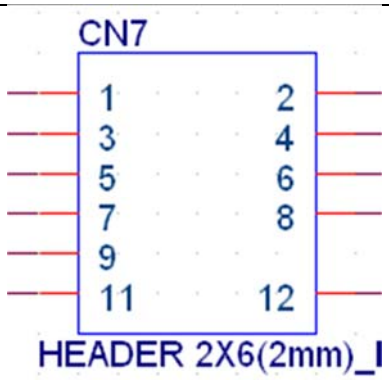
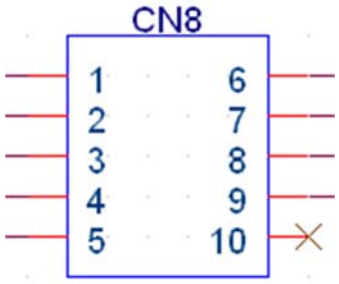
CN7 : 80 PORT PIN HEADER



2.

Pin	Define	Pin	Define
1	V3P3	2	L_AD0
3	L_AD1	4	L_AD2
5	L_AD3	6	L_FRAME_N
7	PLTRST_IO_N	8	V5P0
9	CLK_33M_PORT80	10	NC
11	GND	12	GND

CN8 : COM2 BOX HEADER

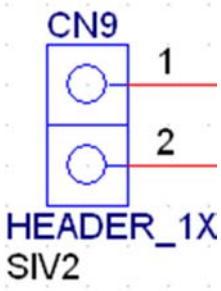


3.

Pin	Define	Pin	Define
1	DCD#2	6	DSR#2
2	RXD#2	7	RTS#2
3	TXD#2	8	CTS#2
4	DTR#2	9	RIA#2

5	GND	10	NC

CN9 : 1X2 RESET PIN HEADER

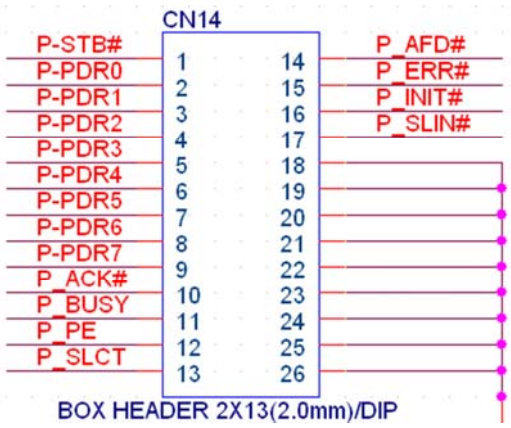


Pin	Define	Pin	Define
1	GND	2	RESET_BTN#

CN10~13 : SATA CONNECTOR

Standard SATA connector

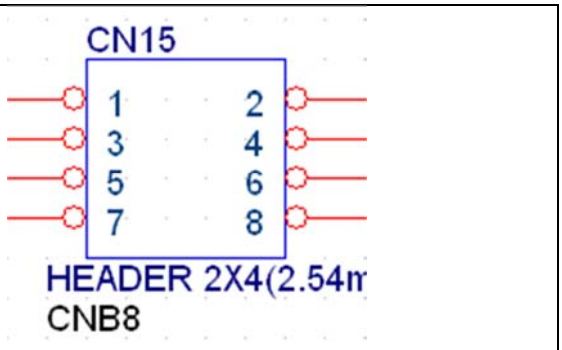
CN14 : LCM BOX HEADER



Pin	**Define**	**Pin**	**Define**
1	P-STB#	14	P_AFD#
2	P-PDR0 #	15	P_ERR#
3	P-PDR1 #	16	P_INIT#
4	P-PDR2 #	17	P_SLIN#
5	P-PDR3 #	18	GND
6	P-PDR4 #	19	GND

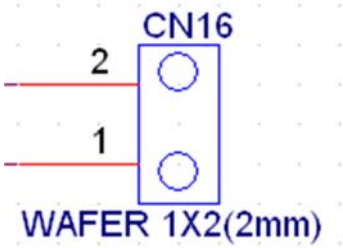
7	P-PDR5 #	20	GND
8	P-PDR6 #	21	GND
9	P-PDR7 #	22	GND
10	P_ACK#	23	GND
11	P_BUSY	24	GND
12	P_PE	25	GND
13	P_SLCT	26	GND

CN15 : 2X4 SPI PIN HEADER



Pin	Define	Pin	Define
1	VCC3_SPI	2	GND
3	SPI_CS0_N	4	SPI_CLK
5	SPI_MISO	6	SPI_MOSI
7	NC	8	FLASH_IO

CN16 : WAFER 1X2 HDD LED



Pin	Define	Pin	Define
1	HDD_LED_VCC	2	HDD_LED_N

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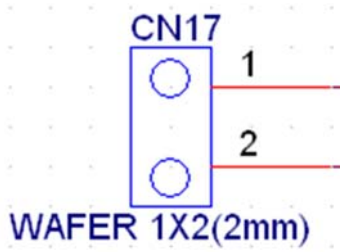
CN17 : WAFER 1X2 LCM BACKLIGHT



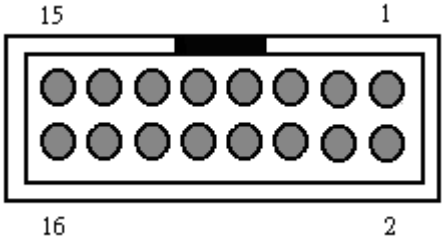
Pin	Define	Pin	Define
1	GP74_CONN	2	V5P0

CN18 : IO CONNECTOR

Pin	Define	Pin	Define
2	AOUT_CON0+	1	ALINK100#
4	AOUT_CON0-	3	ALINK1000#
6	AOUT_CON1+	5	AACT#
8	AOUT_CON1-	7	BINK100#
10	AOUT_CON2+	9	BINK1000#
12	AOUT_CON2-	11	BACT#
14	AOUT_CON3+	13	V3P3

16	AOUT_CON3-	15	RTS#1/CTS#1
18	GND_EARTH	17	DTR#1
20	BOUT_CON0+	19	TXD#1
22	BOUT_CON0-	21	RXD#1
24	BOUT_CON1+	23	DSR#1
26	BOUT_CON1-	25	-GP70
28	BOUT_CON2+	27	GP71
30	BOUT_CON2-	29	GP72
32	BOUT_CON3+	31	GP73
34	BOUT_CON3-	33	HDD_LED_N
36	3VDUAL	35	USB_PP0_CON
38	P80_CTRL	37	USB_PN0_CON
40	V5P0	39	GND

CN19 : VGA BOX HEADER



Pin	Define	Pin	Define
1	VGA_RED	2	VGA_RED
3	VGA_BLUE	4	NC
5	GND	6	GND
7	GND	8	GND
9	+5V	10	GND
11	NC	12	SDA
13	HSYNC	14	VSYNC
15	SCL	16	NC

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CN20 : GPI PIN HEADER

Pin	Define
1	GPIO2
2	GPIO3
3	GPIO4
4	GPIO5
5	GND

CN21~24PCIE X16 夾板式 CONNECTOR

Standard Aewin PCIE connector

CN25 : USB2.0 PIN HEADER

Standard USB2.0 connector

FAN1~5: FAN CONNECTOR

Standard 4 wire fan connector

SLOT1: PCIE X4 SLOT

Standard PCIE x4 connector

SLOT2: PCIE X4 SLOT

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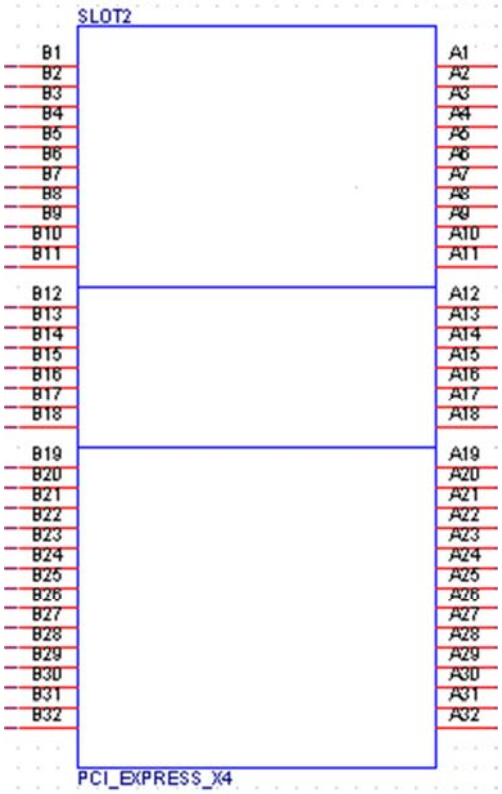

Pin	Define	Pin	Define
B1	GPIO50	A1	EXT_SLOT_FANIN1
B2	GPIO52	A2	EXT_SLOT_FANIN2
B3	GPIO54	A3	EXT_SLOT_FANIN3
B4	GP51	A4	WD_BY#_BUFF
B5	GP52	A5	PLTRST_CHIP
B6	GP53	A6	GND
B7	SMB_DATA_RESUME	A7	EXT_CLK_PEG_100MP
B8	SMB_CLK_RESUME	A8	EXT_CLK_PEG_100MN
B9	GND	A9	GND
B10	EXT_SLOTD_TXP0	A10	EXT_SLOTD_RXP0
B11	EXT_SLOTD_TXN0	A11	EXT_SLOTD_RXN0
B12	GND	A12	GND
B13	EXT_SLOTD_TXP1	A13	EXT_SLOTD_RXP1

B14	EXT_SLOTD_TXN1	A14	EXT_SLOTD_RXN1
B15	EXT_SLOTD_TXP2	A15	EXT_SLOTD_RXP2
B16	EXT_SLOTD_TXN2	A16	EXT_SLOTD_RXN2
B17	GND	A17	GND
B18	EXT_SLOTD_TXP3	A18	EXT_SLOTD_RXP3
B19	EXT_SLOTD_TXN3	A19	EXT_SLOTD_RXN3
B20	GND	A20	GND
B21	EXT_SLOTD_TX4	A21	EXT_SLOTD_RXP4
B22	EXT_SLOTD_TXN4	A22	EXT_SLOTD_RXN4
B23	GND	A23	GND
B24	EXT_SLOTD_TXP5	A24	EXT_SLOTD_RXP5
B25	EXT_SLOTD_TXN5	A25	EXT_SLOTD_RXN5
B26	GND	A26	GND
B27	EXT_SLOTD_TXP6	A27	EXT_SLOTD_RXP6
B28	EXT_SLOTD_TXN6	A28	EXT_SLOTD_RXN6
B29	GND	A29	GND
B30	EXT_SLOTD_TXP7	A30	EXT_SLOTD_RXP7
B31	EXT_SLOTD_TXN7	A31	EXT_SLOTD_RXN
B32	GND	A32	GND

DIMM1: IPMI SOCKET

Standard AeWIN IPMI SOCKET

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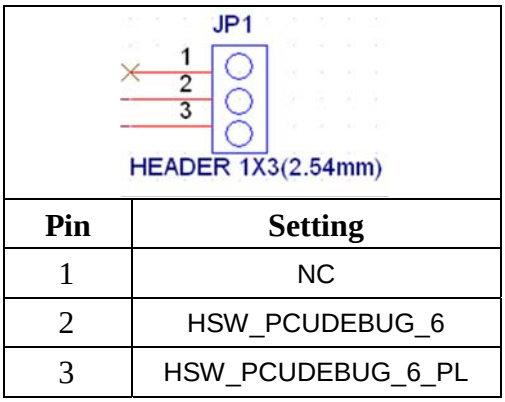
Connectors Location & Define

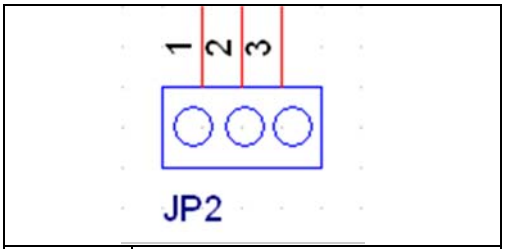
JP1



Pin	Setting
1	NC
2	HSW_PCUDEBUG_6
3	HSW_PCUDEBUG_6_PL

Default (1-2)

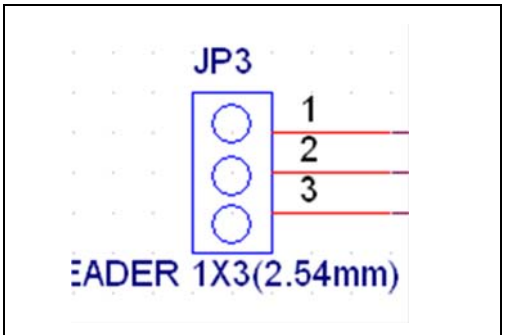
JP2



Pin	Setting
1	IO_PSON#_R
2	FM_PS_ON#
3	GND

Default (1-2)

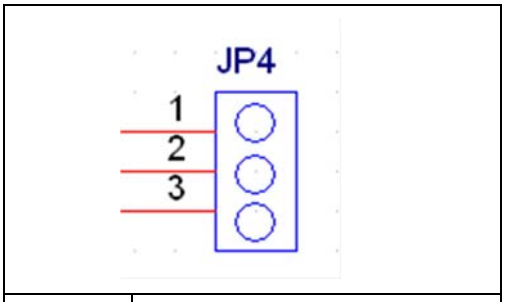
JP3



Pin	Setting
1	PANSWIN#
2	PSIN
3	AT_PWON

Default (1-2)

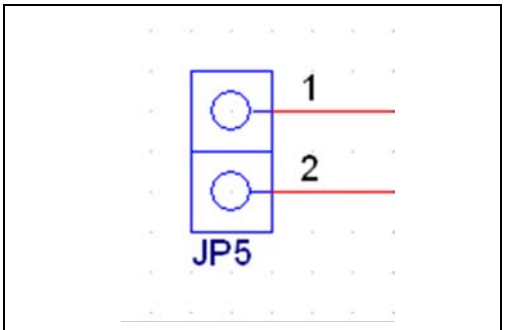
JP4



Pin	Setting
1	RESET_WDTO#
2	WDTO#
3	WDTO#_JP4

Default (2-3)

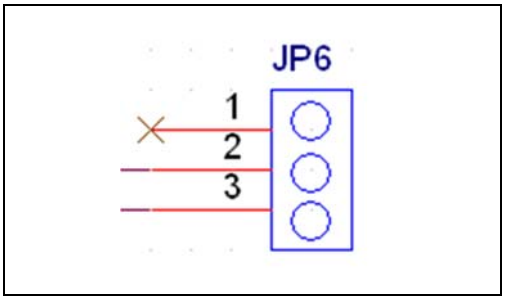
JP5



Pin	Setting
1	PCH_SRTCRSTB_PULLUP
2	GND

Default (NC)

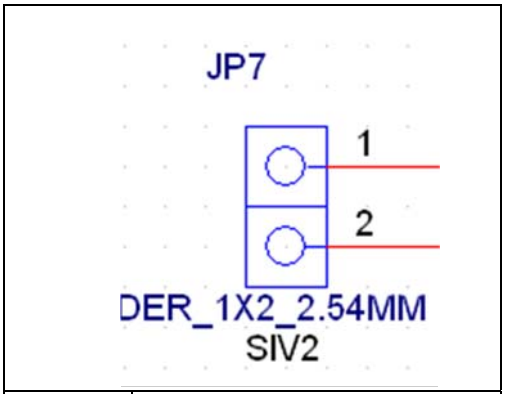
JP6



Pin	Setting
1	NC
2	PCH_RTCRST_PULLUP
3	RTCRST#_PD

Default (1-2)

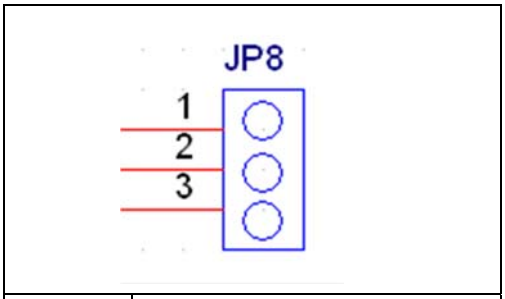
JP7



Pin	Setting
Close	1.5V
Open	1.35V

Default (Close)

JP8

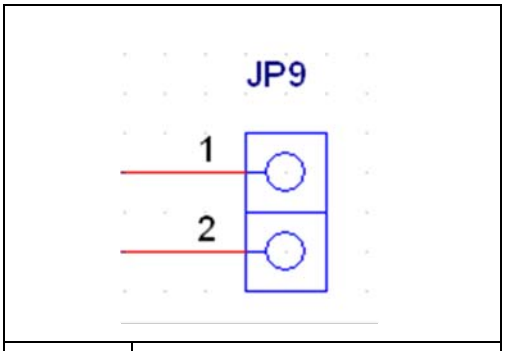


Pin	Setting
1	PLTRST_PCIE_LAN1-2
2	PLTRST_PCIE_LAN_I210
3	Pull down

Default (1-2)

Advanced Embedded & Network Solutions

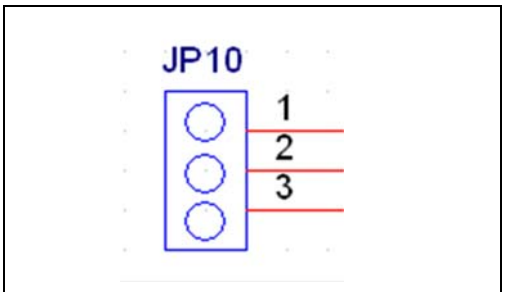
JP9



Pin	Setting
1	GP57#
2	GND

Default (NC)

JP10



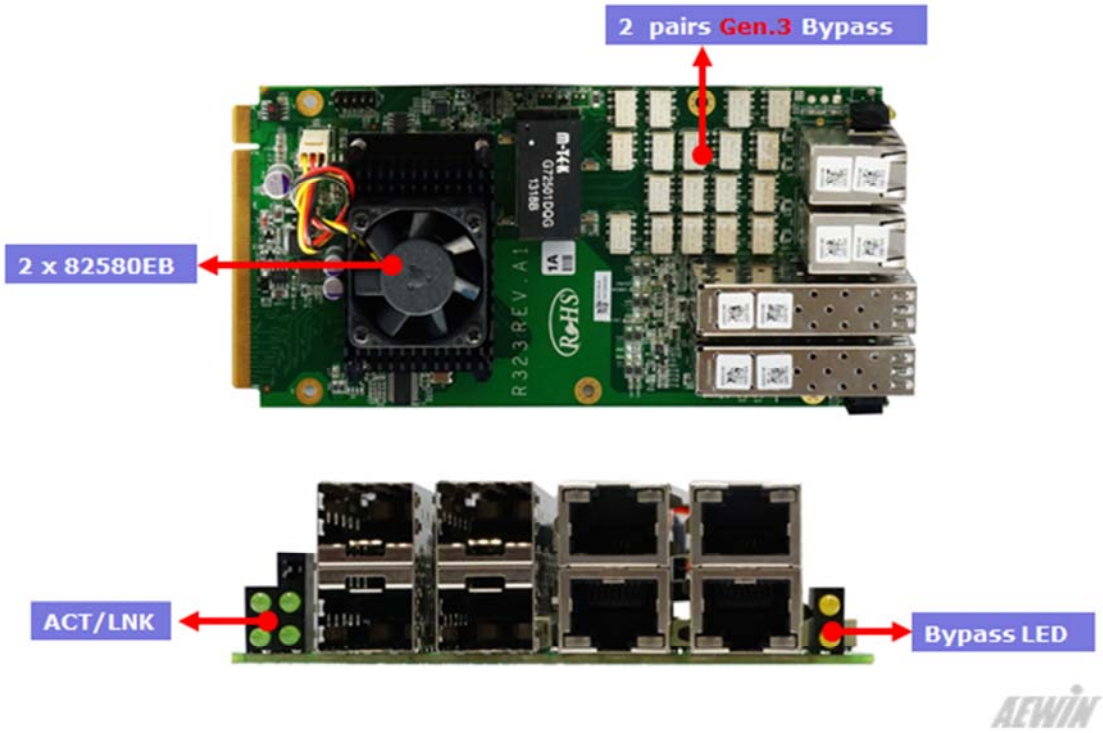
Pin	Setting
1	GND (R321)
2	SIO-GP03
3	M2_P45MERGEN (1803)

Default (2-3)

Chapter 3. Optional Lan Module & Add-on Card Setting

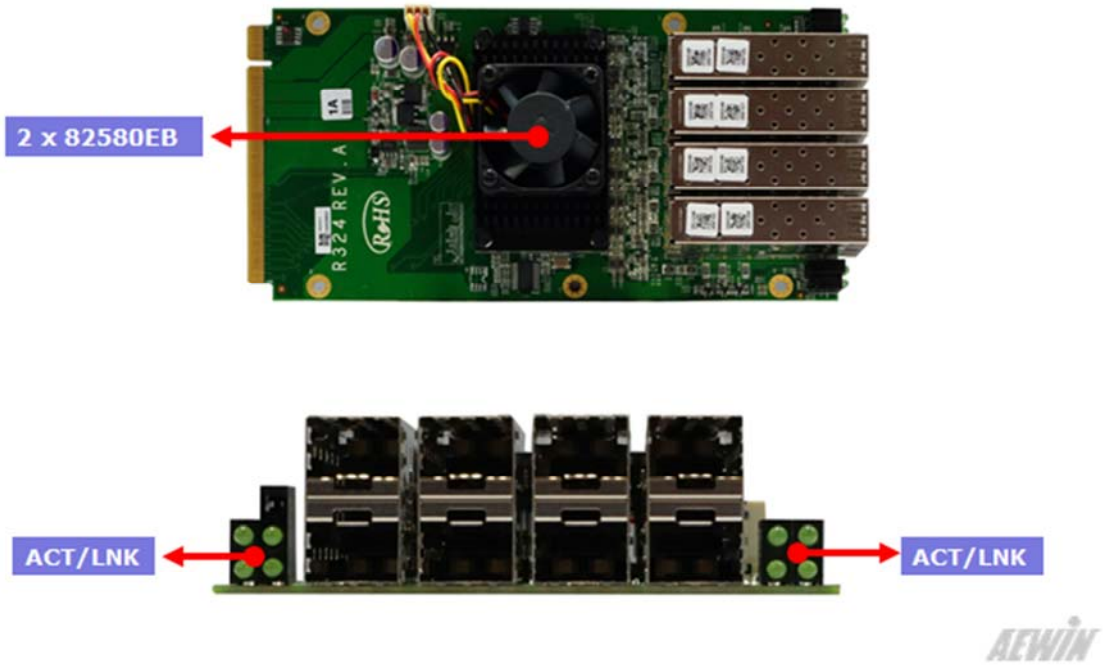
The SCB-1803 can offer various GbE and 10GbE module combinations to match various applications and market demand.

3.1 R323: Ethernet module with four GbE RJ45 and four SFP GbE



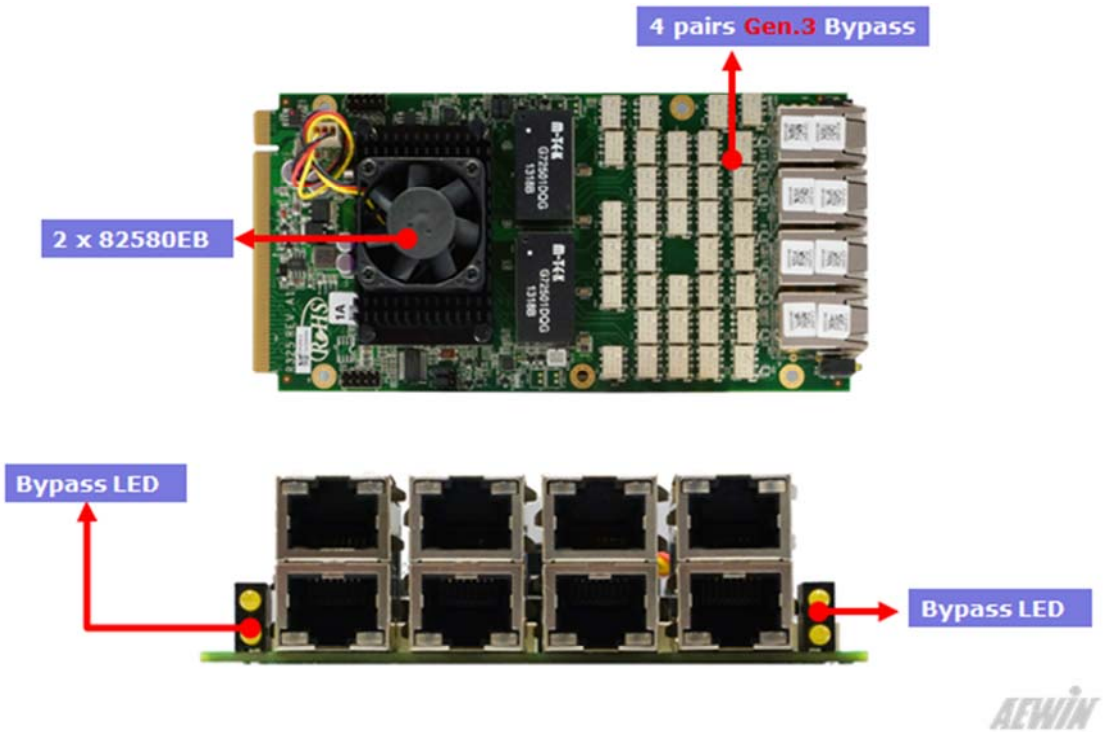
R323 is a four GbE RJ45 and four GbE SFP module. The PCIe x8 golden finger must be connected with CN22、CN23、CN24 or R321A backplane.

3.2 R324: Ethernet module with eight GbE fiber



R324 is a eight GbE SFP module. The PCIe x8 golden finger must be connected with CN22、CN23、CN24 or R321A backplane.

3.3 R325: Ethernet module with eight GbE copper

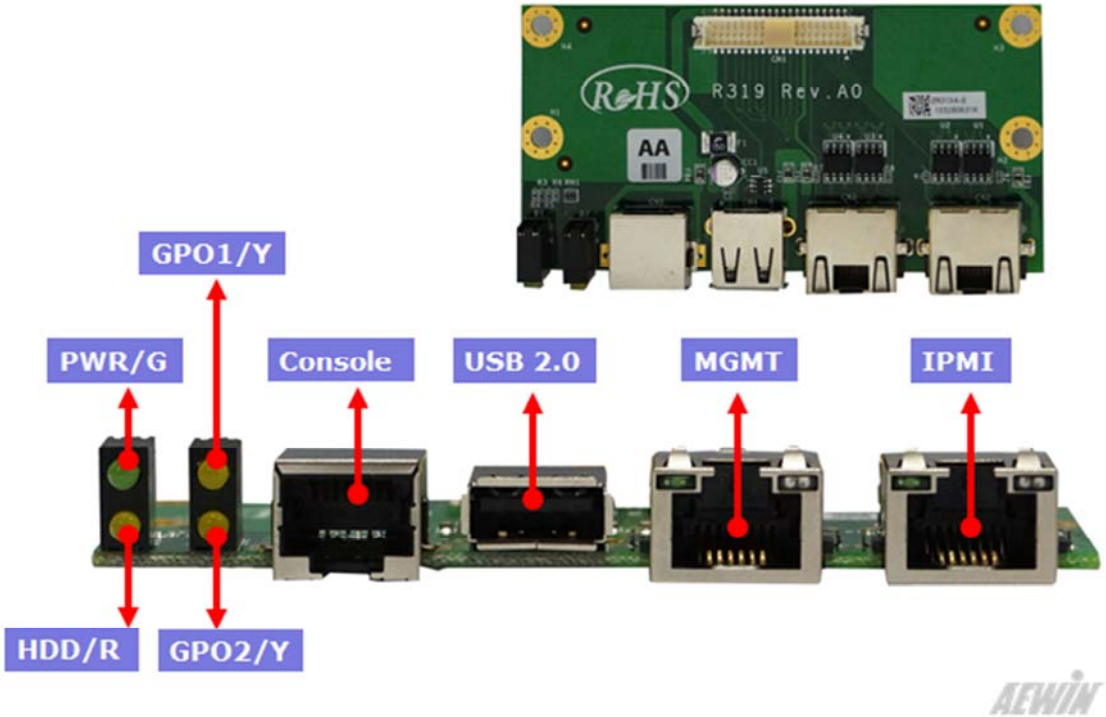


R324 is a eight GbE SFP module. The PCIe x8 golden finger must be connected with CN22、CN23、CN24 or R321A backplane.

3.4 R320: Riser Card for R321

R321: 1 PCIe x8 to 3 PCIe x8 in PCIe x16 slot backplane

3.5 R319: Front I/O module



R319A is a front I/O module with Power/HDD/Status LEDs, one USB

2.0 port, one RJ45 console port(COM1, RS-232) , two GbE port, The CN1 must be connected to CB-1803.

Chapter 4. BIOS Setup

The ROM chip of your CB-1803 board is configured with a customized Basic Input/Output System (BIOS) from AMI BIOS. The BIOS is a set of permanently recorded program routines that give the system its fundamental operational characteristics. It also tests the computer and determines how the computer reacts to instructions that are part of programs.

The BIOS is made up of code and programs that provide the device-level control for the major I/O devices in the system. It contains a set of routines (called POST, for Power-On Self Test) that check out the system when you turn it on. The BIOS also includes BIOS setup program, so no disk-based setup program is required CMOS RAM stores information for:

- Date and time
- Memory capacity of the appliance
- Type of display adapter installed
- Number and type of disk drives

The CMOS memory is maintained by battery installed on the SCB-8970 board. By using the battery, all memory in CMOS can be retained when the system power switch is turned off. The system BIOS also supports easy way to reload the CMOS data when you replace the battery of the battery power lose.

4.1 Quick Setup

In most cases, you can quickly configure the system by choosing the following main menu options:

1. Choose “Exit” ➔ “Load Optimal Defaults” from the main menu. This loads the setup default values from the BIOS Features Setup and Chipset Features Setup screens.
2. Choose “Main” & “Advanced” from the main menu. This option lets you

configure the date and time, hard disk type, floppy disk drive type, primary display and more.

3. In the main menu, press F4 (“Save and Exit”) to save your changes and reboot the system.

4.2 Entering the BIOS Setup Utility

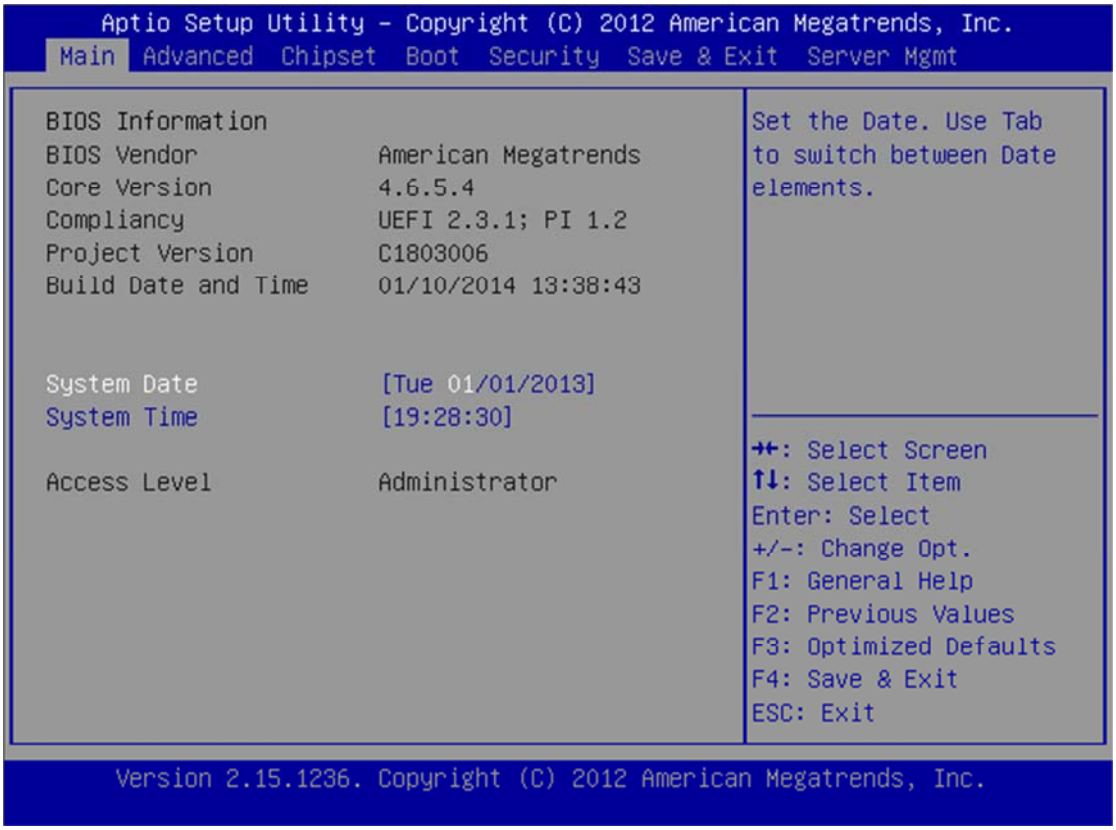
Use the BIOS setup program to modify the system parameters to reflect the options installed in your system and to customize your system. For example, you should run the Setup program after you:

- Received an error code at startup
- Install another disk drive
- Use your system after not having used it for a long time
- Find the original setup missing
- Replace the battery
- Change to a different type of CPU
- Run the AMI Flash program to update the system BIOS

Run the BIOS setup program after you turn on the system. On-screen instructions explain how to use the program.

⇩**Enter the BIOS setup program’s main menu as follows:**

1. Turn on or reboot the system. After the BIOS performs a series of diagnostic checks, the following message appears:
   “Press DEL to enter SETUP”
2. Press the <DEL> key to enter BIOS setup utility. The main menu appears:



3. Choose a setup option with the arrow keys and press <Enter>. See the following sections for a brief description of each setup option.

BIOS Information: Displays the BIOS related information.

Memory Information: Displays the total memory size.

System Language: Change the language display in BIOS setup utility.

System Date [Day mm/dd/yyyy]:
This item allows you to set the system date.

SystemTime: [hour:min:sec]:
This item allows you to set the system time.

In the main menu, press F4 (“Save and Exit”) to save your changes and reboot the system. Press F3(“Optimized Defaults”) to load the Optimal default configuration

values of the menu. Pressing <ESC> anywhere in the program returns you to the main menu.

4.3 Menu Options

The main menu options of the BIOS setup program are described in the following and the following sections of this chapter.

Main: For changing the basic system configurations.

Advanced: For changing the advanced system settings.

Chipset: For customize the Intel chipset function

Boot: For changing the system boot configurations.

Security: For setting User and Supervisor Passwords.

Save & Exit: For selecting the exit options and loading default settings.

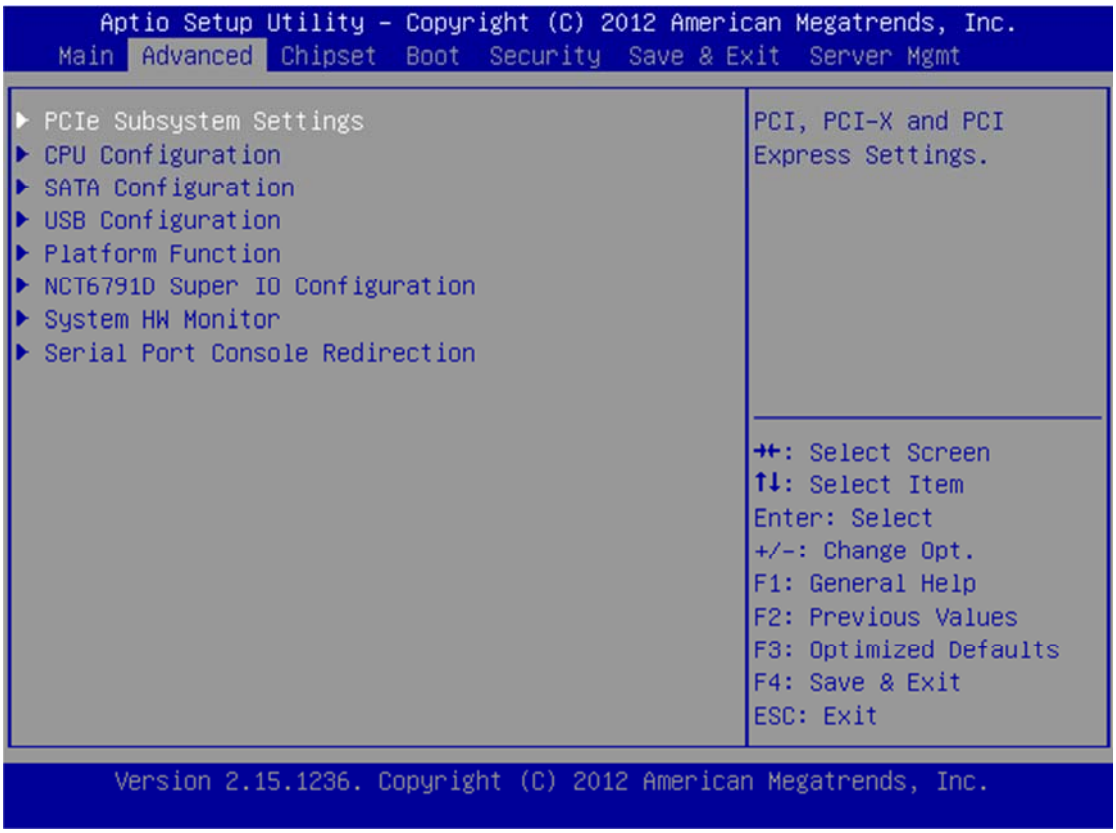
Server Mgmt: For changing the Server Mgmt settings

4.4 Advanced Menu

The Advanced menu items allow you to change the settings for the CPU and other system devices.

⇩Use the Advanced Setup option as follows:

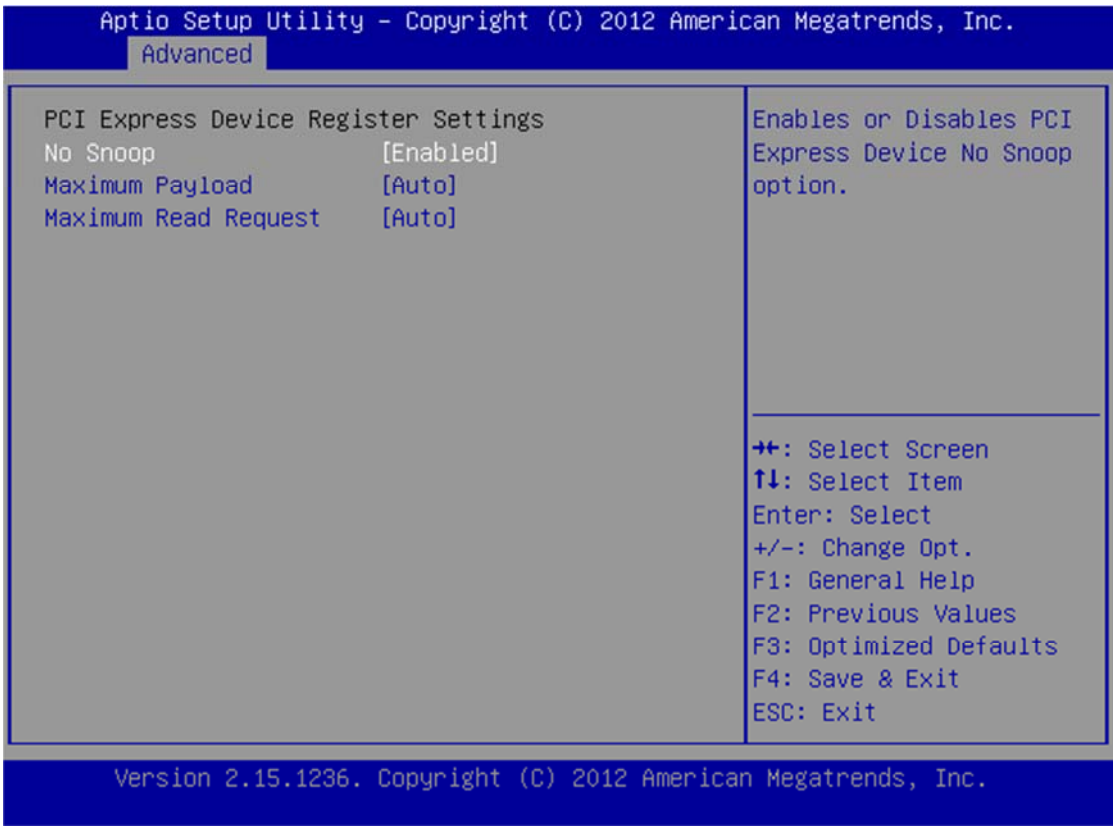
1. Choose “Advanced” from the main menu. The following screen appears:



2. Use the arrow keys to move between fields. Modify the selected field using the PgUP/PgDN/+/- keys. Some fields let you enter numeric values directly.

3. After you have finished with the Advanced setup, press the <←> or <→> key to switch to other setup menu or press <F4> key to save setting.

PCI Subsystem Settings



No Snoop

Enables or Disables PCI Express Device No Snoop option.

Maximum Payload

Set Maximum Payload of PCI Express Device or allow System BIOS to select the value.

Maximum Read Request

Set Maximum Read Request Size of PCI Express Device or allow System BIOS to select the value.

CPU Configuration

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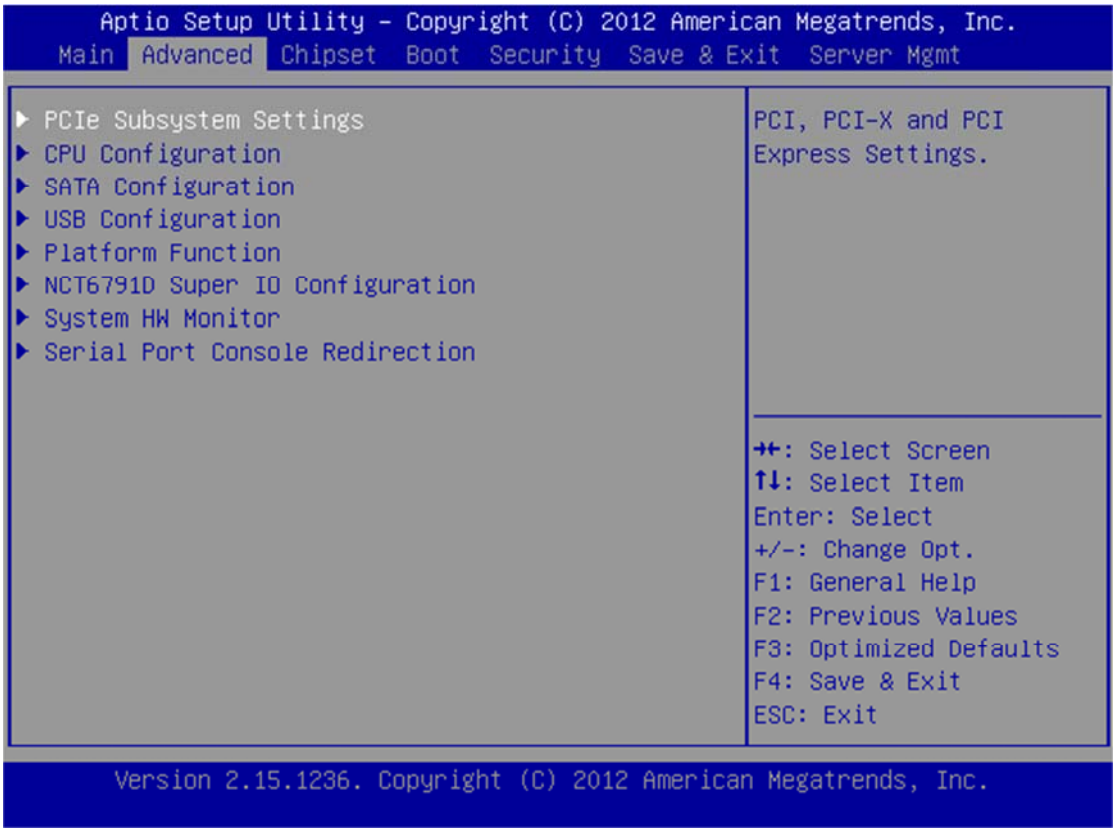
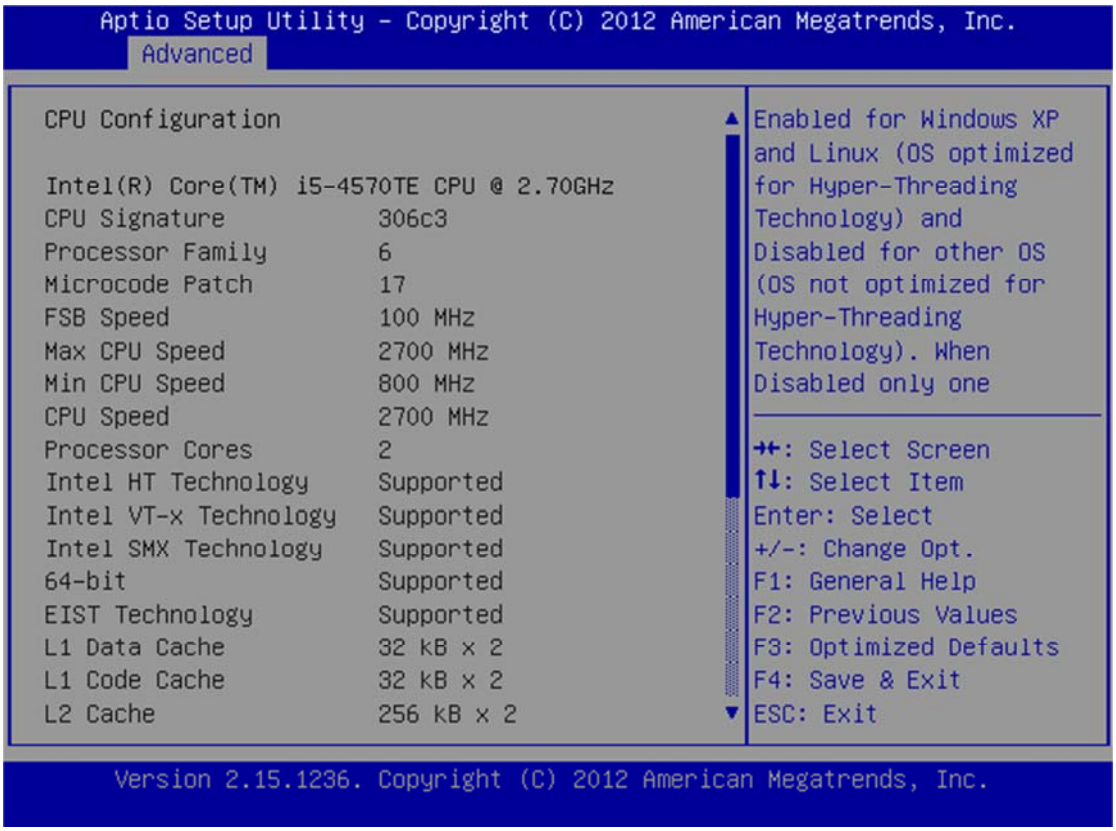
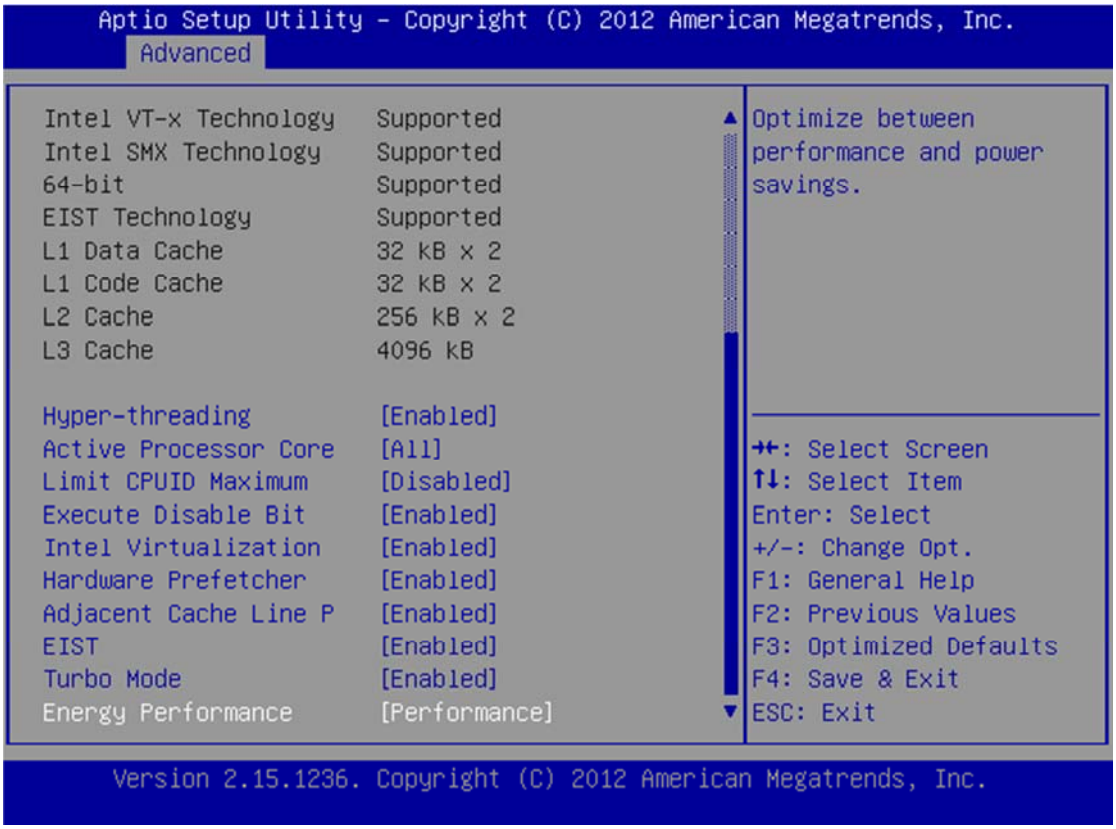






Hyper-threading

Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology). When Disabled only one thread per enabled core is enabled.

Active Processor Cores

Number of cores to enable in each processor package.

Limit CPUID Maximum

Disabled for Windows XP.

Execute Disable Bit

XD can prevent certain classes of malicious buffer overflow attacks when combined with a supporting OS (Windows Server 2003 SP1, Windows XP SP2, SuSE Linux 9.2, RedHat Enterprise 3 Update 3.)

Intel Virtualization Technology

When enabled, a VMM can utilize the additional hardware capabilities provided by

Hardware Prefetcher

Enable the Mid Level Cache (L2) streamer prefetcher.

Adjacent Cache Line Prefetch

Enable the Mid Level Cache (L2) prefetching of adjacent cache lines.

EIST

Enable Enhanced Intel SpeedStep Technology

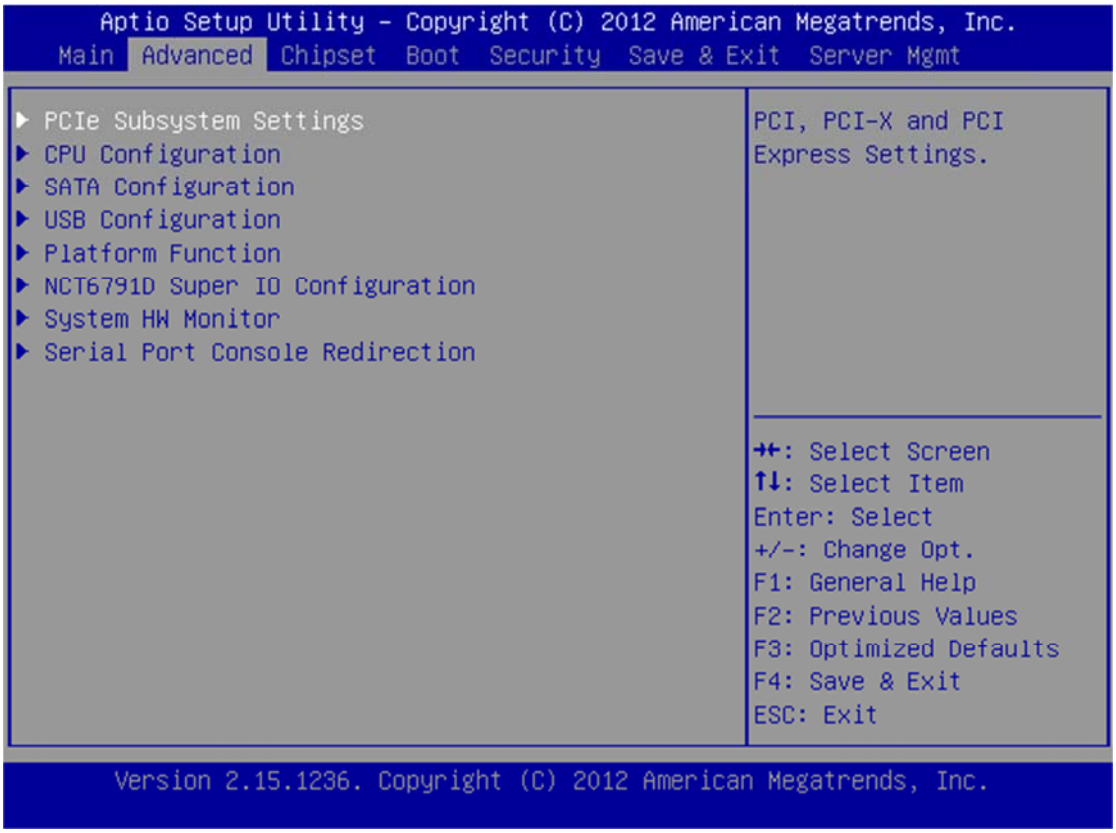
Turbo Mode

Enable Turbo Mode

Energy Performance

Optimize between performance and power savings.

SATA Configuration



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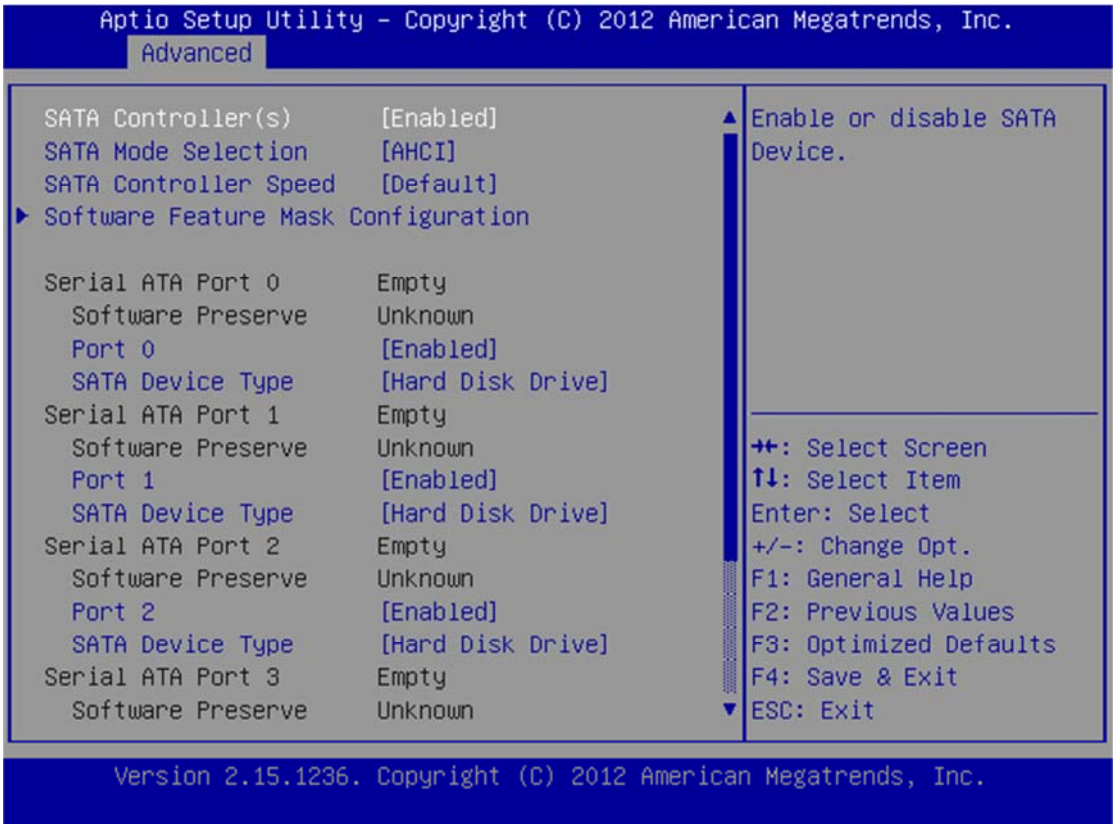

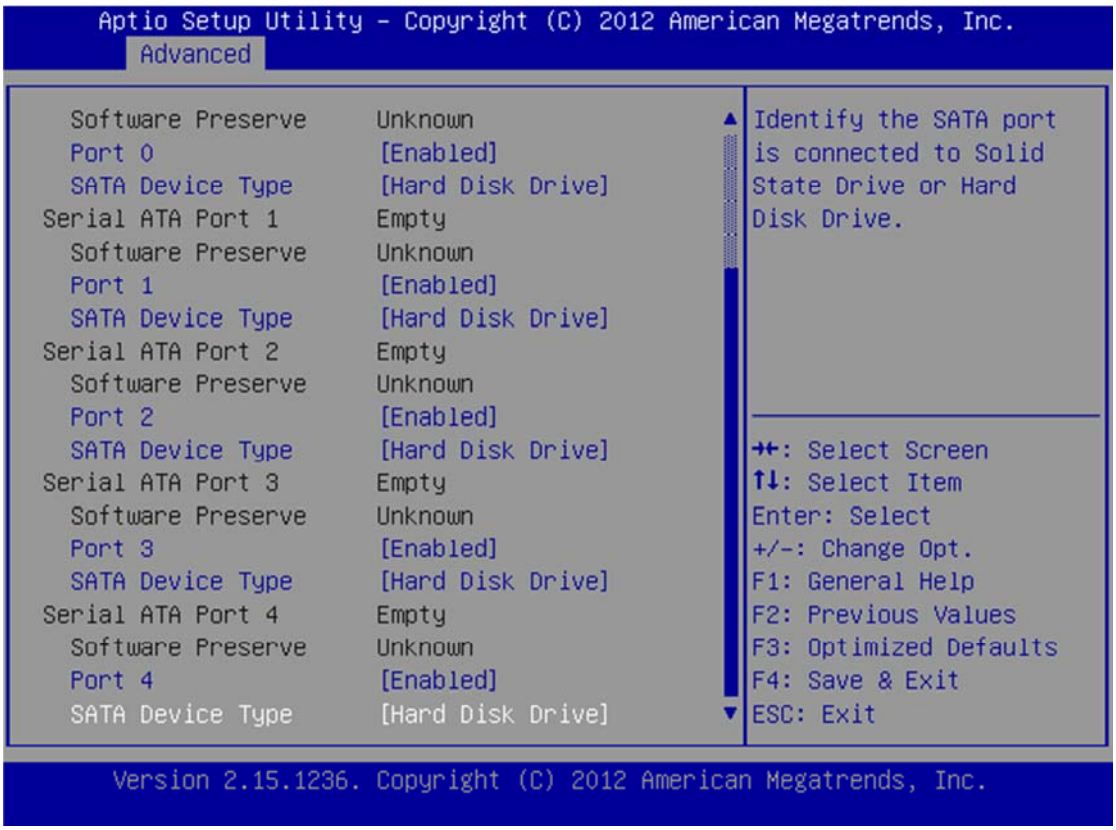

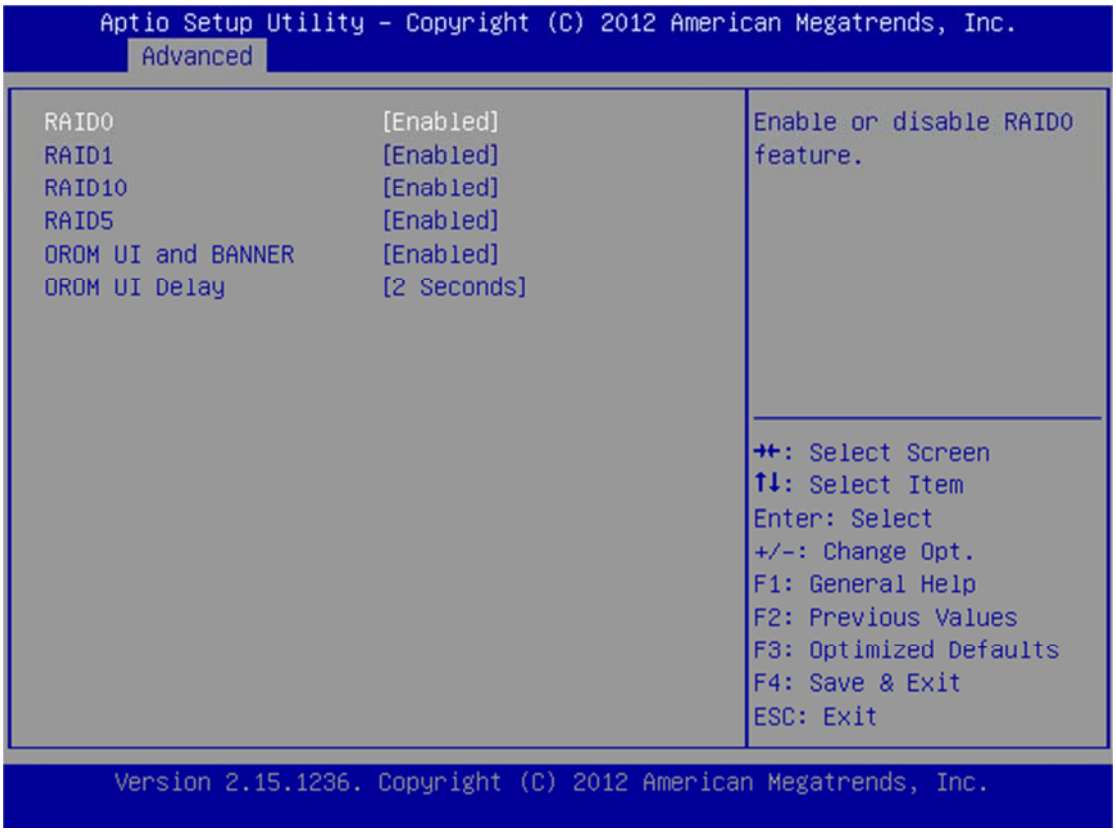

SATA Mode

(1) IDE Mode. (2) AHCI Mode. (3) RAID Mode.

SATA Port0 ~ 4 This information is auto-detected by BIOS and is not user-configurable. It will show "Not Present" if no IDE device is installed in the system.

SATA Controller(s)

Enable or disable SATA Device.

SATA Mode Selection

Determines how SATA controller(s) operate.

SATA Controller Speed

Indicates the maximum speed the SATA controller can support.

RAID0

Enable or disable RAID0 feature.

RAID1

Enable or disable RAID1 feature.

RAID10

Enable or disable RAID10 feature.

RAID5

Enable or disable RAID5 feature.

OROM UI and BANNER

If enabled, then the OROM UI is shown. Otherwise, no OROM banner or information will be displayed if all disks and RAID volumes are Normal.

OROM UI Delay

If enabled, indicates the delay of the OROM UI Splash Screen in a normal status.

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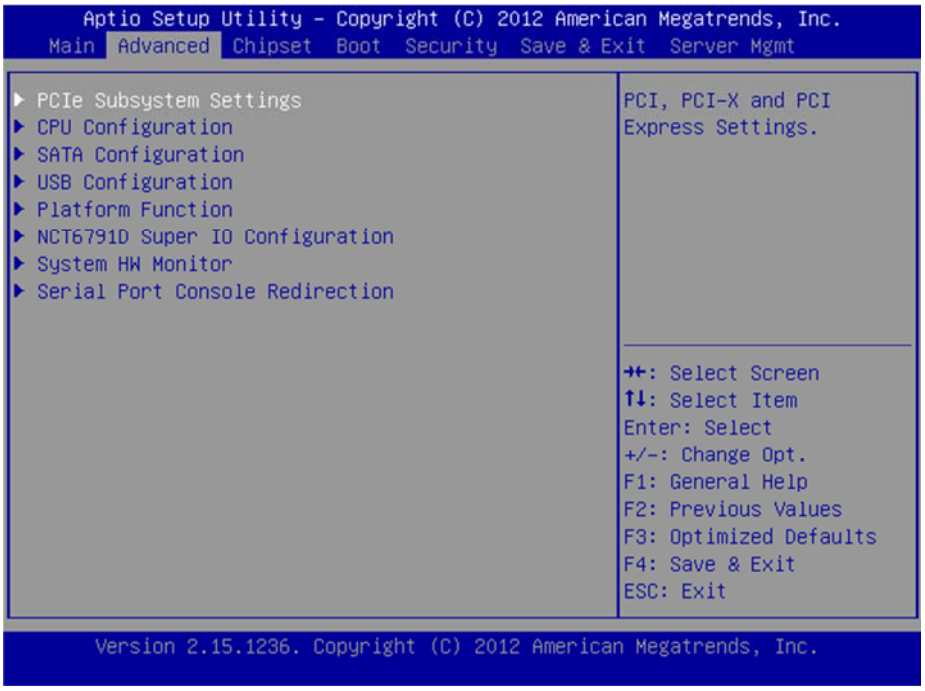
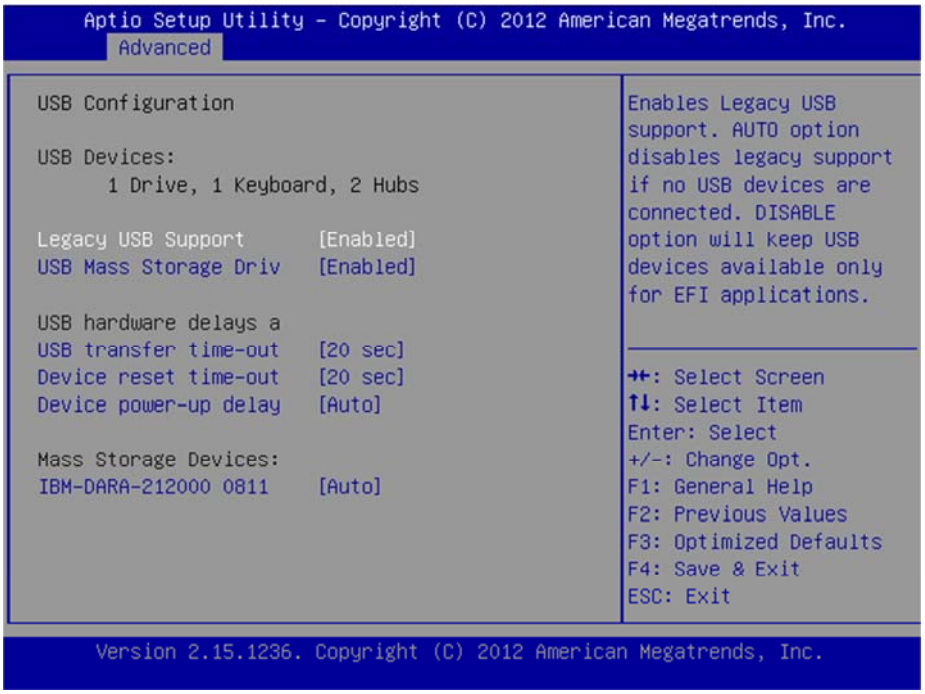
USB Configuration





Legacy USB Support

Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.

USB Mass Storage Device Configuration

Configure the USB Mass Storage Devices.

USB transfer time-out

The time-out value for Control, Bulk, and Interrupt transfers.

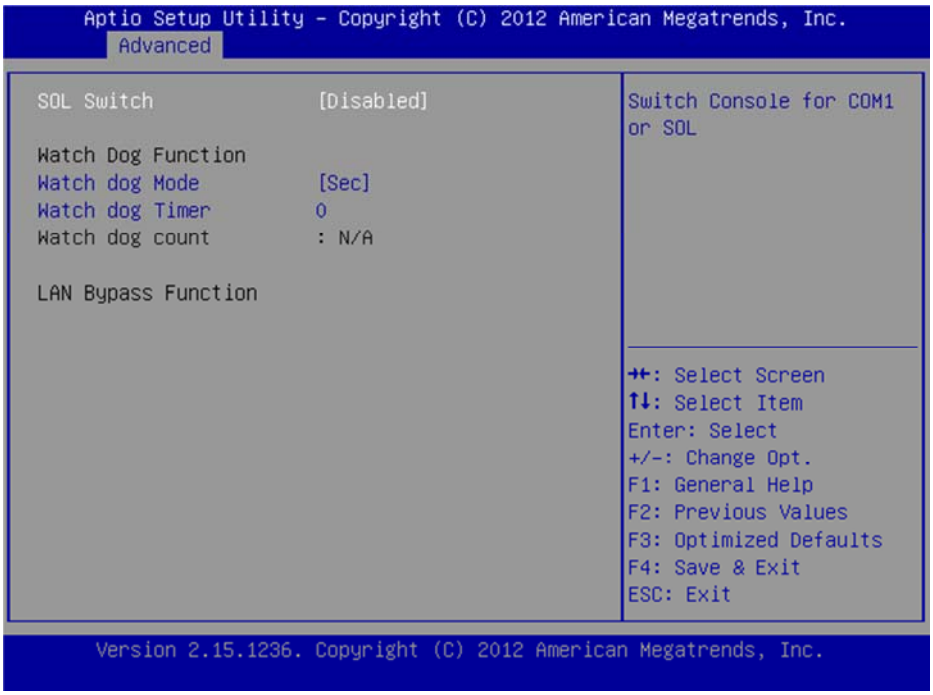
Device reset time-out

USB mass storage device Start Unit command time-out.

Device power-up delay

Maximum time the device will take before it properly reports itself to the Host Controller. 'Auto' uses default value: for a Root port it is 100 ms, for a Hub port the delay is taken from Hub descriptor.

Platform Function



SOL Switch

Switch console for COM2 or SOL.

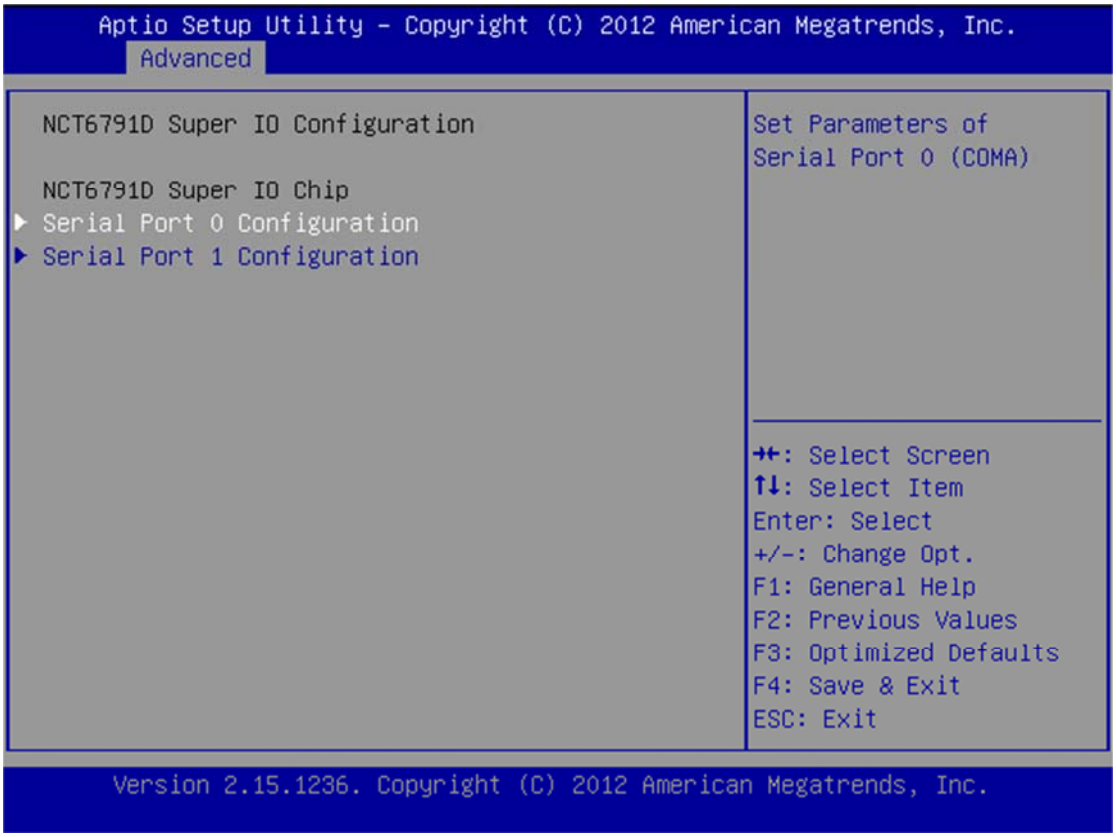
Watch dog Mode

Watch dog Mode（Sec/Min）.

Watch dog Timer

Watch dog Mode（Sec/Min）.

NCT6791D Super IO Configuration



AEWIN

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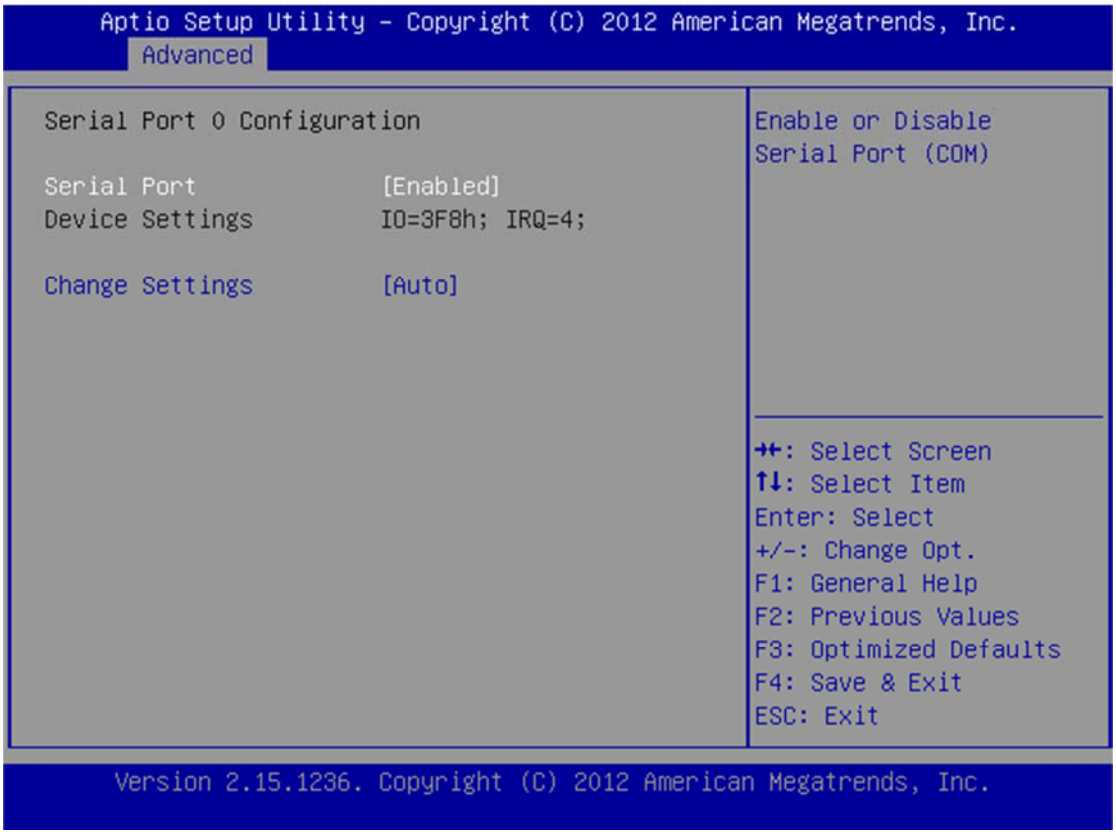
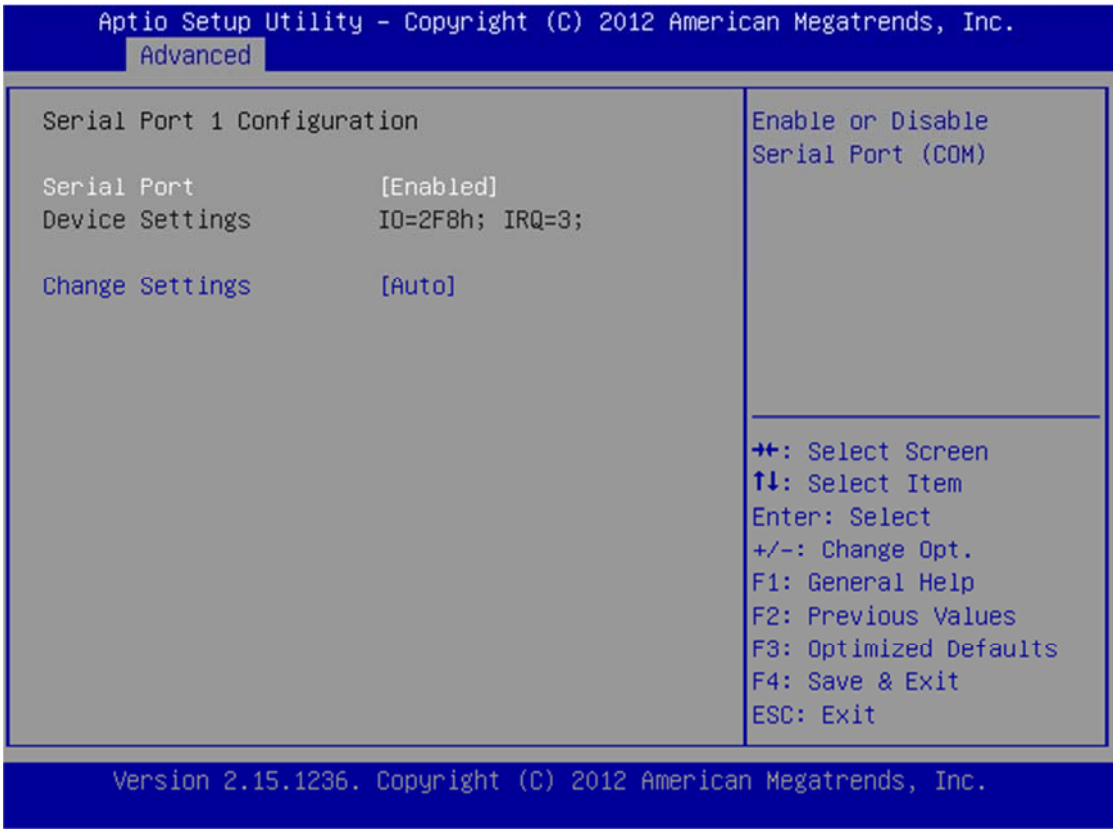




Serial Port 0 / 1 Configuration

Serial Port

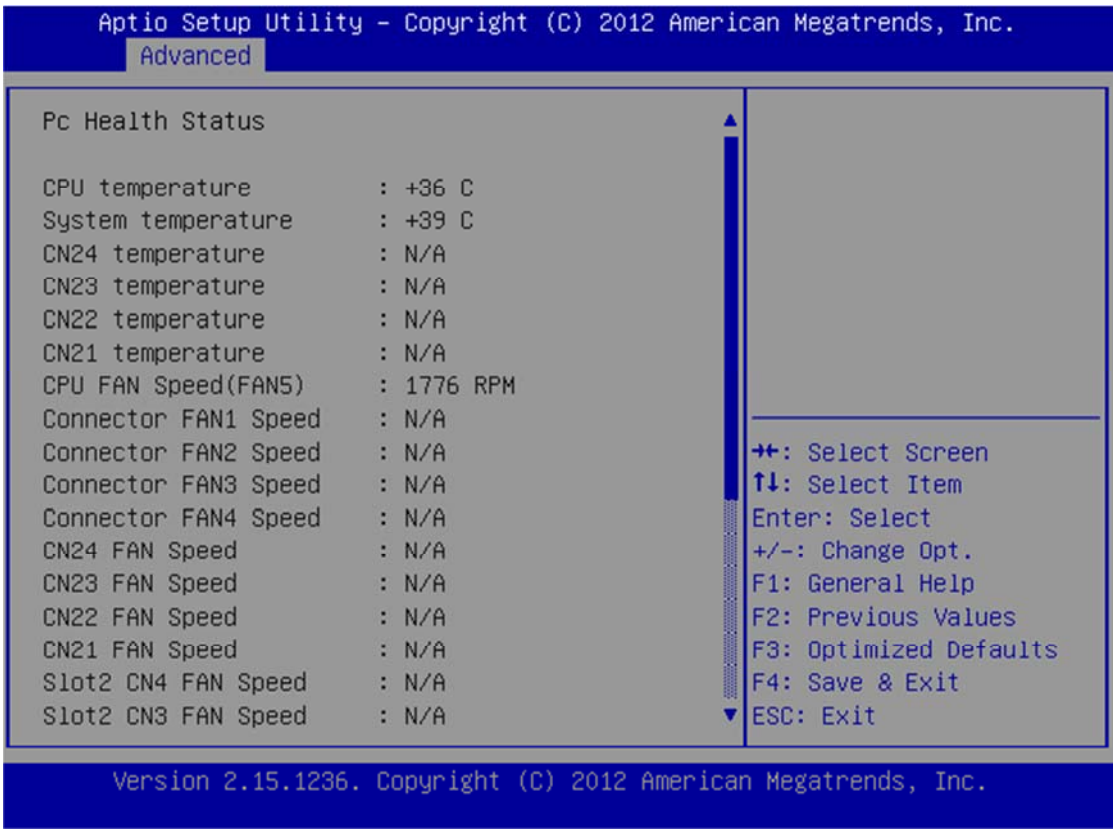
Enable or Disable Serial Port (COM)

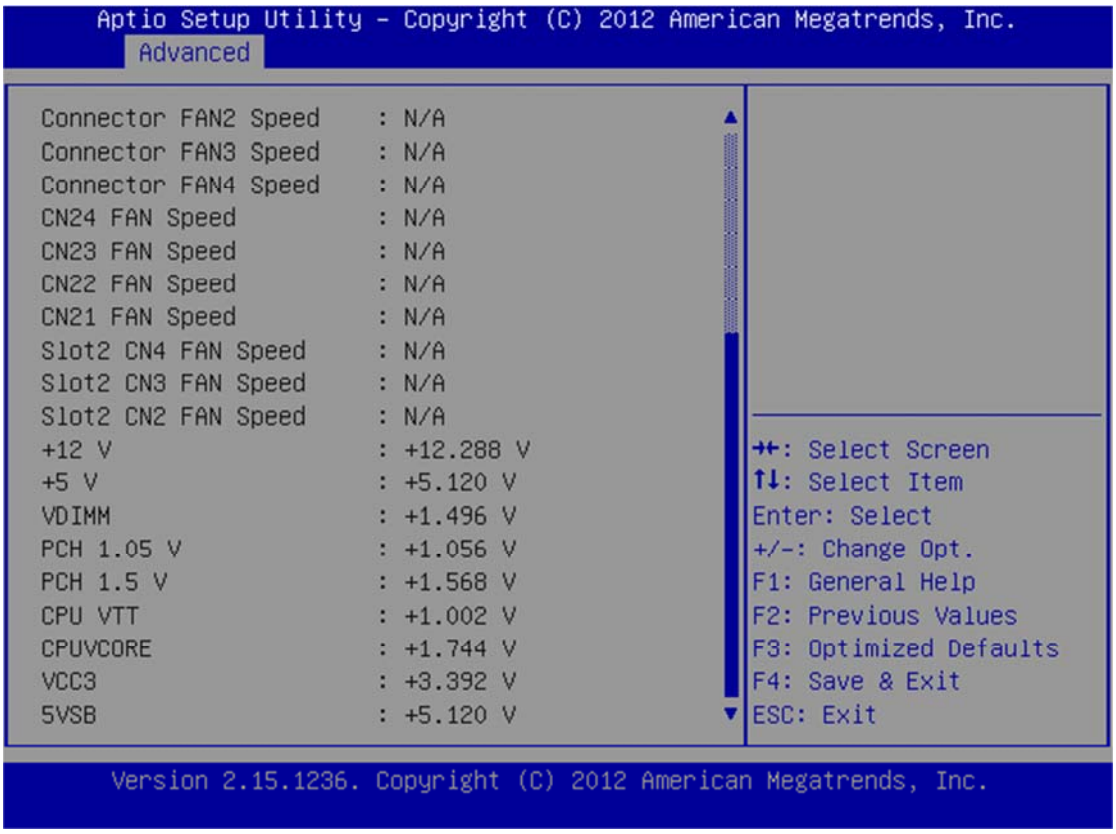
Change Settings

Select an optimal setting for Super IO device.

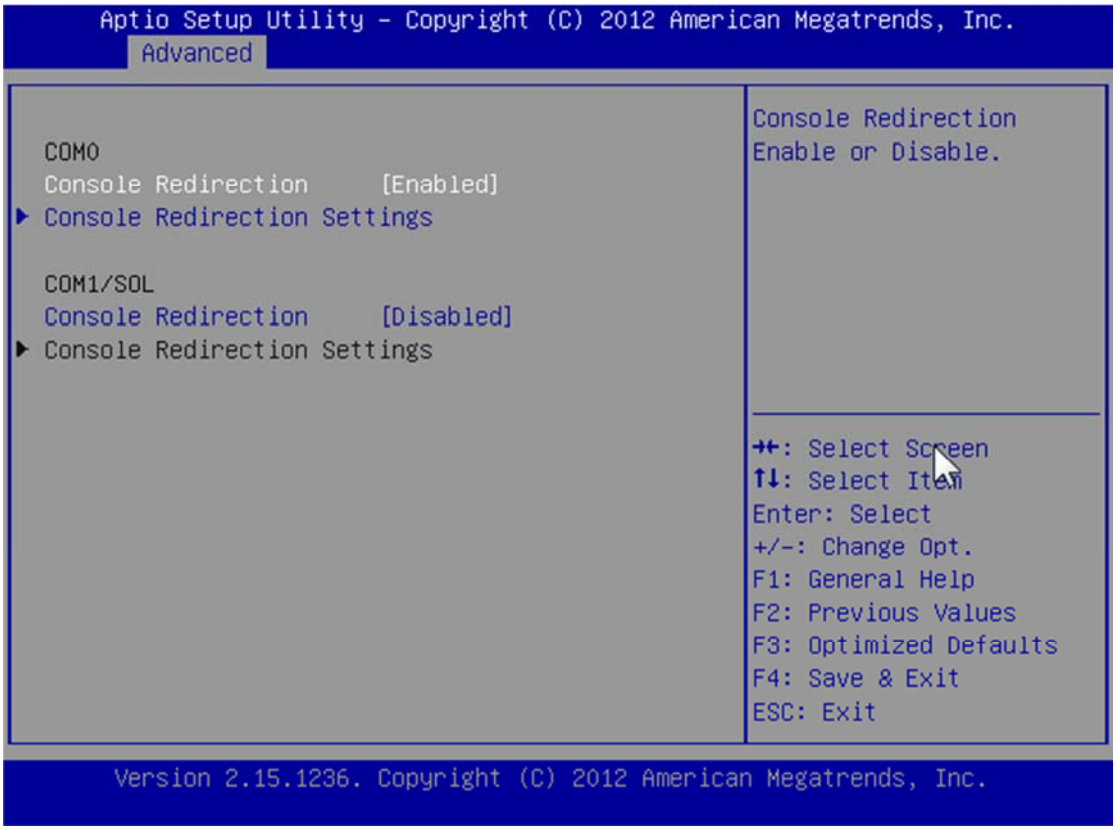
Pc Health Status

This screen shows the motherboard voltage and system temperature.



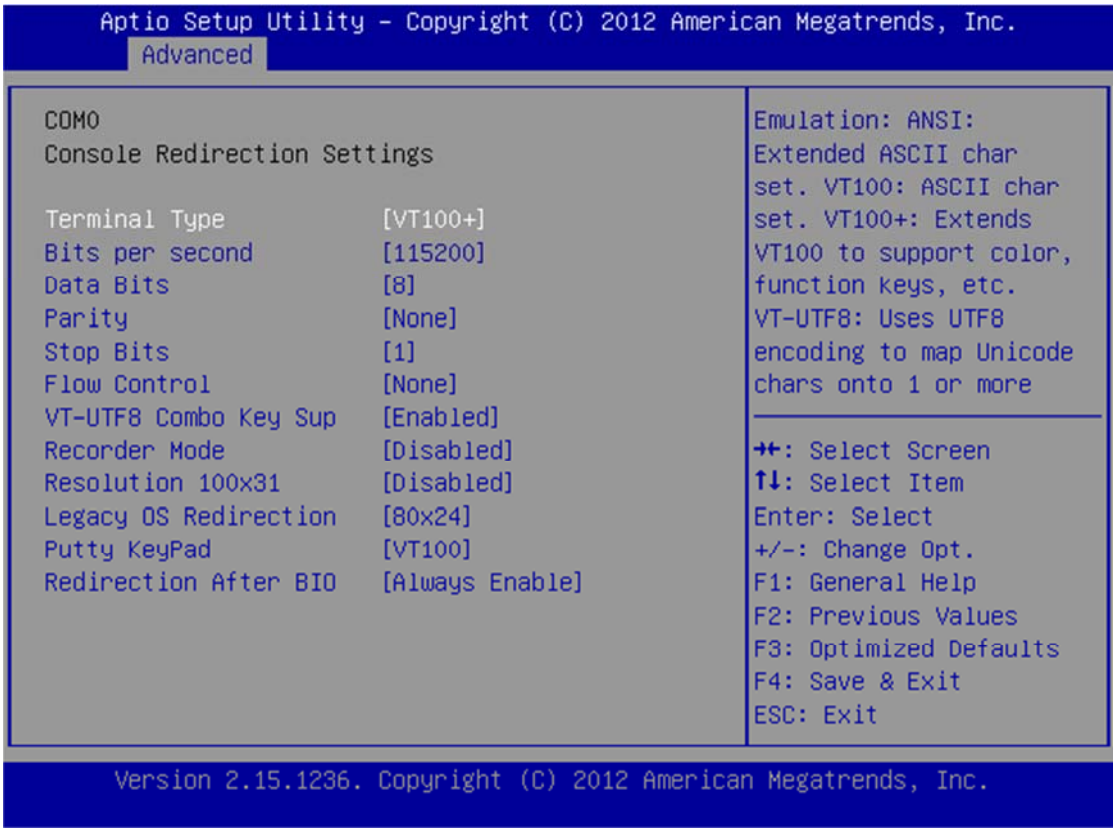


Console Redirection Settings（COM0）



Console Redirection

Console Redirection Enable or Disable.



Terminal Type

Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set. VT100+: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.

Bits per second

Selects serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speeds.

Data Bits

Data Bits.

Parity

A parity bit can be sent with the data bits to detect some transmission errors. Even: parity bit is 0 if the num of 1's in the data bits is even. Odd: parity bit is 0 if num of

1's in the data bits is odd. Mark: parity bit is always 1. Space: Parity bit is always 0. Mark and Space Parity do not allow for error detection. They can be used as an additional data bit.

Stop Bits

Stop bits indicate the end of a serial data packet. (A start bit indicates the beginning). The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit.

Flow Control

Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a 'stop' signal can be sent to stop the data flow. Once the buffers are empty, a 'start' signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signals.

VT-UTF8 Combo Key Support

Enable VT-UTF8 Combination Key Support for ANSI/VT100 terminals.

Recorder Mode

With this mode enabled only text will be sent. This is to capture Terminal data.

Resolution 100x31

Enables or disables extended terminal resolution.

Legacy OS Redirection Resolution

On Legacy OS, the Number of Rows and Columns supported redirection.

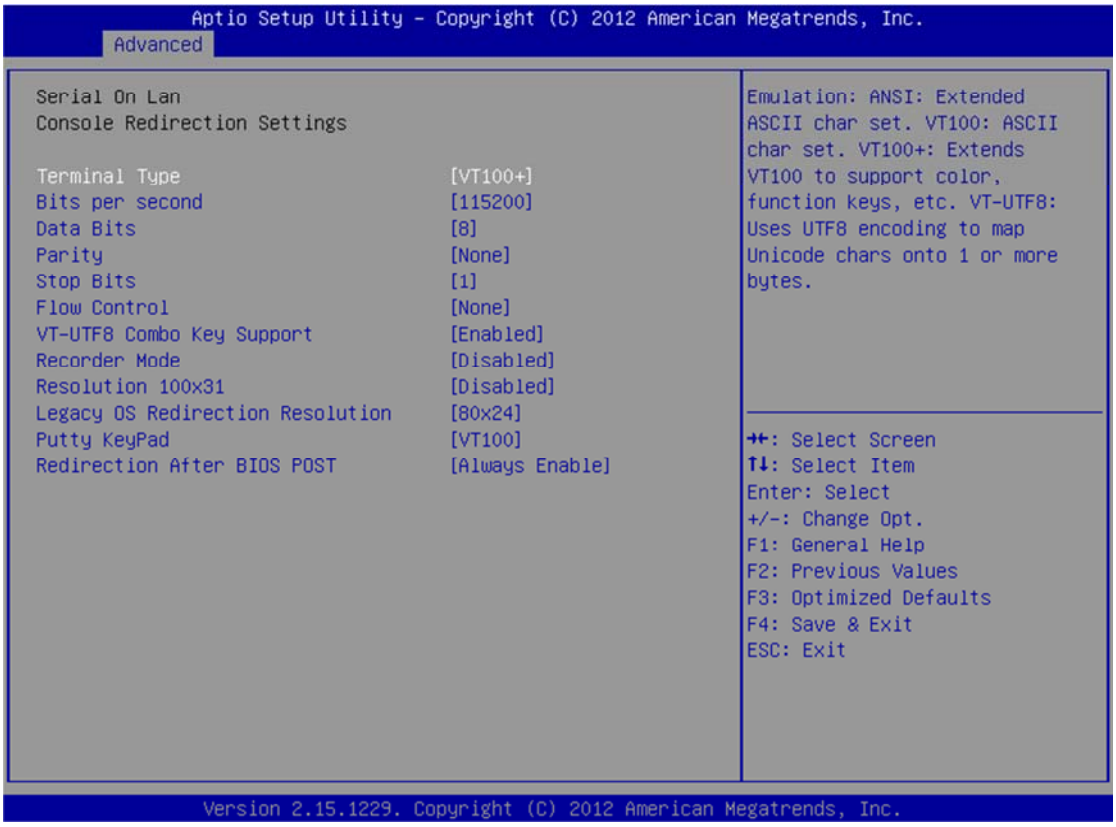
Putty KeyPad

Select FunctionKey and KeyPad on Putty.

Redirection After BIOS POST

The Settings specify if BootLoader is selected than Legacy console redirection is disabled before booting to Legacy OS. Default value is Always Enable which means Legaacy console Redirection is enabled for Legacy OS.

Serial On Lan



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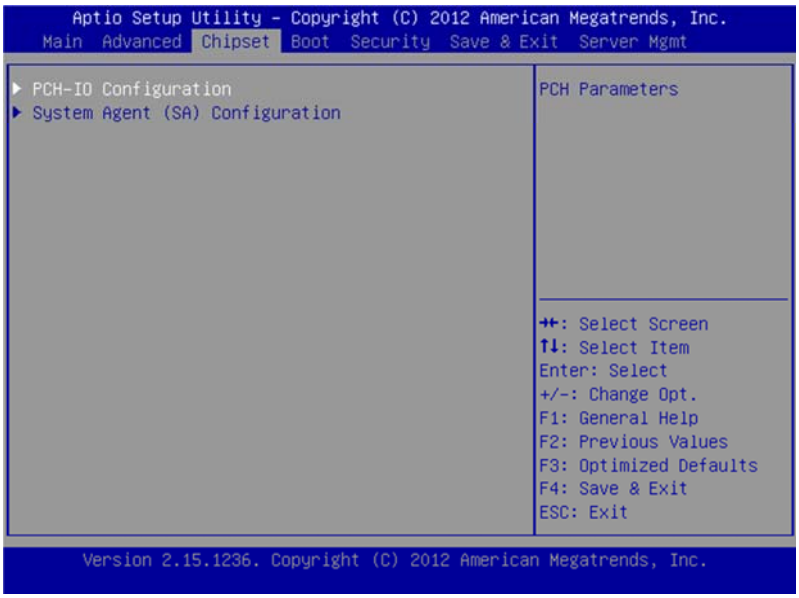
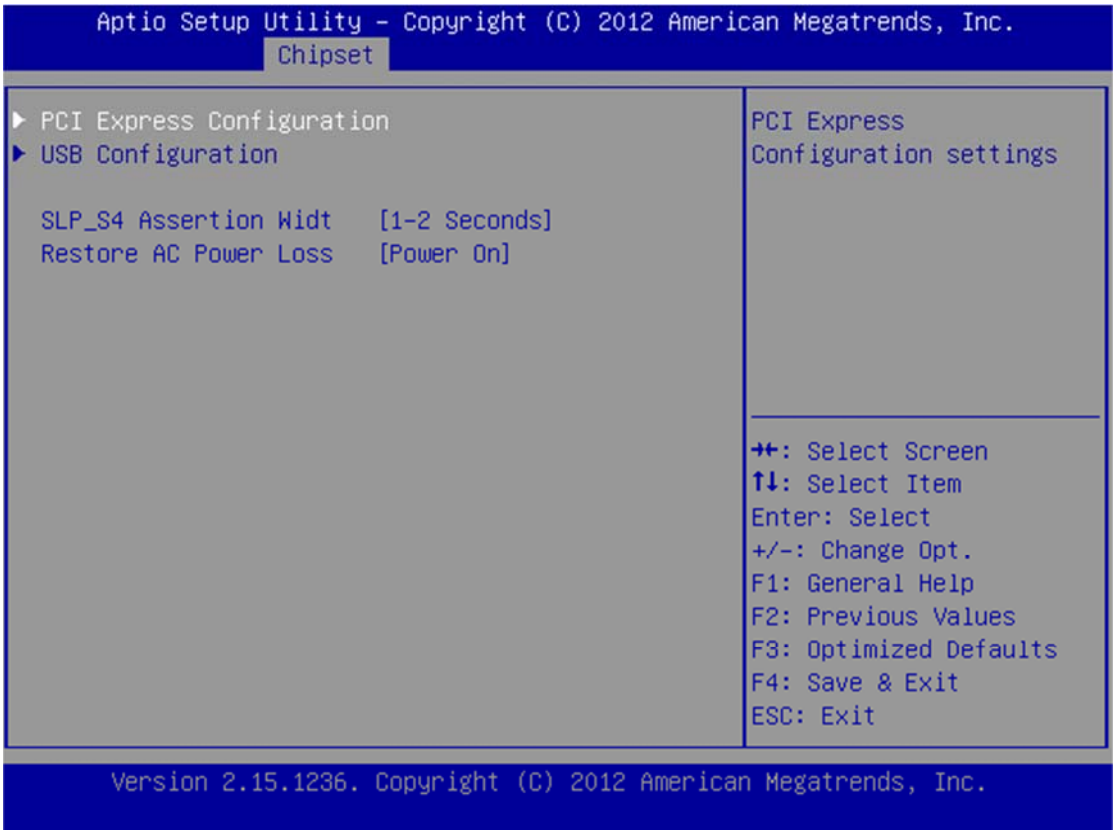
4.5 Chipset

PCH-IO Configuration



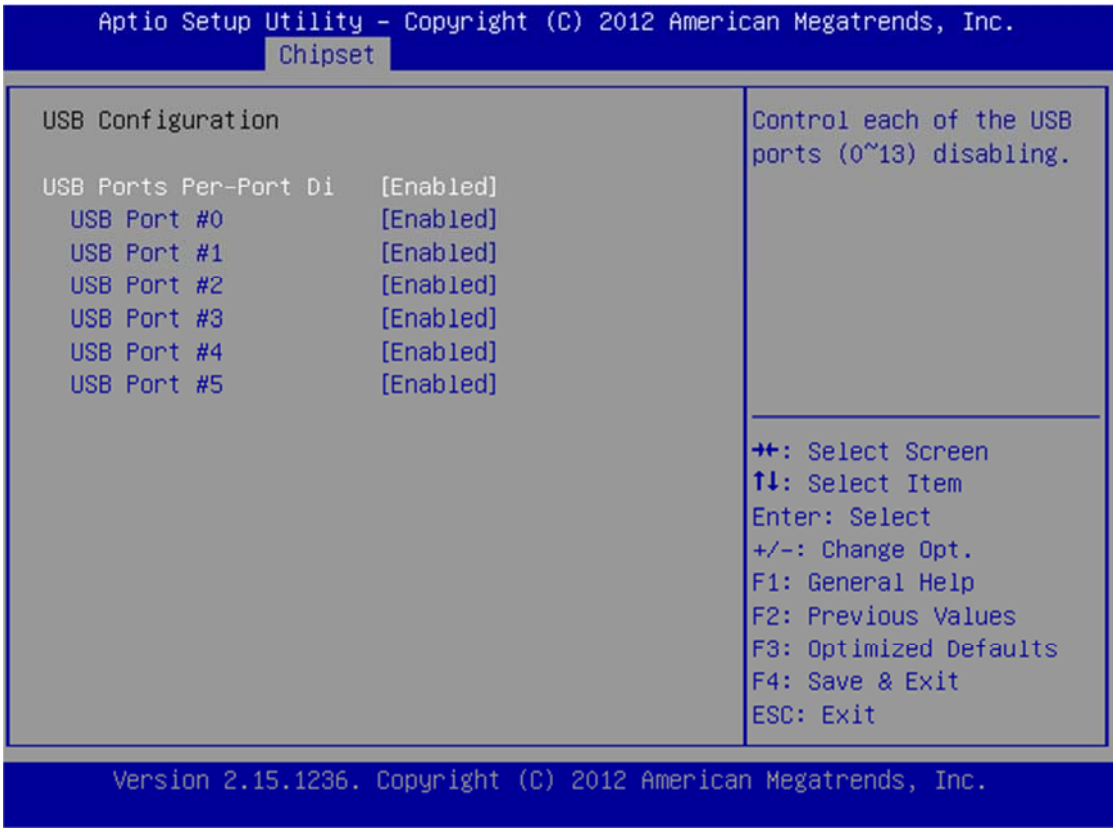


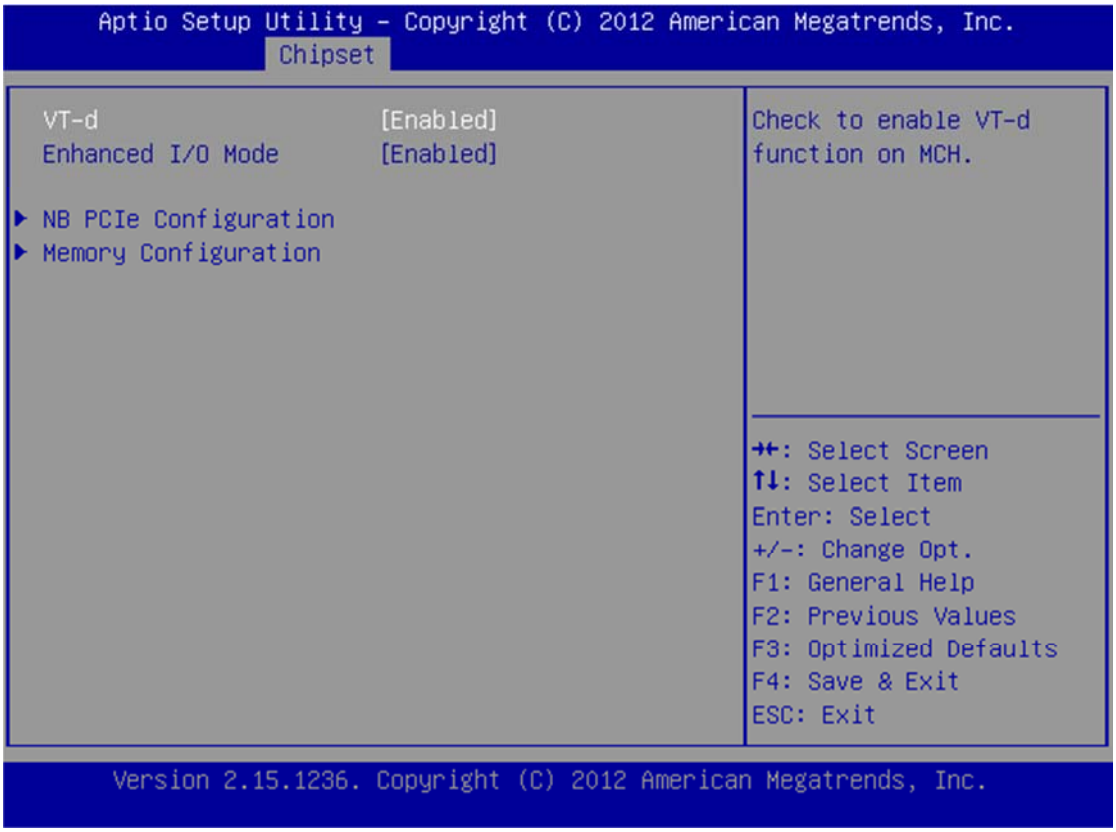
SLP_S4 Assertion Width

Select a minimum assertion width of the SLP_S4# signal

Restore AC Power Loss

Select AC power state when power is re-applied after a power failure.



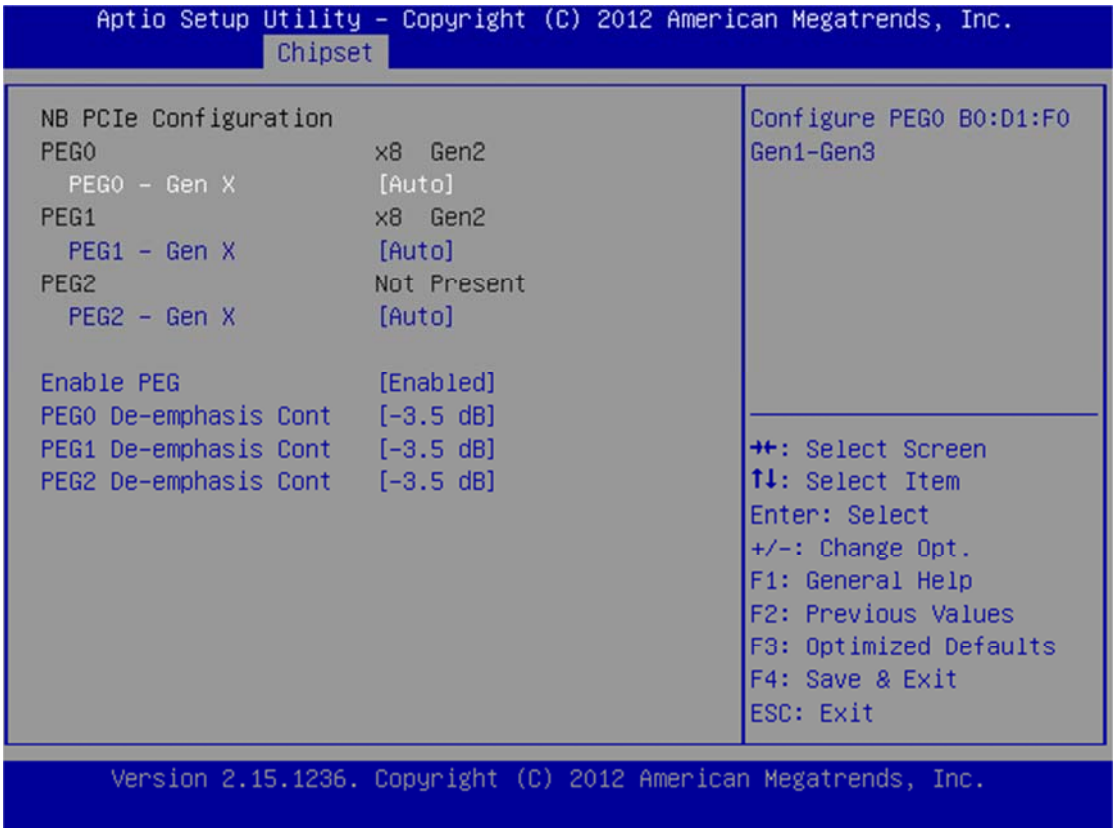


Intel(R) VT-d

Enable/Disable Intel(R) Virtualization Technology for Directed I/O.

Enhance IO Mode

Enable/Disable Enhance IO Mode



PEG0 - Gen X

Configure PEG0 B0:D1:F0 Gen1-Gen3

PEG1 - Gen X

Configure PEG1 B0:D1:F1 Gen1-Gen3

PEG2 - Gen X

Configure PEG2 B0:D1:F2 Gen1-Gen3

Enable PEG

To enable or disable the PEG.

PEG0 De-emphasis Control

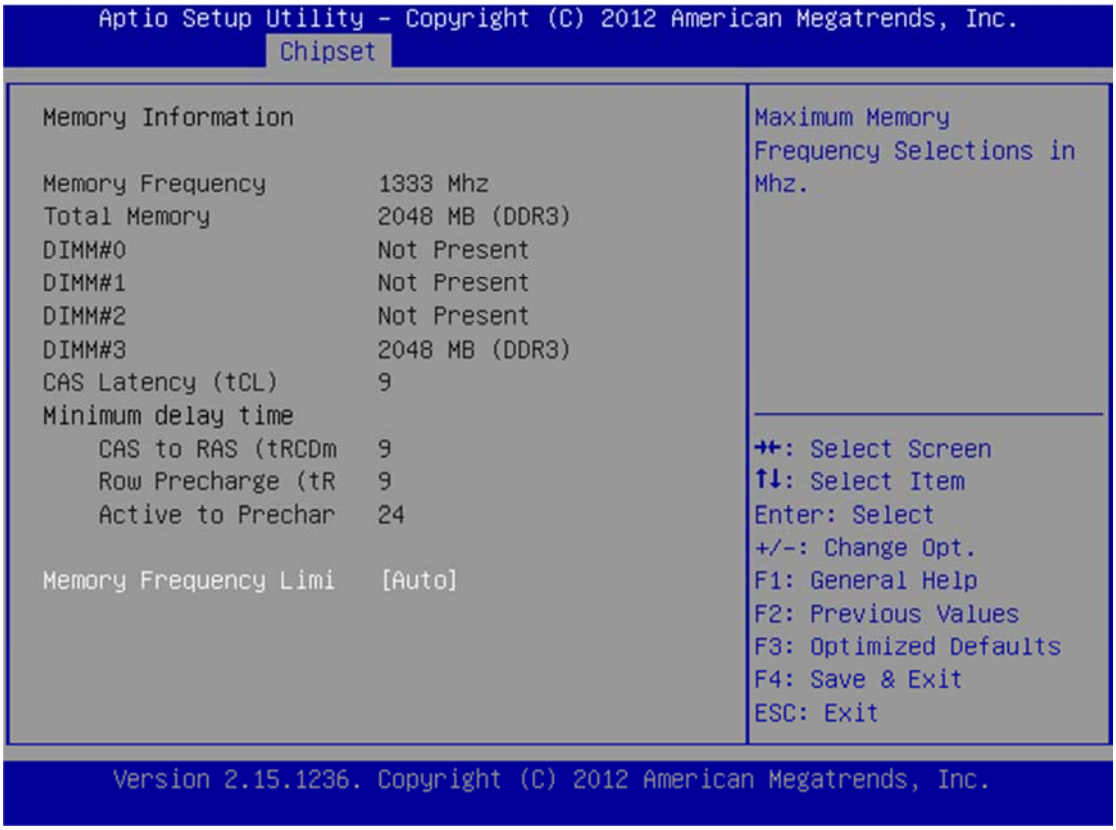
PEG0:Configure the De-emphasis control on PEG

PEG1 De-emphasis Control

PEG1:Configure the De-emphasis control on PEG

PEG2 De-emphasis Control

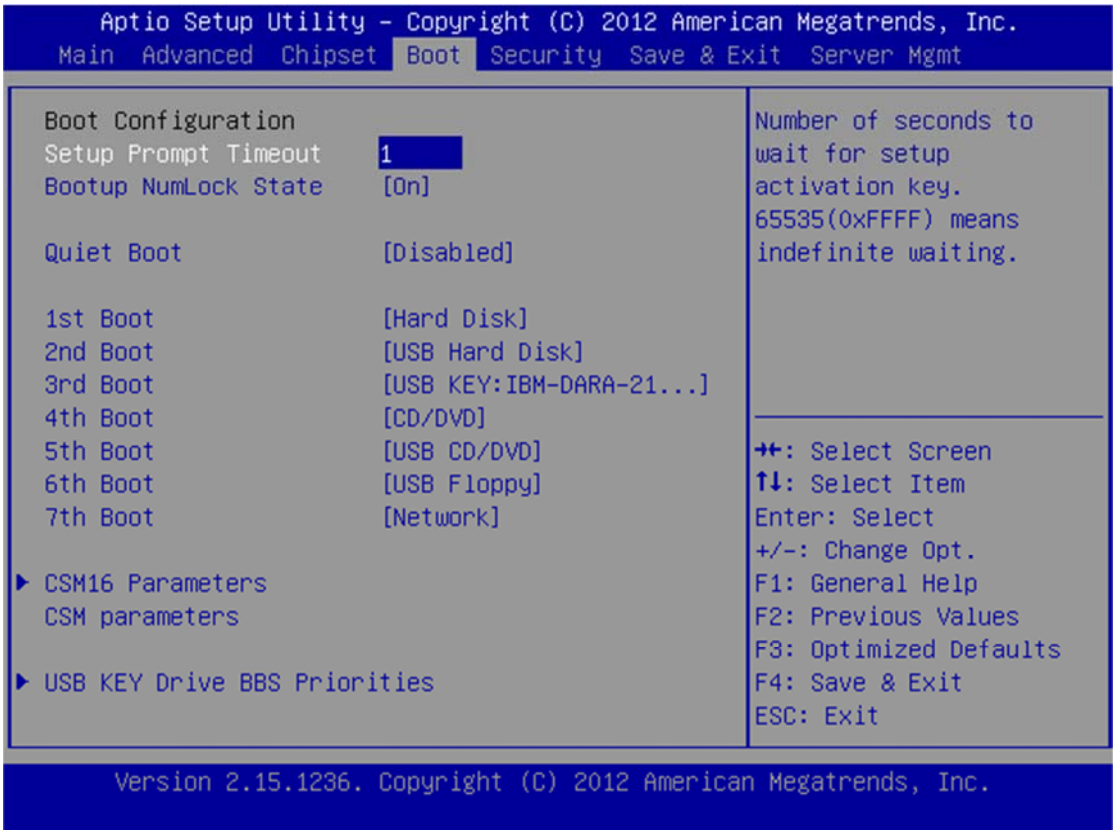
PEG2:Configure the De-emphasis control on PEG



Memory Frequency Limitation

Maxium Memory Frequency Selections in Mhz

4.6 Boot



Setup Prompt Timeout

Use the <+> and <-> keys to adjust the number of seconds to wait for setup activation key.

Bootup NumLock State

This item allows you to select “On” or “Off” power-on state for the NumLock.

Quiet Boot

If this option is set to Disabled, the BIOS displays normal POST messages. If Enabled, an OEM Logo is shown instead of POST messages.

Boot Option Priorities

Choose boot priority from boot device.

Hard Disk Drive BBS Priorities

Specifies the Boot Device Priority sequence from available Hard Drives.

CD/DVD ROM Drive BBS Priorities

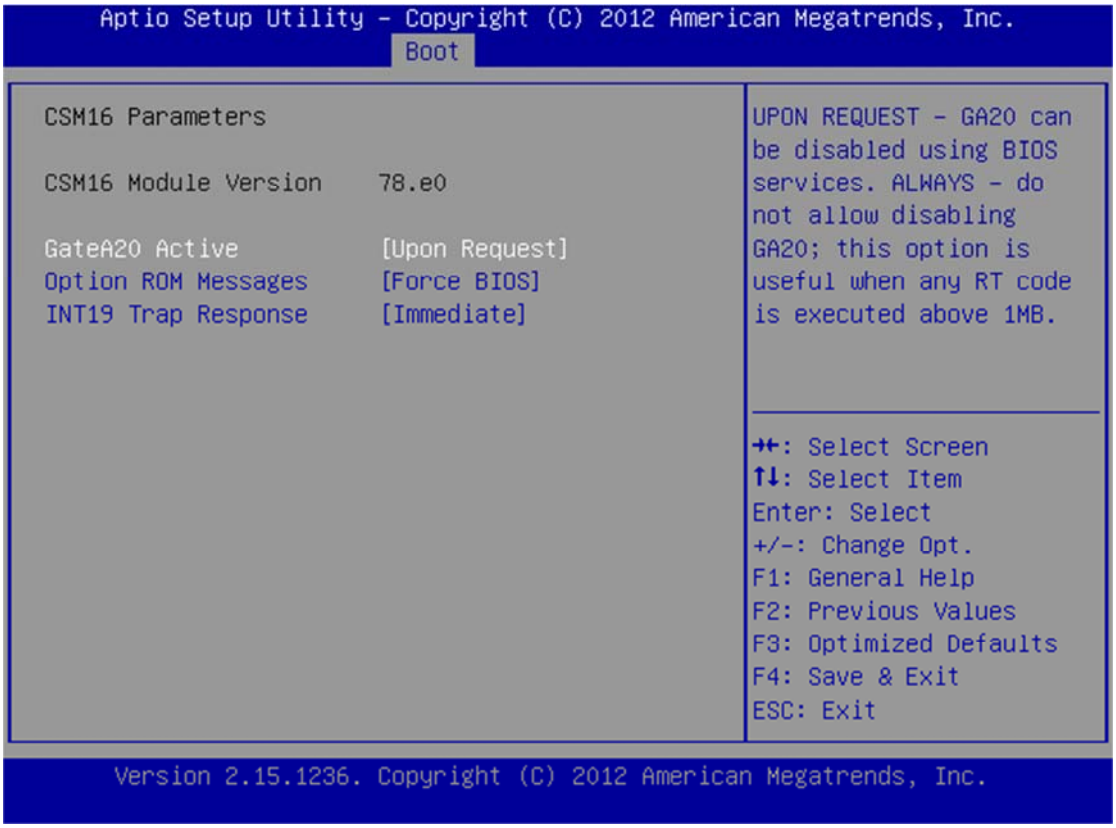
Specifies the Boot Device Priority sequence from available CD/DVD Drives.

NETWORK Device BBS Priorities

Specifies the Boot Device Priority sequence from available NETWORK Drives.

CSM16 Parameters

Enable/Disable, Option ROM execution settings, etc.



GateA20 Active

UPON REQUEST - GA20 can be disabled using BIOS services. ALWAYS - do not allow disabling GA20; this option is useful when any RT code is executed above 1MB.

Option ROM Messages

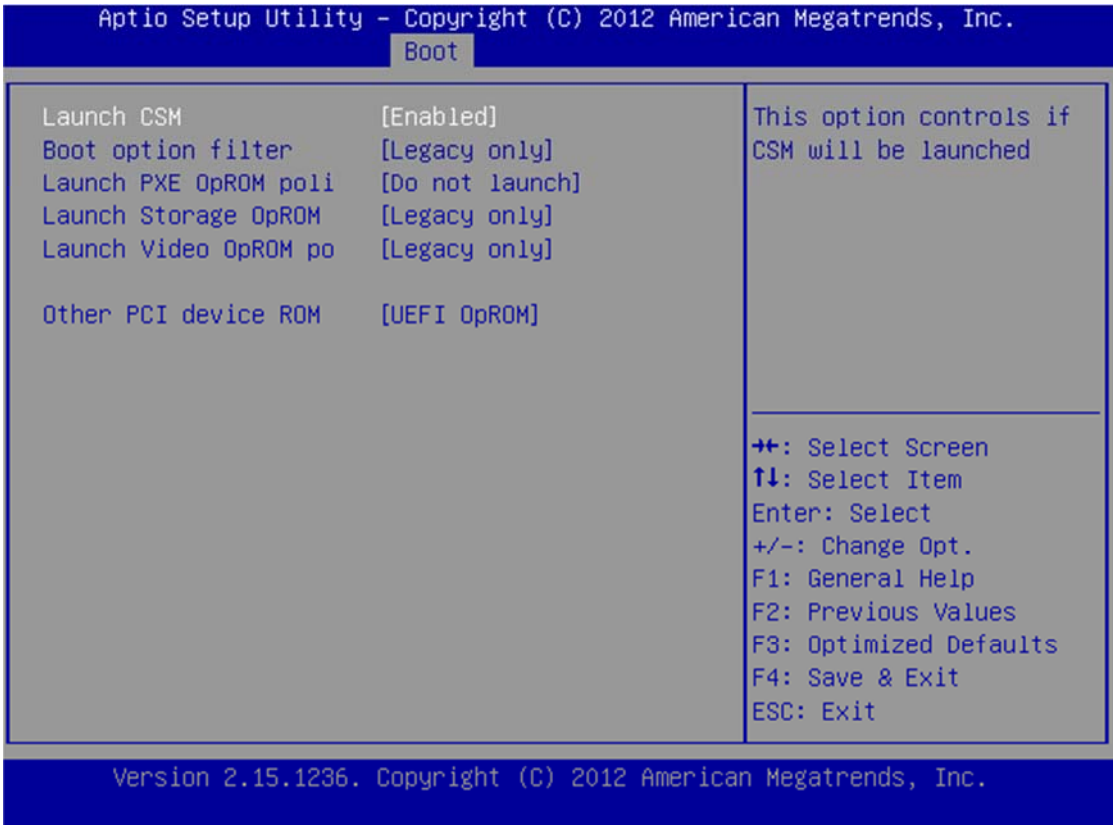
Set display mode for Option ROM.

INT19 Trap Response

BIOS reaction on INT19 trapping by Option ROM: IMMEDIATE - execute the trap right away; POSTPONED - execute the trap during legacy boot.

CSM parameters

OpROM execution , boot Option filter, etc.



Launch CSM

This option controls if CSM will be launched.

Boot option filter

This option controls what devices system can boot to.

Launch PXE OpROM policy

Controls the execution of UEFI and Legacy PXE OpROM.

Launch VIdeo OpROM policy

Controls the execution of UEFI and Video OpROM.

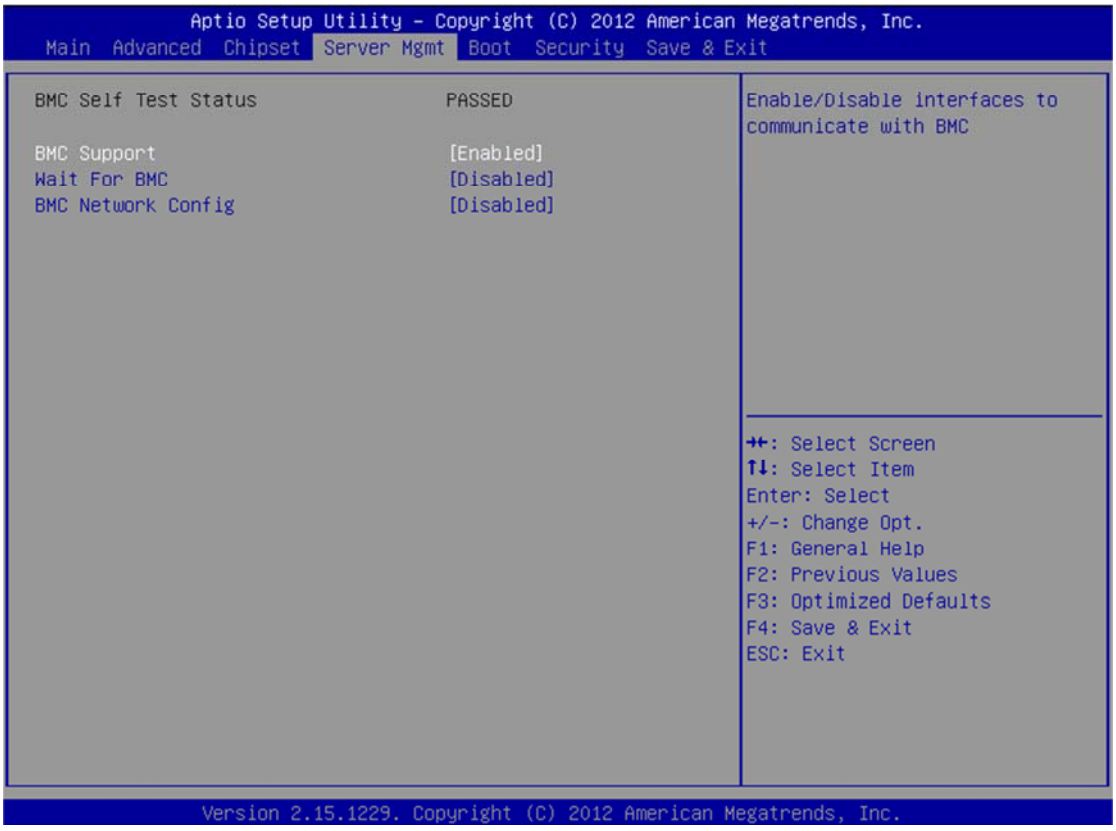
Launch Storage OpROM policy

Controls the execution of UEFI and Legacy Storage OpROM.

Other PCI device ROM priority

For PCI devices other than Network, Mass storage or Video defines which OpROM to launch

4.7 Server Mgmt



BMC Support

Enable/Disable interfaces to communicate with BMC

Wait For BMC

Wait For BMC response for specified time out. In PILOTII, BMC starts at the same time when BIOS starts during AC power ON. It takes around 30 seconds to initialize Host to BMC interfaces.

BMC Network Config

BMC Network Config

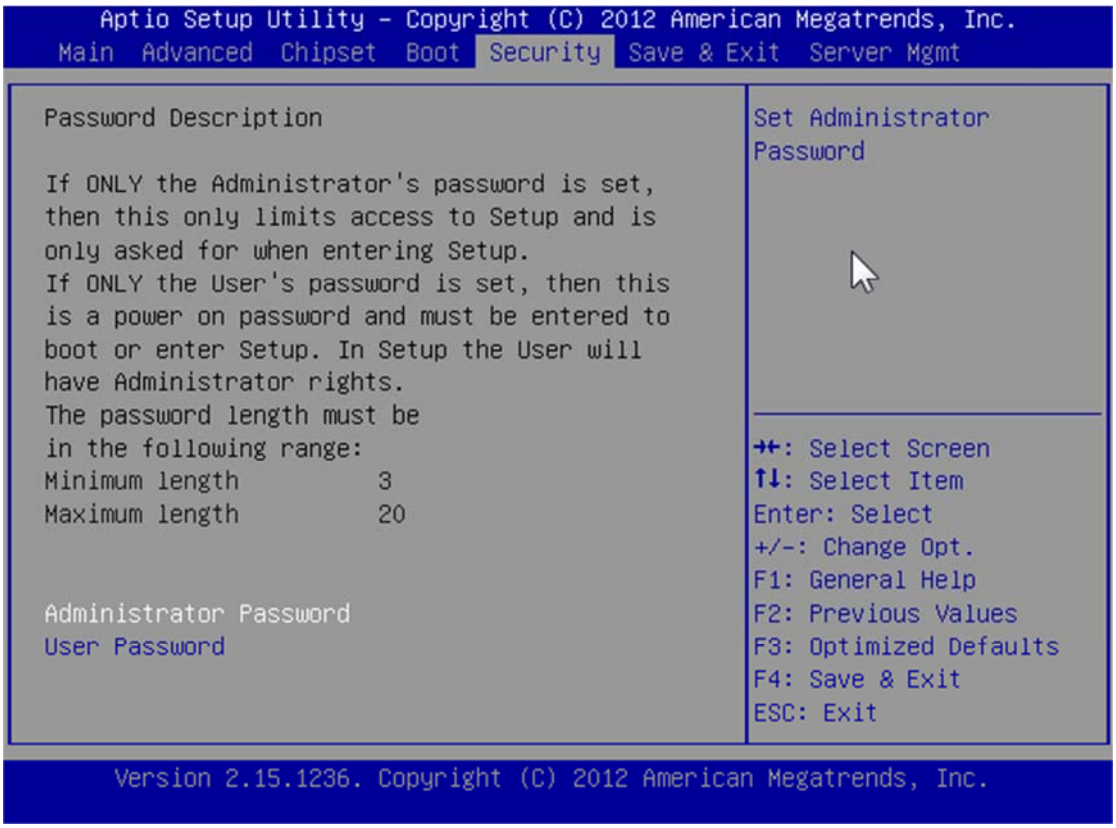
4.8 Security Menu

⇩**Use the Security Setup option as follows:**

1. Choose “Security” from the main menu. The following screen appears:

2. Move between items and select values by using the arrow keys. Modify the selected fields using the PgUP/PgDN keys. Please press the <F1> key for information on the various options.

3. After you have finished with the Security setup, press the <←> or <→> key to switch to other setup menu or press <F4> key to save setting.



Administrator Password:

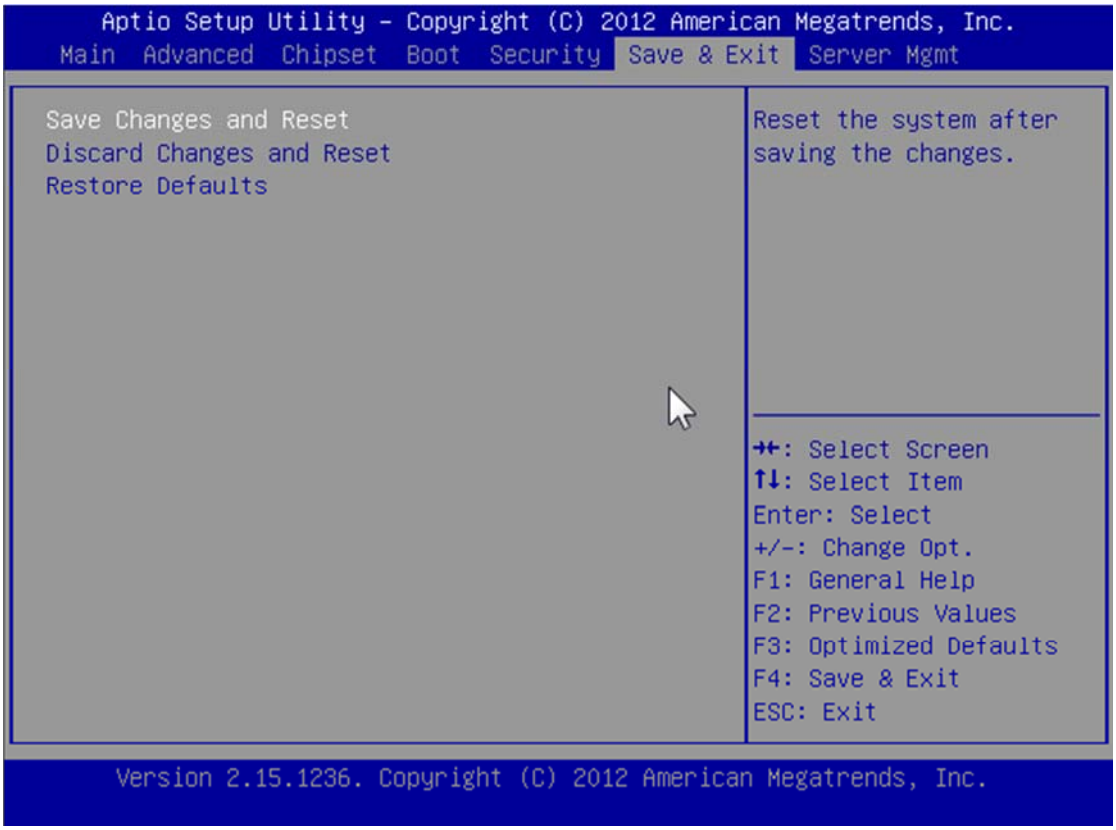
This item allows you to set or change the administrator password. The Administrator Password item on top of the screen shows the default Not Installed. After you have set a password, this item shows Installed.

4.9 Save & Exit

The item allows you to save or discard your changes to the BIOS items, and load the optimal defaults or user defaults for the BIOS items.

⇩**Use the Exit option as follows:**

1. Choose “Exit” from the main menu, the following screen appears.



2. Move between items and select values by using the arrow keys. Modify the selected fields using the PgUP/PgDN keys. For information on the various options, please press <F1> key.

3. Press the <←> or <→> key to switch to other setup menu or press <F4> key to save setting.

Save Changes and Reset:

Store all changes you made into CMOS and reboot system. F4 key can be used for this operation.

Discard Changes and Reset:

Discard all changes you made and reboot system. ESC key can be used for this operation.

Restore Defaults:

This item allows you to load optimal defaults for each setting on the

Setup Utility menus, which will provide the best performance settings for system. F3 key can be used for this operation.

Chapter 5. Utility & Driver Installation

Please install the GbE modules properly before you install the OS, driver or other software.

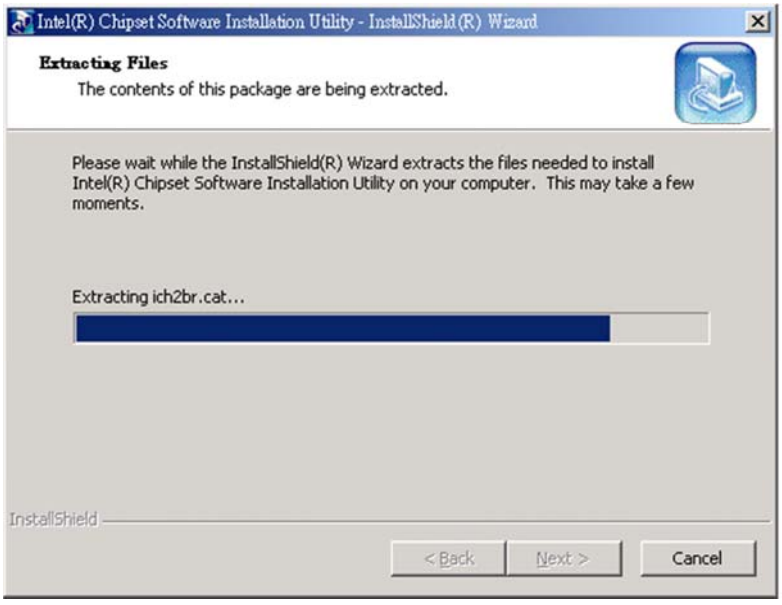
5.1 Operation System Supporting

SCB-1803 can support Windows® and Linux® operation system as follows. Before installation, please check your OS version. If your OS is not in the following list, please upgrade your OS version.

OS	Version
DOS	DOS 6.22
Windows®	Microsoft Windows Server 2008R2 Enterprise (x64) Microsoft Server 2008 Enterprise (x32 and x64) Microsoft Windows Server 2012 (x64) Microsoft Windows 7 （x32/x64）
Linux®	Red Hat Enterprise Linux Server* (x32 and x64)

5.2 System Driver Installation

SCB-1803 offers the system driver in the setup CD. Please install the driver following the procedures.



5.3 LAN Driver Installation

SCB-1803 offers the LAN driver in the setup CD. Please click the Autorun file and install the driver following the procedures.

1. Insert the setup CD of SCB-1803 into your CD-ROM drive.
2. Choose the Drivers file to click the Autorun icon.
3. Follow the procedures to finish the installation.

Appendix A: DOS / Linux Sample Code

We offer some sample code for SCB-1803 appliance for customer need that sample code is putted into the Driver CD for software development use.

Appendix B: Cable Development Kit

The SCB-1803 offers some cables for development use.

DK002

Item & Description	Part No.	Qty
Ethernet Cat.5 Cable 2M/ RoHS	46L-EC5200-00	1
Cross Over 2M Color/ RoHS	46L-CO5202/4-00	1
RJ45 to DB9 2M Cable/ RoHS	46L-RJDB91-00	1
2m null modem cable/ RoHS	46L-DB9200-01	1
VGA CABLE (2mm) 15CM/ RoHS	46L-IVGA01-00	1
KB/MS CABLE 15CM/ RoHS	46L-IPS200-00	1
USB CABLE/ RoHS	46L-IUSB01-00	1

AEWIN

Advanced Embedded & Network Solutions

46L-EC5200-00

46L-CO5202/4-00

46L-RJDB91-00

46L-DB9200-00

46L-IVGA01-00

46L-IPS200-00

46L-IUSB01-00