

## PPC-MB-8260AE Mini-ITX Motherboard with Intel® Core™ i7/i5/i3/Pentium®/Celeron® LGA 1151 CPU, DP/VGA, 5 COM, 6 USB, Dual LAN, PCIe x4, and Mini PCIe Startup Manual

### Packing List

Before card installation, please ensure that the following items have been included in your shipment:

- 1 x PPC-MB-8260AE mini-ITX motherboard
- 4 x COM cables (2 x 5-pin cables)
- 1 x SATA cable
- 1 x PPC-MB-8260AE startup manual
- 1 x Warranty card
- 1 x Thermal grease
- 14 x COM port screws
- 1 x Mini PCIe packet screws

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

**Note 1:** For detailed PPC-MB-8260AE specifications, refer to the latest product information provided on the Advantech website (PPC-61X1C model).

**Note 2:** Acrobat Reader is required to view PDF files.The Acrobat Reader software can be downloaded from [www.adobe.com/Products/acrobat/readstep2.html](http://www.adobe.com/Products/acrobat/readstep2.html) (Acrobat is a trademark of Adobe).

For more information about this or other Advantech products, visit our website at

<http://www.advantech.com>

For technical support and service, visit our support website at

<http://support.advantech.com>

This manual is for PPC-MB-8260AE, Rev. A1.

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Printed in China

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### Specifications

|                    |  |           |                         |                         |           |                  |                  |
|--------------------|--|-----------|-------------------------|-------------------------|-----------|------------------|------------------|
| Selected M/B       | PPC-MB-8260AE  |           |                         |                         |           |                  |                  |
| CPU                | CPU  | KBL       | i7-7700                 | i5-7500                 | i3-7101E  | /                | /                |
|                    |  | SKL       | i7-6700TE               | i5-6500TE               | i3-6100TE | Pentium G4400 TE | Celeron G3900 TE |
|                    | Core #   | Quad Core | Quad Core               | Dual Core               | Dual Core | Dual Core        |                  |
|                    | Max. Speed   | KBL       | 3.6 GHz (up to 4.2 GHz) | 3.4 GHz (up to 3.8 GHz) | 3.9 GHz   | /                | /                |
|                    |  | SKL       | 2.4 GHz (up to 3.4 GHz) | 2.3 GHz (up to 3.3 GHz) | 2.7 GHz   | 2.4 GHz          | 2.3 GHz          |
|                    | L3 Cache   | KBL       | 8M                      | 6M                      | 4M        | /                | /                |
| SKL                |  | 3M        |                         |                         | 3M        | 2M               |                  |
| TDP                | KBL  | 65W       | 65W                     | 54W                     | /         | /                |                  |
|                    | SKL  | 35W       | 35W                     | 35W                     | 35W       | 35W              |                  |
| Chipset            | Intel® H110  |           |                         |                         |           |                  |                  |
| Memory             | 1 x 260-pin SODIMM DDR4, 2133 MHz (up to 16 GB)  |           |                         |                         |           |                  |                  |
| Network (LAN)      | 2 x 10/100/1000 Mbps Ethernet, 2 x Intel® I211   |           |                         |                         |           |                  |                  |
| I/O Port           | 1 x RS232/422/485, 1 x RS232<br>1 x DP<br>1 x VGA<br>4 x USB 3.0<br>1 x Line-Out, 1 x Mic-In   |           |                         |                         |           |                  |                  |
| Internal Connector | 3 x RS232<br>1 x GPIO (8 channels)<br>1 x Speaker connector<br>1 x LED connector<br>2 x USB 2.0<br>1 x LVDS connector<br>1 x Touch connector<br>2 x SATA connector |           |                         |                         |           |                  |                  |
| Watchdog Timer     | 255 timer intervals, configurable using software   |           |                         |                         |           |                  |                  |
| Expansion          | 1 x Full-size mSATA or mini PCIe, 1 x PCIe x4 slot   |           |                         |                         |           |                  |                  |
| Dimensions         | 170 x 170 mm (6.69 x 6.69")  |           |                         |                         |           |                  |                  |
| Operating System   | Microsoft® Windows 7 (32/64 bit), Windows 8.1 (64 bit), Windows 10 (64 bit*)   |           |                         |                         |           |                  |                  |

\*Kaby lake processors only support Windows 10 (64 bit)

## Jumpers and Connectors

The PPC-MB-8260AE motherboard features a number of jumpers that allow users to configure the system according to specific applications. The functions of each jumper and connector are listed in the table below.

### Connectors and Headers

| Connectors and Headers List |   |
|-----------------------------|---|
| Label                       | Function                                |
| CN2                         | Mic-In/Line-Out connector               |
| LAN2_USB1                   | RJ45+USB 3.0 stack connector            |
| LAN1_USB1                   | RJ45+USB 3.0 stack connector            |
| VGA1                        | VGA display connector                   |
| DP1                         | DisplayPort connector                   |
| CN1                         | COM 1/2 connector                       |
| DCIN1                       | Power input connector                   |
| ATX12v1                     | ATX 12V power supply connector          |
| ATX_5Vsb1                   | ATX 5VSB power supply connector         |
| CN5                         | Power button bonnector                  |
| CN6 ~ 8                     | COM 5/4/3 connector                     |
| CN11                        | General purpose I/O pin header          |
| BAT1                        | Battery connector                       |
| SPI1                        | SPI BIOS flash socket                   |
| CN16                        | Touch connector                         |
| CN17                        | LVDS panel connector                    |
| CN20                        | LVDS backlight inverter power connector |
| Sysfan1 ~ 2                 | System fan power connector              |
| CPUFAN1                     | CPU fan power connector                 |
| CN18 ~ 19                   | SATA power connector                    |
| SATA1 ~ 2                   | SATA signal connector                   |
| CN4                         | Power LED connector                     |
| CN9/CN12                    | 2 x USB 2.0 pin header                  |
| PClex4_1                    | PCIe x4 slot connector                  |
| AMP1                        | Audio amplifier output connector        |
| DIMMA1                      | DDR4 SODIMM socket                      |
| CPU1                        | CPU socket                              |
| Mini-PCIe1                  | MSATA and mini PCIe socket              |

## Jumpers and Connectors (Cont.)

### ATX\_5Vsb1: ATX 5VSB Power Supply Connector

| Pin | Definition |
|-----|------------|
| 1   | +V5SB      |
| 2   | GND        |
| 3   | PSON       |

### CN1: COM 2 Connector

| Pin | Definition (RS232) | Definition (RS422) | Definition (RS485) |
|-----|--------------------|--------------------|--------------------|
| 1   | DCD                | TX-                | TX-                |
| 2   | RXD                | TX+                | TX+                |
| 3   | TXD                | RX+                |                    |
| 4   | DTR                | RX-                |                    |
| 5   | GND                |                    |                    |
| 6   | DSR                |                    |                    |
| 7   | RTS                |                    |                    |
| 8   | CTS                |                    |                    |
| 9   | RI                 |                    |                    |

### CN6 ~ 8: COM 5/4/3 Connector

| Pin | Definition |
|-----|------------|
| 1   | DCD        |
| 2   | RXD        |
| 3   | TXD        |
| 4   | DTR        |
| 5   | GND        |
| 6   | DSR        |
| 7   | RTS        |
| 8   | CTS        |
| 9   | RI         |
| 10  | NA         |

### CN11: General Purpose I/O Pin Header

| Pin | Definition |
|-----|------------|
| 1   | GND        |
| 2   | GPIO4      |
| 3   | GPIO0      |

## Jumpers and Connectors (Cont.)

|    |       |
|----|-------|
| 4  | GPIO5 |
| 5  | GPIO1 |
| 6  | GPIO6 |
| 7  | GPIO2 |
| 8  | GPIO7 |
| 9  | GPIO3 |
| 10 | +V5   |

### CN16: Touch Connector

| Pin | Definition |
|-----|------------|
| 1   | Y+         |
| 2   | X+         |
| 3   | SENSE      |
| 4   | Y-         |
| 5   | X-         |

### Sysfan 1 ~ 2: System Fan Power Connector

| Pin | Definition |
|-----|------------|
| 1   | GND        |
| 2   | POWER      |
| 3   | SPEED      |
| 4   | PWM        |

### CPUFAN1: CPU Fan Power Connector

| Pin | Definition |
|-----|------------|
| 1   | GND        |
| 2   | POWER      |
| 3   | SPEED      |
| 4   | PWM        |

### CN18 ~ 19: SATA Power Connector

| Pin | Definition |
|-----|------------|
| 1   | +V3.3      |
| 2   | GND        |
| 3   | +V5        |
| 4   | GND        |
| 5   | +V12       |

## Jumpers and Connectors (Cont.)

### CN4: Power LED Connector

| Pin | Definition |
|-----|------------|
| 1   | +V5_DUAL   |
| 2   | +V5        |
| 3   | GND        |
| 4   | GND        |

### AMP1: Audio Amplifier Output Connector

| Pin | Definition |
|-----|------------|
| 1   | SPK L-     |
| 2   | SPK L+     |
| 3   | SPK R+     |
| 4   | SPK R-     |

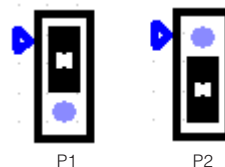
## Jumper Settings

### Jumpers List

| Jumper | Function                             |
|--------|--------------------------------------|
| JP1    | ATX/AT select                        |
| JCMOS1 | RTC select                           |
| JP2    | Touch power select                   |
| JP3    | LCD power select                     |
| JP4    | Enable power select                  |
| JP5    | LVDS PWM power select                |
| JP6    | COM Pin 9 power select (COM 1 and 2) |
| JP7    | LVDS resolution select               |

### ATX/AT Select (JP1)

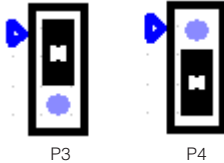
|          |               |
|----------|---------------|
| (1-2) P1 | AT            |
| (2-3) P2 | ATX (default) |



## Jumpers and Connectors (Cont.)

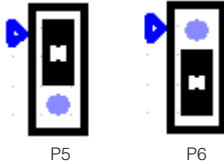
### RTC Select (Jcmos1)

|          |                  |
|----------|------------------|
| (1-2) P3 | Normal (default) |
| (2-3) P4 | Clear CMOS       |



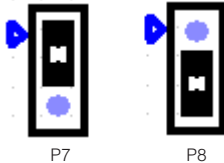
### Touch Power Select (JP2)

|          |                      |
|----------|----------------------|
| (1-2) P5 | +V3.3_DUAL (default) |
| (2-3) P6 | +V3.3                |



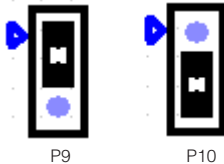
### LCD Power Select (JP3)

|          |                 |
|----------|-----------------|
| (1-2) P7 | +V5             |
| (2-3) P8 | +V3.3 (default) |



### Enable Power Select (JP4)

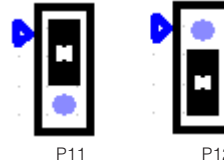
|           |                 |
|-----------|-----------------|
| (1-2) P9  | +V5             |
| (2-3) P10 | +V3.3 (default) |



## Jumpers and Connectors (Cont.)

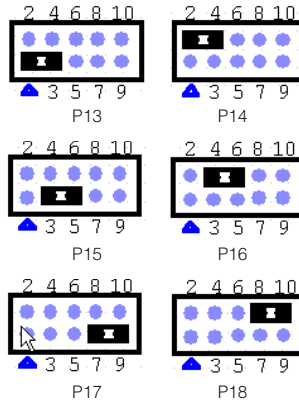
### LVDS PWM Power Select (JP5)

|           |                 |
|-----------|-----------------|
| (1-2) P11 | +V5             |
| (2-3) P12 | +V3.3 (default) |



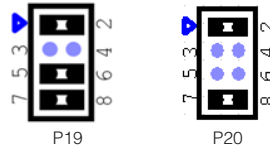
### COM Ring Select (JP6)

|                         |                        |
|-------------------------|------------------------|
| (1-3)/(2-4)<br>P13/P14  | COM 2/1 ring (default) |
| (3-5)/(4-6)<br>P15/P16  | COM 2/1 5V             |
| (7-9)/(8-10)<br>P17/P18 | COM 2/1 12V            |

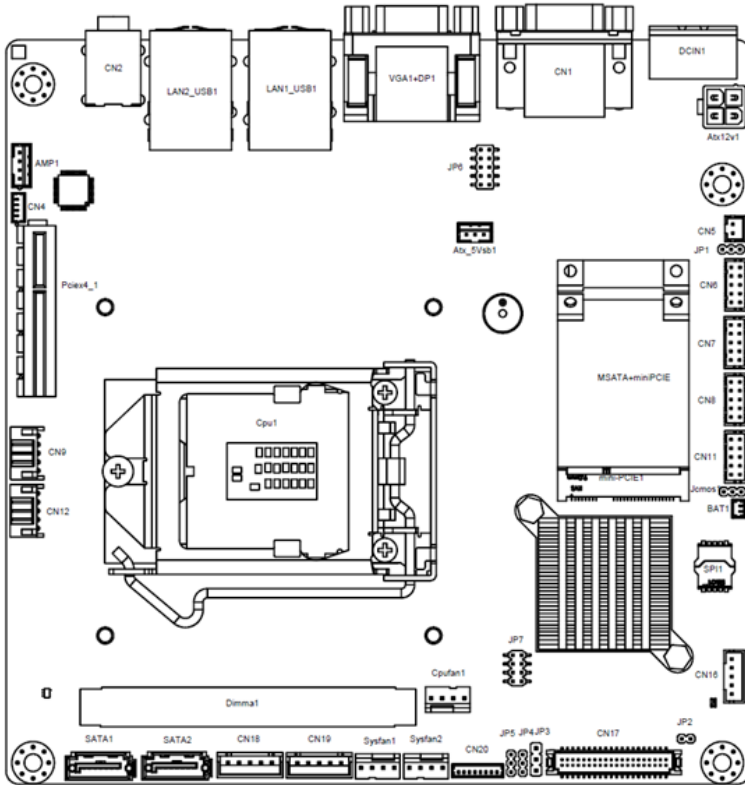


### LVDS Resolution Select (JP7)

|                           |                    |
|---------------------------|--------------------|
| (1-2)/(5-6)/<br>(7-8) P19 | 1024*768 (24 bit)  |
| (1-2)/(7-8)<br>P20        | 1280*1024 (24 bit) |

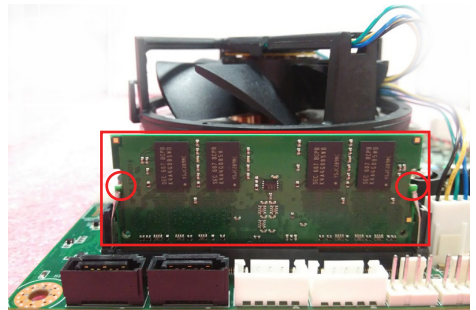


## Board Layout: Jumper and Connector Locations



## Installation Guide

1. Insert the memory module into the memory slot at a 45 degree angle, as shown below. Ensure that the gold fingers of the module are fully inserted into the slot.
2. Once inserted, gently press the memory module into the slot until the tabs snap into place, securing the module in position.

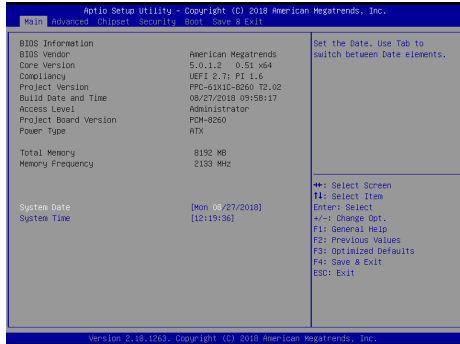


# BIOS Setup Program

## 1.1 Entering the BIOS Setup Utility

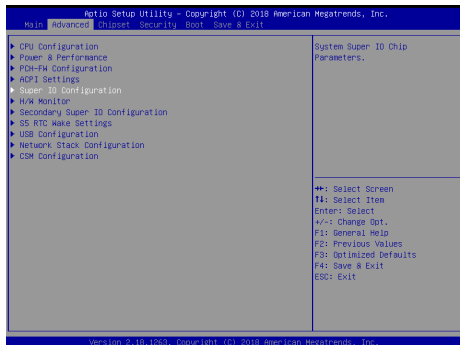
When the power is turned on, press the <Del> button to enter the BIOS setup screen.

After a setting is configured, press <F4> to save and exit; otherwise, the configuration will not be saved in the BIOS.

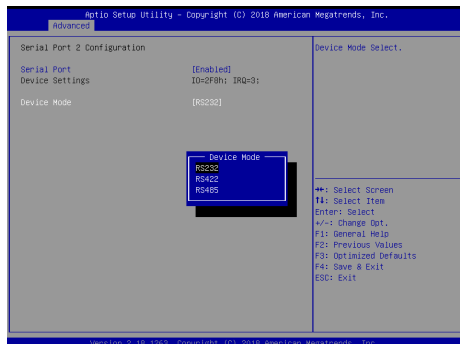


## 1.2 COM 2 Mode Selection (RS232/422/RS485)

1. Access the "Super IO Configuration" item from the "Advanced" tab.

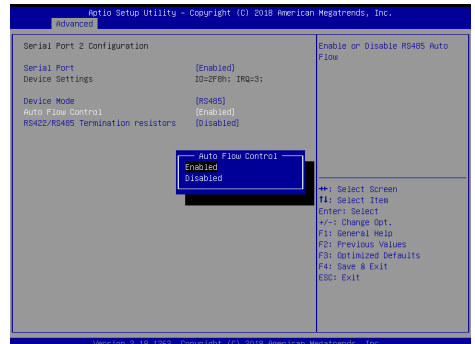


2. Select "Serial Port 2 Configuration". The COM 2 mode can be configured via the "Device Mode" item.



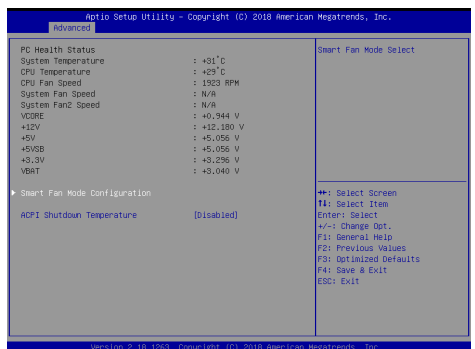
# BIOS Setup Program (Cont.)

3. Select the "RS485" option. Autoflow and termination resistors can be enabled or disabled.



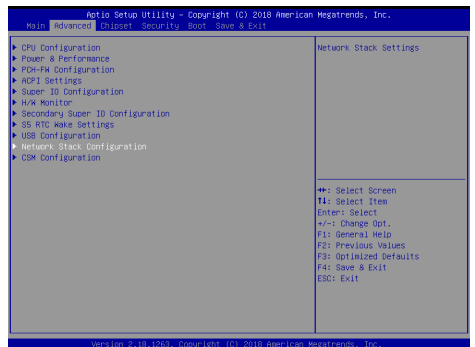
## 1.3 H/W Monitor and Smart Fan Mode Configuration

1. Access the "H/W Monitor" item from the "Advanced" tab to check the voltage temperature and fan speed.



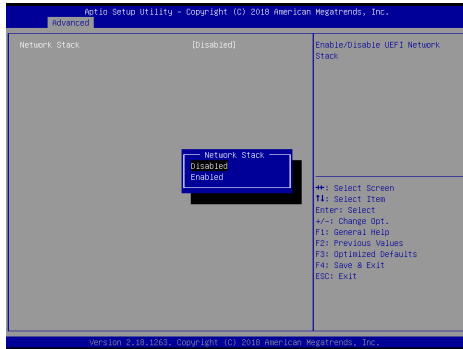
## 1.4 LAN PXE Mode Selection

1. Access the "Network Stack Configuration" item from the "Advanced" tab.



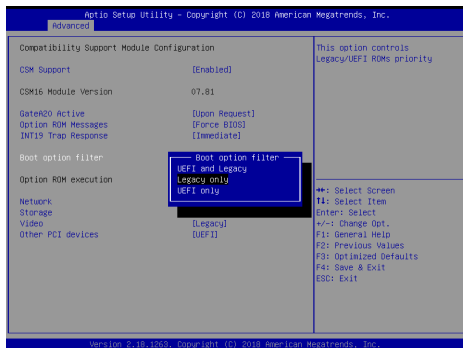
## BIOS Setup Program (Cont.)

2. Select the "Enabled" option for the "Network Stack" item.

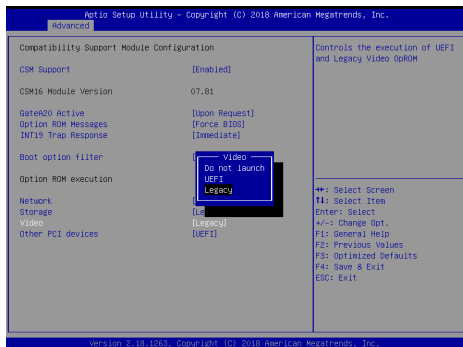


## 1.5 Boot Option Filter

1. Access the "CSM Configuration" item from the "Advanced" tab. Users can select "UEFI only" or "Legacy only" for "Boot Option Filter" configuration.



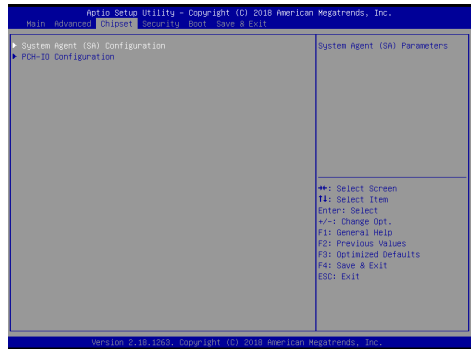
2. Configure the Video and Storage item settings to match the Boot Option Filter configuration.



## BIOS Setup Program (Cont.)

### 1.6 Graphics Configuration

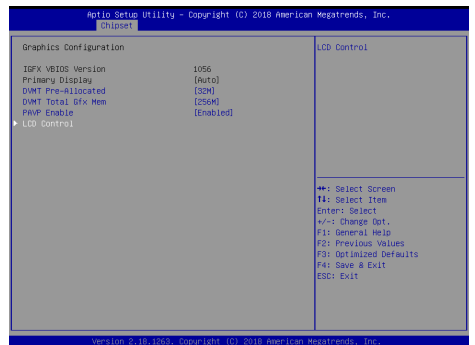
1. Access the "System Agent (SA) Configuration" item from the "Chipset" tab.



2. Click on the "Graphics Configuration" item.

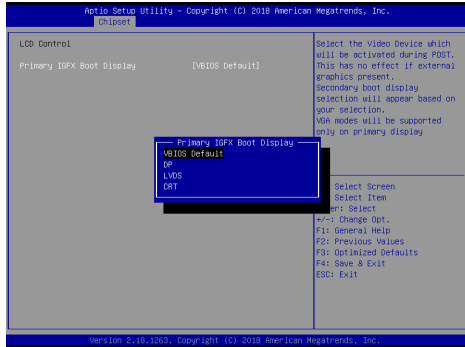


3. Select the "LCD Control" item.

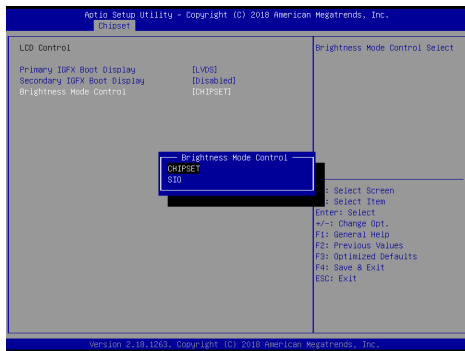


## BIOS Setup Program (Cont.)

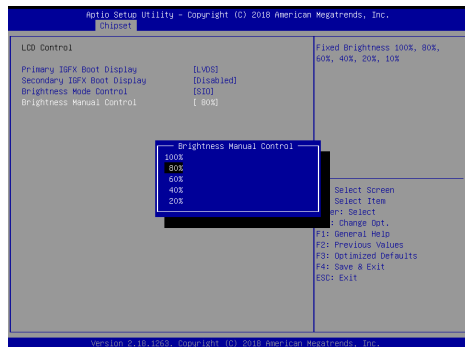
- The Primary IGFX Boot Display item can be configured as "VBIOS Default", "DP", "LVDS", or "CRT".



- The Brightness Mode Control item configuration is set to "Chipset" by default. This means users can adjust the system brightness via the OS brightness dimmer.



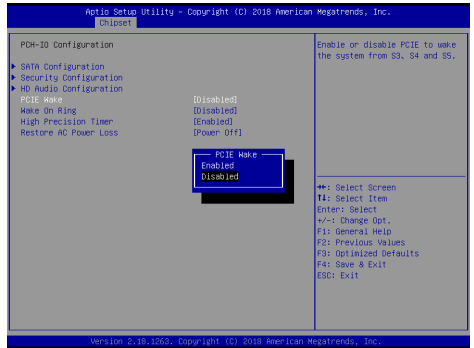
- Access the "Brightness Manual Control" item to select from six brightness level options.



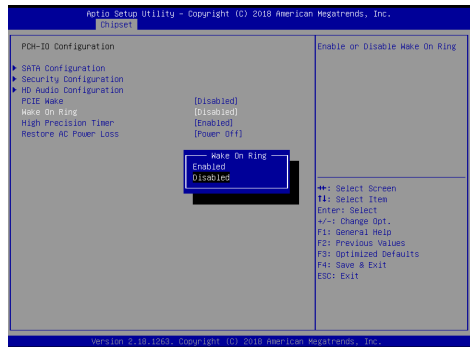
## BIOS Setup Program (Cont.)

### 1.7 Wake-On-LAN and Ring

- In the "Chipset" tab click the "PCH-IO Configuration" item to access "PCIE Wake" configuration. Select the "Enabled" option to allow wake-on-LAN function.



- In the "Chipset" tab click the "PCH-IO Configuration" item to access "Wake on Ring" configuration. Select the "Enabled" option to allow wake-on-ring function.



### 1.8 AT and ATX Settings

- In the "Chipset" tab click the "PCH-IO Configuration" item to access the "Restore AC Power Loss" item. Set the item configuration to "Power On", "Power Off", or "Last State".

