

WEBS-5491

Fan-less Embedded System



User's Manual

Version 1.0

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How to Use This Manual

The manual describes how to configure your WEBS-5491 embedded system to meet various operating requirements. It is divided into five chapters, with each chapter addressing a basic concept and operation of Fan-less Embedded System.

Chapter 1: System Overview. Present what may have in the box and give an overview of the product specifications and basic system architecture for this fan-less embedded system.

Chapter 2: System Installation. Show the definitions and locations of all the interfaces and describe a proper installation guide so that can easily configure the system.

Chapter 3: BIOS Setup Information. Specify the meaning of each setup parameters, how to get advanced BIOS performance and update new BIOS. In addition, POST checkpoint list will give users some guidelines of trouble-shooting.

Chapter 4: Important Instructions. Indicate some instructions which must be carefully followed when the fan-less embedded system is used.

Chapter 5: Frequent Asked Questions. Provide the answers for the most frequently asked questions.

The content of this manual is subject to change without prior notice. These changes will be incorporated in new editions of the document. The vendor may make supplement or change in the products described in this document at any time.

Revision History

Revision	Date	Details of Change(s)
V1.0	2015/11/11	Initial Release

Chapter 1

System Overview

1.1 Introduction

Portwell Inc., a world-leading innovator in the Industrial PC (IPC) market and a Premier Member of the Intel® Internet of Things (IoT) Solutions Alliance, announced WEBS-5491, a fan-less embedded system. Builds on Intel® Baytrail SoC and takes advantages of Intel® Atom™ E3845(10 W Max TDP, 2M Cache, 1.91 GHz) processor technologies, especially its compact design plus low power consumption.

The 4th generation Intel Atom Bay Trail-I series provides extended temperature from -40 to 110 degrees, high I/O connectivity, integrated memory controller, error correcting code (ECC), virtualization, and built-in security capabilities within 10W thermal design power (TDP). Among them, E3845 SoC processor is designed for applications including highly efficient and dedicated image signal processing with secure content delivery.

Portwell's WEBS-5491 is designed to be power-optimized and value-optimized. Instead of adopting a mobile CPU like a traditional embedded system, WEBS-5491 utilizes the newest Intel® Atom™ platform Intel® Atom™ E3845, and Intel® Baytrail SoC chipset, which is more economical compared to its mobile counterpart and provides great efficacy as well as ultra low power consumption; this makes WEBS-5491 not only competitive but outstanding in the market. This feature allows WEBS-5491 embedded system to be used extensively in harsh environments such as the operating temperature from -30 to 70 °C degrees. The system includes all required interfaces for industrial application: 1 x DVI-I port, 2 x Gigabit Ethernet port, 3 x USB 1.1/2.0, 1 x USB 3.0, 2 x RS-232/422/485 port, 1 x 2.5" SATA HDD, 1x CF and 1 x SD socket for storage capacity. Two SMA Antenna holes provide optional wireless solution via half size Mini-PCIe module.

To fulfill different application needs and to secure the system from power input change, the system accepts DC 12~24V wide range power input with 3-pin terminal block connector for various operating environment. The WEBS-5491 embedded system offers wall mounting DIN Rail mounting. It supports many mainstream operating systems, such as Windows 8.1, Windows 7 and Linux.

1.2 Check List

The WEBS-5491 Embedded system package covers the following items:

Essential

- ✓ One WEBS-5491 Fan-less Embedded system

- ✓ Screws for HDD installation



M3X4L Screw 4 pieces

- ✓ Driver CD



- ✓ 3-pin Terminal Block Connector (Female)



- ✓ Wall mount kit (W/ 6*screws)



Optional

- ✓ 60W Power Adapter with Power Cord (EU/US type) and Switch Cable



60W Power Adapter



Power Cord (US type)



Power Cord (EU type)

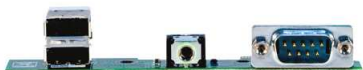


Power Switch Cable (from DC Jack to 3-pin TBC)

- ✓ Selectable I/O Kit



2x RS-232/422/485, 1x RS-232
(Expansion: Option 1)



1x RS-232/422/485, 2x USB ports and 1x Line-out
(Expansion: Option 2)

- ✓ DVI to VGA cable



- ✓ DIN Rail kit (W/ 7*screws)

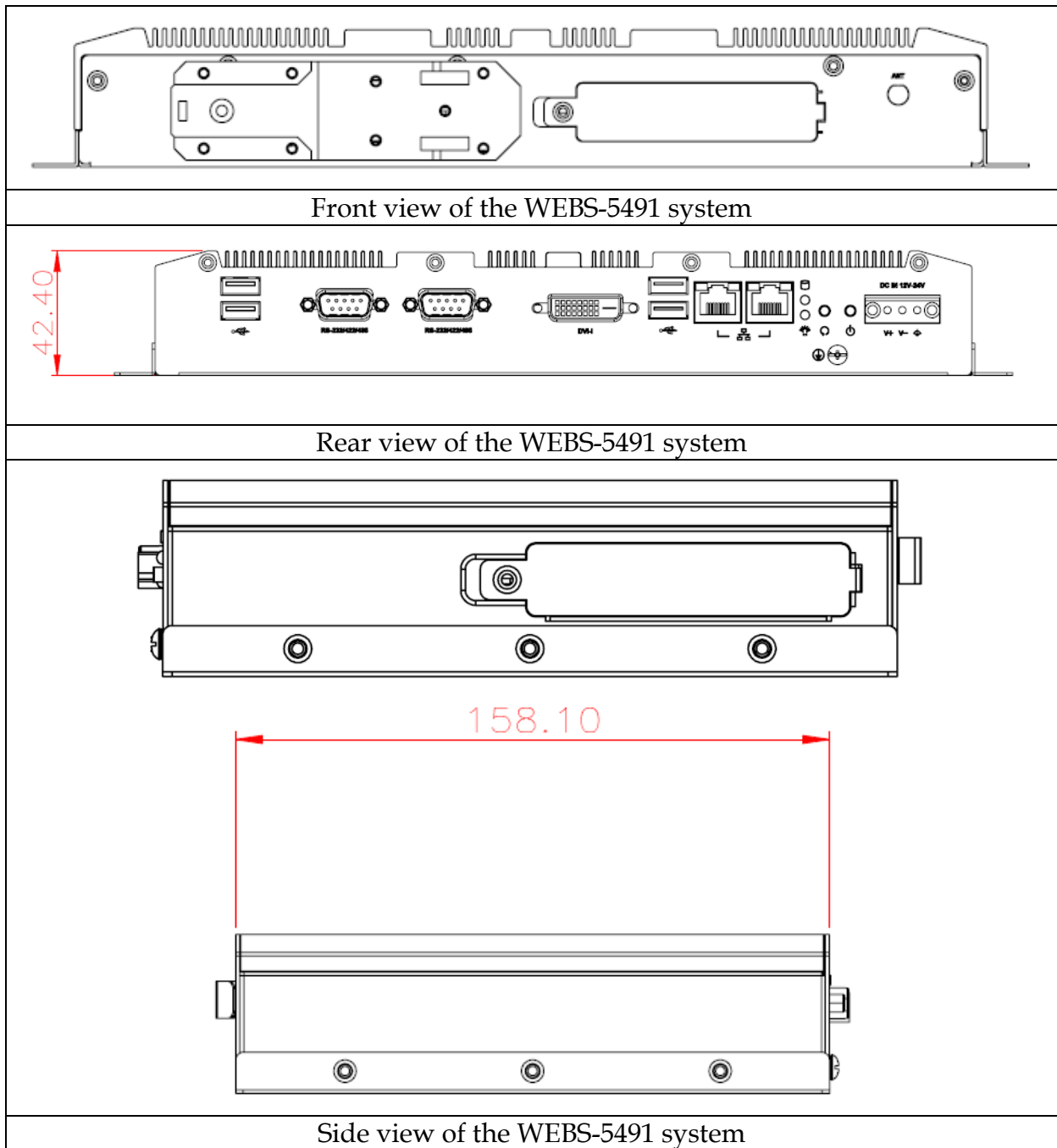


If any of these items is damaged or missing, please contact your vendor and keep all packing materials for future replacement and maintenance.

1.3 Product Specification

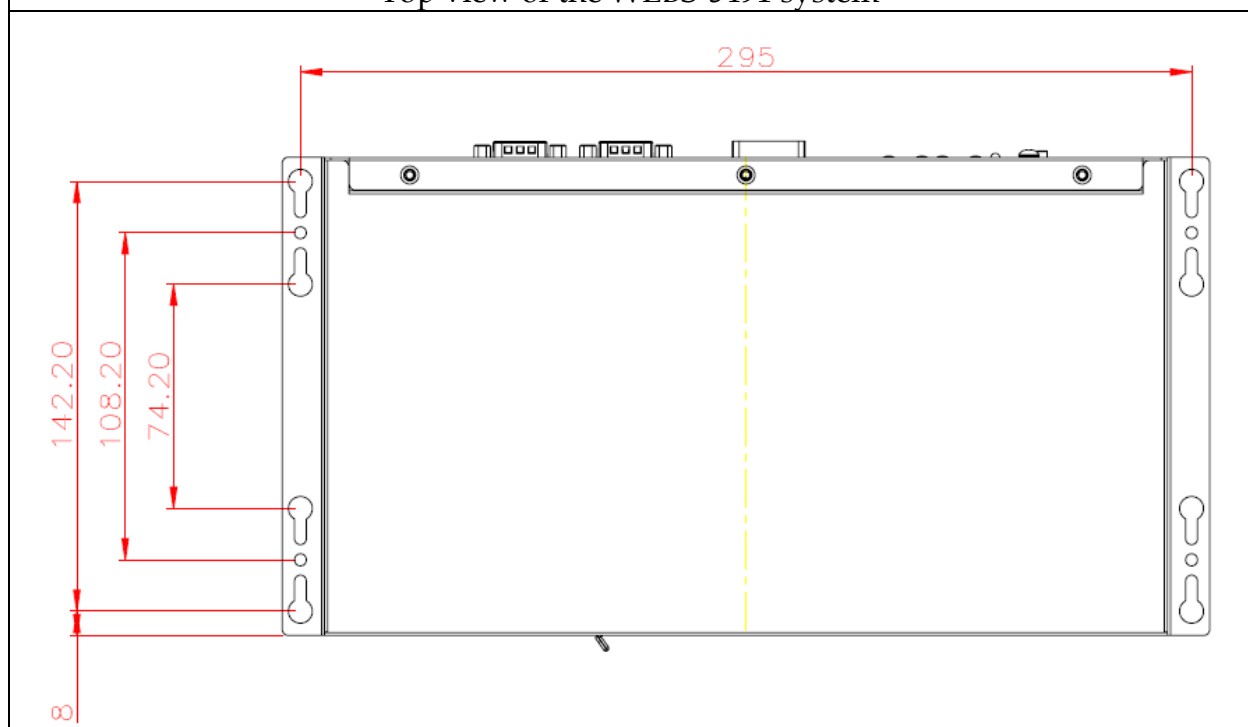
System	
SOC	Intel® Atom™ Qual-Core E3845 (1.91 GHz)
Memory	DDR3L SO-DIMM 1333/1600 MHz max up to 8 GB
BIOS	AMI
Graphics	Intel® Gen7 Graphics
LVDS	Single/Dual Channel 24-bit
LAN Chipset	Dual Intel® I210IT Gigabit Ethernet (Support Jumbo Frame)
Audio	Realtek High Definition Audio Codec
Watchdog Timer	1~255 levels reset
Storage Device	2.5" SATA HDD / SSD, Compact Flash II up to 64 GB, SD card
OS	Windows 7 / Windows 8.1 / Linux™
I/O Interface	
Series Port	2 x RS-232/422/485 (Expansion : default)
Display	1 x DVI-I
USB	1 x USB 2.0, 1 x USB 3.0, 2 x USB 2.0 (Expansion: default)
Ethernet	2 x Gigabit Ethernet
Others	2 x SMA Antenna hole for WiFi/3G Solution
Expansion	2 x RS-232/422/485, 1 x RS-232 (Expansion: option 1)
	1 x Line-out, 1 x RS-232/422/485, 2 x USB 2.0 (Expansion: option 2)
Mechanical	
Mounting (mm)	VESA Mount 75 x 75 & 100 x 100 ; Panel Mount
Weight (Kg)	2.8kg
Dimension	279(W) x 164(D) x 34(H) mm
Power	
Power Supply	DC 12 ~ 24V input with 3-pin Terminal Block Connector
Power Adaptor	12V, 5A/60W(Optional)
Environment	
OP /Storage Temp	-30°C~70 °C / -40°C~80°C (20~90% non-condensing)
Vibration	1.0G (CF/SSD/SD) and 0.5G (HDD) , Power on & 2.16G, Packaged; 5~500Hz
Shock	15G peak acceleration, 11 ms (Power on condition)
Drop	Package with Carton from 96.5 cm (1-Corner, 3-Axis, 6-Face)
Certification	CE/FCC Class A

1.4 Mechanical Dimension





Top view of the WEBS-5491 system



Bottom view of the WEBS-5491 system

Chapter 2 System Installation

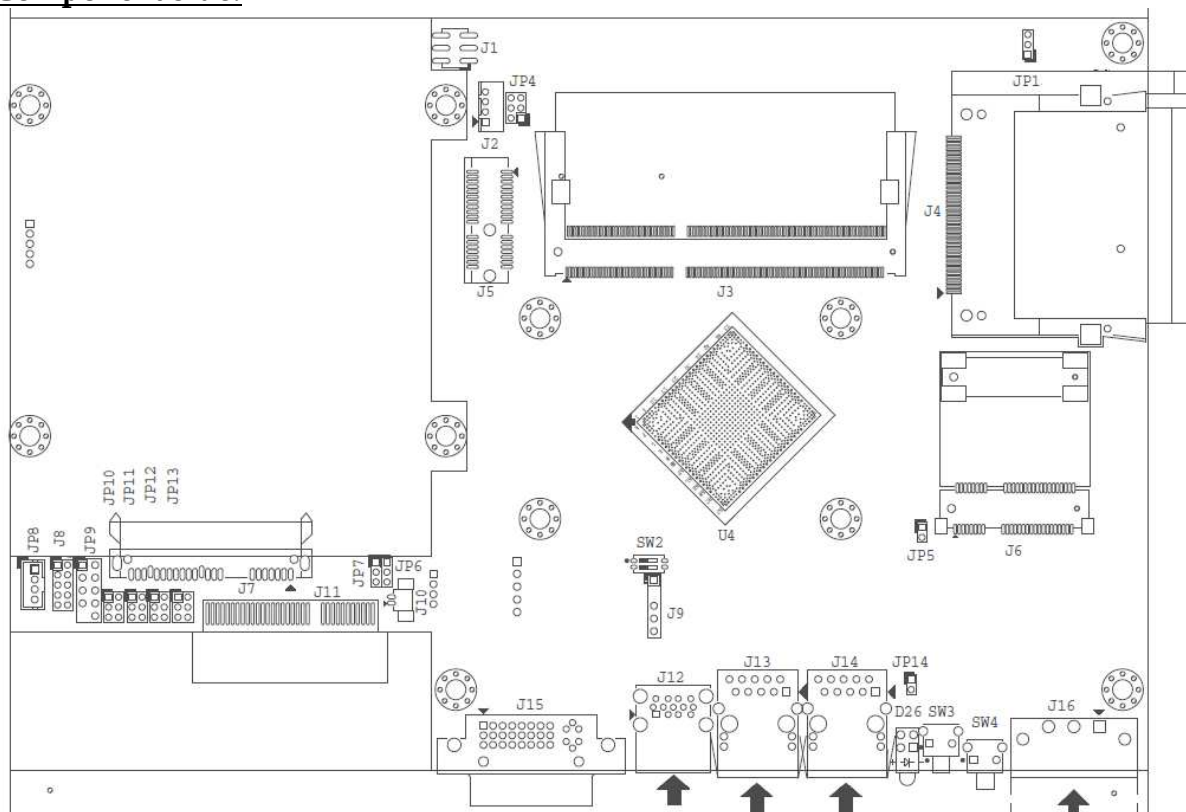
This chapter provides you with instructions to set up your WEBS-5491 embedded system. Definitions and locations of all the interfaces are described so that you can easily configure your system.

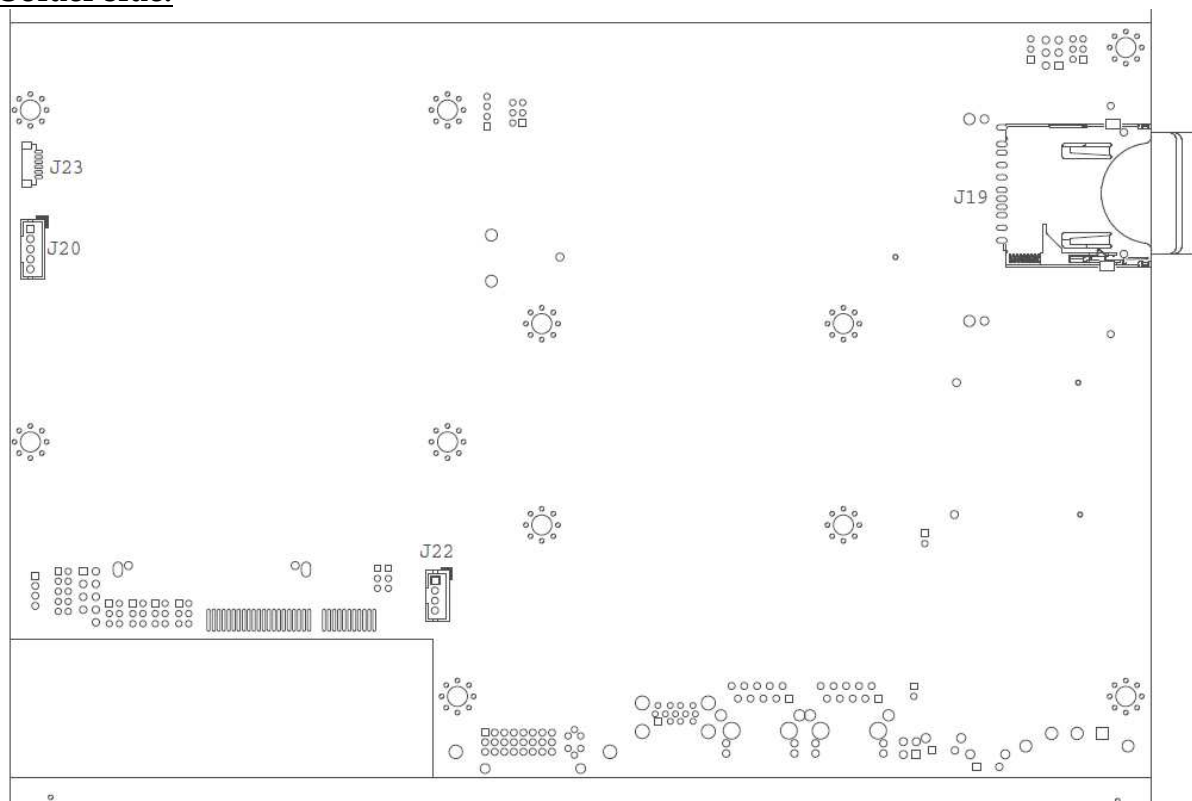
2.1 Embedded Board H/W Jumper Setting Introduction

WEBS-5491 Embedded system adopts PEB-99A4 mother board. You may configure the embedded system by setting jumpers of the mother board to match the needs of your applications. To select any option, cover the jumper cap (SHORT) or remove (NC) it from the jumper pins according to the following instructions.

*Note: NC stands for "Not Connect".

Component side:



Solder side:**Connector and Jumper setting:**

Connector	
J3	DDR3 SO-DIMM Socket.
J4	Compact Flash connector.
J5	PCI-E X 1 Slot.
J6	Mini-PCI-E Slot.(Half size)
J7	SATA Connector with power.
J8	GPIO Connector.(2*5 Pin/2.0mm)
J9	SM- Bus Connector.
J10	Battery Connector.
J11	PCI-E X4 Slot(Right angle) for Audio and COM Port Signal .
J12	USB Port 0~1 D-Sub Connector. (Up:USB2.0 Down:USB3.0)
J13	RJ45 Connector.
J14	RJ45 Connector.
J15	DVI-I D-sub Connector.
J16	Power Input Connector. (Terminal Blocks 3Px1/5.08mm female)
J19	SD Card.
J22	USB Port 3 Connector (1*4 Pin Wafer/2mm).
Jumpers	
JP1	Clear CMOS.
JP7	GPIO Voltage selection.
JP8	Audio out.(From amplifier)
JP9	LPC Debug Port.
JP10	COM PORT RI and power source adjust pin.

JP11	COM PORT RI and power source adjust pin.
JP12	COM PORT RI and power source adjust pin.
JP13	COM PORT RI and power source adjust pin.
SW2	AT/ATX & BIOS recovery Setup.

J8: GPIO Connector (2*5 Pin Header/2mm):

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GPIO0	2	GPIO4
3	GPIO1	4	GPIO5
5	GPIO2	6	GPIO6
7	GPIO3	8	GPIO7
9	GND	10	+5V

J16: Power Input Connector (Terminal Blocks 3Px1/5.08mm female)

PIN NO.	DESCRIPTION
1	GND EARTH
2	Vin-
3	Vin+

J22: USB Port 3 Connector (1*5 Pin Wafer/2mm)

PIN NO.	DESCRIPTION
1	+ 5V
2	USB_D3-
3	USB_D3+
4	GND

JP1: CMOS Setup

PIN NO.	DESCRIPTION
1-2	Normal (Keep CMOS Setup) ★ Default
2-3	Clear CMOS Setup

JP7: GPIO Power Selection

PIN NO.	DESCRIPTION
1-2	5V Level ★ Default
2-3	3.3V Level

JP8: Internal Audio Connector

PIN NO.	DESCRIPTION
1	Audio_R+
2	Audio_R-
3	Audio_L+
4	Audio_L-

JP9: LPC Debug Port Pin Assignment

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
---------	-------------	---------	-------------

1	LAD0	2	3.3V
3	LAD1	4	LPC_RESET
5	LAD2	6	LPC_FRAME
7	LAD3	8	LPC_CLCOK
		10	GND

JP10: COM2 Pin 9 Function Setup

PIN NO.			DESCRIPTION
1-2	3-4	5-6	
Short			+5V Output
	Short		RI Function ★ Default
		Short	+12V Output

JP11: COM1 Pin 9 Function Setup

PIN NO.			DESCRIPTION
1-2	3-4	5-6	
Short			+5V Output
	Short		RI Function ★ Default
		Short	+12V Output

JP12: COM4 Pin 9 Function Setup

PIN NO.			DESCRIPTION
1-2	3-4	5-6	
Short			+5V Output
	Short		RI Function ★ Default
		Short	+12V Output

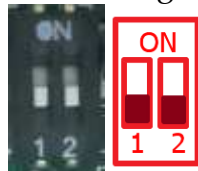
JP13: COM3 Pin 9 Function Setup

PIN NO.			DESCRIPTION
1-2	3-4	5-6	
Short			+5V Output
	Short		RI Function ★ Default
		Short	+12V Output

SW2: AT/ATX & BIOS recovery Setup

PIN NO.	DESCRIPTION
1-4(Port1)	ON: AT Mode OFF: ATX Mode ★ Default
2-3(Port2)	ON: Recover BIOS OFF: Disable ★ Default

*Note: Diagram of SW2 default setting



2.2 Selectable I/O Kit Installation

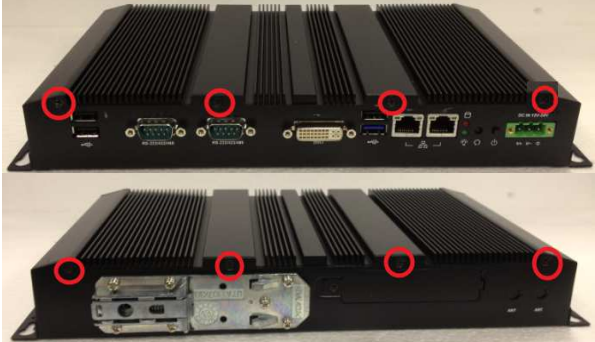



In addition to default I/O interfaces, including 1x DVI, 2x RS-232/422/485, 4x USB and 2x Gigabit Ethernet, to further enhance system flexibility as well as to increase

the versatility in application fields, WEBS-5491 allows users to select different I/O combinations for various market demands.






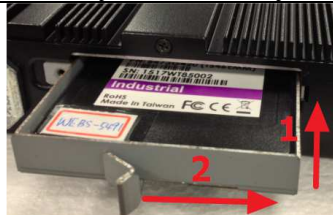


2.3 Memory Installation

WEBS-5491 system supports one DDR3L SO-DIMM memory module. It's easy to install by just opening the back cover.

1. Unscrew the back cover to detach it	2. Remove the IPC back cover
	
3. Insert Memory module to the slot	4. Press down the memory module and finish installation
	


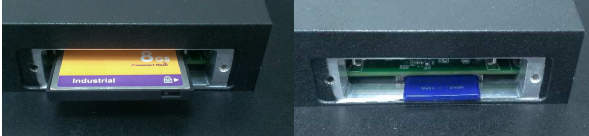


2.4 HDD Installation

WEBS-5491 Series supports 1x 2.5" HDD/SSD. The unique design of the HDD tray allows easy installation and maintenance. (The height must be less than 10mm)

<p>1. Remove the screws of HDD tray cover</p> 	<p>2. Push the rod to release HDD tray</p> 
<p>3. Install the HDD into tray with screws</p> 	<p>4. Push HDD tray back into system</p> 
<p>5. Screw the cover and finish installation</p> 	<p>6. Inside view of installed HDD in system</p> 



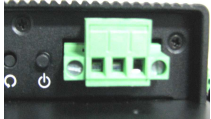
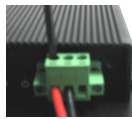
2.5 CF and SD card Installation

CF and SD card are both supported in WEBS-5491 Series. It is easy to install CF and SD card by opening the cover at side and insert the card.



<p>1. CF cover locates at the right side. Unscrew and remove the side bracket.</p> 	<p>2. Carefully insert CF and SD card into the socket.</p> 
<p>3. Complete insertion (Eject CF card by pressing the elastic stick on the right side)</p> 	<p>4. Screw the side bracket and finish installation</p> 

2.6 Getting Started

WEBS-5491 Series support 12~24V DV input via 3-pin terminal block connector.

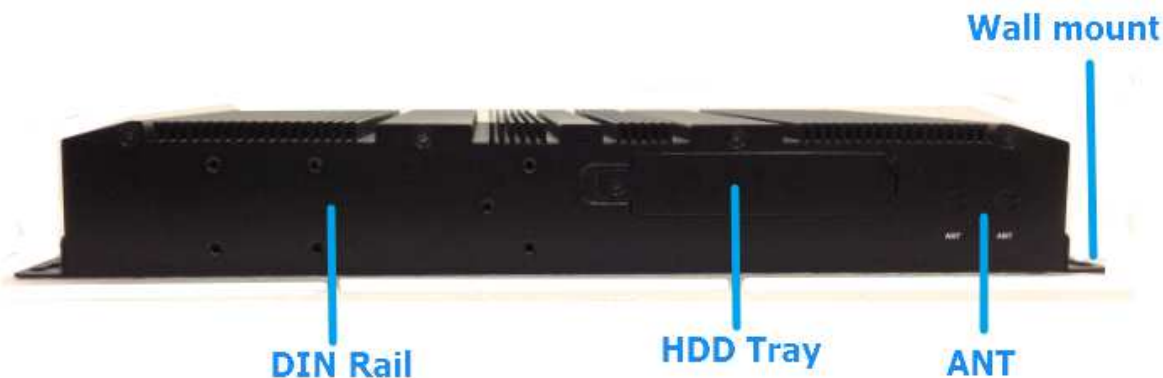
1. Male-type 3-pin terminal block connector located at rear I/O	2. Take the female type 3-pin terminal block connector in accessory kit
	
3. Fix female type 3-pin terminal block connector to the system by screw.	4. Follow pin definition and fix power cable to 3-pin thermal block connector by screw
	

60W AC to DC power adapter and switch cable from adapter to 3-pin terminal block connector is an optional accessory.

1. Screw 3 pin terminal block cable to adaptor	2. Connect 3-pin terminal block connector to PPC through AC in with adaptor
	

2.7 I/O Interfaces

2.7.1 Front View



2.5" HDD/SSD Cover:

Remove the cover and install the 2.5" HDD/SSD.

*Note: Refer to section 2.4 for installation guide.

Antenna Hole:

It is reserved for WiFi or 3G solution.

2.7.2 Rear View



DC in 12-24V via 3-pin Terminal Block Connector:

Provide power connection of Panel PC to the main power source via DC power cable or AC/DC adapter.

Power Button:

Press the button to turn ON/OFF the system.

Reset Button:

Press the button to restart the system.

Power LED and HDD LED:

It demonstrates the power in and HDD working status of the system.

Status	Power LED	HDD LED
Off	N/A	N/A
Working	Green	Red

Gigabit Ethernet:

Two Gigabit Ethernet (10/100/1000 Mbits/sec) LAN ports by using dual Intel® I210IT GbE Ethernet Controller (Support Jumbo Frame)

USB (Universal Serial Bus) ports:

Connectors for USB-compatible devices

With different I/O kit combination...	Total # of USB ports	Details
Default	4	3x USB 2.0 & 1x USB 3.0
Option 1	2	1x USB 2.0 & 1x USB 3.0
Option 2	4	3x USB 2.0 & 1x USB 3.0

DVI-I:

An external monitor can be provided via DVI-I interface.

COM ports:

Connectors for RS-232/422/485 connection

*Note: The RS-232/422/485 configuration is determined by BIOS setting. Check BIOS setting for details.

With different I/O kit combination...	Total # of COM ports	Details
Default	2	2x RS-232/422/485
Option 1	3	2x RS-232/422/485 & 1x RS-232
Option 2	1	1x RS-232/422/485

Line-out:

Connectors for audio line-out

With different I/O kit combination...	Total # of Audio ports	Details
Default	0	N/A
Option 1	0	N/A
Option 2	1	1x Line-out

CF Cover:

Remove the cover and install the CF card.

*Note: Refer to section 2.5 for installation guide.

Chapter 3

BIOS Setup Information

WEBS-5491 Series Panel PC adopts PEB-99A4 mother board. PEB-99A4 is equipped with the AMI BIOS stored in Flash ROM. These BIOS has a built-in Setup program that allows users to modify the basic system configuration easily. This type of information is stored in CMOS RAM so that it is retained during power-off periods. When system is turned on, PEB-99A4 communicates with peripheral devices and checks its hardware resources against the configuration information stored in the CMOS memory. If any error is detected, or the CMOS parameters need to be initially defined, the diagnostic program will prompt the user to enter the SETUP program. Some errors are significant enough to abort the start up.

3.1 Entering Setup—Launch System Setup

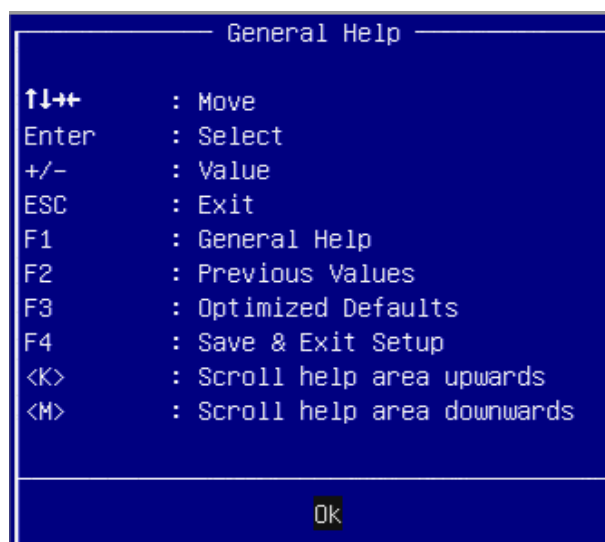
Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press key will enter BIOS setup screen.

Press to enter SETUP

If the message disappears before responding and still wish to enter Setup, please restart the system by turning it OFF and On or pressing the RESET button. It can be also restarted by pressing <Ctrl>, <Alt>, and <Delete> keys on keyboard simultaneously.

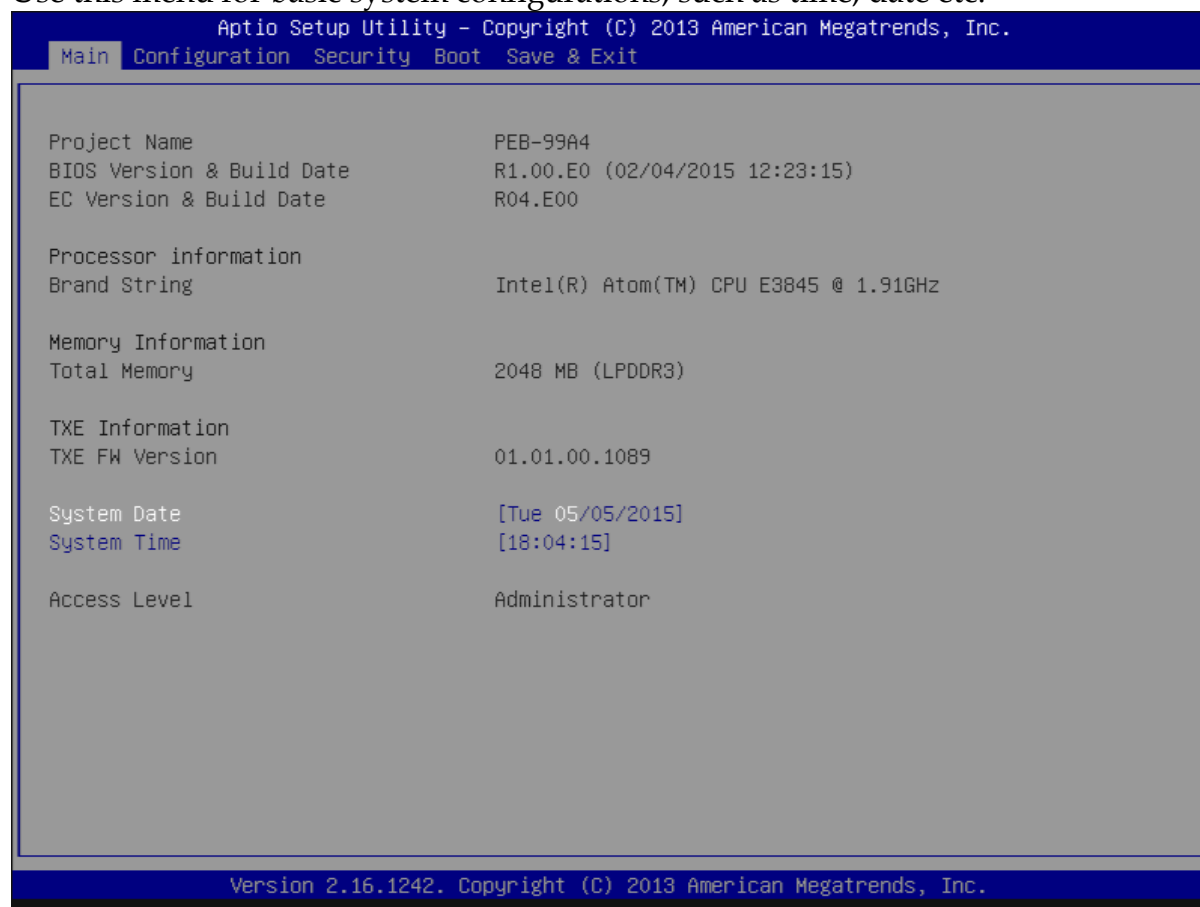
Press <F1> to Run General Help or Resume

The BIOS setup program provides a General Help screen. The menu can be easily called up from any menu by pressing <F1>. The Help screen lists all the possible keys to use and the selections for the highlighted item. Press <Esc> to exit the Help screen.



3.2 Main

Use this menu for basic system configurations, such as time, date etc.



BIOS Information, Memory Information

These items show the firmware and memory specifications of your system. Read only.

System Date

The date format is <Day>, <Month> <Date> <Year>. Use [+] or [-] to configure system Date.

System Time

The time format is <Hour> <Minute> <Second>. Use [+] or [-] to configure system Time.

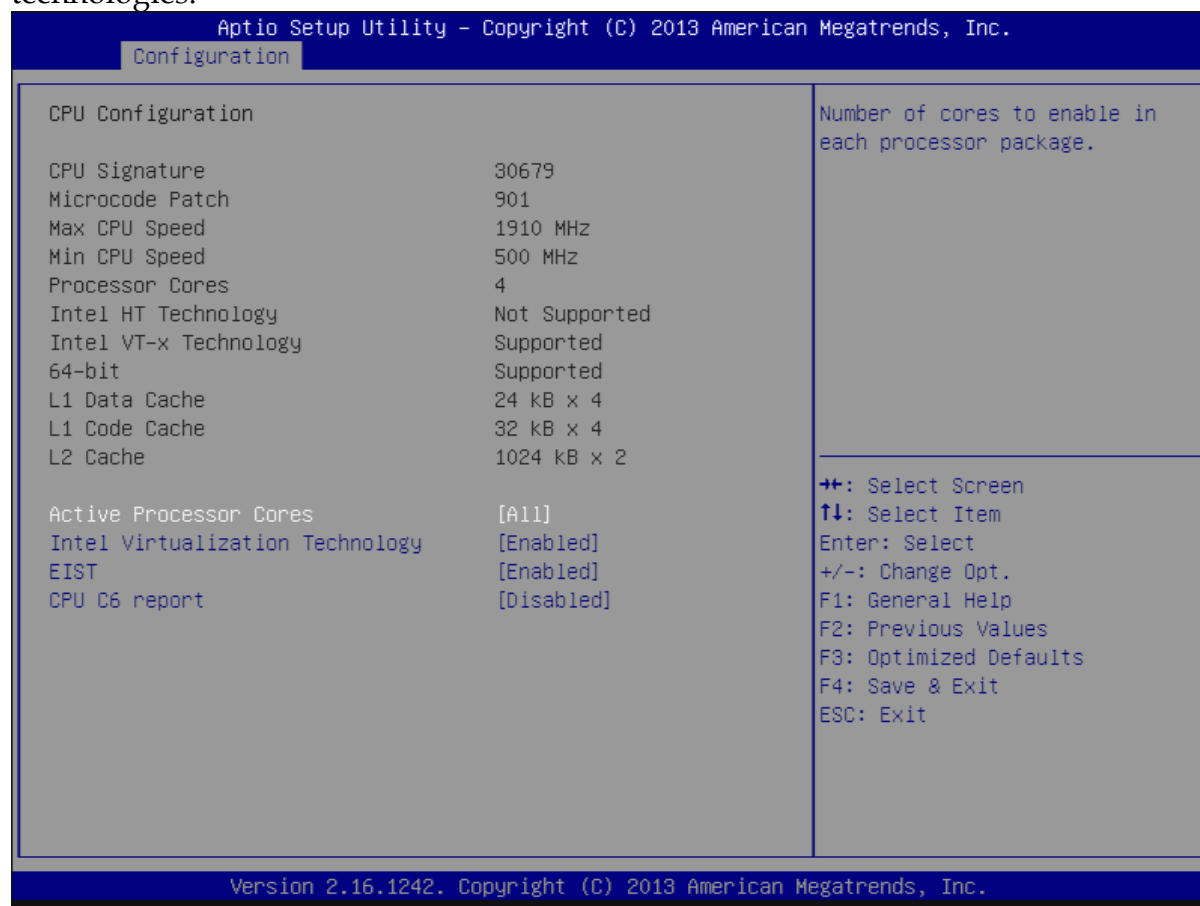
3.3 Configuration

Use this menu to set up the items of special enhanced features.



CPU configuration

CPU Configure the specific active core(s) and advanced processor management technologies.



Active Processor Cores

Number of cores to enable in each processor package.

The choice: All(Default), 1.

Intel Virtualization Cores

When enabled, a VMM can utilize the additional hardware capabilities provided by Vander pool Technology.

The choice: Disabled. Enabled(Default).

EIST

Enable/Disable Intel Speed Step.

The choice: Disabled. Enabled(Default).

CPU C6 report

Enable or Disable the CPU C6 (ACPI C3) report to OS.

The choice: Disabled(Default). Enabled.

Chipset Configuration

Configuration Chipset feature.



High Precision Timer

Enable or Disable the High Precision Event Timer.

The choice: Disabled. Enabled(Default).

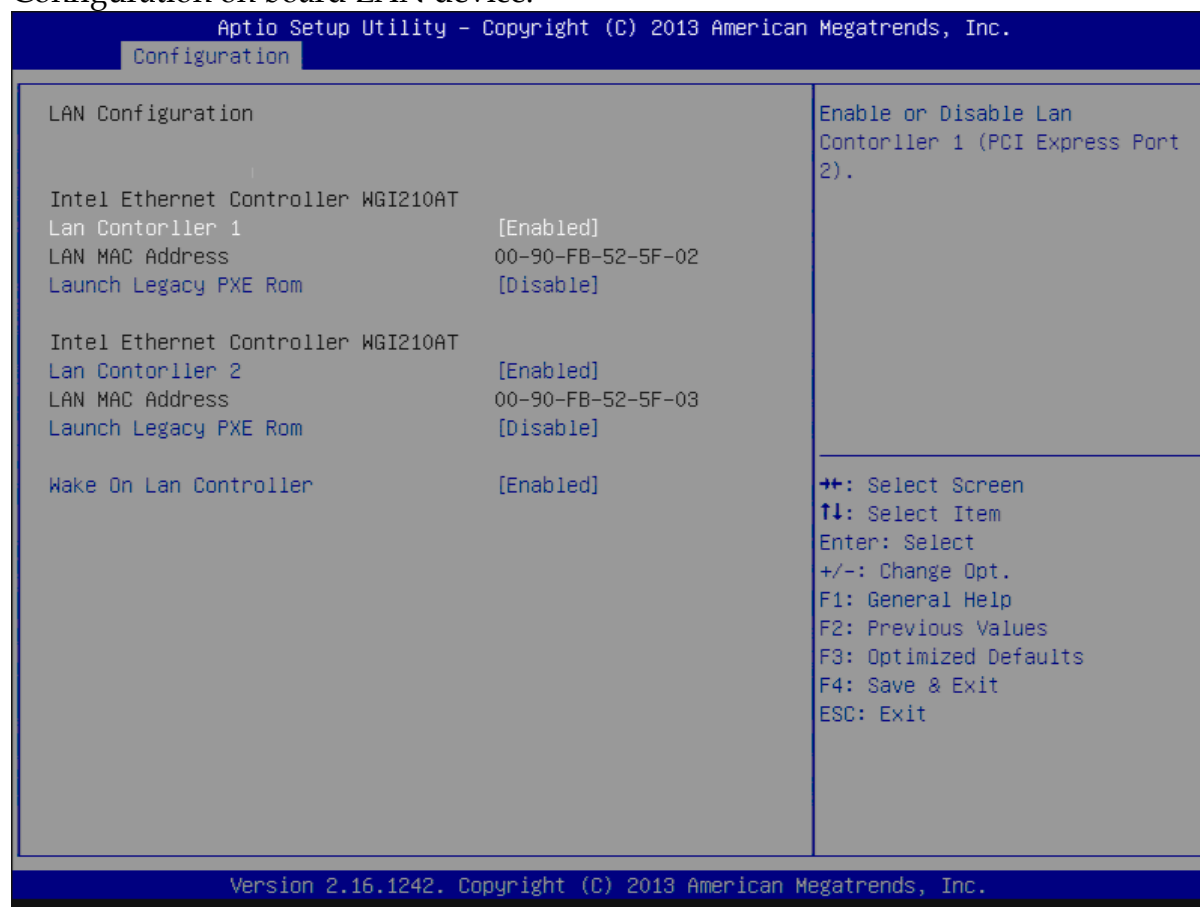
Audio Controller

Control Detection of the Azalia device. Disabled = Azalia will be unconditionally disabled. Enabled = Azalia will be unconditionally Enabled.

The choice: Disabled. Enabled(Default).

LAN Configuration

Configuration on board LAN device.



LAN Controller 1

Enable or Disable LAN Controller 1 (PCI Express Port 2).

The choice: Disabled. Enabled(Default).

Launch Legacy PXE Rom

Launch Legacy PXE Rom. [Disable] Not Launch Rom, [Enabled] Force Launch Rom.

The choice: Disabled(Default). Enabled.

LAN Controller 2

Enable or Disable LAN Controller 2 (PCI Express Port 3).

The choice: Disabled. Enabled(Default).

Launch Legacy PXE Rom

Launch Legacy PXE Rom. [Disable] Not Launch Rom, [Enabled] Force Launch Rom.

The choice: Disabled(Default). Enabled.

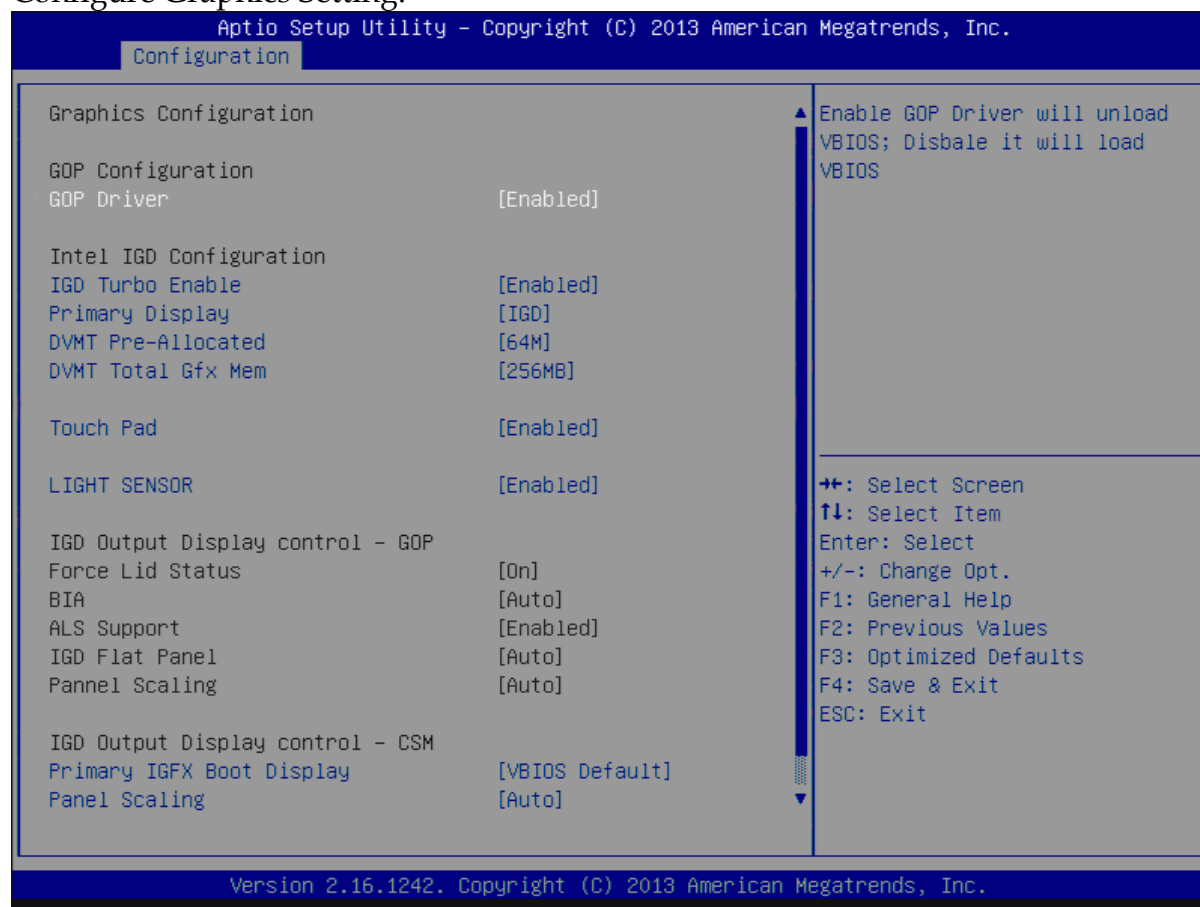
Wake on LAN Controller

Enable or Disable Intel LAN 0 and Intel LAN 1 WGI210AT wakeup function.

The choice: Disabled. Enabled(Default).

Graphic Configuration

Configure Graphics Setting.



GOP Driver

Enable GOP Driver will unload VBIOS; Disable it will load VBIOS

Choices: Enable(Default), Disable.

IGD Turbo Enable

Enable IGD Turbo Enable; Disable IGD Turbo Disable.

Choices: Enable(Default), Disable.

Primary Display

Select which of IGD/PCI Graphics device should be Primary Display.

Choices: Auto, IGD(Default), PCI, SG.

DVMT Pre-Allocated

Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory sized used by the Internal Graphic Device

Choices: 64M(Default), 96M, 128M, 160M, 192M, 224M, 256M, 288M, 320M, 352M, 384M,416M, 448M, 480M, 512M.

DVMT Total GFX Mem

Select DVMT 5.0 Total Graphics Memory sized used by the Internal Graphic Device.

Choices: 128MB, 256MB(Default), Max.

Touch Pad

Touch Pad Enable/Disable.

Choices: Enable(Default), Disable.

LIGHT SENSOR

LIGHT SENSOR Support Enable/Disable..

Choices: Enable(Default), Disable.

Primary IGFX Boot Display

Select the Video Device which will be activated during POST. This as no effect if external graphics present. Secondary will appear based on your Selection. VGA modes will be supported only on primary display.

Choices: VBIOS Default(Default), DVI, LVDS.

Panel Scaling

Select the LCD Panel scaling option used by Internal Graphic device.

Choices: Auto(Default), Off, Force Scaling.

Backlight Control

Back Light Control Setting.

Choices: PWM Inverted, PWM Normal(Default), GMBus Inverted, GMBus Normal.

Active LFP

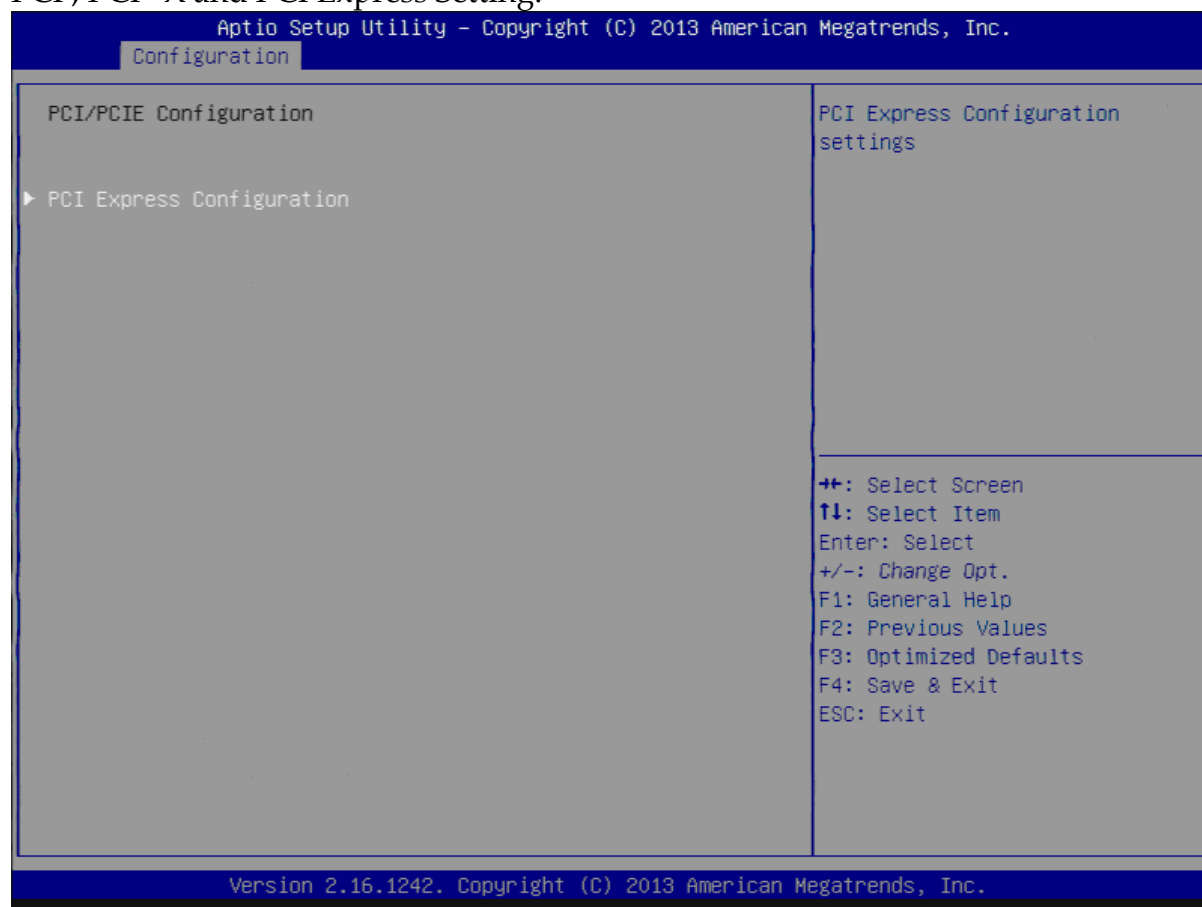
Select the Active LEP Configuration. Mo LVDS: VBIOS does not enable LVDS.

eDP Port-A: LFP driven by Int-DisplayPort encoder from Port-A.

Choices: No LVDS, eDP Port-A(Default).

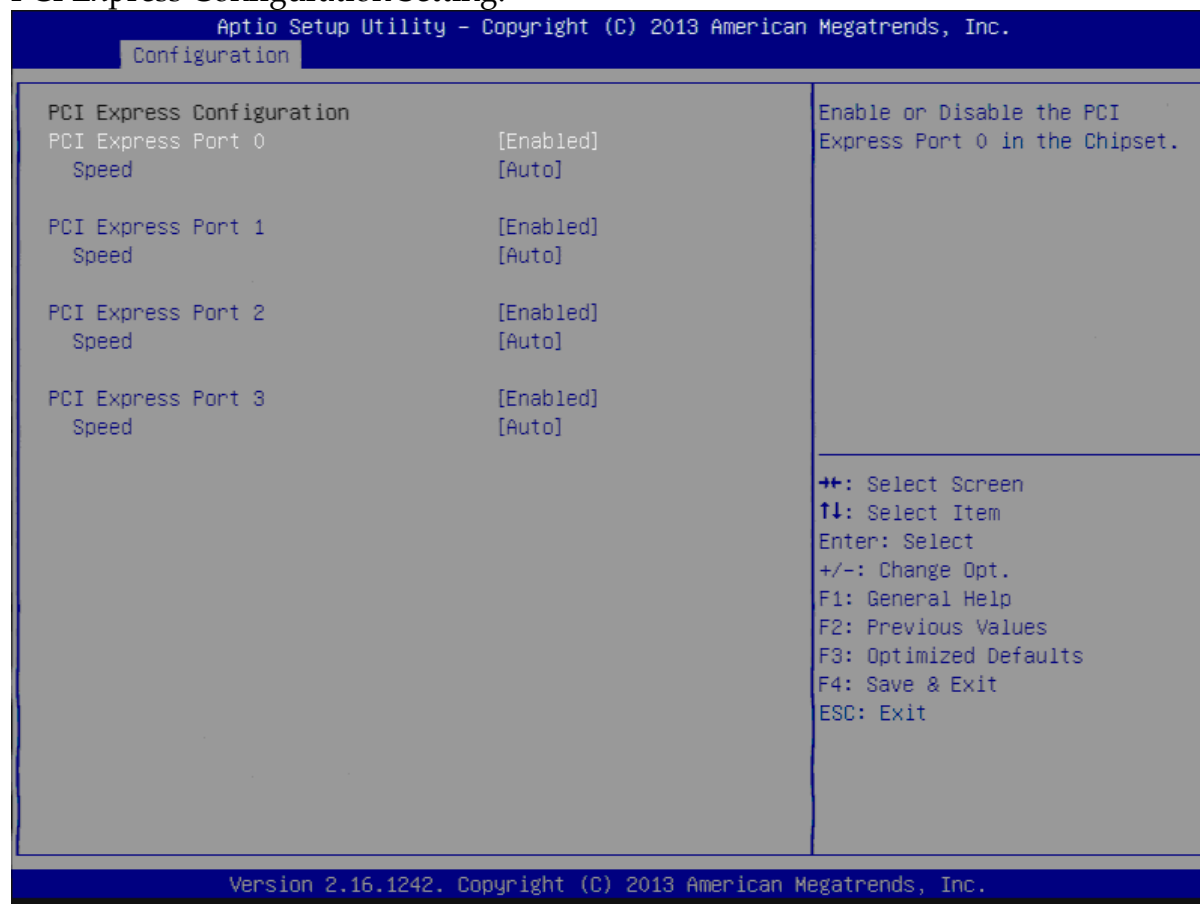
PCI/PCIE Configuration

PCI , PCI -X and PCI Express Setting.



PCI Express Configuration

PCI Express Configuration Setting.



PCI Express Configuration Port 0

Enable or Disable the PCI Express Port 0 in the Chipset.

Choices: Enable(Default), Disable.

Speed

Configuration PCIe Speed

Choices: Auto(Default), Gen1, Gen2.

PCI Express Configuration Port 1

Enable or Disable the PCI Express Port 1 in the Chipset.

Choices: Enable(Default), Disable.

Speed

Configuration PCIe Speed

Choices: Auto(Default), Gen1, Gen2.

PCI Express Configuration Port 2

Enable or Disable the PCI Express Port 2 in the Chipset.

Choices: Enable(Default), Disable.

Speed

Configuration PCIe Speed

Choices: Auto(Default), Gen1, Gen2.

PCI Express Configuration Port 3

Enable or Disable the PCI Express Port 3 in the Chipset.

Choices: Enable(Default), Disable.

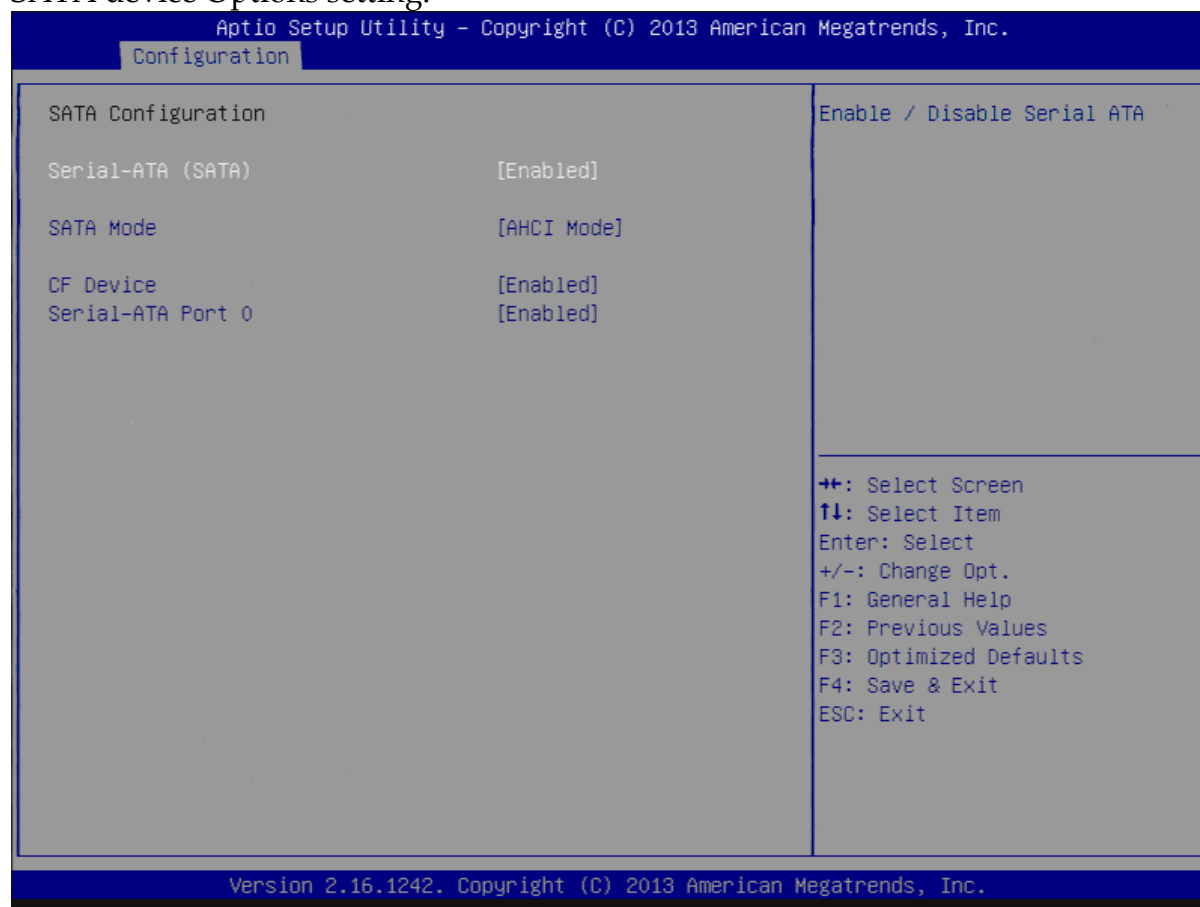
Speed

Configuration PCIe Speed

Choices: Auto(Default), Gen1, Gen2.

SATA Configuration

SATA device Options setting.



Serial-ATA (SATA)

Enable or Disable Serial ATA.

Choices: Disabled, Enabled(Default).

SATA Mode

Select IDE / AHCI.

Choices: Disabled, IDE, AHCI(Default).

CF Device

Enabled / Disabled CF Device.

Choices: Disabled, Enabled(Default).

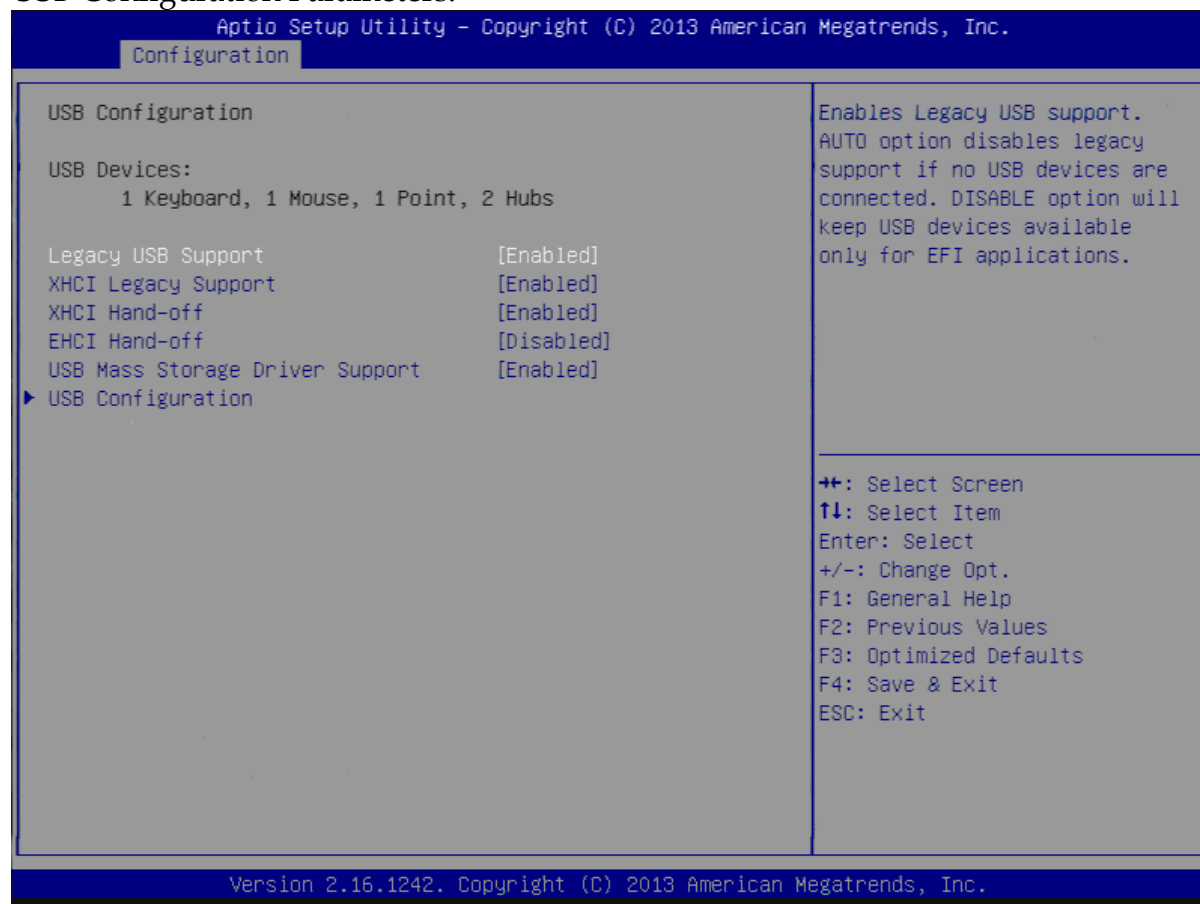
Serial-ATA Port 0

Enable or Disable Serial ATA Port 0.

Choices: Disabled, Enabled(Default).

USB Configuration

USB Configuration Parameters.



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.

Choices: Enabled, Disabled(Default).

XHCI Legacy Support

Enable/Disable XHCI Controller Legacy support.

Choices: Enabled, Disabled(Default).

XHCI Hand-off

This is a workaround for Oses without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.

Choices: Enabled, Disabled(Default).

EHCI Hand-off

This is a workaround for Oses without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.

Choices: Enabled, Disabled(Default).

USB Mass storage Driver Support

Enable/Disable USB Mass storage Driver Support.

Choices: Enabled(Default), Disabled.

USB Configuration

USB Configuration settings.



XHCI Mode

Mode of operation of XHCI controller

Choices: Smart Auto(Default), Auto, Enable, Disable.

USB2 Link Power Management

Enable/Disable USB2 Link Power Management.

Choices: Enable(Default), Disable.

USB 2.0 (EHCI) Support

Control the USB EHCI (USB2.0) functions. One EHCI controller must always be enabled.

Choices: Enable, Disable(Default).

USB Port 0

Enable/Disable USB Port 0: USB 3.0 port on Board.

Choices: Enable(Default), Disable.

USB Port 1

Enable/Disable USB Port 1: USB 2.0 port on Board.

Choices: Enable(Default), Disable.

USB Port 2

Enable/Disable USB Port 2: The USB port turn into a mini PCIE.

Choices: Enable(Default), Disable.

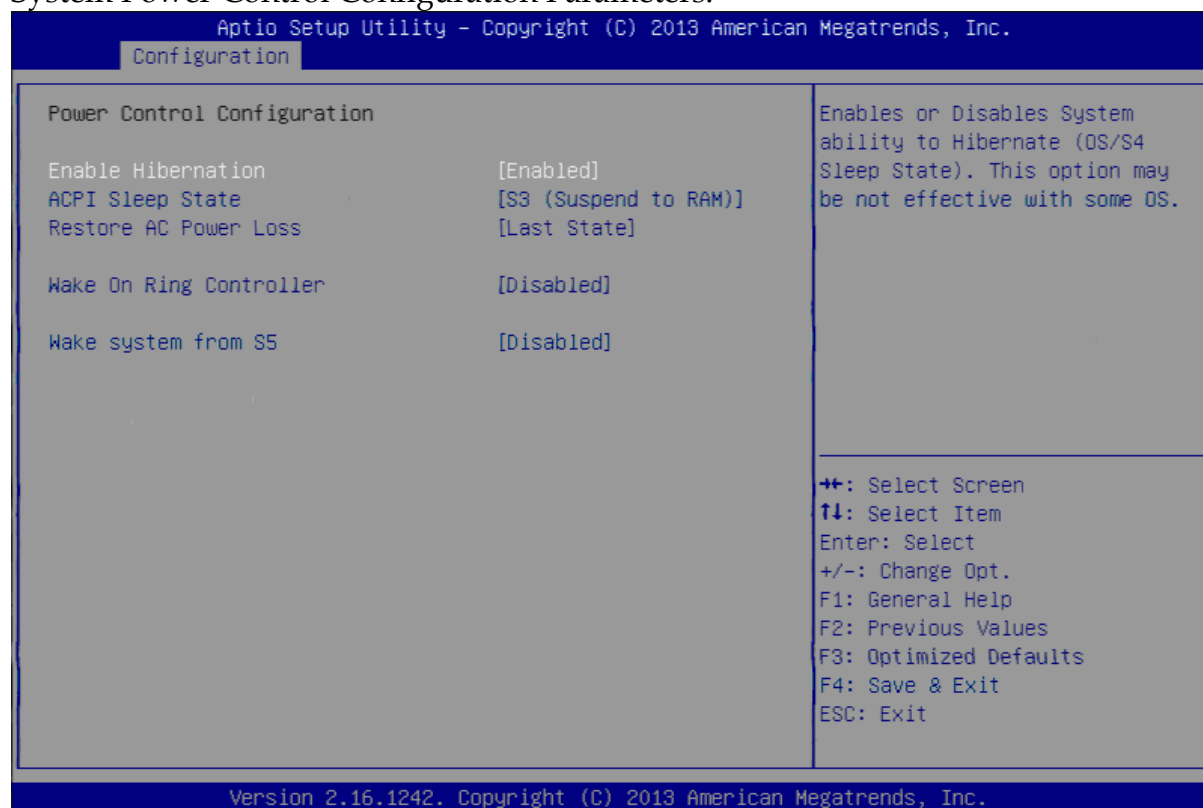
USB Port 3

Enable/Disable USB Port 3: The USB port as USB HUB have 2 USB Port in external cart.

Choices: Enable(Default), Disable.

Power Control Configuration

System Power Control Configuration Parameters.



Enable Hibernation

Enable or disable System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.

Choices: Disabled, Enabled(Default).

ACPI Sleep State

Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.

Choices: Suspend Disable, S3 (Suspend to RAM) (Default)

Restore AC Ring Loss

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

Choices: Power Off, Power on, Last State(Default).

Wake on Ring Controller

Enable / Disable GPIO wake on Ring function.

Choices: Disabled(Default), Enabled.

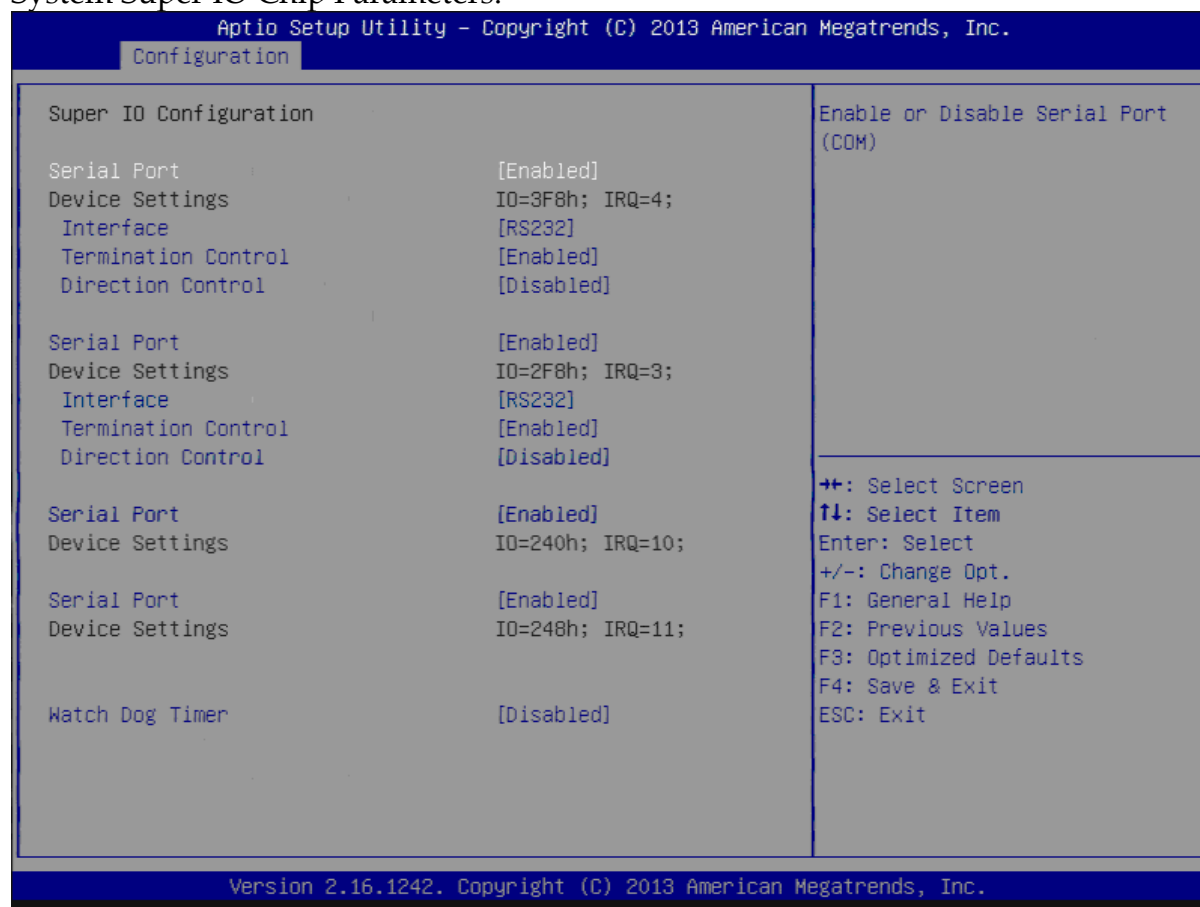
Wake System from S5

Enable or Disable System wake on alarm event, Select Enable, system will wake on the hr: mm: sec: specified.

Choices: Disabled(Default), Enabled.

Super IO Configuration

System Super IO Chip Parameters.



Serial Port

Enable or Disable Serial Port (COM) IO=3F8H; IRQ=4.
 Choices: Disabled, Enabled(Default).

Interface

Set Current UART mode RS232, RS485, RS485/RS422.
 Choices: RS232(Default), RS485 HALF DUFLEX, RS485/422 FULL DUFLEX.

Termination Control

Set Termination Control Disabled/ Enabled.
 Choices: Disabled, Enabled(Default).

Direction Control

Set Direction Control set Enabled as Transceiver else; Disabled as Receiver.
 Choices: Disabled(Default), Enabled.

Serial Port

Enable or Disable Serial Port (COM) IO=2F8H; IRQ=3.
 Choices: Disabled, Enabled(Default).

Interface

Set Current UART mode RS232, RS485, RS485/RS422.

Choices: RS232(Default), RS485 HALF DUFLEX, RS485/422 FULL DUFLEX.

Termination Control

Set Termination Control Disabled/ Enabled.

Choices: Disabled, Enabled(Default).

Direction Control

Set Direction Control set Enabled as Transceiver else; Disabled as Receiver.

Choices: Disabled(Default), Enabled.

Serial Port

Enable or Disable Serial Port (COM) IO=240H; IRQ=10.

Choices: Disabled, Enabled(Default).

Serial Port

Enable or Disable Serial Port (COM) IO=248H; IRQ=11.

Choices: Disabled, Enabled(Default).

Watch Dog Timer

Enable or Disable Watch Dog Timer.

Choices: Disabled(Default), Enabled.

Timer Unit (Watch Dog Timer Enabled)

Select Timer count unit of WDT.

Choices: Seconds(Default), Minutes.

Timer value (Watch Dog Timer Enabled)

Set WDT Timer value Seconds/minutes.

Choices: Default [20].

Hardware Monitor

Monitor hardware status.

The screenshot shows the 'Hardware Monitor' section of the BIOS setup utility. The title bar reads 'Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.' and the current screen is 'Configuration'. The main area is divided into two columns. The left column displays the following data:

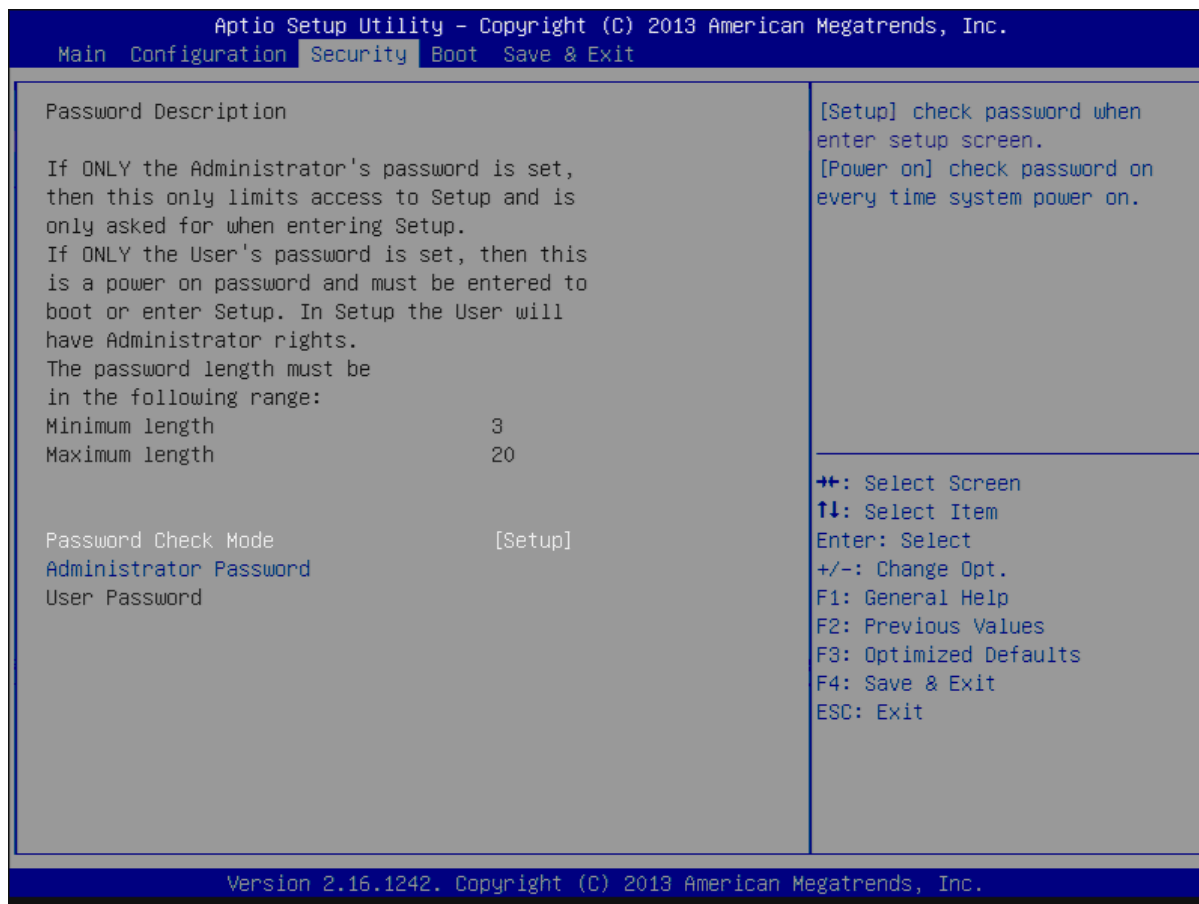
Health Status	
CPU temperature	: +45 C
System temperature	: +36 C
Vcore	: +0.924 V
+3.3V	: +3.378 V
+5V	: +5.193 V
+12V	: +12.612 V
+1.35V	: +1.359 V

The right column contains navigation instructions:

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

The footer of the screen reads 'Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.'

3.4 Security



Password Check Mode

[Setup] check password when enter setup screen, [Power On] check password on every time system power on.

Choices: Setup(Default), Power On.

Administrator Password

Set Administrator Password

User Password

Set User Password.

3.5 Boot

Use this menu to specify the priority of boot devices.



Setup Prompt Timeout

Number of seconds to wait for setup activation key. 65535 (0xFFFF) means indefinite waiting.

Choices: Default [5].

Bootup NumLock state

Select the keyboard NumLock state.

Choices: On(Default), Off.

Post Report

Post Report Support Enabled/Disabled.

Choices: Disabled(Default), Enabled.

Summary Screen

Summary Screen Support Enabled/Disabled.

Choices: Disabled(Default), Enabled.

CSM Support

Enabled/Disabled CSM Support.

Choices: Disabled, Enabled(Default).

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.

Choices: Upon Request(Default), Always.

Option ROM Messages

Set display mode for Option ROM.

Choices: Force BIOS(Default), Keep Current.

INT19 Trap Response

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

Choices: Immediate(Default), Postponed.

Storage

Controls the of execution of UEFI and Legacy Storage OpROM.

Choices: Do not launch(Default), UEFI only, Legacy only.

Full Screen Logo

Enables or Disables Quiet Boot option and Full screen Logo.

Choices: Disabled(Default), Enabled.

OS Selection

OS Selection

Choices: Windows 8.X(Default), Windows 7.

Fast Boot

Enables or Disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.

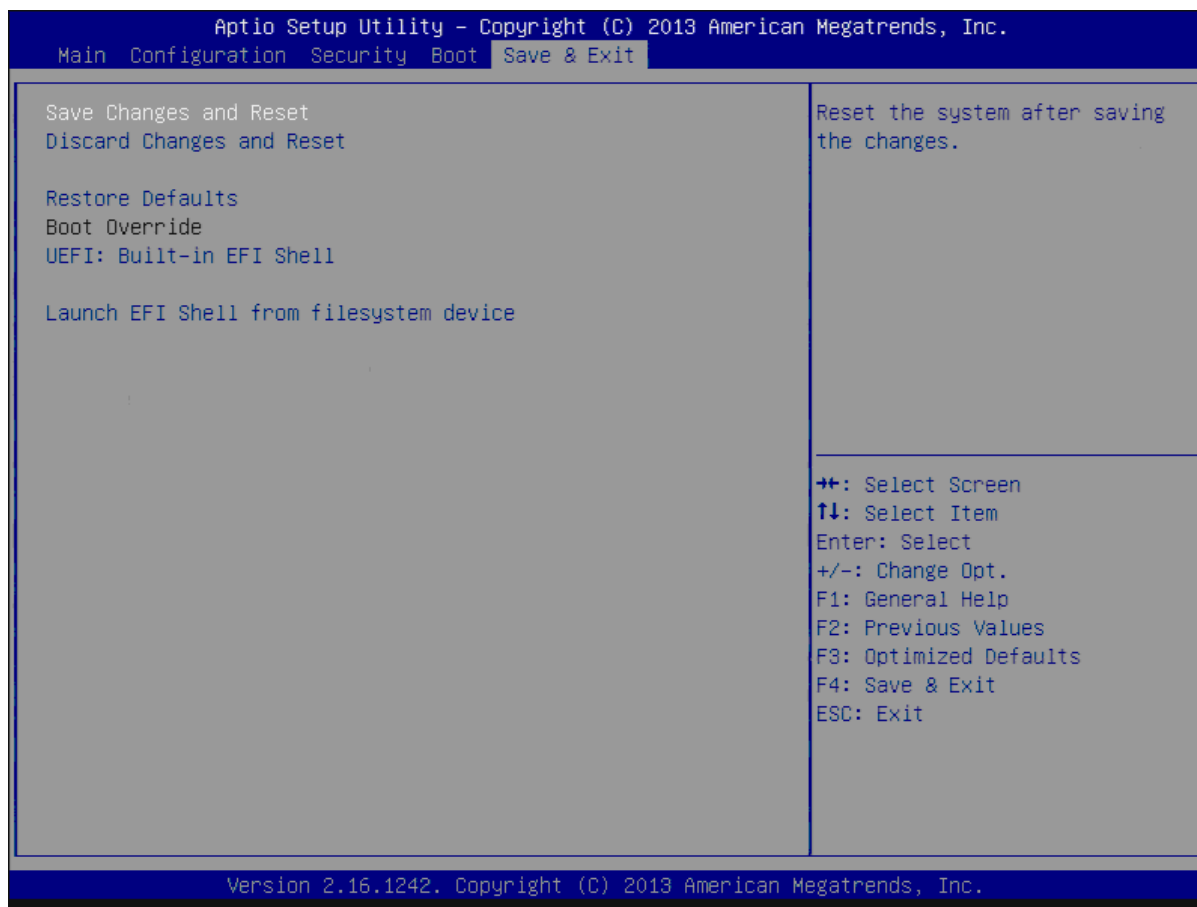
Choices: Disable(Default), Enabled.

Boot Option #1

Sets the system boot order

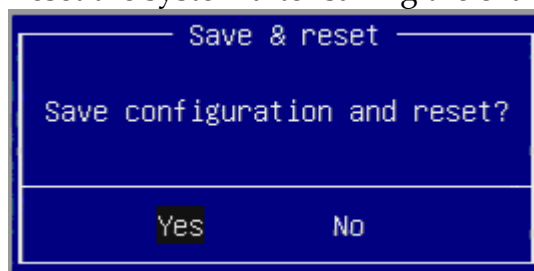
Choices: UEFI: Built-in EFI Shell, Disabled.

3.6 Save and Exit



Save Changes and Reset

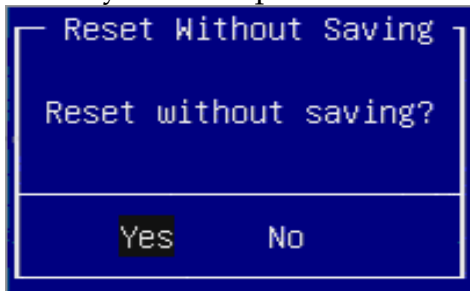
Reset the system after saving the changes.



Pressing <Enter> on this item asks for confirmation: Save configuration and reset.

Discard Changes and Exit

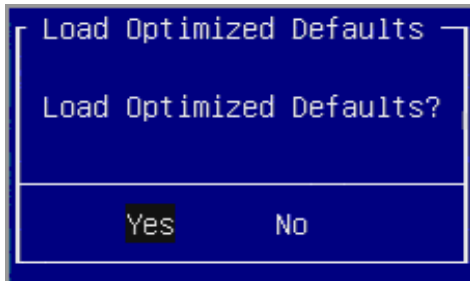
Reset system setup without saving any changes.



Pressing <Enter> on this item asks for confirmation: Reset without saving.

Restore Defaults

Restore/Load Default values for all the setup options.



Pressing <Enter> on this item asks for confirmation: Load Optimized Default.

Chapter 4

Important Instructions

This chapter includes instructions which must be carefully followed when the fan-less embedded system is used.

4.1 Note on the Warranty

Due to their limited service life, parts which, by their nature, are especially subject to wear are not included in the guarantee beyond the legal stipulations.

4.2 Exclusion of Accident Liability Obligation

Portwell, Inc. shall be exempt from the statutory accident liability obligation if users fail to abide by the safety instructions.

4.3 Liability Limitations / Exemption from the Warranty Obligation

In the event of damage to the system unit caused by failure to abide by the hints in this manual and on the unit (especially the safety instructions), Portwell, Inc. shall not be required to respect the warranty even during the warranty period and shall be free from the statutory accident liability obligation.

4.4 Declaration of Conformity

EMC

CE/FCC Class A

This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This equipment may not cause harmful interference.
2. This equipment must accept any interference that may cause undesired operation.

Applicable Standards:

EN 55022: 2006 + A1: 2007, Class A

EN 61000-3-2: 2006

EN 61000-3-3: 1995 + A1: 2001 + A2: 2005

EN 55024: 1998 + A1: 2001 + A2: 2003

IEC 61000-4-2: 2008

IEC 61000-4-3: 2006 + A1: 2007

IEC 61000-4-4: 2004

IEC 61000-4-5: 2005

IEC 61000-4-6: 2007

IEC 61000-4-8: 1993 + A1: 2000

IEC 61000-4-11: 2004

FCC 47 CFR Part 15 Subpart

Chapter 5

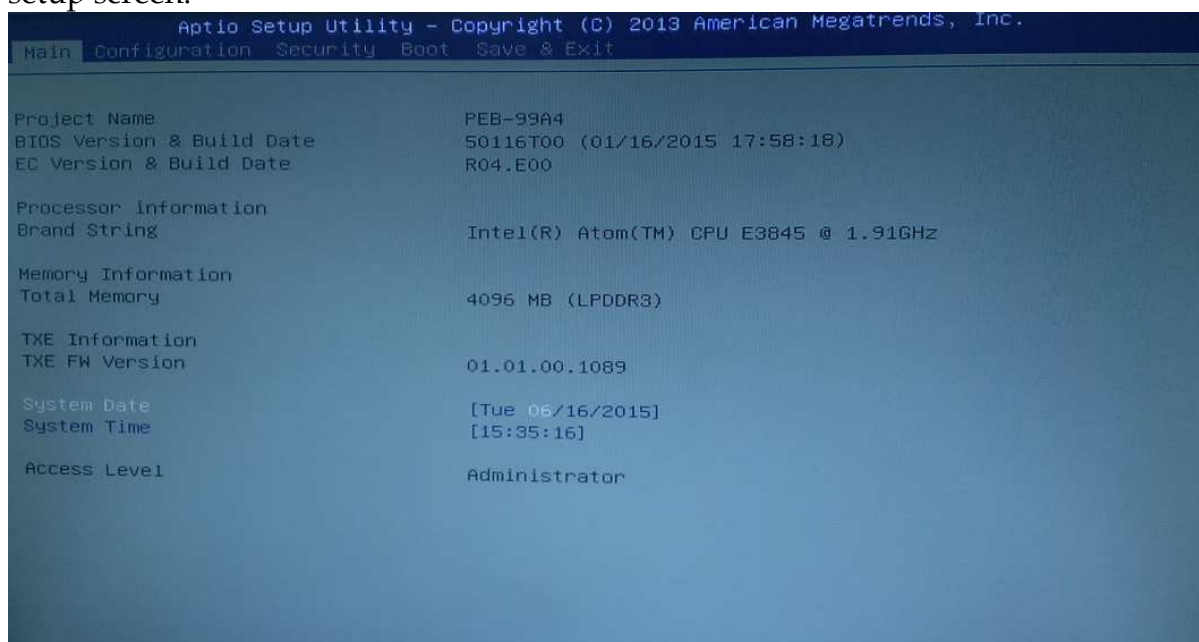
Frequent Asked Questions

Q1: How to set OS Selection for different OS?

Answer:

You can find OS Selection under BIOS setting.

Step1. Power on the computer and the system will start POST (Power on Self Test) process. When the message appears on the screen, press key and enter BIOS setup screen.



```
Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
Main Configuration Security Boot Save & Exit

Project Name                PEB-99A4
BIOS Version & Build Date   50116T00 (01/16/2015 17:58:18)
EC Version & Build Date     R04.E00

Processor Information
Brand String                Intel(R) Atom(TM) CPU E3845 @ 1.91GHz

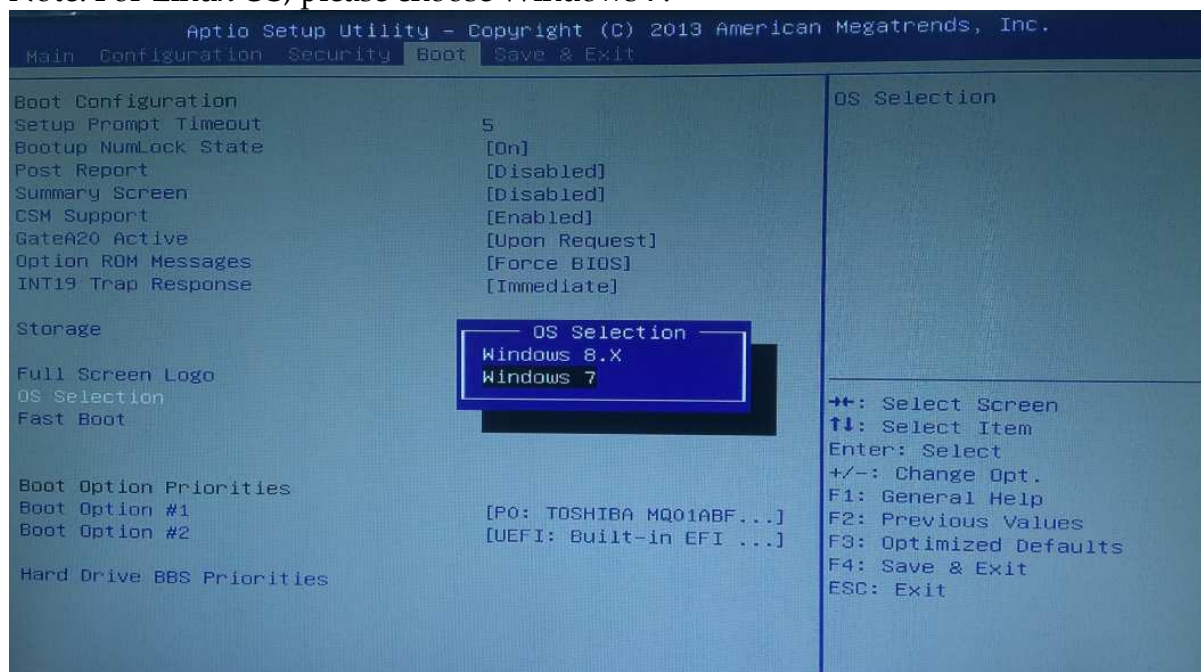
Memory Information
Total Memory                4096 MB (LPDDR3)

TXE Information
TXE FW Version              01.01.00.1089

System Date                 [Tue 06/16/2015]
System Time                 [15:35:16]

Access Level                Administrator
```

Step2. In page “Boot”, you can find OS Selection and choose the corresponding OS.
Note: For Linux OS, please choose Windows 7.



Q2: What supposed to do when forget the password of system BIOS?

Answer:

Please turn off the power supply, and then find the JP1 to set it from 1-2 short to 2-3 short. Wait for 5 seconds to clean password; then set it back to 1-2 short to turn on power supply.

JP1: CMOS Setup

PIN NO.	DESCRIPTION
1-2	Normal (Keep CMOS Setup) ★ Default
2-3	Clear CMOS Setup

Q3: How to set AT mode for the system?

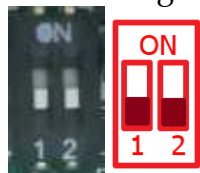
Answer:

The default setting is ATX mode: user needs to press the power button in order to turn on the system. By adjusting SW2 port 1 jumper on board and restart the system, user can set the system as AT mode.

SW2: AT/ATX & BIOS recovery Setup

PIN NO.	DESCRIPTION
1-4(Port1)	ON: AT Mode OFF:ATX Mode ★ Default

*Note: Diagram ATX mode setting



*Note: Diagram AT mode setting

