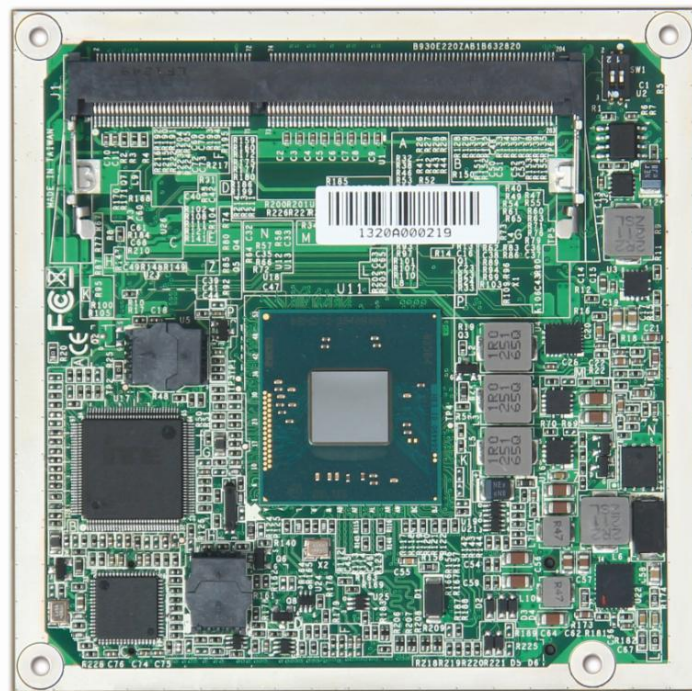


# PCOM-B632VG

## COM Express Type VI Non-ECC Module

### User Manual



Version 0.0

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## How to Use This Manual

The manual describes how to configure your PCOM-B632VG to meet various operating requirements. It is divided into five chapters, with each chapter addressing a basic concept and operation of this COM Express Module.

**Chapter 1 : System Overview.** Presents what you have in the box and give you an overview of the product specifications and basic system architecture for this model of single board computer.

**Chapter 2 : Hardware Configuration.** Shows the definition and location of Jumpers and Connectors that you can easily configure your system.

**Chapter 3 : System Installation.** Describes how to properly mount the CPU, main memory to get a safe installation and provides a programming guide of Watch Dog Timer function.

**Chapter 4 : BIOS Setup Information.** Specifies 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.

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

Updates to this manual, technical clarification, and answers to frequently asked questions will be shown on the following web site: <http://www.portwell.com.tw>

## **Chapter 1**

# **System Overview**

### **1.1 Introduction**

COM Express Type 6, holds by PICMG (PCI Industrial Computer Manufacturer Group) defines new industrial computer platform in “Module board” and “Carrier board” architecture. The “Module board” equipped processor or its socket, chipset, memory or memory socket and single Ethernet controller on it. The On-The-Shelf Module board allows users to create their own Carrier board easily and quickly since most critical parts are ready on Module board. COM Express Module board offers expansion interfaces such as PCI Express, PCI, SATA, IDE, LPC, LVDS, HDMI, DP, DVI, and Audio etc. that could support variety functions depending on Carrier board design.

The Carrier board was customized design to fit in different mechanical requirements. In the meanwhile, its variety functions were also customized to meet the application. Compare to the platform that designed from nothing, COM Express architecture platform only needs to develop Carrier board. Users could keep their know-how which related to their core competence in the Carrier board.

PCOM-B632 is Type VI COM Express Module board equipped Intel BayTrail BGA processor ( 1.9GHz Quad Core 、1.75GHz / 1.46GHz / 1.33GHz Dual Core and 1.46GHz single core processor on-board), one DDR3L SO-DIMM sockets, one Gigabit Ethernet controller on it to provide expansion interfaces – PCI Express (x4 / x1), eDP port (supports SDVO/HDMI/DP/DVI), SATA and so on.

### **1.2 Check List**

The PCOM-B632VG series package should cover the following basic items

- ✓ One PCOM-B632VG module board

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

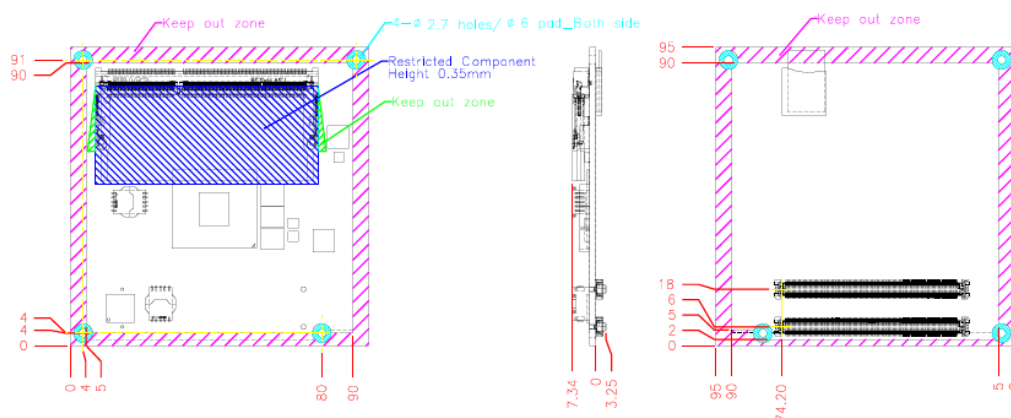
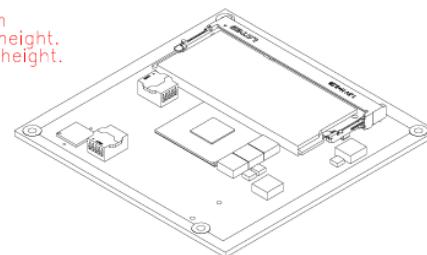
## 1.3 Product Specification

| #  | Requirement         | Detailed Description  |
|----|---------------------|---|
| 1  | Form Factor         | Type 6, Compact Form Factor COM Express   |
| 2  | Processor           | <ul style="list-style-type: none"> <li>- Intel BayTrail-I 1.91GHz 2MB Cache 4 Core (10W)</li> <li>- Intel BayTrail-I 1.75GHz 1MB Cache 2 Core (8W)</li> <li>- Intel BayTrail-I 1.46GHz 1MB Cache 2 Core (7W)</li> <li>- Intel BayTrail-I 1.33GHz 1MB Cache 2 Core (6W)</li> <li>- Intel BayTrail-I 1.46GHz 512KB Cache 1 Core (5W)</li> </ul> |
| 3  | Chipset             | -SoC  |
| 4  | Memory              | -Supports up to 8GB DDR3L 1067/1333 MT/s SDRAM on one 204-pin SODIMM sockets.   |
| 5  | BIOS                | - Phoenix UEFI  |
| 6  | Ethernet            | Intel® Ethernet Controller I210IT<br>(NC Sideband Interface, Jumbo frames , 1000Base-T)   |
| 7  | Graphic             | Intel® Gen7 Graphics supports DX11.1, OpenGL 3.0 / ES2.0  |
| 8  | Display             | eDP: Resolution up to 2560x1600<br>VGA: Resolution up to 2560x1600<br>DP: Resolution up to 2560x1600  |
| 9  | PCI Express         | PCI Express Gen2 (5.0GT/s)<br>x 4, x 2, x 1   |
| 10 | SATA                | 2 x SATA 3.0Gb/s  |
| 11 | USB Port            | 6 x Universal Serial Bus 2.0(480 Mb/s bus comprehends the high-speed/ full-speed /low-speed data ranges), 1 x USB3.0.   |
| 12 | Watchdog Timer      | Programmable via S/W from 1 sec to 255 min  |
| 13 | LPC                 | LPC Interface (4-bit-wide bus operating at 4 times the clock speed, 33.3MHz)  |
| 14 | Hardware Monitoring | -ITE 8528 CPU, Voltage , Temperature  |
| 15 | Connector           | COM Express Connector x2  |
| 16 | Audio               | Intel® High Definition Audio (2x channels delivering 192-KHz 32-bits, and 8x channels delivering 96-KHz 32-Bits)  |
| 17 | Board Size          | 95x95mm   |
| 18 | Environment         | -Operation Temperature:<br>-40° C ~ +85° C (-40° F~+185° F)<br>-Relative Humidity: 5~95%  |

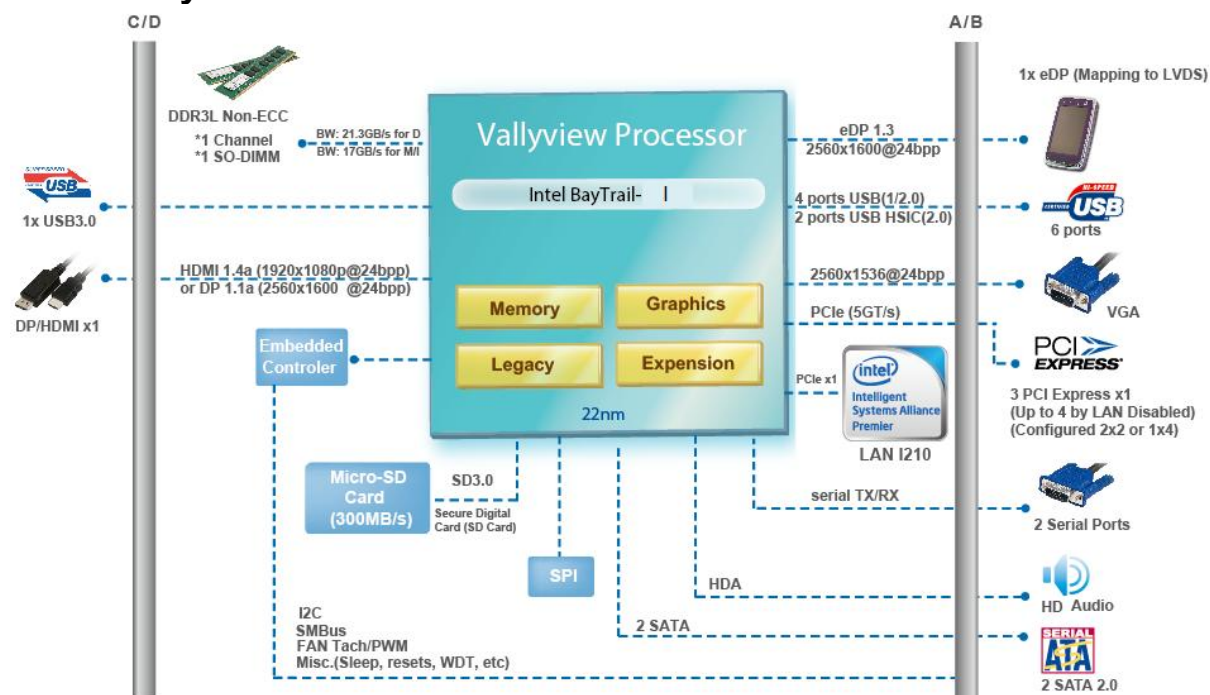
## 1.4 Mechanical Drawing

NOTE:

- Restricted component height on the top side of the module : 8 mm
- Restricted component height on the bottom side of the module : 3.8 mm
- Do not place plugging component in the zone of restricted component height.
- Do not place DIP type component in the zone of restricted component height.



## 1.5 System Architecture

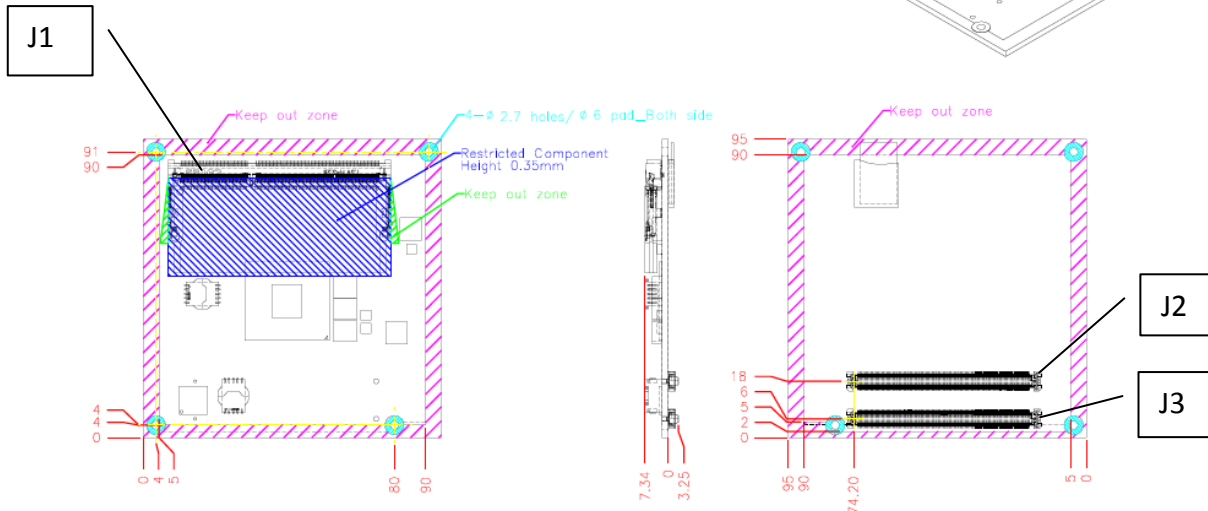
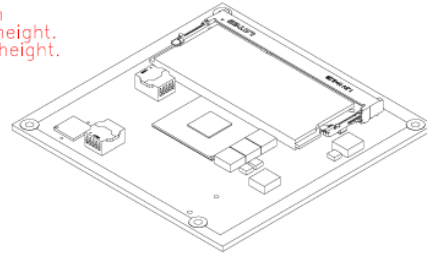


## Chapter 2 Hardware Configuration

This chapter indicates connectors' Pin Assignment.

NOTE:

- Restricted component height on the top side of the module : 8 mm
- Restricted component height on the bottom side of the module : 3.8 mm
- Do not place plugging component in the zone of restricted component height.
- Do not place DIP type component in the zone of restricted component height.



### 2.1 Connector Allocation

#### Connector Function List

| Connector | Function                          | Remark |
|-----------|-----------------------------------|--------|
| J1        | DDR3L channel connector.          |        |
| J2        | COM Express connector row C and D |        |
| J3        | COM Express connector row A and B |        |

#### Pin Assignment of Connectors

| J3     |                    |        |                    | J4     |                    |        |                    |
|--------|--------------------|--------|--------------------|--------|--------------------|--------|--------------------|
| Row A  |                    | Row B  |                    | Row C  |                    | Row D  |                    |
| Pin No | Signal Description | Pin No | Signal Description | Pin No | Signal Description | Pin No | Signal Description |
| A1     | GND (FIXED)        | B1     | GND (FIXED)        | C1     | GND (FIXED)        | D1     | GND (FIXED)        |
| A2     | GBE0_MDI3-         | B2     | GBE0_ACT#          | C2     | GND                | D2     | GND                |
| A3     | GBE0_MDI3+         | B3     | LPC_FRAME#         | C3     | USB0_SSRX-         | D3     | USB0_SSTX-         |
| A4     | GBE0_LINK100#      | B4     | LPC_AD0            | C4     | USB0_SSRX+         | D4     | USB0_SSTX+         |
| A5     | GBE0_LINK1000#     | B5     | LPC_AD1            | C5     | GND                | D5     | GND                |



## Hardware Configuration

|     |             |     |             |     |                   |     |                   |
|-----|-------------|-----|-------------|-----|-------------------|-----|-------------------|
| A6  | GBE0_MDI2-  | B6  | LPC_AD2     | C6  | USB1_SSRX-        | D6  | USB1_SSTX-        |
| A7  | GBE0_MDI2+  | B7  | LPC_AD3     | C7  | USB1_SSRX+        | D7  | USB1_SSTX+        |
| A8  | GBE0_LINK#  | B8  | LPC_DRQ0#   | C8  | GND               | D8  | GND               |
| A9  | GBE0_MDI1-  | B9  | LPC_DRQ1#   | C9  | USB2_SSRX-        | D9  | USB2_SSTX-        |
| A10 | GBE0_MDI1+  | B10 | LPC_PCLK    | C10 | USB2_SSRX+        | D10 | USB2_SSTX+        |
| A11 | GND (FIXED) | B11 | GND (FIXED) | C11 | GND (FIXED)       | D11 | GND (FIXED)       |
| A12 | GBE0_MDI0-  | B12 | PWRBTN#     | C12 | USB3_SSRX-        | D12 | USB3_SSTX-        |
| A13 | GBE0_MDI0+  | B13 | SMB_CLK     | C13 | USB3_SSRX+        | D13 | USB3_SSTX+        |
| A14 | GBE0_CTREF  | B14 | SMB_DAT     | C14 | GND               | D14 | GND               |
| A15 | SUS_S3#     | B15 | SMB_ALERT#  | C15 | DP1_LANE6         | D15 | DP1_CTRLCLK_AUX   |
| A16 | SATA0_TX+   | B16 | SATA1_TX+   | C16 | DP1_LANE6#        | D16 | DP1_CTRLDATA_AUX# |
| A17 | SATA0_TX-   | B17 | SATA1_TX-   | C17 | NC                | D17 | NC                |
| A18 | SUS_S4#     | B18 | SUS_STAT#   | C18 | NC                | D18 | NC                |
| A19 | SATA0_RX+   | B19 | SATA1_RX+   | C19 | PCIE_RX6+         | D19 | PCIE_TX6+         |
| A20 | SATA0_RX-   | B20 | SATA1_RX-   | C20 | PCIE_RX6-         | D20 | PCIE_TX6-         |
| A21 | GND (FIXED) | B21 | GND (FIXED) | C21 | GND (FIXED)       | D21 | GND (FIXED)       |
| A22 | SATA2_TX+   | B22 | SATA3_TX+   | C22 | NC                | D22 | NC                |
| A23 | SATA2_TX-   | B23 | SATA3_TX-   | C23 | NC                | D23 | NC                |
| A24 | SUS_S5#     | B24 | PWROK       | C24 | DP1_HDP           | D24 | NC                |
| A25 | SATA2_RX+   | B25 | SATA3_RX+   | C25 | DP1_LANE4         | D25 | NC                |
| A26 | SATA2_RX-   | B26 | SATA3_RX-   | C26 | DP1_LANE4#        | D26 | DP1_LANE0         |
| A27 | BATLOW#     | B27 | WDT         | C27 | NC                | D27 | DP1_LANE0#        |
| A28 | ATA_ACT#    | B28 | HDA_SDIN2   | C28 | NC                | D28 | NC                |
| A29 | HDA_SYNC    | B29 | HDA_SDIN1   | C29 | DP1_LANE5         | D29 | DP1_LANE1         |
| A30 | HDA_RST#    | B30 | HDA_SDIN0   | C30 | DP1_LANE5#        | D30 | DP1_LANE1#        |
| A31 | GND (FIXED) | B31 | GND (FIXED) | C31 | GND (FIXED)       | D31 | GND (FIXED)       |
| A32 | HDA_BITCLK  | B32 | SPKR        | C32 | DP2_CTRLCLK_AUX   | D32 | DP1_LANE2         |
| A33 | HDA_SDOUT   | B33 | I2C_CLK     | C33 | DP2_CTRLDATA_AUX# | D33 | DP1_LANE2#        |
| A34 | BIOS_DIS0#  | B34 | I2C_DAT     | C34 | DP2_AUX_SEL       | D34 | DP1_AUX_SEL       |
| A35 | THRMTRIP#   | B35 | THRM#       | C35 | NC                | D35 | NC                |
| A36 | USB6-       | B36 | USB7-       | C36 | DP3_CTRLCLK_AUX   | D36 | DP1_LANE3         |
| A37 | USB6+       | B37 | USB7+       | C37 | DP3_CTRLDATA_AUX# | D37 | DP1_LANE3#        |
| A38 | USB_6_7_OC# | B38 | USB_4_5_OC# | C38 | DP3_AUX_SEL       | D38 | NC                |
| A39 | USB4-       | B39 | USB5-       | C39 | DP3_LANE0         | D39 | DP2_LANE0         |

## Hardware Configuration

|     |              |     |              |     |             |     |              |
|-----|--------------|-----|--------------|-----|-------------|-----|--------------|
| A40 | USB4+        | B40 | USB5+        | C40 | DP3_LANE0#  | D40 | DP2_LANE0#   |
| A41 | GND (FIXED)  | B41 | GND (FIXED)  | C41 | GND (FIXED) | D41 | GND (FIXED)  |
| A42 | USB2-        | B42 | USB3-        | C42 | DP3_LANE1   | D42 | DP2_LANE1    |
| A43 | USB2+        | B43 | USB3+        | C43 | DP3_LANE1#  | D43 | DP2_LANE1#   |
| A44 | USB_2_3_OC#  | B44 | USB_0_1_OC#  | C44 | DP3_HPD     | D44 | DP2_HPD      |
| A45 | USB0-        | B45 | USB1-        | C45 | NC          | D45 | NC           |
| A46 | USB0+        | B46 | USB1+        | C46 | DP3_LANE2   | D46 | DP2_LANE2    |
| A47 | VCC_RTC      | B47 | EXCD1_PERST# | C47 | DP3_LANE2#  | D47 | DP2_LANE2#   |
| A48 | EXCD0_PERST# | B48 | EXCD1_CPPE#  | C48 | NC          | D48 | NC           |
| A49 | EXCD0_CPPE#  | B49 | SYS_RST#     | C49 | DP3_LANE3   | D49 | DP2_LANE3    |
| A50 | LPC_SERIRQ   | B50 | CB_RESET#    | C50 | DP3_LANE3#  | D50 | DP2_LANE3#   |
| A51 | GND (FIXED)  | B51 | GND (FIXED)  | C51 | GND (FIXED) | D51 | GND (FIXED)  |
| A52 | PCIE_TX5+    | B52 | PCIE_RX5+    | C52 | PEG_RX0+    | D52 | PEG_TX0+     |
| A53 | PCIE_TX5-    | B53 | PCIE_RX5-    | C53 | PEG_RX0-    | D53 | PEG_TX0-     |
| A54 | GPIO         | B54 | GPO1         | C54 | NC          | D54 | PEG_LANE_RV# |
| A55 | PCIE_TX4+    | B55 | PCIE_RX4+    | C55 | PEG_RX1+    | D55 | PEG_TX1+     |
| A56 | PCIE_TX4-    | B56 | PCIE_RX4-    | C56 | PEG_RX1-    | D56 | PEG_TX1-     |
| A57 | GND          | B57 | GPO2         | C57 | NC          | D57 | NC           |
| A58 | PCIE_TX3+    | B58 | PCIE_RX3+    | C58 | PEG_RX2+    | D58 | PEG_TX2+     |
| A59 | PCIE_TX3-    | B59 | PCIE_RX3-    | C59 | PEG_RX2-    | D59 | PEG_TX2-     |
| A60 | GND (FIXED)  | B60 | GND (FIXED)  | C60 | GND (FIXED) | D60 | GND (FIXED)  |
| A61 | PCIE_TX2+    | B61 | PCIE_RX2+    | C61 | PEG_RX3+    | D61 | PEG_TX3+     |
| A62 | PCIE_TX2-    | B62 | PCIE_RX2-    | C62 | PEG_RX3-    | D62 | PEG_TX3-     |
| A63 | GPI1         | B63 | GPO3         | C63 | NC          | D63 | NC           |
| A64 | PCIE_TX1+    | B64 | PCIE_RX1+    | C64 | NC          | D64 | NC           |
| A65 | PCIE_TX1-    | B65 | PCIE_RX1-    | C65 | PEG_RX4+    | D65 | PEG_TX4+     |
| A66 | GND          | B66 | WAKE0#       | C66 | PEG_RX4-    | D66 | PEG_TX4-     |
| A67 | GPI2         | B67 | WAKE1#       | C67 | NC          | D67 | GND          |
| A68 | PCIE_TX0+    | B68 | PCIE_RX0+    | C68 | PEG_RX5+    | D68 | PEG_TX5+     |
| A69 | PCIE_TX0-    | B69 | PCIE_RX0-    | C69 | PEG_RX5-    | D69 | PEG_TX5-     |
| A70 | GND (FIXED)  | B70 | GND (FIXED)  | C70 | GND (FIXED) | D70 | GND (FIXED)  |
| A71 | LVDS_A0+     | B71 | LVDS_B0+     | C71 | PEG_RX6+    | D71 | PEG_TX6+     |
| A72 | LVDS_A0-     | B72 | LVDS_B0-     | C72 | PEG_RX6-    | D72 | PEG_TX6-     |
| A73 | LVDS_A1+     | B73 | LVDS_B1+     | C73 | GND         | D73 | GND          |
| A74 | LVDS_A1-     | B74 | LVDS_B1-     | C74 | PEG_RX7+    | D74 | PEG_TX7+     |
| A75 | LVDS_A2+     | B75 | LVDS_B2+     | C75 | PEG_RX7-    | D75 | PEG_TX7-     |

## Hardware Configuration

|      |               |      |               |      |             |      |             |
|------|---------------|------|---------------|------|-------------|------|-------------|
| A76  | LVDS_A2-      | B76  | LVDS_B2-      | C76  | GND         | D76  | GND         |
| A77  | LVDS_VDDEN    | B77  | LVDS_B3+      | C77  | NC          | D77  | NC          |
| A78  | LVDS_A3+      | B78  | LVDS_B3-      | C78  | PEG_RX8+    | D78  | PEG_TX8+    |
| A79  | LVDS_A3-      | B79  | LVDS_BKLT_EN  | C79  | PEG_RX8-    | D79  | PEG_TX8-    |
| A80  | GND (FIXED)   | B80  | GND (FIXED)   | C80  | GND (FIXED) | D80  | GND (FIXED) |
| A81  | LVDS_CLKA+    | B81  | LVDS_CLKB+    | C81  | PEG_RX9+    | D81  | PEG_TX9+    |
| A82  | LVDS_CLKA-    | B82  | LVDS_CLKB-    | C82  | PEG_RX9-    | D82  | PEG_TX9-    |
| A83  | LVDS_I2CCK    | B83  | LVDS_BKLT_CTL | C83  | NC          | D83  | NC          |
| A84  | LVDS_I2CDAT   | B84  | VCC_5V_SBY    | C84  | GND         | D84  | GND         |
| A85  | GPI3          | B85  | VCC_5V_SBY    | C85  | PEG_RX10+   | D85  | PEG_TX10+   |
| A86  | NC            | B86  | VCC_5V_SBY    | C86  | PEG_RX10-   | D86  | PEG_TX10-   |
| A87  | NC            | B87  | VCC_5V_SBY    | C87  | GND         | D87  | GND         |
| A88  | PCIE0_CK_REF+ | B88  | BIOS_DIS1#    | C88  | PEG_RX11+   | D88  | PEG_TX11+   |
| A89  | PCIE0_CK_REF- | B89  | VGA_RED       | C89  | PEG_RX11-   | D89  | PEG_TX11-   |
| A90  | GND (FIXED)   | B90  | GND (FIXED)   | C90  | GND (FIXED) | D90  | GND (FIXED) |
| A91  | SPI_POWER     | B91  | VGA_GRN       | C91  | PEG_RX12+   | D91  | PEG_TX12+   |
| A92  | SPI_MISO      | B92  | VGA_BLU       | C92  | PEG_RX12-   | D92  | PEG_TX12-   |
| A93  | GPO0          | B93  | VGA_HSYNC     | C93  | GND         | D93  | GND         |
| A94  | SPI_CLK       | B94  | VGA_VSYNC     | C94  | PEG_RX13+   | D94  | PEG_TX13+   |
| A95  | SPI_MOSI      | B95  | VGA_DDC_CLK   | C95  | PEG_RX13-   | D95  | PEG_TX13-   |
| A96  | NC            | B96  | VGA_DDC_DAT   | C96  | GND         | D96  | GND         |
| A97  | TYPE10#       | B97  | SPI_CS#       | C97  | NC          | D97  | NC          |
| A98  | SER0_TX       | B98  | NC            | C98  | PEG_RX14+   | D98  | PEG_TX14+   |
| A99  | SER0_RX       | B99  | NC            | C99  | PEG_RX14-   | D99  | PEG_TX14-   |
| A100 | GND (FIXED)   | B100 | GND (FIXED)   | C100 | GND (FIXED) | D100 | GND (FIXED) |
| A101 | SER1_TX       | B101 | FAN_PWNOUT    | C101 | PEG_RX15+   | D101 | PEG_TX15+   |
| A102 | SER1_RX       | B102 | FAN_TACHIN    | C102 | PEG_RX15-   | D102 | PEG_TX15-   |
| A103 | LID#          | B103 | SLEEP#        | C103 | GND         | D103 | GND         |
| A104 | VCC_12V       | B104 | VCC_12V       | C104 | VCC_12V     | D104 | VCC_12V     |
| A105 | VCC_12V       | B105 | VCC_12V       | C105 | VCC_12V     | D105 | VCC_12V     |
| A106 | VCC_12V       | B106 | VCC_12V       | C106 | VCC_12V     | D106 | VCC_12V     |
| A107 | VCC_12V       | B107 | VCC_12V       | C107 | VCC_12V     | D107 | VCC_12V     |
| A108 | VCC_12V       | B108 | VCC_12V       | C108 | VCC_12V     | D108 | VCC_12V     |
| A109 | VCC_12V       | B109 | VCC_12V       | C109 | VCC_12V     | D109 | VCC_12V     |
| A110 | GND (FIXED)   | B110 | GND (FIXED)   | C110 | GND (FIXED) | D110 | GND (FIXED) |

## Chapter 3

### System Installation

This chapter provides you with instructions to set up your system. The additional information is enclosed to help you set up onboard PCI device and handle Watch Dog Timer (WDT) and operation of GPIO in software programming.

#### 3.1 Intel® Vallyview CPU

Intel® E3845 (4 core, 10W, 1.91GHz, 1333MT)

Intel® E3827 (2 core, 8W, 1.75GHz, 1333MT)

Intel® E3826 (2 core, 7W, 1.46GHz, 1067MT)

Intel® E3825 (2 core, 6W, 1.33GHz, 1067MT)

Intel® E3815 (1 core, 5W, 1.46GHz, 1067MT)

#### 3.2 Main Memory

PCOM-B632 provides 1 x 204-pin SO-DIMM sockets which supports 1333 MT/s DDR3L-SDRAM (1.35V) as main memory, Non-ECC (Error Checking and Correcting),. The maximum memory can be up to 4GB. Memory clock and related settings can be detected by BIOS via SPD interface.

Watch out the contact and lock integrity of memory module with socket, it will impact on the system reliability. Follow normal procedures to install memory module into memory socket. Before locking, make sure that all modules have been fully inserted into the card slots.

#### 3.3 Installing the Single Board Computer

To install your PCOM-B632 into standard chassis or proprietary environment, please perform the following:

Step 1 : Check all jumpers setting on proper position

Step 2 : Install and configure CPU and memory module on right position

Step 3 : Place PCOM-B632 into the dedicated position in the system

Step 4 : Attach cables to existing peripheral devices and secure it

##### **WARNING**

Please ensure that SBC is properly inserted and fixed by mechanism.

##### **Note:**

Please refer to section 3.3.1 to 3.3.6 to install INF/VGA/LAN/Audio/Sideband Fabric

Device/Trusted Execution Engine drivers.

### **3.3.1 Chipset Component Driver**

PCOM-B632 uses state-of-art Intel® BayTrail-I chipset. It's a new chipset that some old operating systems might not be able to recognize. To overcome this compatibility issue, for Windows Operating Systems such as Windows 8, please install its INF before any of other Drivers are installed. You can find very easily this chipset component driver in PCOM-B632 CD-title

### **3.3.2 Intel® Gen7 Graphic Controller**

PCOM-B632 has integrated Intel® Gen7 Graphic which supports DX11, OpenGL3.2. It is the most advanced design to gain an outstanding graphic performance. PCOM-B632 supports VGA, [eDP \(Optional\)](#), [DP \(1.1a\) \(Optional\)](#), [HDMI \(Optional\)](#) and [dual display \(Optional\)](#). This combination makes PCOM-B632 an excellent piece of multimedia hardware.

#### **Drivers Support**

Please find the Graphic driver in the PCOM-B632 CD-title. The driver supports Windows 8.

### **3.3.3 Intel I210LM Gigabit Ethernet Controller**

#### **Drivers Support**

Please find Intel I210LM LAN driver in /Ethernet directory of PCOM-B632 CD-title. The driver supports Windows 8.

### **3.3.4 Intel HD Audio Controller**

Please find Intel® High Definition Audio driver form PCOM-B632 CD-title. The driver supports Windows 8.

### **3.3.5 Intel Sideband Fabric Device**

Please find Intel® Sideband Fabric Device driver form PCOM-B632 CD-title. The driver supports Windows 8.

### **3.3.6 Intel Trusted Execution Engine**

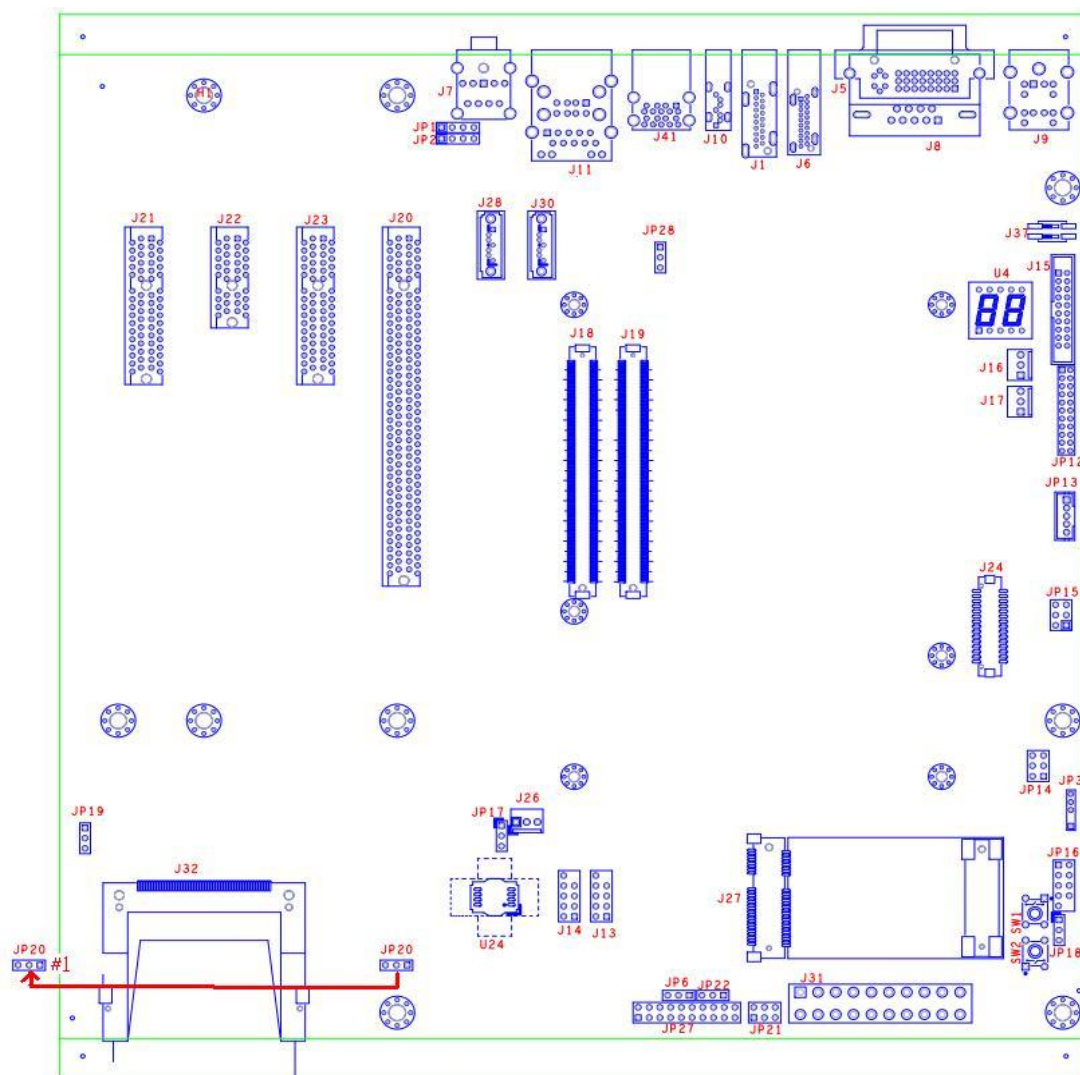
Please find Intel® Trusted Execution Engine driver form PCOM-B632 CD-title. The driver supports Windows 8.

### 3.4 Clear CMOS Operation

The following table indicates how to enable/disable Clear CMOS Function hardware circuit by putting jumper of the PCOM-C600 carrier board.

#### JP20 : CMOS Setting

|      | Jumper Setting Describe |
|------|-------------------------|
| *1-2 | Default                 |
| 2-3  | Clean CMOS              |



## Chapter 4

### BIOS Setup Information

PCOM-B632 is equipped with the Phoenix 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, PCOM-B632 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.

#### 4.1 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 <F2> key will enter BIOS setup screen.

##### **Press <F2> 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.

### General Help

Setup changes system behavior by modifying the BIOS configuration. Selecting incorrect values may cause system boot failure; load Setup Default values to recover.

<Up/Down> arrows select fields in current menu.

<PgUp/PgDn> moves to previous/next page on scrollable menus.

<Home/End> moves to top/bottom item of current menu.

Within a field, <F5> or <-> selects next lower value and <F6>, <+>, or <Space> selects next higher value.

<Left/Right> arrows select menus on menu bar.

<Enter> displays more options for items marked with ►.

<F9> loads factory installed Setup Default values.

<F10> saves current settings and exits Setup.

<Esc> or <Alt-X> exits Setup; in sub-menus, pressing these keys returns to the previous menu.

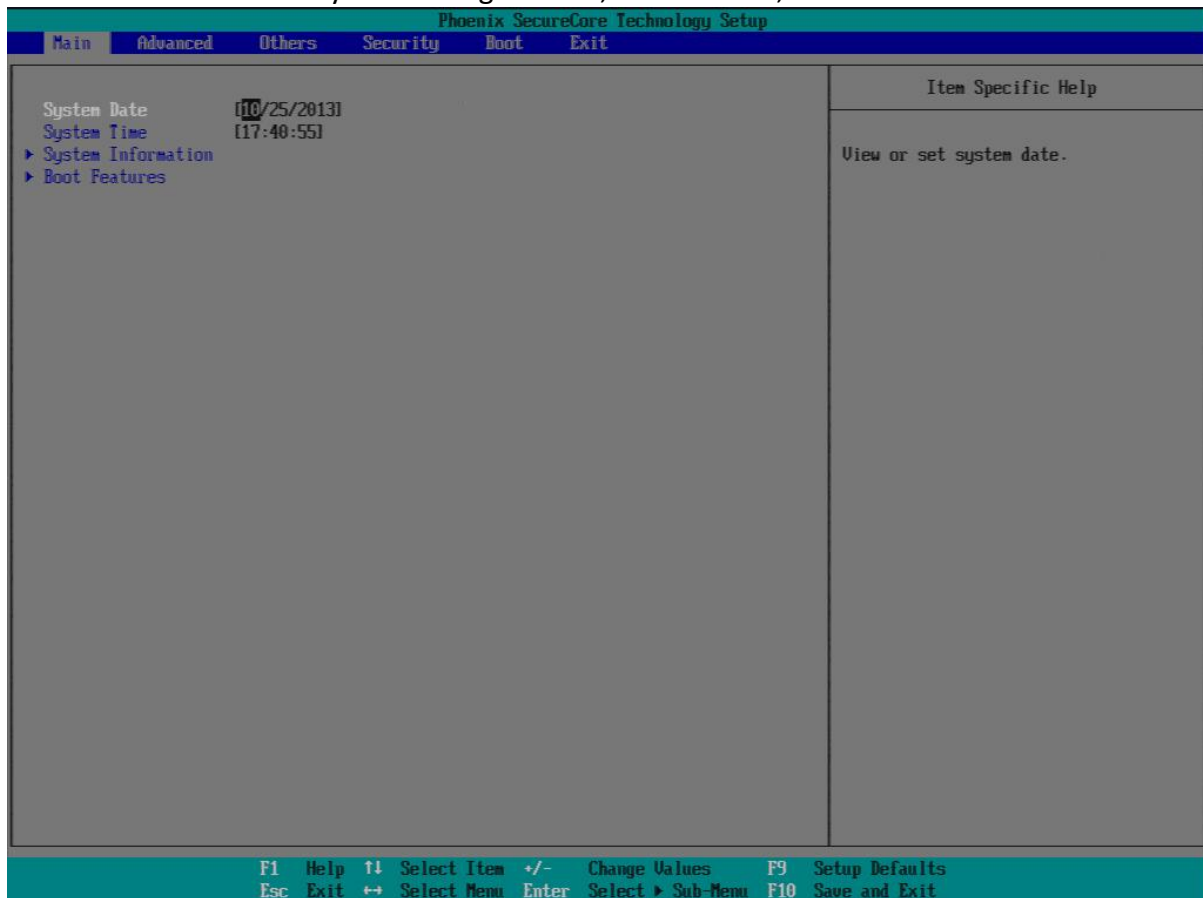
<F1> or <Alt-H> displays General Help (this screen).

[Continue]



## 4.2 Main

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



### System Date

View or set system date

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

### System Time

View or set system time

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

## BIOS Setup Information

### System Information

Display System Information, Show only.

The screenshot shows the BIOS setup interface for Phoenix SecureCore Technology. The 'Main' menu is selected, and the 'System Information' screen is displayed. The screen lists various system specifications including BIOS Version, EC Version, Build Time, Processor Type, System Memory Speed, L2 Cache RAM, Total Memory, and Memory Channel A Slot 0. At the bottom, a legend explains the navigation keys: F1 for Help, F4 for Select Item, +/- for Change Values, F9 for Setup Defaults, Esc for Exit, F2 for Select Menu, Enter for Select Sub-Menu, and F10 for Save and Exit.

| System Information      |                                       |
|-------------------------|---------------------------------------|
| BIOS Version            | R1.00.W1                              |
| EC Version              | R00.E00                               |
| Build Time              | 10/28/2013                            |
| Processor Type          | Intel(R) Atom(TM) CPU E3825 @ 1.33GHz |
| System Memory Speed     | 1066 MHz                              |
| L2 Cache RAM            | 512 KB                                |
| Total Memory            | 4096 MB                               |
| Memory Channel A Slot 0 | 4096 MB (DDRIII-1066)                 |

F1 Help F4 Select Item +/- Change Values F9 Setup Defaults  
Esc Exit F2 Select Menu Enter Select Sub-Menu F10 Save and Exit

## Boot Features

Select Boot features

| Phoenix SecureCore Technology Setup |           |                                     |
|-------------------------------------|-----------|-------------------------------------|
| Main                                |           |                                     |
| Boot Features                       |           | Item Specific Help                  |
| NumLock:                            | [On]      | Selects Power-on state for NumLock. |
| Timeout                             | [ 2]      |                                     |
| Quick Boot                          | [Disable] |                                     |
| Diagnostic Splash Screen            | [Disable] |                                     |
| Diagnostic Summary Screen           | [Disable] |                                     |
| BIOS Level USB                      | [Enable]  |                                     |
| Allow Hotkey in S4 resume           | [Enable]  |                                     |
| UEFI Boot                           | [Enable]  |                                     |
| Legacy Boot                         | [Disable] |                                     |

|     |      |    |             |       |                   |     |                |
|-----|------|----|-------------|-------|-------------------|-----|----------------|
| F1  | Help | F4 | Select Item | +/-   | Change Values     | F9  | Setup Defaults |
| Esc | Exit | F2 | Select Menu | Enter | Select ► Sub-Menu | F10 | Save and Exit  |

### NumLock:

Selects Power-on state for NumLock

Choices: On, Off.

### Timeout

Number of seconds that P.O.S.T will wait for the user input before booting

Choices: 0-99 seconds.

### Quick Boot

Enable/Disable quick boot

Choices: Disable, Enable.

### Diagnostic Splash Screen

If you select 'Enabled' the diagnostic splash screen always displays during boot. If you select 'Disabled' the diagnostic splash screen does not displays unless you press HOTKEY during boot

Choices: Disable, Enable.

### Diagnostic Summary Screen

Display the Diagnostic summary screen during boot

Choices: Disable, Enable.

**BIOS Level USB**

Enable/Disable all BIOS support for USB in order to reduce boot time. Note that this will prevent using a USB keyboard in setup or a USB biometric scanner such as a finger print reader to control access to setup, but does not prevent the operating system from supporting such hardware

Choices: Disable, Enable.

**Allow Hotkey in S4 Resume**

Enable hotkey detection when system resuming from Hibernate state

Choices: Disable, Enable.

**UEFI Boot**

Enable the UEFI boot

Choices: Disable, Enable.

**Legacy Boot**

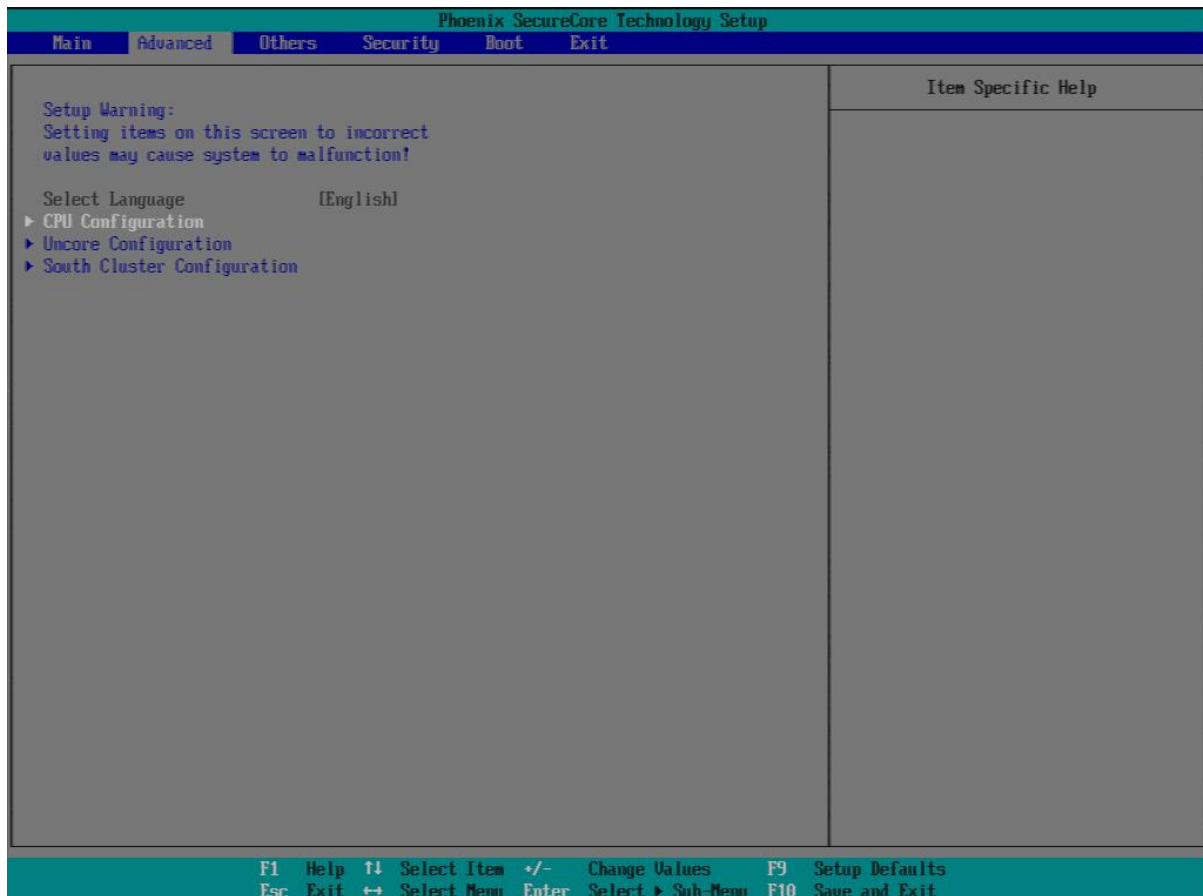
Enable the Legacy boot

Choices: Disable, Enable.

## 4.3 Advanced

### Setup Warning:

Setting items on this screen to incorrect values may cause system to malfunction!



## CPU Configuration

| Phoenix SecureCore Technology Setup  |   |
|--|---|
| Advanced   |   |
| CPU Configuration  | Item Specific Help                                  |
| CPU Configuration<br>Active Processor Cores [ALL]<br>Execute Disable Bit [Enable]<br>Limit CPUID Maximum [Disable]<br>Bi-directional PROCHOT# [Enable]<br>VTX-2 [Enable]<br>TM1 [Enable]<br>DTS [Enable]<br>▶ CPU Power Management | Number of cores to enable in each processor package |

|  |
|--|
| F1 Help ↑↓ Select Item +/- Change Values F9 Setup Defaults       |
| Esc Exit ↔ Select Menu Enter Select ▶ Sub-Menu F10 Save and Exit |

### Active Processor Cores

Number of cores to enable in each processor package

Choices: All, 1.

### Execute Disabled Bit

Execute Disabled Bit prevent certain classes of malicious buffer overflow attacks when combined with a supporting OS

Choices: Disable, Enable.

### Limit CPUID Maximum

Disabled for Windows XP

Choices: Disable, Enable.

### Bi-directional PROCHOT#

When a processor thermal sensor trips (either core), the PROCHOT# will be driven

If bi-direction is enabled, external agents can drive PROCHOT# to throttle the processor

Choices: Disable, Enable.

### VTX-2

To enable or disable the VTX-2 Mode support

Choices: Disable, Enable.

## BIOS Setup Information

### **TM1**

Enable/Disable TM1

Choices: Disable, Enable.

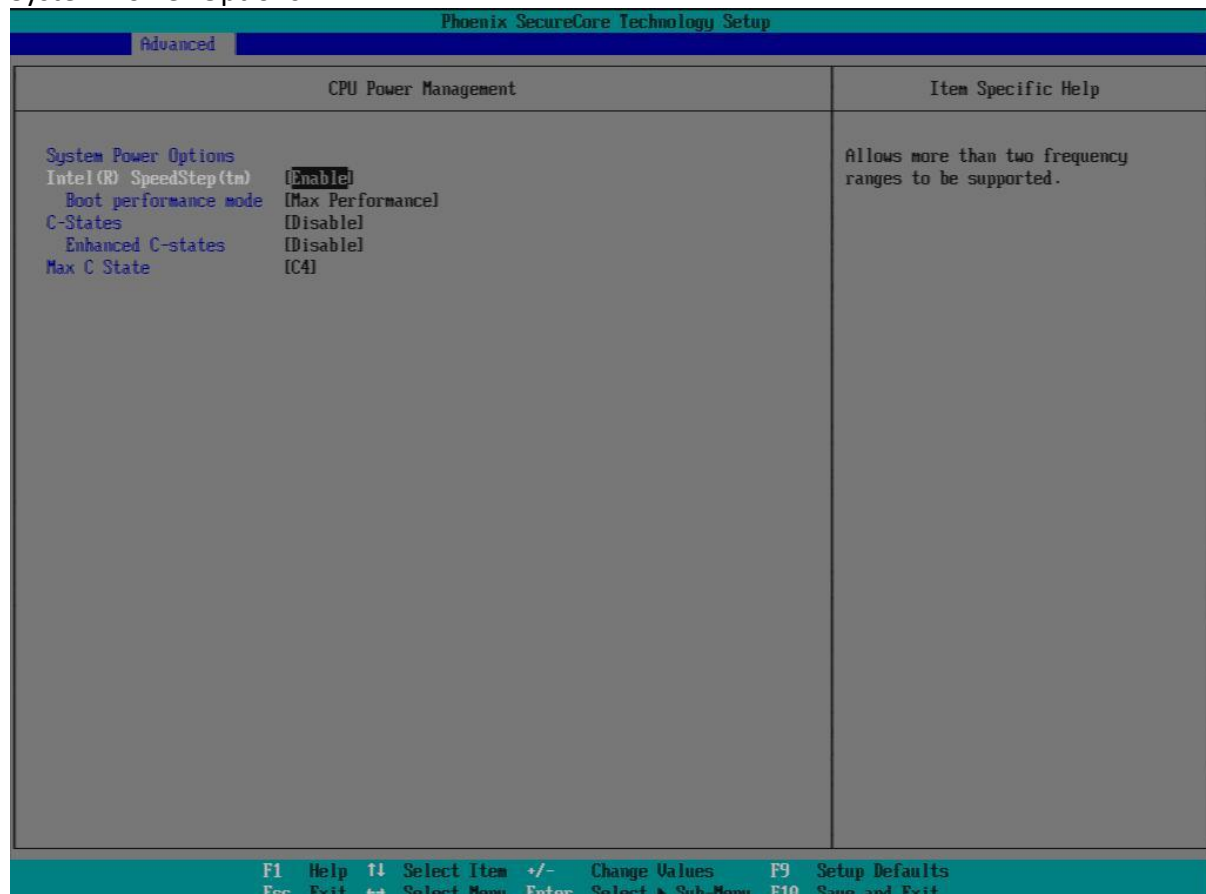
### **DTS**

Enabled/Disable Digital Thermal Sensor

Choices: Disable, Enable.

### **CPU Power Management**

System Power Options



### **Intel® SpeedStep™**

Allows more than two frequency ranges to be supported

Choices: Disabled, Enabled.

### **Boot performance mode**

Select the performance state that the BIOS will set before OS handoff

Choices: Max Performance, Max Battery.

### **C-States**

Enable/Disable C States

Choices: Disable, Enable.

### **Enhanced C-States**

Enable/Disable C1E, C2E and C4E. When enabled, CPU will switch to minimum speed when all cores enter C-State

Choices: Disable, Enable.

### **Max C State**

This option controls the Max C State that the processor will support

Choices: C7, C6, C4, C1.

### **Uncore Configuration**

Show only **(Optional options)**

| Phoenix SecureCore Technology Setup  |                    |
|--|--------------------|
| Advanced   |                    |
| Uncore Configuration   | Item Specific Help |
| <b>GOP Configuration</b><br>GOP Driver [Enable]  |                    |
| <b>IGD Configuration</b><br>Integrated Graphics Device [Enable]<br>Primary Display [Auto]<br>RC6 (Render Standby) [Disable]<br>PAUC [Enable]<br>GTT Size [2MB]<br>Aperture Size [256MB]<br>DUMT Pre-Allocated [64M]<br>Spread Spectrum clock [Disable] |                    |
| <b>IGD - LCD Control</b><br>Force Lid Status [ON]<br>IGD Boot Type [UGA Port]<br>Panel Scaling [Auto]  |                    |
| F1 Help ↑ Select Item +/- Change Values F9 Setup Defaults<br>Esc Exit ← Select Menu Enter Select ► Sub-Menu F10 Save and Exit  |                    |

### **GOP Driver (Optional)**

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

Choices: Enable, Disable.

### **Integrated Graphic Device (Optional)**

Enable: Enable Integrated Graphics Device (IGD) when selected as the Primary Video Adapter.

Disable: Always disable IGD

Choices: Disable, Enable.



**Primary Display (Optional)**

Select which of IGD/PCI Graphics device should be Primary Display.  
Choices: Auto, IGFX, IGD, PCIe.

**RC6 (Rander Standby) (Optional)**

Check to enable render standby support  
Choices: Enable, Disable.

**PAVC (Optional)**

Enable/Disable Protected Audio Video control.  
Choices: Enable, Disable.

**GTT Size (Optional)**

Select the GTT Size  
Choices: 1MB, 2MB.

**Aperture Size (Optional)**

Select the Aperture Size  
Choices: 128MB, 256MB, 512MB.

**DVMT Pre-Allocated (Optional)**

Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory sized used by the Internal Graphic Device  
Choices: 32M, 64M, 96M, 128M, 160M, 192M, 224M, 256M, 288M, 320M, 352M, 384M, 416M, 448M, 480M, 512M.

**Spread Spectrum clock (Optional)**

Enable clock chip Spread Spectrum feature  
Choices: Disable, Enable.

**Force Lid States (Optional)**

For test: Force to set lid status as on or off  
Choices: OFF, ON.

**IGD Boot Type (Optional)**

Select preference for Integrated Graphics Device (IGD) display interface used when system boots  
Choices: Auto, VGA Port, HDMI Port B, DP Port B, DP Port C, eDP, DSI PORT A, DSI PORT C.

**Panel Scaling (Optional)**

Select the LCD Panel scaling option used by Internal Graphic device  
Choices: Auto, Centering, Stretching.

## South Cluster Configuration

| Phoenix SecureCore Technology Setup   |                                    |
|---|------------------------------------|
| Advanced  |                                    |
| South Cluster Configuration   | Item Specific Help                 |
| <ul style="list-style-type: none"> <li>▶ PCI Express Configuration</li> <li>▶ USB Configuration</li> <li>▶ Audio Configuration</li> <li>▶ SATA Drives</li> <li>▶ LPSS &amp; SCC Configuration</li> <li>▶ Miscellaneous Configuration</li> </ul> | PCI Express Configuration Settings |
| <div> <div>F1 Help ↑↓ Select Item +/- Change Values F9 Setup Defaults</div> <div>Esc Exit ↔ Select Menu Enter Select ▶ Sub-Menu F10 Save and Exit</div> </div>  |                                    |

## BIOS Setup Information

### PCI Express Configuration

#### PCI Express Configuration Settings

| Phoenix SecureCore Technology Setup   |                                    |
|---|------------------------------------|
| Advanced  |                                    |
| PCI Express Configuration   | Item Specific Help                 |
| PCI Express Root Port 1 [Enable]  | Control the PCI Express Root Port. |
| PCI Express Root Port 2 [Enable]  |                                    |
| PCI Express Root Port 3 [Enable]  |                                    |
| PCI Express Root Port 4 [Enable]  |                                    |
| F1 Help F4 Select Item +/- Change Values F9 Setup Defaults<br>Esc Exit F5 Select Menu Enter Select ► Sub-Menu F10 Save and Exit |                                    |

#### PCI Express Root Port 1-4

Control PCI Express root port

Choices: Enable, Disable.

## USB Configuration

### USB Configuration settings

| Phoenix SecureCore Technology Setup |           |                                |
|-------------------------------------|-----------|--------------------------------|
| Advanced                            |           |                                |
| USB Configuration                   |           | Item Specific Help             |
| XHCI Controller                     | [Enable]  | Enable/Disable XHCI Controller |
| XHCI Mode                           | [Enable]  |                                |
| USB OTG Support                     | [Disable] |                                |
| EHCI Controller                     | [Disable] |                                |
| USB Per-Port Disable Control        | [Enable]  |                                |
| USB Port #0 Disable                 | [Enable]  |                                |
| USB Port #1 Disable                 | [Enable]  |                                |
| USB Port #2 Disable                 | [Enable]  |                                |
| USB Port #3 Disable                 | [Enable]  |                                |
|                                     |           |                                |

|     |      |    |             |       |                   |     |                |
|-----|------|----|-------------|-------|-------------------|-----|----------------|
| F1  | Help | F4 | Select Item | +/-   | Change Values     | F9  | Setup Defaults |
| Esc | Exit | ↔  | Select Menu | Enter | Select ► Sub-Menu | F10 | Save and Exit  |

#### XHCI Controller

Enable/Disable XHCI Controller

Choices: Enable, Disable.

#### XHCI Mode

Mode of operation of XHCI controller

Choices: Smart Auto, Auto, Enable, Disable.

#### USB OTG Support

Enable/Disable USB OTG Support

Choices: Disable, PCI Mode, ACPI Mode.

#### EHCI Controller

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

Choices: Enable, Disable.

#### USB Per-Port Disable Control

Control each of the USB ports (0~3) disabling

Choices: Disable, Enable.

## BIOS Setup Information

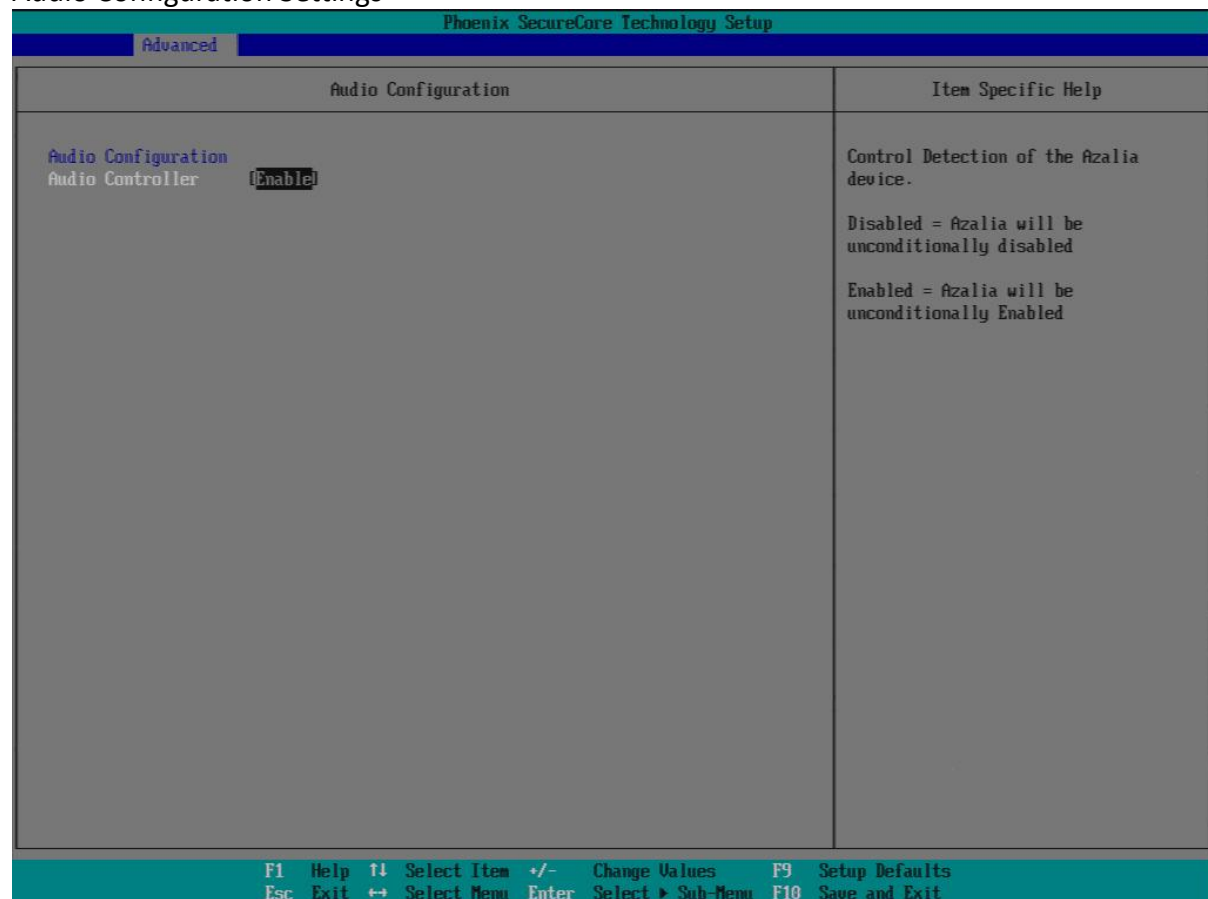
### USB Port #0-#3 Disable

Disable each USB port (0~3).

Choices: Enable, Disable.

### Audio Configuration

Audio Configuration Settings



### Audio Controller

Control Detection of the Azalia device

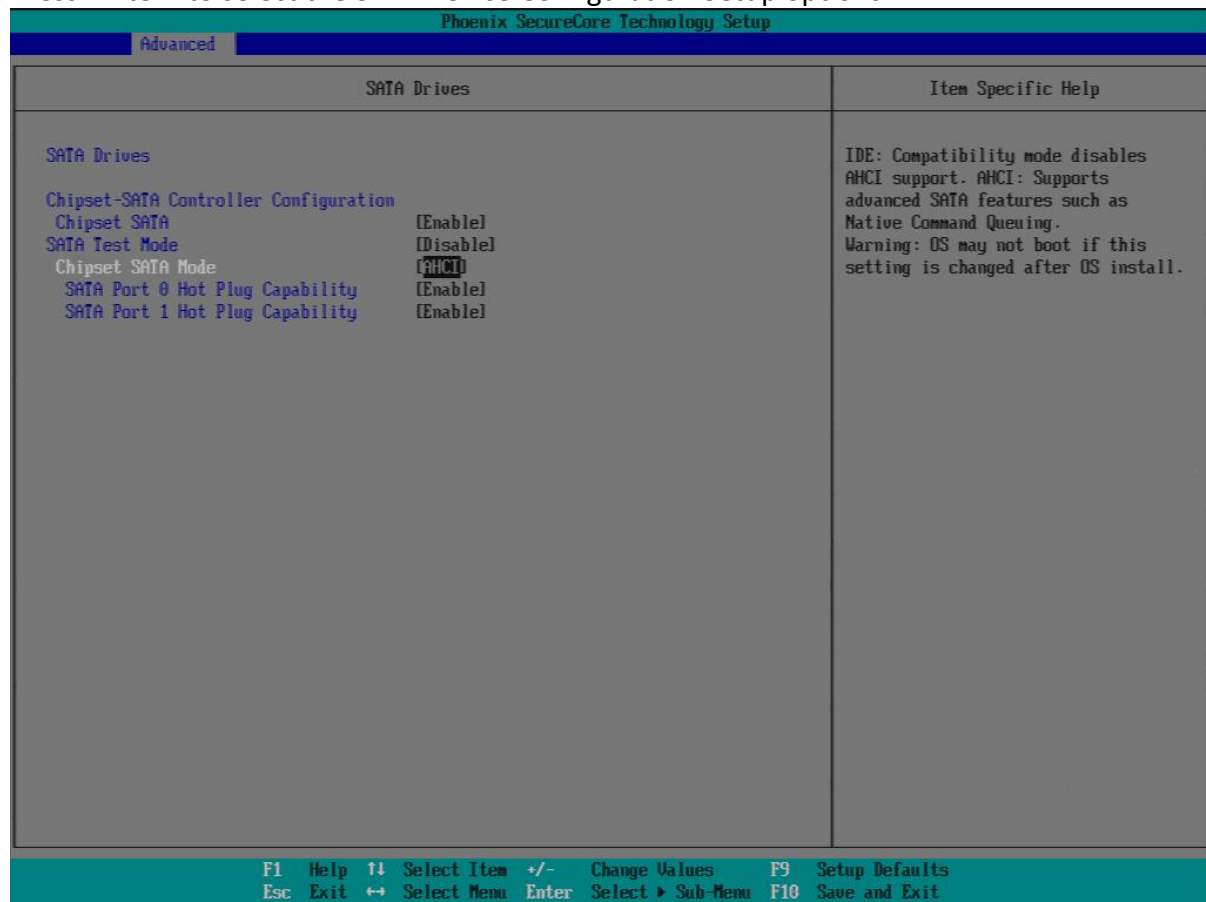
Disabled = Azalia will be unconditionally disabled.

Enabled = Azalia will be unconditionally enabled.

Choices: Disable, Enable.

## SATA Drives

Press<Enter> to select the SATA Device Configuration Setup options.



### Chipset SATA

Enables or Disables the Chipset SATA Controller. The Chipset SATA controller supports the 2 black internal SATA ports (up to 3Gb/s supported per port).

Choices: Enable, Disable.

### SATA Test Mode

Test Mode Enable/Disable

Choices: Enable, Disable.

### Chipset SATA Mode

IDE: Compatibility mode disables

AHCI support: Supports advanced SATA features such as Native Command Queuing.

Warning: OS may not boot if this setting is changed after OS install.

Choices: IDE, AHCI.

### Serial Port 0/1 Hot Plug Capability

If enabled, SATA port 0/1 will be reported as Hot Plug capable.

Choices: Enable, Disable.

## BIOS Setup Information

### LPSS & SCC Configuration

| Phoenix SecureCore Technology Setup |                    |
|-------------------------------------|--------------------|
| Advanced                            |                    |
| LPSS & SCC Configuration            | Item Specific Help |
| LPSS & SCC Devices Mode [PCI Mode]  |                    |
| SCC SD Card Support [Enable]        |                    |

|     |      |    |             |       |                   |     |                |
|-----|------|----|-------------|-------|-------------------|-----|----------------|
| F1  | Help | ↑↓ | Select Item | +/-   | Change Values     | F9  | Setup Defaults |
| Esc | Exit | ↔  | Select Menu | Enter | Select ► Sub-Menu | F10 | Save and Exit  |

#### LPSS & SCC Mode

Choices: ACPI Mode, PCI Mode.

#### SCC SD Card Support

Choices: Disable, Enable.

## Miscellaneous Configuration

Enable/Disable Misc. Features

| Phoenix SecureCore Technology Setup                                 |  |
|---|--|
| Advanced  |  |
| Miscellaneous Configuration   | Item Specific Help   |
| <p>Miscellaneous Configuration</p> <p>State After G3 [S0 State]</p> | <p>Specify what state to go to when power is re-applied after a power failure (G3 state)</p> |

|     |      |    |             |       |                   |     |                |
|-----|------|----|-------------|-------|-------------------|-----|----------------|
| F1  | Help | F4 | Select Item | +/-   | Change Values     | F9  | Setup Defaults |
| Esc | Exit | F5 | Select Menu | Enter | Select > Sub-Menu | F10 | Save and Exit  |

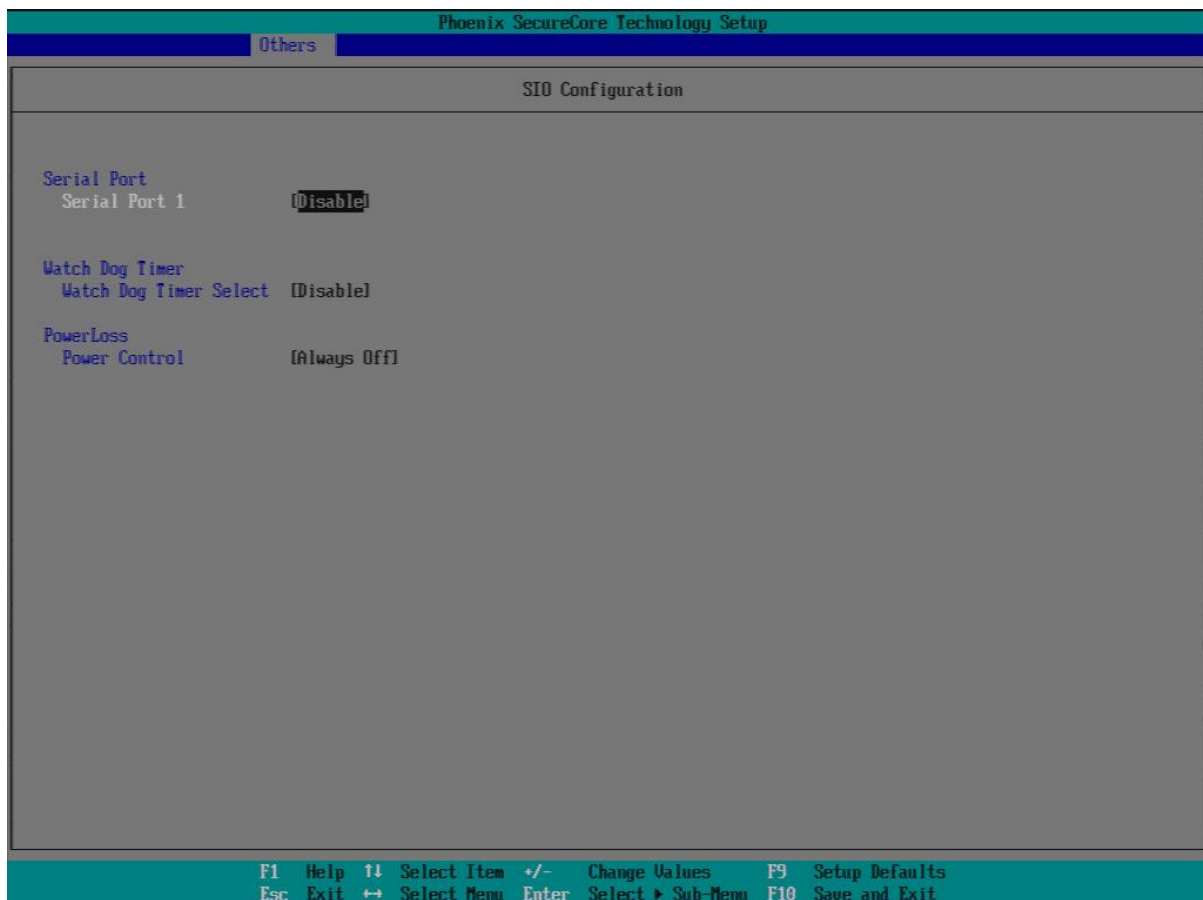
### State After G3

Specify what state to go to when power is re-applied after a power failure (G3 state)

Choices: S0 State, S3 State.



## 4.4 Others



### Serial Port1

Choices: Disable 3F8/IRQ4.

### Watch Dog Timer Select

Choices: Disable, 15 secs, 30 secs, 1 min, 2 mins, 3 mins.

### Power Control

Choices: Former State, Always On, Always Off.

## Hardware Monitor



## APM Configuration

| Phoenix SecureCore Technology Setup |            |
|-------------------------------------|------------|
| Others                              |            |
| APM Configuration                   |            |
| Power On By RTC Alarm               | [Enable]   |
| RTC Alarm Date                      | [Everyday] |
| Wake up hour                        | [ 0]       |
| Wake up minute                      | [ 0]       |
| Wake up second                      | [ 0]       |
| Wake on Lan1                        | [Enable]   |

|     |      |    |             |       |                   |     |                |
|-----|------|----|-------------|-------|-------------------|-----|----------------|
| F1  | Help | ↑↓ | Select Item | +/-   | Change Values     | F9  | Setup Defaults |
| Esc | Exit | ↔  | Select Menu | Enter | Select ► Sub-Menu | F10 | Save and Exit  |

### Power On By RTC Alarm

Choices: Disable, Enable.

### RTC Alarm Date

Choices: Every day, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31.

### Wake up hour

Choices: 0-23

### Wake up minute

Choices: 0-59

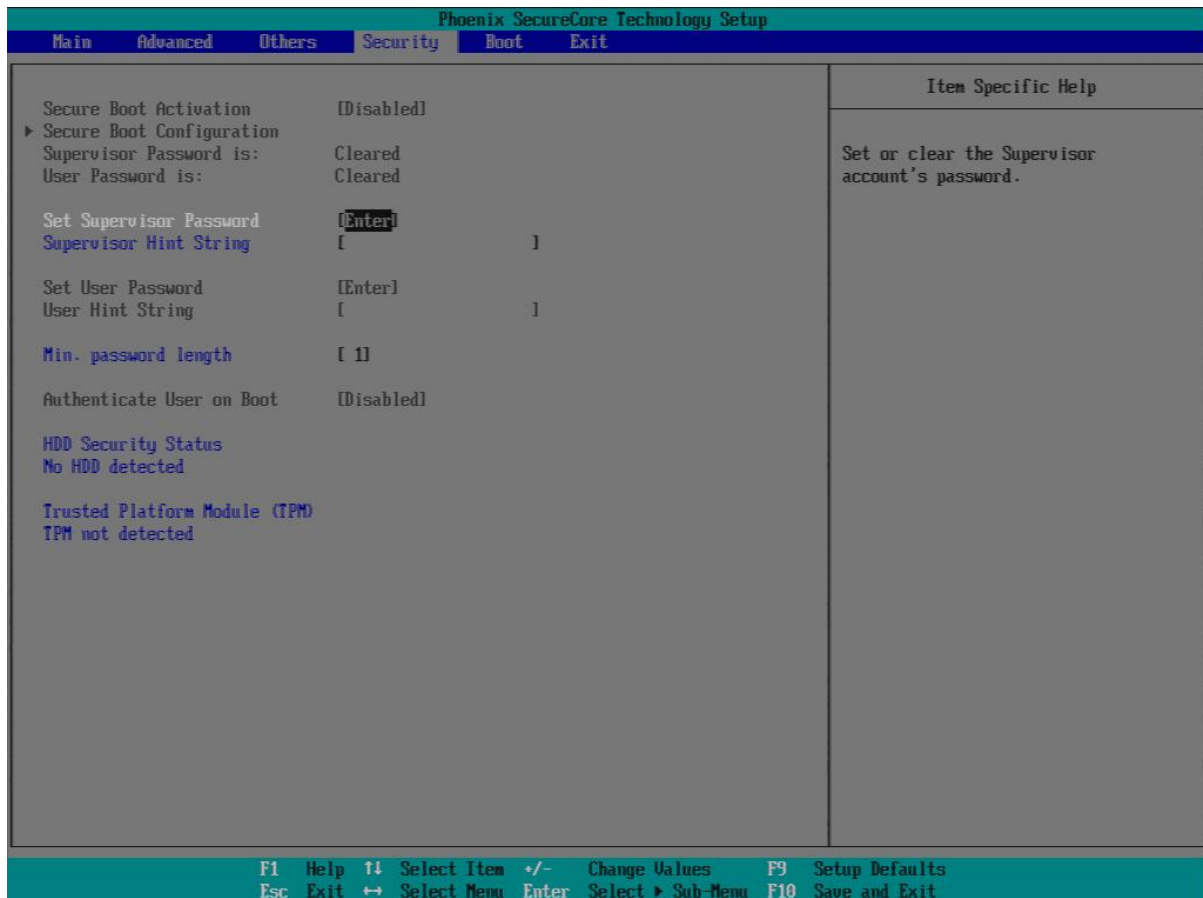
### Wake up second

Choices: 0-59

### Wake on LAN1

Choices: Disable, Enable.

## 4.5 Security



### Set Supervisor Password

Set or clear the Supervisor account's password.

### Supervisor Hint String

Press Enter to type Supervisor Hint String.

### Set User Password

Set or clear the User account's password.

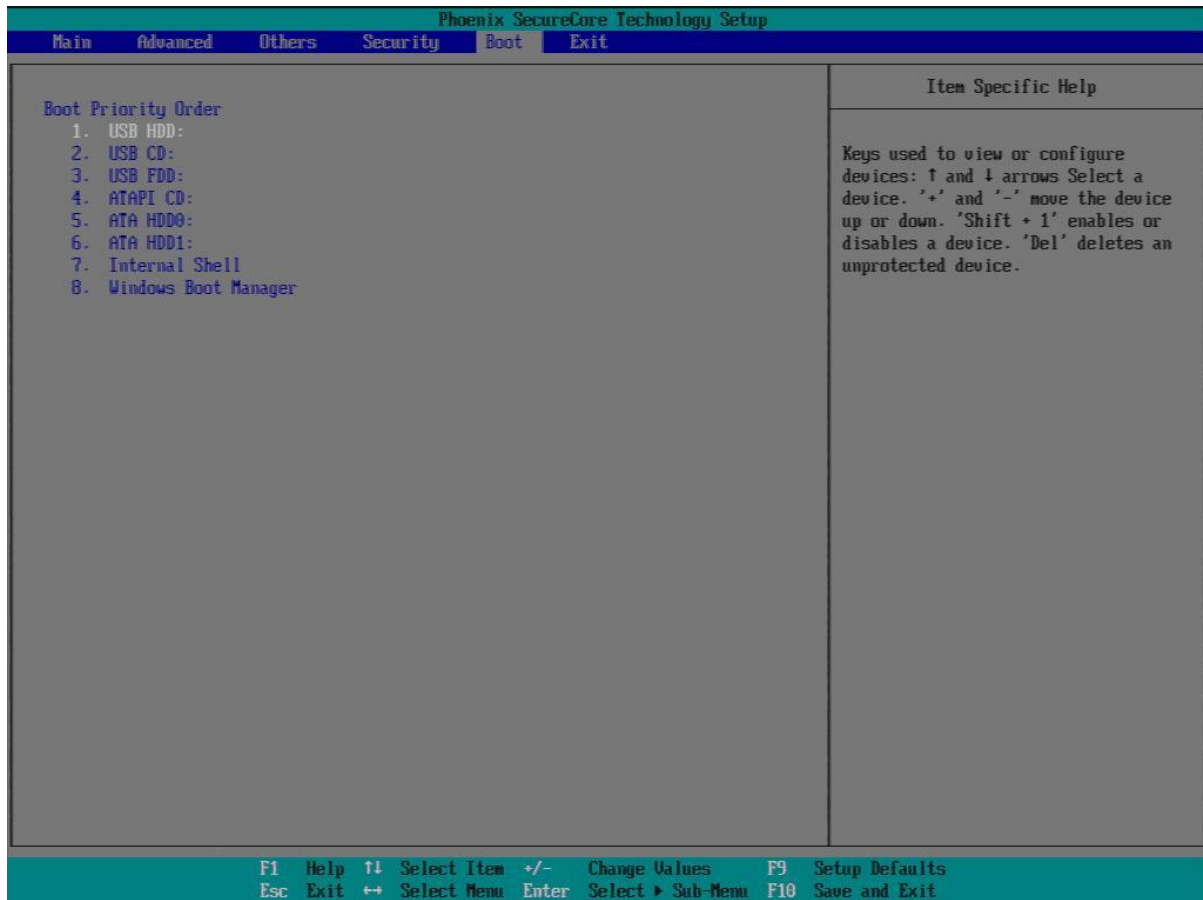
### Supervisor Hint String

Press Enter to type User Hint String.

### Min. password length

Set the minimum number of characters for password (1-20).

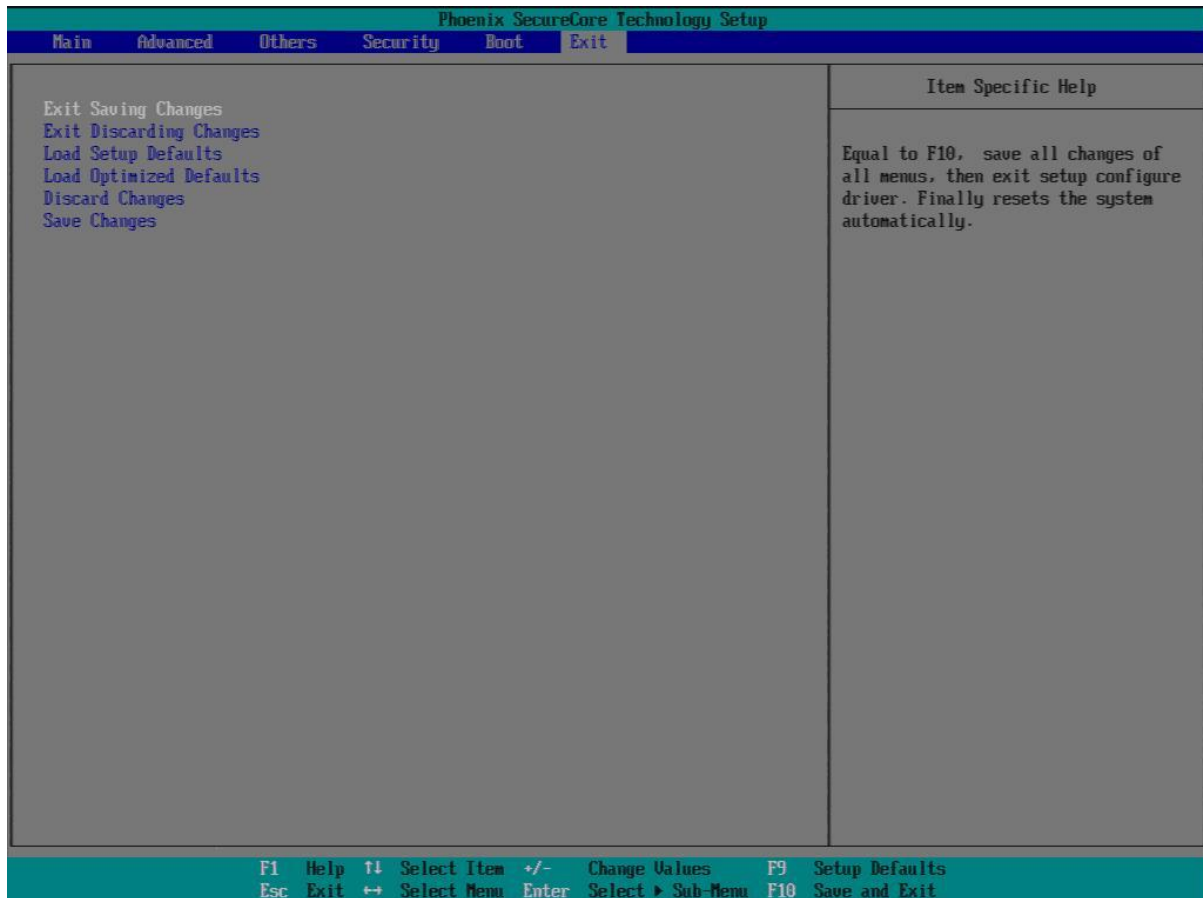
## 4.6 Boot



### Boot Priority Order

Keys used to view or configure devices: ↑ and ↓ arrows Select a device. '+' and '-' move the device up or down. 'Shift + 1' enabled or disables a device. 'Del' deletes an unprotected device.

## 4.7 Exit



### **Exit Saving Changes**

Equal to F10, save all changes of all menus, then exit setup configure driver. Finally resets the system automatically.

### **Exit Discarding Changes**

Equal to ESC, never save changes, then exit setup configure driver.

### **Load Setup Defaults**

Equal to F9. Load standard default values.

### **Load Optimized Defaults**

Load settings for optimized boot time and system performance.

### **Discard Changes**

Load the original value of this boot time. Not the default Setup value.

### **Save Changes**

Save all changes of all menus, but do not reset system.

## Chapter 5

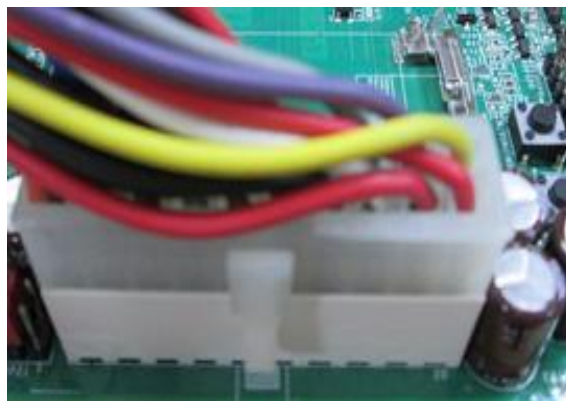
### Troubleshooting

This chapter provides a few useful tips to quickly get PCOM-B632 running with success. As basic hardware installation has been addressed in Chapter 2, this chapter will primarily focus on system integration issues, in terms of BIOS setting, and OS diagnostics.

#### 5.1 Hardware Quick Installation

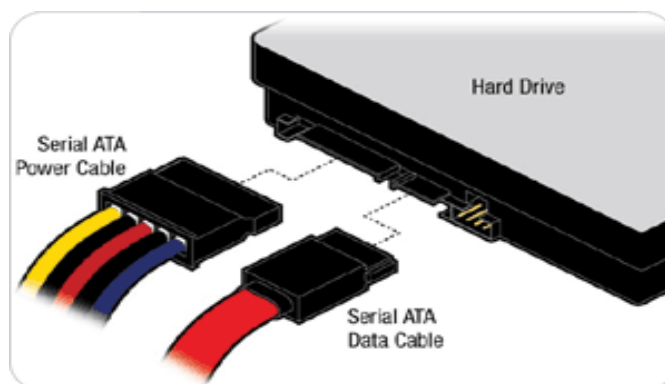
##### ATX Power Setting

Unlike other Single board computer, PCOM-B632 supports ATX only. Therefore, there is no other setting that really needs to be set up. However, there are only two connectors that must be connected—J25 (4 pins ATX power connector) & J31 (20 pins ATX Power Connector) in the PCOM-C600 carrier board.



##### Serial ATA

Unlike IDE bus, each Serial ATA channel can only connect to one SATA hard disk at a time; The installation of Serial ATA is simpler and easier than IDE, because SATA hard disk doesn't require setting up Master and Slave, which can reduce mistake of hardware installation.



The PCOM-B632 can support two SATA interface (SATAII, 3.0Gb/s) to the PCOM-C600 carrier board with AHCI or IDE mode. It has two J28 & J30 SATA ports in PCOM-C600 carrier board.

## 5.2 BIOS Setting

It is assumed that users have correctly adopted modules and connected all the devices cables required before turning on ATX power. 204-pin DDR3 Memory, keyboard, mouse, SATA hard disk, VGA connector, power cable of the device, ATX accessories are good examples that deserve attention. With no assurance of properly and correctly accommodating these modules and devices, it is very possible to encounter system failures that result in malfunction of any device.

To make sure that you have a successful start with PCOM-B632, it is recommended, when going with the boot-up sequence, to hit “F2” key and enter the BIOS setup menu to tune up a stable BIOS configuration so that you can wake up your system far well.

### Loading the default optimal setting

When prompted with the main setup menu, please scroll down to “**Load Setup Defaults**”, press “**Enter**” and select “**Yes**” to load in default optimal BIOS setup. This will force your BIOS setting back to the initial factory configuration. It is recommended to do this so you can be sure the system is running with the BIOS setting that Portwell has highly endorsed. As a matter of fact, users can load the default BIOS setting any time when system appears to be unstable in boot up sequence.

## 5.3 FAQ

### Information & Support

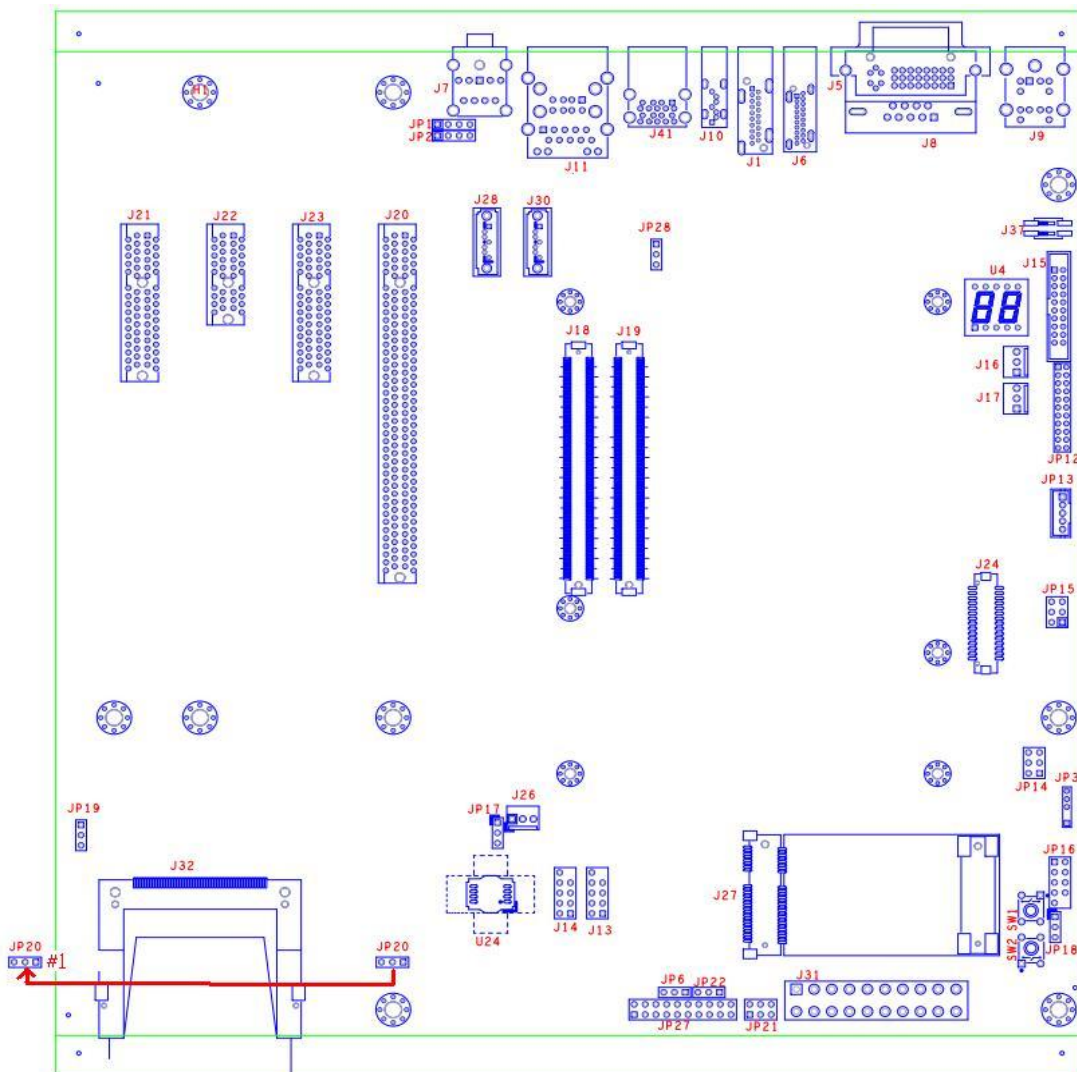
**Question:** I forget my password of system BIOS, what am I supposed to do?

**Answer:** You can switch off your power supply then find the JP20 of the PCOM-C600 carrier board to set it from 1-2 short to 2-3 short and wait 5 seconds to clean your password then set it back to 1-2 short to switch on your power supply.

#### **JP20 : CMOS Setting**

|      | Jumper Setting Describe |
|------|-------------------------|
| *1-2 | Default                 |
| 2-3  | Clean CMOS              |





**Question: How to update the BIOS file of the PCOM-B632?**

**Answer:** 1. Please visit web site of the **Portwell download center** as below hyperlink

[http://www.portwell.com.tw/support/download\\_center.php](http://www.portwell.com.tw/support/download_center.php)

But you must register an account first. **(The E-Mail box should be an existing Company email address that you check regularly.)**

<http://www.portwell.com.tw/member/newmember.php>

2. Input your User name and password to log in the download center.
3. Select the **"Search download"** to input the keyword **"PCOM-B632"**.
4. Find the **"BIOS"** page to download the ROM file and flash utility.
5. Execute the zip file to root of the bootable USB pen drive. You can get the **"ShellFlash32.efi"**, **"temp.bin"**, **"Update.nsh"** three files.
6. Insert your USB pen drive in USB port of the PCOM-C600 carrier board and power-on.
7. Boot to EFI-Shell mode then input the **"fs0:"** command to switch to the root of the USB pen drive.

```

EFI Shell version 2.31 [4660.22136]
Current running mode 1.1.2
Device mapping table
  fs0      :Removable HardDisk - Alias hd24c0b blk0
            Acpi (PNP0A03.0)/Pci (1410)/Usb (2.0)/HD (Part1,Sig004441B1)
  blk0     :Removable HardDisk - Alias hd24c0b fs0
            Acpi (PNP0A03.0)/Pci (1410)/Usb (2.0)/HD (Part1,Sig004441B1)
  blk1     :Removable BlockDevice - Alias (null)
            Acpi (PNP0A03.0)/Pci (1410)/Usb (2.0)

Press ESC in 1 seconds to skip startup.nsh, any other key to continue.
Shell> fs0:

```

8. Type the "update" command to start flash BIOS processes.

```

EFI Shell version 2.31 [4660.22136]
Current running mode 1.1.2
Device mapping table
  fs0      :Removable HardDisk - Alias hd24c0b blk0
            Acpi (PNP0A03.0)/Pci (1410)/Usb (2.0)/HD (Part1,Sig004441B1)
  blk0     :Removable HardDisk - Alias hd24c0b fs0
            Acpi (PNP0A03.0)/Pci (1410)/Usb (2.0)/HD (Part1,Sig004441B1)
  blk1     :Removable BlockDevice - Alias (null)
            Acpi (PNP0A03.0)/Pci (1410)/Usb (2.0)

Press ESC in 1 seconds to skip startup.nsh, any other key to continue.
Shell> fs0:
fs0:\> Update_

```

9. When it finished all update processes, it will reboot in 5 seconds automatically.

```

Shell> fs0:
fs0:\> Update
Update> ShellFlash32 -sd -cvar -bbl -file temp.bin

Phoenix SCT Flash for Shell 01.17.1.0, Build 130704
Copyright (c) 2011-2013 Phoenix Technologies Ltd.

The tool will start flashing in 5 seconds, press ESC to abort.
Read BIOS image from file.
Initialize Flash module.
Read current BIOS.

WARNING: Physical buffer does not enough for binary check

Begin Flashing.....
Total blocks of the image = 768.
|-----|
|.....**.....|
Image flashing done.

Flashing finished.
BIOS is updated successfully.
WARNING: System will shutdown or reboot in 5 seconds!

```

10. Please press the “**F2**” key to BIOS setup menu to select “**Load Setup Defaults**” and then select “**Exit Saving Changes**” option to finish all BIOS flash processes.

**Question:** What are the attention options when insert PCOM-B632 in PCOM-C600 carrier board?

**Answer:**

1. The PCOM-C600 carrier board doesn't support the DP display function in Win8 operation system. It must use the **PCOM-C605** carrier board which can support the DP display function.
2. If you want to use the **eDP** display function, it needs to use a **PA-M1V display adapter (optional)** and need to modify a customized version BIOS to enable the DP option of the BIOS. If you need to use this adapter, please ask your PCOM-B632 provider or distributor.

**Note:**

Please visit our Download Center to get the Catalog, User manual, BIOS, and driver files.

[http://www.portwell.com.tw/support/download\\_center.php](http://www.portwell.com.tw/support/download_center.php)

If you have other additional technical information or request which is not covered in this manual, please fill in the technical request form as below hyperlink.

[http://www.portwell.com.tw/support/problem\\_report.php](http://www.portwell.com.tw/support/problem_report.php)

We will do our best to provide a suggestion or solution for you.

Thank you.