# cPCI-3640 Series

## User's Manual

Low-Power 3U CompactPCI® Quad-Core Intel Atom® Processor Blade




**Manual Rev.**: Rev. 1.1
Revision Date: May 22, 2026
Part Number: 50M-31131-1010

LEADING EDGE AI COMPUTING
Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

## Revision History

| Revision | Description | Date | By |
|---|---|---|---|
| 1.0 | Initial release | 2025-07-08 | AL |
| 1.1 | Block diagram updated | 2026-05-22 | AL |


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

# Preface

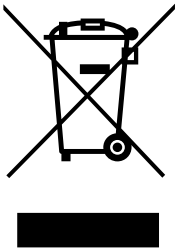
### Copyright

Copyright 2026 ADLINK Technology, Inc. This document contains proprietary information protected by copyright. All rights are reserved. No part of this manual may be reproduced by any mechanical, electronic, or other means in any form without prior written permission of the manufacturer.

### Disclaimer

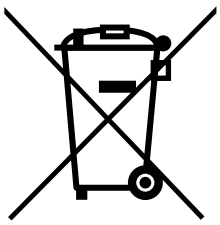
The information in this document is subject to change without prior notice in order to improve reliability, design, and function and does not represent a commitment on the part of the manufacturer. In no event will the manufacturer be liable for direct, indirect, special, incidental, or consequential damages arising out of the use or inability to use the product or documentation, even if advised of the possibility of such damages.

### Environmental Responsibility



ADLINK is committed to fulfill its social responsibility to global environmental preservation through compliance with the European Union's Restriction of Hazardous Substances (RoHS) directive and Waste Electrical and Electronic Equipment (WEEE) directive. Environmental protection is a top priority for ADLINK. We have enforced measures to ensure that our products, manufacturing processes, components, and raw materials have as little impact on the environment as possible. When products are at their end of life, our customers are encouraged to dispose of them in accordance with the product disposal and/or recovery programs prescribed by their nation or company.

**Battery Labels** (for products with battery)












### California Proposition 65 Warning



**WARNING:** This product can expose you to chemicals including acrylamide, arsenic, benzene, cadmium, Tris(1,3-dichloro-2-propyl)phosphate (TDCPP), 1,4-Dioxane, formaldehyde, lead, DEHP, styrene, DINP, BBP, PVC, and vinyl materials, which are known to the State of California to cause cancer, and acrylamide, benzene, cadmium, lead, mercury, phthalates, toluene, DEHP, DIDP, DnHP, DBP, BBP, PVC, and vinyl materials, which are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

### Trademarks

Product names mentioned herein are used for identification purposes only and may be trademarks and/or registered trademarks of their respective companies.



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

### Conventions

Take note of the following conventions used throughout this manual to make sure that users perform certain tasks and instructions properly.



NOTE: Additional information, aids, and tips that help users perform tasks.



CAUTION: Information to prevent ***minor*** physical injury, component damage, data loss, and/or program corruption when trying to complete a task.



WARNING: Information to prevent ***serious*** physical injury, component damage, data loss, and/or program corruption when trying to complete a specific task.



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

# Table of Contents

**Preface** ..... **iii**

**List of Figures** ..... **vi**

**List of Tables** ..... **vi**

**1 Introduction** ..... **1**

1.1 Overview ..... 1

1.2 Features ..... 1

1.3 Package Contents ..... 1

**2 Specifications** ..... **3**

2.1 Product Specifications ..... 3

2.2 Block Diagram ..... 4

**3 Mechanical Layout** ..... **7**

3.1 Connector and Switch Locations ..... 7

**4 Getting Started** ..... **11**

4.1 CPU and Heatsink ..... 11

4.2 SATA Drive Installation ..... 11

4.3 Installation of the cPCI-3640 to the Chassis ..... 13

4.4 cPCI-R3610(T) RTM Installation ..... 13

**5 Driver Installation** ..... **15**

5.1 cPCI-3640 Drivers ..... 15

**6 Connector Pinouts and Jumper Settings** ..... **17**

6.1 cPCI-3640 Blade Connector Pin Assignments ..... 17

6.2 cPCI-R3610(T) RTM Connector Pin Assignments ..... 23

6.3 Switch and Jumper Settings ..... 24

**7 BIOS Settings** ..... **27**

7.1 BIOS Setup Menu ..... 27

7.2 Main Menu ..... 28

7.3 Advanced Menu ..... 31

7.4 Security Menu ..... 60

7.5 Boot Menu ..... 63

7.6 Save & Exit Menu ..... 65

**Safety Instructions** ..... **67**

**Getting Services** ..... **68**



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

# List of Figures

Figure 1: cPCI-3640 functional block diagram ..... 4
Figure 2: cPCI-3640D daughterboard functional block diagram ..... 5
Figure 3: cPCI-3640T daughterboard functional block diagram ..... 5
Figure 4: cPCI-3610 RTM functional block diagram ..... 6
Figure 5: cPCI-3640 series board layout ..... 7
Figure 7: cPCI-3640 series faceplate ..... 8
Figure 8: cPCI-3610(T) RTM board layout ..... 10
Figure 9: cPCI-R3610(T) RTM faceplate ..... 10

# List of Tables

Table 1: System LED status ..... 9
Table 2: LAN LED status definition ..... 18



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

# 1 Introduction

## 1.1 Overview

The ADLINK cPCI-3640 Series is a 3U CompactPCI® 2.0 processor blade featuring the 64-bit Intel Atom® Processor X Series (formerly Elkhart Lake) and soldered DDR4-2400-3200 MHz IBECC memory, with up to 32GB. The cPCI-3640 comes in single-slot (4HP) width and dual-slot (8HP) width form factor. Faceplate I/O includes 1x USB 3.0 port, 2x RJ-45 2.5GbE ports, and 1x VGA port.

The Intel Atom® Processor X Series integrates the 10th generation Intel UHD graphics and provides excellent graphics, media, and display support. Storage options include a CFAST socket or an onboard 32GB SLC SSD (optional). Additionally, the SATA1 to layer 2 riser card is available, with a route to J2 option in the BIOS.

Rear I/O signals to J2 include 2x GbE, 4x GPIO pins (reserved), and PWROK/WDT/HDD/User LED (reserved). The cPCI-3640 is an ideal solution for transportation, factory automation, and other industrial applications that require optimal computing performance for data transfer with lower power consumption. The ADLINK cPCI-3640 provides high manageability and supports Satellite mode operation as a standalone blade in peripheral slots.

## 1.2 Features

- 3U CompactPCI R3.0 blade in 4HP and 8HP width form factor
- 64-bit quad-core Intel Atom® x6413E Processor (1.5-3.00 GHz, TDP 9W)
- Integrated Graphics and memory controllers
- Compatible with PICMG 2.0 CompactPCI R3.0, PICMG 2.1 Hot Swap R2.0
- Dual channel DDR4 2400-3200 soldered memory with IBECC up to 32GB
- 32-bit, 33MHz PCI interface
- Supports Satellite mode operation as a standalone blade in peripheral slots
- 1x USB 3.0 port
- 1x VGA port
- 2x RJ45 2.5GbE ports on front panel, switchable to rear J2 (in 1GbE mode)
- Optional 2.5” SATA device via riser car

## 1.3 Package Contents

The cPCI-3640 is packaged with the following components. If any of these items are missing or damaged, please retain the shipping carton and packing material and contact your dealer for inspection. Authorization must be obtained before returning any product to ADLINK.

**Processor Blade**

- The cPCI-3640 Processor Blade
- 2.5” SATA drive accessory pack

**Rear Transition Module**

- cPCI-R3610: 8HP width, 50mm depth Rear Transition Mod- ule with 2x COM, 1x USB 2.0, 2x GbE, 1x SATA, 1x VGA
- cPCI-R3610T: 8HP width, 80mm depth Rear Transition Module with 2x COM, 1x USB 2.0, 2x GbE, 1x SATA, 1x VGA


LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000



NOTE:

The contents of non-standard cPCI-3640 configurations may vary depending on the customer’s requirements.



CAUTION:

This product must be protected from static discharge and physical shock. Never remove any of the components except at a static-free workstation. Use the anti-static bag shipped with the product when putting the board on a surface. Wear an anti-static wrist strap properly grounded on one of the system's ESD ground jacks when installing or servicing system components.



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

# 2 Specifications

## 2.1 Product Specifications

### 2.1.1 cPCI-3640 Specifications

| | |
|---|---|
| **CompactPCI® Standards** | • PICMG® 2.0 CompactPCI® Rev. 3.0<br>• PICMG® 2.1 Hot Swap Specification Rev. 2.0 |
| **Mechanical** | • Standard 3U CompactPCI®<br>• Board size: 100mm x 160mm<br>Single slot (4HP, 20.32mm)<br>Dual slot (8HP, 40.64mm) |
| **Processor** | • Quad-core Intel Atom® x6413E Processor, 1.50 GHz Base frequency, 3.00 GHz Burst frequency, 1.5MB L2 cache, TDP 9W |
| **Memory** | • Dual channel DDR4-2700-3200 IBECC soldered memory<br>• Up to 32GB |
| **CompactPCI Bus** | • PCI 32-bit, 33MHz; 5V only<br>• Supports operation in system slot as master or in peripheral slot as standalone blade without connectivity to CompactPCI bus (Satellite mode) |
| **2.5 GbE Ethernet** | • Two RJ45 on front faceplate via Intel® I225 Ethernet controllers (switchable to rear J2) |
| **Graphics** | • Integrated Intel UHD Graphics<br>• Resolution up to 1920x1200 @60Hz<br>• Single analog display |
| **USB** | • A single USB 3.0 port on the front faceplate |
| **Faceplate I/O** | **4HP cPCI-3640**<br>• 1x USB 3.0 port<br>• 2x 2.5G BASE-T Ethernet ports<br>• 1x VGA port<br><br>**8HP cPCI-3640T**<br>• 1x USB 3.0 port<br>• 2x 2.5G BASE-T Ethernet ports<br>• 1x VGA port<br>• 1x Serial ports<br>• 2x 10/100/1000G BASE-T Ethernet ports |
| **Storage Interfaces**[1] | • Standard CFAST socket<br>• Optional onboard 32GB SLC SSD (Other capacities available upon request)<br>• Additional SATA devices via riser card |
| **BIOS** | • AMI UEFI BIOS, UEFI secure boot |
| **OS Compatibility** | • Microsoft Windows 10 IoT Enterprise 64-bit<br>• Ubuntu 20.04/22.04<br>• VxWorks 6.9 (by request)<br>• Other OS support by request |
| **Environmental** | • Operating Temperature: Standard: -25°C to 85°C (2 m/s airflow minimum)<br>• Storage Temperature: -40°C to 85°C<br>• Humidity: 5-95% non-condensing<br>• Shock and vibration: Custom-designed to meet requirements<br>  • Wayside design: equipment must meet EN-50125-3 standard<br>  • Onboard design: equipment must meet CEI-61373 (1B category) standard |
| **EMI** | • EN50155 version 2017 OT5 class<br>• CE/FCC Class A |


NOTE:

ADLINK-certified thermal design. The thermal performance is dependent on the chassis cooling design. Sufficient forced airflow is required. Temperature limits of optional mass storage devices may also affect the thermal specification.



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

### 2.1.2 cPCI-R3610(T) RTM Specifications

| | |
|---|---|
| **Mechanical** | Board Size<br>• cPCI-R3610: 100mm x 50mm single-slot ($HP, 20.32mm)<br>• cPCI-R3610T: 100mm x 80mm<br>Dual-slot (8HP, 40.64mm)<br>(optional single-slot upon request) |
| **Gigabit Ethernet** | • Two GbE ports switched from cPCI-3640 |
| **Graphics** | • VGA switched from cPCI-3640 |
| **Serial Ports** | • Two serial ports on I/O panel from pin header |
| **Storage Interfaces** | • One 7-pin Serial ATA port, SATA1 signal switched from cPCI-3640 by BIOS |
| **Faceplate I/O** | • 1x USB 2.0 ports<br>• 2x 10/100/1000BASE-T Ethernet ports<br>• Analog DB-15 VGA port<br>• 2x COM ports |

NOTE:

Specifications are subject to change without prior notice.

## 2.2 Block Diagram

### 2.2.1 cPCI-3640 Blade

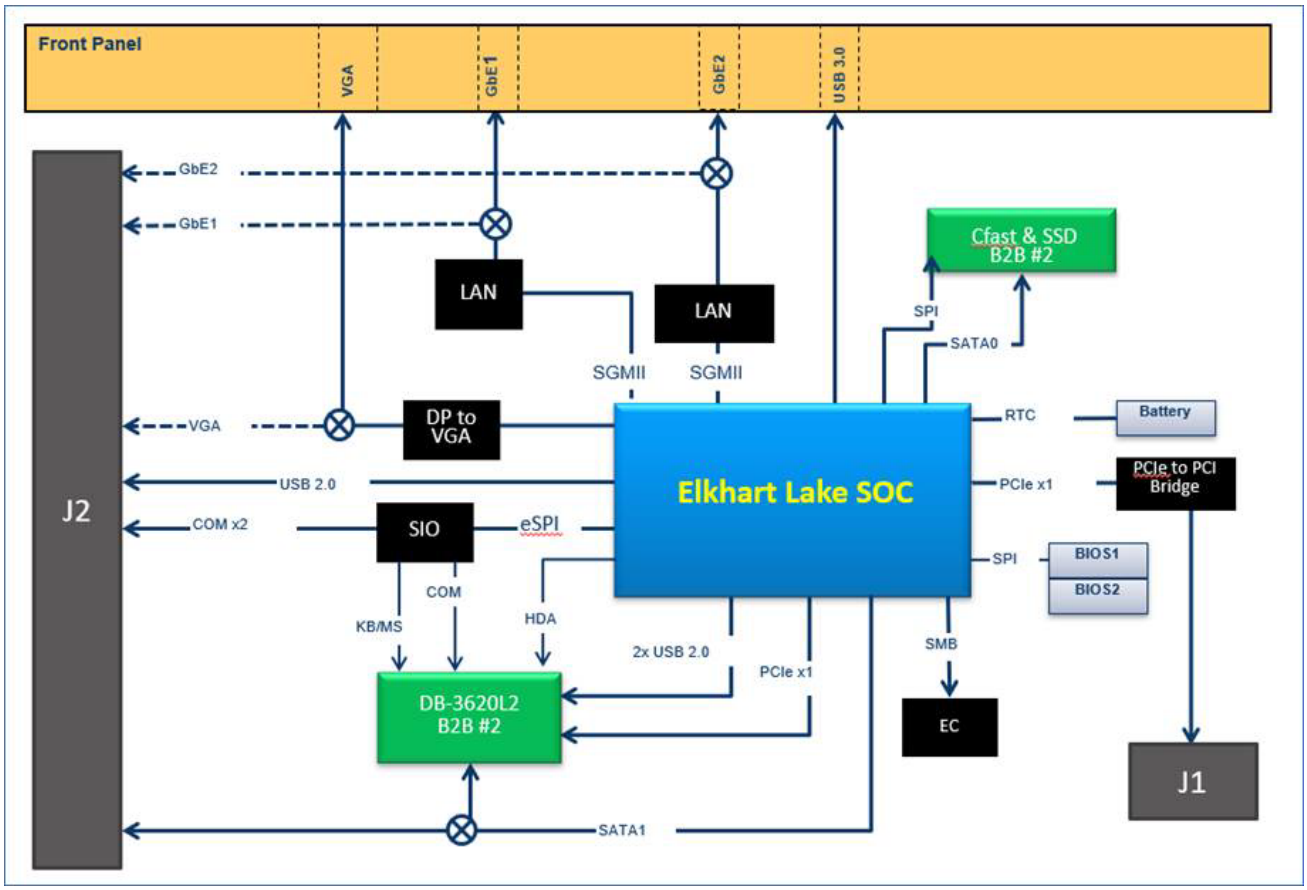



**Figure 1: cPCI-3640 functional block diagram**



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

### 2.2.2 cPCI-3640D Daughterboard (DB-3610L2)

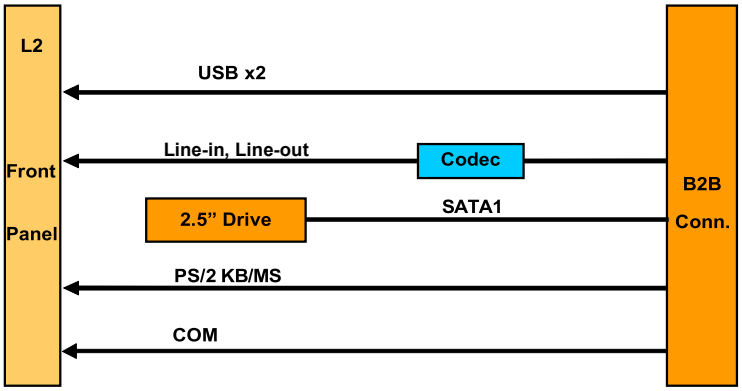



**Figure 2: cPCI-3640D daughterboard functional block diagram**

### 2.2.3 cPCI-3640T Daughterboard (DB-3620L2)

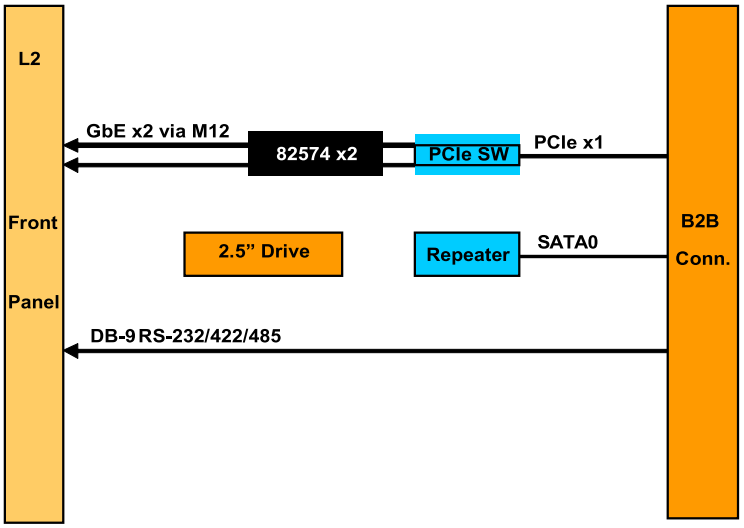



**Figure 3: cPCI-3640T daughterboard functional block diagram**


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

### 2.2.4 cPCI-3610(T) RTM

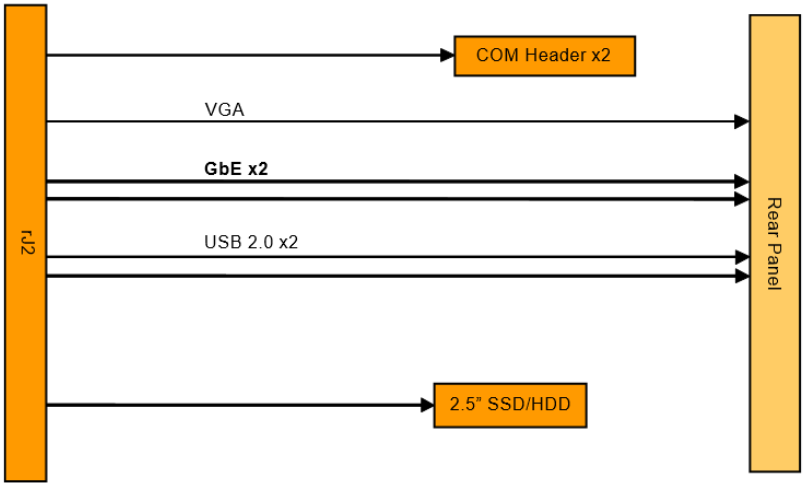



**Figure 4: cPCI-3610 RTM functional block diagram**

This page intentionally left blank.



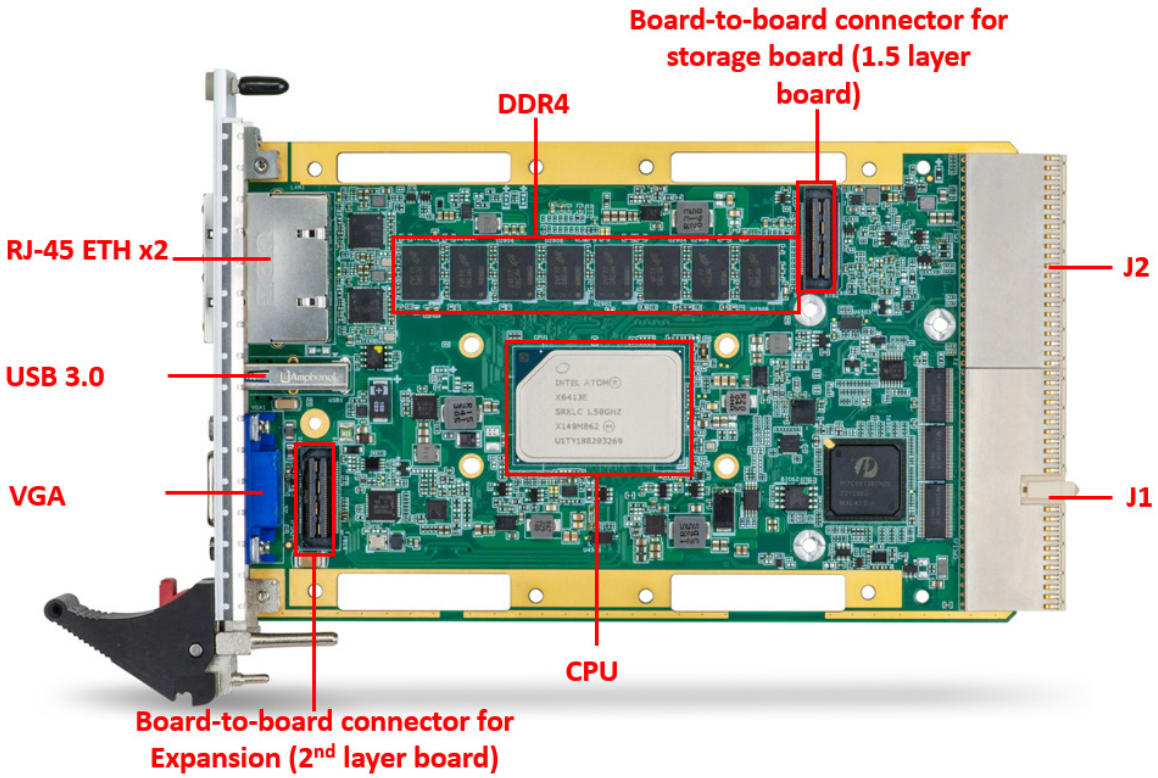
Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

# 3 Mechanical Layout

## 3.1 Connector and Switch Locations

This chapter illustrates the board layouts, connector pin assignments, and jumper settings.

### 3.1.1 cPCI-3640 Series Board Layout




| | |
|---|---|
| **CPU** | Intel® Atom™ Processor |
| **LAN** | 2x Ethernet RJ-45 connector |
| **USB** | USB 3.0 port |
| **VGA** | DB-15 female VGA connector |
| **J1** | CompactPCI connector J1 |
| **J2** | CompactPCI connector J2 |

**Figure 5: cPCI-3640 series board layout**


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

### 3.1.2 cPCI-3640 Series Faceplate

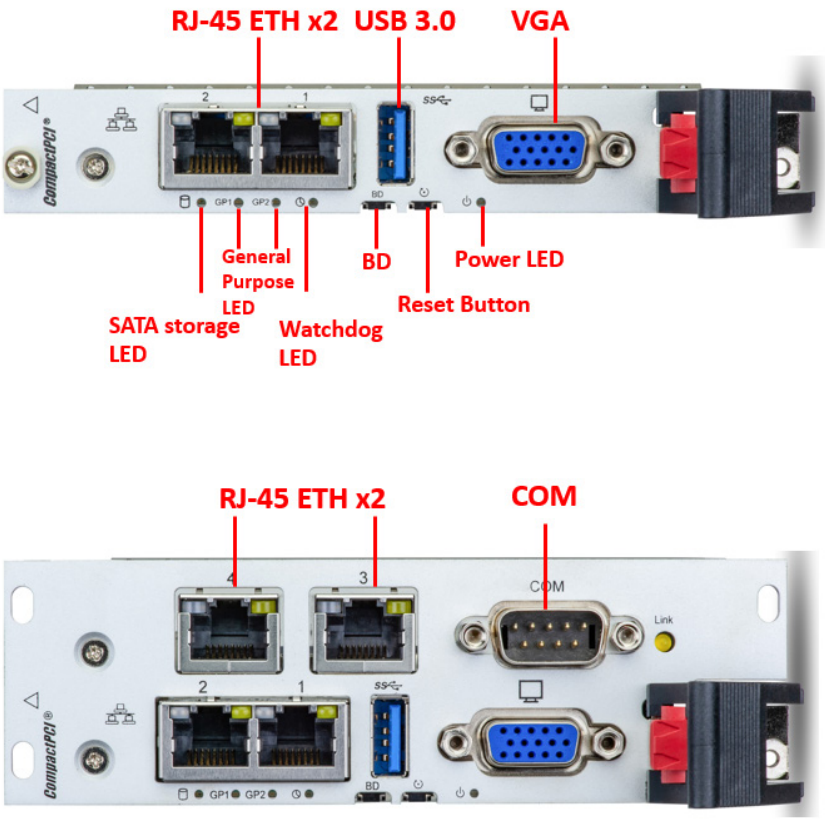



**Figure 6: cPCI-3640 series faceplate**

**System LED Status**



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

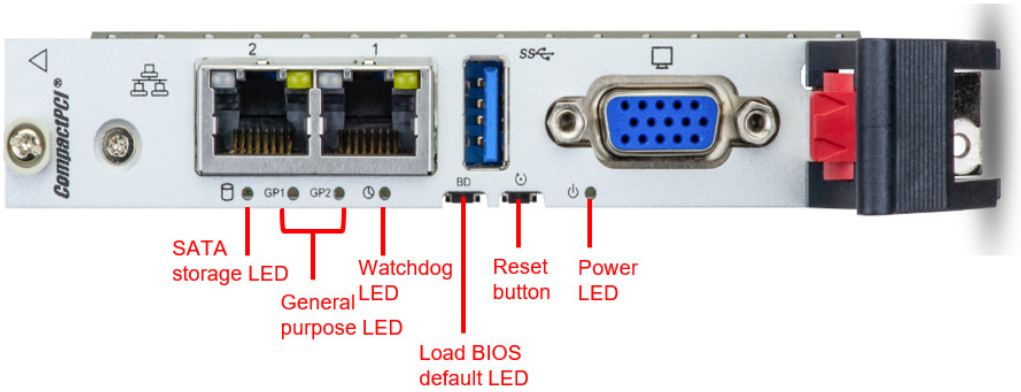



**Table 1: System LED status**

| LED | Definition | Color | Condition | Indication |
|---|---|---|---|---|
|  | SATA storage LED | Yellow | OFF | No SATA activity |
| | | | ON/Blinking | SATA transmission in 2.5” SATA, CFAST, SSD |
| GP1/GP2 | General Purpose LED | Blue | OFF | User define |
| GP1/GP2 | | | ON/Blinking | User define |
|  | Watchdog LED | Red | OFF | No watchdog activity |
| | | | ON/Blinking | Watchdog event alert |
| BD | Load BIOS Default Button | NA | NA | Press on it to load BIOS default |
|  | Reset Button | NA | NA | Press on it to warm reset the CPU |
|  | Power LED | Green | OFF | System is of |
| | | | ON | All system power ready |

1. SATA storage LED is controlled by PCH.
2. GP1/GP2 LED is controlled by PCH or EC (default BOM is PCH).
3. Watchdog LED is controlled by EC.
4. Power LED is controlled by EC.

### 3.1.3 cPCI-3610(T) RTM Board Layout

| | | | |
|---|---|---|---|
| **COM2** | RS-232/422/485 port | **LAN1/2** | Dual Ethernet ports |
| **COM3** | RS-232/422/485 port | **VGA1** | VGA port |
| **SATA1** | SATA port switched from front by BIOS (SATA2 not connected) | **USB** | USB 2.0 port |
| **rJ2** | CompactPCI connector | **SW1-8** | Switches |

(cPCI-R3610 is 50mm deep and cPCI-R3610T is 80mm deep)


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

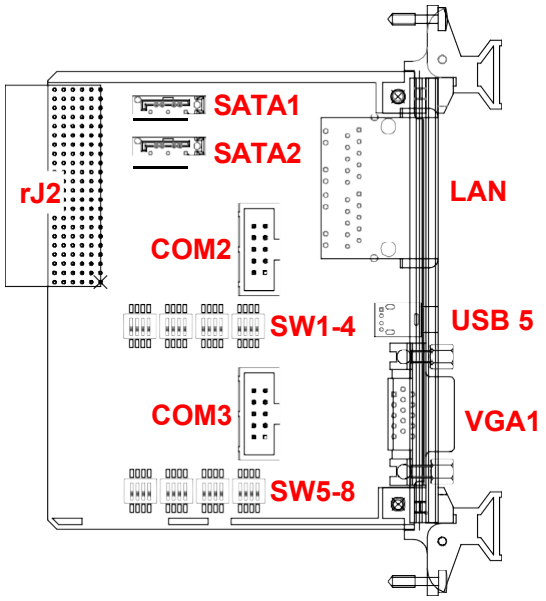



**Figure 7: cPCI-3610(T) RTM board layout**

### 3.1.4 cPCI-R3610(T) RTM Faceplate

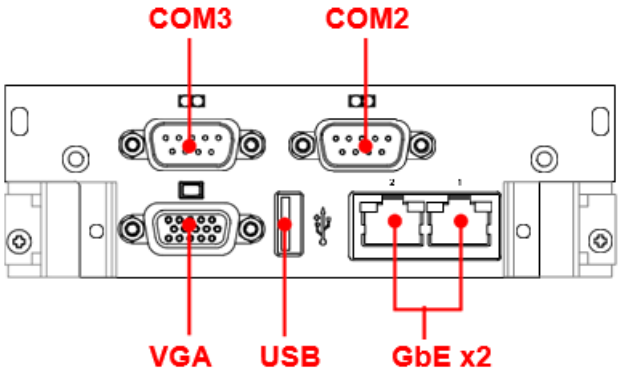



**Figure 8: cPCI-R3610(T) RTM faceplate**


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

# 4 Getting Started

This chapter describes the following installation procedures for the cPCI-3640 and the rear transition module:

- CPU and Heatsink
- 2.5" SATA storage drive
- Processor blade installation to chassis
- RTM installation to chassis

## 4.1 CPU and Heatsink

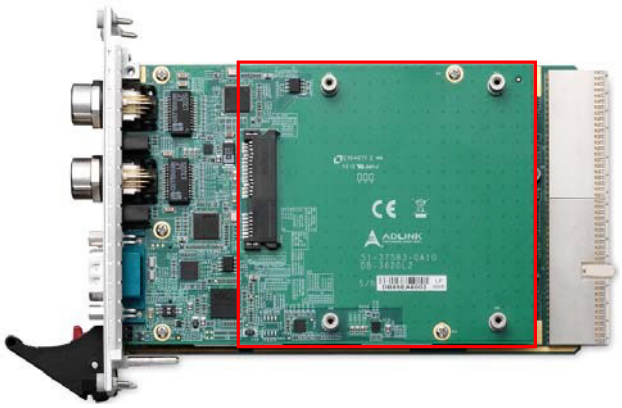
The cPCI-3640 Series comes with the CPU and heatsink pre-installed. Removal of the heatsink/CPU by users is not recommended. Please contact your ADLINK service representative for assistance.

## 4.2 SATA Drive Installation

The 2-slot cPCI-3640D/G/M/T(R) versions provide space to install a slim-type 2.5" Serial ATA storage drive.

**Installing a SATA Drive**

1. A 2.5" SATA drive can be installed in the location marked below.



2. Prepare a 2.5" SATA drive and locate the brackets and screws in the accessory kit.





Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3. Screw the brackets to the 2.5" SATA drive with the four M3 screws.




4. Align the drive assembly with the cPCI-3640D/T and insert it onto the onboard SATA connector until it is securely seated.



5. Secure the hard drive assembly to the cPCI-3640D/T with the four M2.5 screws provided.




Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

## 4.3 Installation of the cPCI-3640 to the Chassis

The cPCI-3640 may be installed in a system or peripheral slot of a 3U CompactPCI chassis. These instructions are for reference only. Please refer to the user guide that comes with the chassis for more information.

1. Be sure to select the correct slot depending on the operational purpose of the module. The system power may now be turned on or off.
2. Remove the blank faceplate from the selected slot, if necessary.
3. Press down on the release catches of the cPCI-3640 ejector handles.
4. **Remove the black plastic caps securing the mounting screws to the faceplate.**
5. Align the module's top and bottom edges with the chassis card guides, and then carefully slide the module into the chassis. A slight resistance may be felt when inserting the module. If the resistance is too strong, check for bent pins on the backplane or if the board's connector pins are not properly aligned with the connectors on the backplane. Then, push the board until it is completely flush with the chassis.
6. Push the ejector handles outwards to secure the module in place, and then fasten the screws on the module faceplate.
7. Connect the cables and peripherals to the board, and then turn the chassis on if necessary.

## 4.4 cPCI-R3610(T) RTM Installation

The installation and removal procedures for an RTM are the same as those for CompactPCI boards. Because RTMs are shorter than front boards, be sure to pay careful attention when inserting or removing them.

Refer to the previous section for peripheral connectivity of all I/O ports on the RTM. When installing the cPCI-3640 Series and related RTMs, ensure that the RTM is the correct matching model.




You must install the correct RTM to enable functions (I/O interfaces) on the rear panel. Installing non-compatible RTMs may damage the system board and/or other RTMs.


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

This page intentionally left blank.


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

# 5 Driver Installation

The cPCI-3640 drivers are available from the ADLINK website at https://www.adlinktech.com/Products/CompactPCI/3UCompactPCI2_0Blades/cPCI-3640_Series. ADLINK provides validated drivers for Windows 10. We recommend using these drivers to ensure compatibility.

## 5.1 cPCI-3640 Drivers

The following describes the cPCI-3640 driver installation procedures for Windows 10. Install the Windows operating system before installing any driver. Most standard I/O device drivers are installed during Windows installation.

1. Install the Chipset driver by extracting and running the program in **Intel_Chipset_Win10x64_v10.1.18634.8254_public.zip**.
2. Install the ME driver by extracting and running the program in **Intel_ME_Win10x64_v15.40.10.2252.zip.**
3. Install the Graphics driver and utilities by extracting and running the program in **Intel_Graphics_Win10x64_v27.20.100.9079.zip**.
4. Install the SerialIO driver by extracting and running the program in **Intel_SerialIO_Win10x64_v5.123.1.1021.zip.**
5. Install the LAN driver by extracting and running the program in **Intel_LAN_Win10x64_v27.6.zip.**
6. Install the HID driver by extracting and running the program in **Intel_HID_Win10x64_v2.2.1.383.zip.**
7. Install the PSE driver by extracting and running the program in **Intel_PSE_Win10x64_v5.4.1.4510.zip.**
8. Install the Audio driver and utilities by extracting and running the program in **Realtek_Audio_Win10x64_v6.0.1.8496**.


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

This page intentionally left blank.

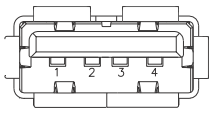

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

# 6 Connector Pinouts and Jumper Settings

## 6.1 cPCI-3640 Blade Connector Pin Assignments

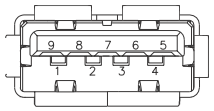
### 6.1.1 USB 2.0 Connectors

| Pin # | Signal Name |
|---|---|
| 1 | Vcc |
| 2 | UV0- |
| 3 | UV0+ |
| 4 | GND |



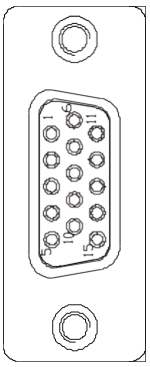

### 6.1.2 USB 3.0 Connectors

| Pin # | Signal Name |
|---|---|
| 1 | USB3.0_P5VA |
| 2 | USB2_CMAN |
| 3 | USB2_CMAP |
| 4 | GND |
| 5 | USB3A_CMRXN |
| 6 | USB3A_CMRXP |
| 7 | GND |
| 8 | USB3A_CMTXN |
| 9 | USB3A_CMTXP |



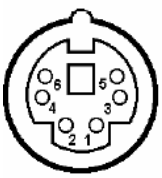

### 6.1.3 DB-15 VGA Connector

| Signal Name | Pin # | Pin # | Signal Name |
|---|---|---|---|
| Red | 1 | 2 | Green |
| Blue | 3 | 4 | N.C. |
| GND | 5 | 6 | GND |
| GND | 7 | 8 | GND |
| +5V. | 9 | 10 | GND |
| N.C. | 11 | 12 | CRTDATA |
| HSYNC | 13 | 14 | VSYNC |
| CRTCLK | 15 | | |



### 6.1.4 PS/2 Keyboard/Mouse Connector

| Pin # | Signal | Function |
|---|---|---|
| 1 | KBDATA | Keyboard Data |
| 2 | MSDATA | Mouse Data |
| 3 | GND | Ground |
| 4 | +5V | Power |
| 5 | KBCLK | Keyboard Clock |
| 6 | MSCLK | Mouse Clock |




Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

### 6.1.5 RJ-45 Gigabit Ethernet Connectors

| Pin # | 10BASE-T/ 100BASE-TX | 1000BASE-T |
|---|---|---|
| 1 | TX+ | LAN_TX0+ |
| 2 | TX- | LAN_TX0- |
| 3 | RX+ | LAN_TX1+ |
| 4 | — | LAN_TX2+ |
| 5 | — | LAN_TX2- |
| 6 | RX- | LAN_TX1- |
| 7 | — | LAN_TX3+ |
| 8 | — | LAN_TX3- |

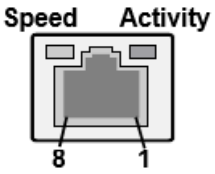
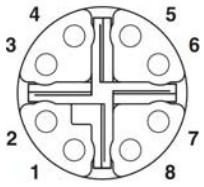



**Table 2: LAN LED status definition**

| Status | | Speed LED (Green/Amber) | Activity LED (Yellow) |
|---|---|---|---|
| Network link is not established or system powered off | | Off | Off |
| 10 Mbps | Link | Off | On |
| | Active | Off | Blinking |
| 100 Mbps | Link | Green | On |
| | Active | Green | Blinking |
| 1000 Mbps | Link | Orange | On |
| | Active | Orange | Blinking |

### 6.1.6 M12 Gigabit Ethernet Connectors

| Pin # | Signal |
|---|---|
| 1 | DN3 |
| 2 | DP3 |
| 3 | DN2 |
| 4 | DP2 |
| 5 | DN1 |
| 6 | DP1 |
| 7 | DN0 |
| 8 | DP0 |

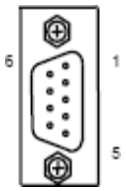



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

### 6.1.7 cPCI-3640D/T(R) Serial Ports

COM1 connector (DB-9)

| Pin # | RS-232 | RS-422 | RS-485(+) |
|---|---|---|---|
| 1 | DCD-L | TXD- | TXD- |
| 2 | RXD | TXD+ | TXD+ |
| 3 | TXD | RXD+ | — |
| 4 | DTR-L | RXD- | — |
| 5 | GND | GND | GND |
| 6 | DSR-L | — | — |
| 7 | RTS-L | — | — |
| 8 | CTS-L | — | — |
| 9 | RI-L | — | — |

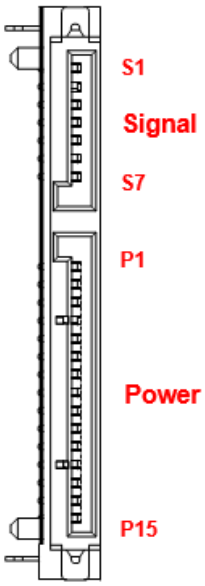



NOTE:

The COM mode setting for cPCI-3640D models is configured using SW1-SW4. See 5.3.1 cPCI-3640D COM1 Mode Selection Switches (SW1-SW4). The COM mode setting for cPCI-3640T(R) models is configured using SW1. 5.3.2 cPCI-3640T(R) COM1 Mode Selection Switch (SW1).

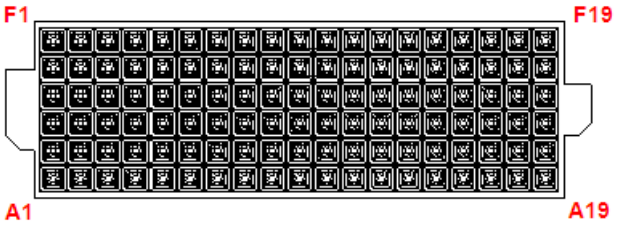
### 6.1.8 Serial ATA Connector on DB-3610L2

| Pin # | Signal |
|---|---|
| S1 | GND |
| S2 | TX+ |
| S3 | TX- |
| S4 | GND |
| S5 | RX- |
| S6 | RX+ |
| S7 | GND |
| P1 | NC |
| P2 | NC |
| P3 | NC |
| P4 | GND |
| P5 | GND |
| P6 | GND |
| P7 | 5V |
| P8 | 5V |
| P9 | 5V |
| P10 | GND |
| P11 | NC |
| P12 | GND |
| P13~P15 | NC |




Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

### 6.1.9 XMC Connector on DB-3UMC (JN3)




| Pin# | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 1 | RXP | RXN | 3.3V | NC | NC | VPWR |
| 2 | GND | GND | Not used | GND | GND | PCIE_RST-L |
| 3 | NC | NC | 3.3V | NC | NC | VPWR |
| 4 | GND | GND | Not used | GND | GND | Not used |
| 5 | NC | NC | 3.3V | NC | NC | VPWR |
| 6 | GND | GND | Not used | GND | GND | +12V |
| 7 | NC | NC | 3.3V | NC | NC | VPWR |
| 8 | GND | GND | Not used | GND | GND | -12V |
| 9 | NC | NC | Not used | NC | NC | VPWR |
| 10 | GND | GND | Not used | GND | GND | GA0 |
| 11 | TXP | TXN | Not used | NC | NC | VPWR |
| 12 | GND | GND | GA1 | GND | GND | Not used |
| 13 | NC | NC | 3.3V | NC | NC | VPWR |
| 14 | GND | GND | GA2 | GND | GND | Not used |
| 15 | NC | NC | Not used | NC | NC | VPWR |
| 16 | GND | GND | Not used | GND | GND | Not used |
| 17 | NC | NC | Not used | NC | NC | NC |
| 18 | GND | GND | Not used | GND | GND | Not used |
| 19 | CK-P | CK-N | Not used | Not used | Not used | Not used |

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

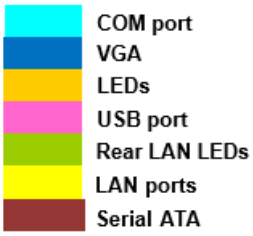
### 6.1.10 CompactPCI J1 Connector

| Pin | Z | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|
| 25 | GND | P5V | P5V | CPCI_ENUM# | NC | P5V | GND |
| 24 | GND | CPCI_AD1 | P5V | V(I/O) | CPCI_AD0 | P5V | GND |
| 23 | GND | NC | CPCI_AD4 | CPCI_AD3 | P5V | CPCI_AD2 | GND |
| 22 | GND | CPCI_AD7 | GND | NC | CPCI_AD6 | CPCI_AD5 | GND |
| 21 | GND | NC | CPCI_AD9 | CPCI_AD8 | CPCI_M66E N | CPCI_CBE_L 0 | GND |
| 20 | GND | CPCI_AD12 | GND | VIO | CPCI_AD11 | CPCI_AD10 | GND |
| 19 | GND | NC | CPCI_AD15 | CPCI_AD14 | GND | CPCI_AD13 | GND |
| 18 | GND | CPCI_SERR_L | GND | NC | CPCI_PAR | CPCI_CBE_L 1 | GND |
| 17 | GND | NC | BMC_I2C_CLK | BMC_I2C_DAT A | GND | CPCI_PERR_ L | GND |
| 16 | GND | CPCI_DEVSEL_ L | GND | V(I/O) | CPCI_STOP_ L | CPCI_LOCK_ L | GND |
| 15 | GND | NC | CPCI_FRAME-L | CPCI_IRDY-L | CPCI_BDSEL # | CPCI_TRDY_ L | GND |
| 12-14 | Key | | | | | | |
| 11 | GND | CPCI_AD18 | CPCI_AD17 | CPCI_AD16 | GND | CPCI_CBE_L 2 | GND |
| 10 | GND | CPCI_AD21 | GND | NC | CPCI_AD20 | CPCI_AD19 | GND |
| 9 | GND | CPCI_CBE_L3 | NC | CPCI_AD23 | GND | CPCI_AD22 | GND |
| 8 | GND | CPCI_AD26 | GND | V(I/O) | CPCI_AD25 | CPCI_AD24 | GND |
| 7 | GND | CPCI_AD30 | CPCI_AD29 | CPCI_AD28 | GND | CPCI_AD27 | GND |
| 6 | GND | CPCI_REQ_L0 | GND | NC | CPCI_CLK0 | CPCI_AD31 | GND |
| 5 | GND | NC | NC | CPCI_RESET_ L | GND | CPCI_GNT_L 0 | GND |
| 4 | GND | NC | CPCI_HEALTHY_ L | V(I/O) | CPCI_INTP | NC | GND |
| 3 | GND | CPCI_INTA_L | CPCI_INTB_L | CPCI_INTC_L | P5V | CPCI_INTD_ L | GND |
| 2 | GND | NC | P5V | NC | NC | NC | GND |
| 1 | GND | P5V | N12V | NC | P12V | P5V | GND |

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

### 6.1.11 Compact PCI J2 Connector

| Pin | Z | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|
| 22 | GND | BMC_GPI4 | BMC_GPI3 | BMC_GPI2 | BMC_GPI1 | BMC_GPI0 | GND |
| 21 | GND | CPCI_CLK6 | GND | LAN1_MDI_P0 | LAN1_MDI_N0 | USB5_P | GND |
| 20 | GND | CPCI_CLK5 | GND | LAN1_MDI_P2 | GND | R_LAN2_1000-L_USB5_N | GND |
| 19 | GND | GND | GND | LAN1_MDI_N2 | LAN1_MDI_P1 | LAN1_MDI_N1 | GND |
| 18 | GND | R_LAN2_100-L | LAN1_MDI_P3 | LAN1_MDI_N3 | GND | P3V3 | GND |
| 17 | GND | R_LAN2_LINK/ACT-L | GND | RST_BTN-L | CPCI_REQ_L6 | CPCI_GNT_L6 | GND |
| 16 | GND | GPIO0 | R_LAN1_ 100-L | USB4_P_DEG | GND | R_LAN1_ 1000-L | GND |
| 15 | GND | VGA_BACK_B | R_LAN1_LINK/ACT-L | USB4_N_FAL | CPCI_REQ_L5 | CPCI_GNT_L5 | GND |
| 14 | GND | GPIO1 | USB_P4_OC# | USB_P3_OC# | SATA_TXN_J2 | COM3_RI-L | GND |
| 13 | GND | LAN2_MDI_P0 | GND | SATA_TXP_J2 | COM3_DTR-L | COM3_CTS-L | GND |
| 12 | GND | GPIO2_R | LAN2_MDI_N0 | USB3_P | SATA_RXN_J2 | COM3_SOUT | GND |
| 11 | GND | LAN2_MDI_P1 | GND | SATA_RXP_J2 | COM3_RTS-L | COM3_SIN | GND |
| 10 | GND | GPIO3_R | LAN2_MDI_N1 | USB3_N | GND | COM3_DSR-L | GND |
| 9 | GND | VGA_BACK_VSY | GND | VGA+BACK+G | COM3_DCD-L | COM4_RI-L | GND |
| 8 | GND | VGA_BACK_HSY | LAN2_MDI_P2 | LAN2_MDI_N2 | GND | COM4_DTR-L | GND |
| 7 | GND | VGA_BACK_R | GND | P5V | COM4_CTS-L | COM4_SOUT | GND |
| 6 | GND | VGA_BACK_CLK | LAN2_MDI_P3 | LAN2_MDI_N3 | GND | CON4_RTS-L | GND |
| 5 | GND | VGA_BACK_DAT | GND | HDD_LED_SATATXN2 | COM4_SIN | COM4_DSR-L | GND |
| 4 | GND | V(I/O) | PWR_LED_SATARXP2 | WDT_LED_SATARXN2 | GP_LED_SATATXP2 | COM4_DCD-L | GND |
| 3 | GND | CPCI_CLK4 | CPI_GND_L3 | CPCI_GNT_L3 | CPCI_REQ_L4 | CPCI_GNT_L4 | GND |
| 2 | GND | CPCI_CLK2 | CPCI_CLK3 | CPCI_SYSEN-L | CPCI_GNT_L2 | CPCI_REQ_L3 | GND |
| 1 | GND | CPCI_CLK1 | GND | CPCI_REQ_L1 | CPCI_GNT_L1 | CPCI_REQ_L2 | GND |

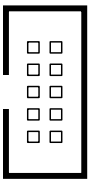



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

## 6.2 cPCI-R3610(T) RTM Connector Pin Assignments

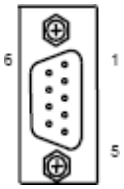
### 6.2.1 Serial Port Pin Headers (COM2/3)

| Pin # | RS-232 | RS-422 | RS-485(+) |
|---|---|---|---|
| 1 | DCD-L | TXD- | TXD- |
| 2 | DSR-L | — | — |
| 3 | RXD | TXD+ | TXD+ |
| 4 | RTS-L | — | — |
| 5 | TXD | RXD+ | — |
| 6 | CTS-L | — | — |
| 7 | DTR-L | RXD- | — |
| 8 | RI-L | — | — |
| 9 | GND | GND | GND |
| 10 | — | — | — |



### 6.2.2 Serial Port DB-9 Connectors (COM2/3)

| Pin # | RS-232 | RS-422 | RS-485(+) |
|---|---|---|---|
| 1 | DCD-L | TXD- | TXD- |
| 2 | RXD | TXD+ | TXD+ |
| 3 | TXD | RXD+ | — |
| 4 | DTR-L | RXD- | — |
| 5 | GND | GND | GND |
| 6 | DSR-L | — | — |
| 7 | RTS-L | — | — |
| 8 | CTS-L | — | — |
| 9 | RI-L | — | — |




NOTE:

See 5.3.3 cPCI-R3610(T) COM2 Mode Selection Switches (SW1-SW4) and 5.3.4 cPCI-R3610(T) COM3 Mode Selection Switches (SW5-SW8) for COM2/3 mode settings.

### 6.2.3 Serial ATA Connectors on RTM

| Pin # | Signal |
|---|---|
| 1 | GND |
| 2 | TX+ |
| 3 | TX- |
| 4 | GND |
| 5 | RX- |
| 6 | RX+ |
| 7 | GND |



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

## 6.3 Switch and Jumper Settings

### 6.3.1 BSW1 BIOS Failsafe Switch

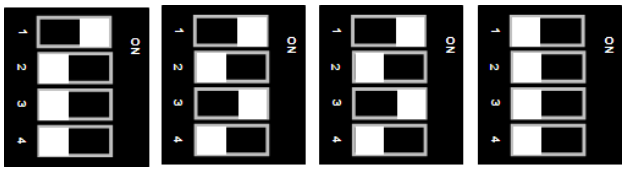
By default, BSW1 pin 2 is set to ON (boot from SPI0). It is not recommended to change the setting of pin 2 unless the user is certain that SPI0 has malfunctioned. In this case, set BSW1 pin 2 to OFF to boot from SPI1.




| BSW1 | ON | OFF |
|---|---|---|
| Pin 1 | Boot from SPI0 (Default) | Boot from SPI1 |
| Pin 2 | Normal BIOS (Default) To boot from SPI0 | Failsafe BIOS To boot from SPI1 when SPI0 has failed to boot |

### 6.3.2 cPCI-3640D COM1 Mode Selection Switches (SW1-SW4)

These switches set the cPCI-3640D COM1 to RS-232 full modem, RS-422, RS-485, or RS-485+ half-duplex mode. Switches SW1-SW4 are located on the top edge of the DB-3610L2 board. RS-232 full modem is set by default.

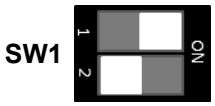



| Mode | Pin | SW1 | SW2 | SW3 | SW4 |
|---|---|---|---|---|---|
| **RS-232 (default)** | 1 | ON | ON | ON | OFF |
| | 2 | OFF | OFF | OFF | OFF |
| | 3 | OFF | ON | ON | OFF |
| | 4 | OFF | OFF | OFF | OFF |
| **RS-422** | 1 | OFF | OFF | OFF | ON |
| | 2 | ON | ON | ON | OFF |
| | 3 | OFF | OFF | OFF | ON |
| | 4 | OFF | ON | ON | OFF |
| **RS-485** | 1 | OFF | OFF | OFF | ON |
| | 2 | OFF | ON | ON | OFF |
| | 3 | ON | OFF | OFF | ON |
| | 4 | OFF | ON | ON | OFF |
| **RS-485+** | 1 | OFF | OFF | OFF | OFF |
| | 2 | OFF | ON | ON | ON |
| | 3 | ON | OFF | OFF | OFF |
| | 4 | OFF | ON | ON | ON |

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

### 6.3.3 cPCI-3640T(R) COM1 Mode Selection Switch (SW1)

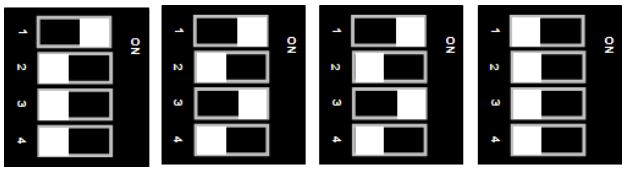
These switches set the cPCI-3640T(R) COM1 to RS-232 full modem, RS-422, or RS-485. Switch SW1 is located next to the COM1 connector on the DB-3640L2 board. RS-232 full modem is set as the default.




| Mode | Pin | SW1 |
|---|---|---|
| **RS-232** | 1 | ON |
| | 2 | OFF |
| **RS-422** | 1 | ON |
| | 2 | ON |
| **RS-485** | 1 | OFF |
| | 2 | ON |

### 6.3.4 cPCI-R3610(T) COM2 Mode Selection Switches (SW1-SW4)

These switches on the RTM select COM2 to be RS-232 full modem, RS-422, RS-485, or RS-485+ half-duplex mode. RS-232 full modem is set by default. See **3.1.4 cPCI-R3610(T) RTM Board Layout** for switch locations.

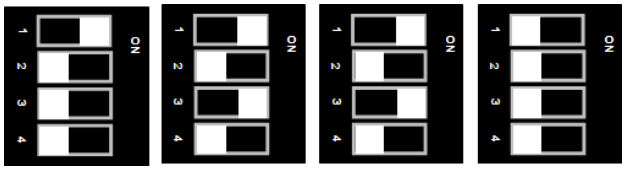



| Mode | Pin | SW1 | SW2 | SW3 | SW4 |
|---|---|---|---|---|---|
| **RS-232** | 1 | OFF | ON | ON | ON |
| | 2 | OFF | OFF | OFF | OFF |
| | 3 | OFF | ON | ON | OFF |
| | 4 | OFF | OFF | OFF | OFF |
| **RS-422** | 1 | ON | OFF | OFF | OFF |
| | 2 | OFF | ON | ON | ON |
| | 3 | ON | OFF | OFF | OFF |
| | 4 | OFF | ON | ON | OFF |
| **RS-485** | 1 | ON | OFF | OFF | OFF |
| | 2 | OFF | ON | ON | OFF |
| | 3 | ON | OFF | OFF | ON |
| | 4 | OFF | ON | ON | OFF |
| **RS-485+** | 1 | OFF | OFF | OFF | OFF |
| | 2 | ON | ON | ON | OFF |
| | 3 | OFF | OFF | OFF | ON |
| | 4 | ON | ON | ON | OFF |

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

### 6.3.5 cPCI-R3610(T)COM3 Mode Selection Switches (SW5-SW8)

These switches on the RTM select COM3 to be in RS-232 full modem, RS-422, RS-485, or RS-485+ half-duplex mode, with RS-232 full modem set as the default. See **3.1.4 cPCI-R3610(T) RTM Board Layout** for switch locations.




**SW5** **SW6** **SW7** **SW8**

| Mode | Pin | SW5 | SW6 | SW7 | SW8 |
|---|---|---|---|---|---|
| **RS-232** | 1 | OFF | ON | ON | ON |
| | 2 | OFF | OFF | OFF | OFF |
| | 3 | OFF | ON | ON | OFF |
| | 4 | OFF | OFF | OFF | OFF |
| **RS-422** | 1 | ON | OFF | OFF | OFF |
| | 2 | OFF | ON | ON | ON |
| | 3 | ON | OFF | OFF | OFF |
| | 4 | OFF | ON | ON | OFF |
| **RS-485** | 1 | ON | OFF | OFF | OFF |
| | 2 | OFF | ON | ON | OFF |
| | 3 | ON | OFF | OFF | ON |
| | 4 | OFF | ON | ON | OFF |
| **RS-485+** | 1 | OFF | OFF | OFF | OFF |
| | 2 | ON | ON | ON | OFF |
| | 3 | OFF | OFF | OFF | ON |
| | 4 | ON | ON | ON | OFF |

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

# 7 BIOS Settings

The BIOS can be configured via a setup utility that is invoked during the BIOS boot phase. The BIOS configuration is stored in NVRAM, which is the same hardware component where the BIOS itself is stored. All settings are retained even after the system is powered off. In this section, the BIOS setup menu will be described.

## 7.1 BIOS Setup Menu

The BIOS setup utility is invoked by pressing the <ESC> or <DEL> key. The user can change BIOS settings while the setup utility is running. A system reset is required for the new settings to take effect.

In the BIOS setup utility, several hotkeys are designed for specific purposes. The hotkeys are listed below.

- <F1>: General help in setup menu
- <F8>: Load previous BIOS values
- <F9>: Load BIOS default in setup utility
- <F10>: Save & Exit setup utility

### 7.1.1 Menu Selection Bar

The Menu Selection Bar is located at the top of the screen. It displays the top-level available menus to the user:

- Main Menu
- Advanced Menu
- Chipset Menu
- Security Menu
- Boot Menu
- Save & Exit Menu

### 7.1.2 Menu Conventions

The appearance of the setup menu shown in this chapter is a sample used to describe the item list. It is displayed on a VT100 terminal via a serial console. The following are the menu conventions:

**Using Color**

- Mandatory BIOS setup fields are shown in black.
- BIOS setup fields that are currently not used are shown in grey.
- Display-only strings are also shown in black.

**Using Brackets**

- Editable menu options are marked with square brackets ‘[’ and ‘]’ to distinguish them from display-only fields that cannot be modified.


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

## 7.2 Main Menu

The Main Menu provides read-only information about the system and allows you to set the system's date and time. Refer to the tables below for a screenshot of the Main Menu, along with details of its submenus and settings

Main Advanced Chipset Security Boot Save & Exit

| | | |
|---|---|---|
| BIOS Information | | Set the Date. Use Tab |
| BIOS Vendor | American Megatrends | to switch between Date |
| BIOS Version | 0.03.10 | elements. |
| Build Date | 02/02/2023 | |
| MRC Version | 0.0.4.104 | |
| GOP Version | 18.0.1031 | |
| ME FW Version | 15.40.16.2485 | |
| BIOS Boot Source | Primary BIOS | |
| System Information | | |
| Project Name | cPCI-3640 | |
| CPU Board Version | A1 | |
| CPU Brand String | Intel Atom(R) x6413E | |
| | Processor @1.50GHz | >: Select Screen |
| CPU Frequency | 1500 MHz | ^v: Select Item |
| Total Memory | 32768 MB (DDR4) | Enter: Select |
| Memory Frequency | 3200 MHz | +/-: Change Opt. |
| PCH SKU | MCC SKU 0 | F1: General Help |
| | | F8: Previous Values |
| > Board Information | | F9: Optimized Default |
| | | F10: Save & Exit |
| System Date | [Wed 12/07/2022] | ESC: Exit |
| System Time | [16:28:59] | |
| Access Level | Administrator | |

### 7.2.1 BIOS Information

| BIOS Item | Options | Description |
|---|---|---|
| BIOS Vendor | **Info-only.**<br>American Megatrends | Display vendor name of system BIOS. |
| BIOS Version | **Info-only.**<br>x.yy.zz | Display version of booting BIOS. |
| Build Date | **Info-only.**<br>MM/DD/YYYY | It shows the date that BIOS was built. |
| MRC Version | **Info-only.**<br>w.x.y.z | Display the revision of MRC code which is implemented in BIOS. |
| GOP Version | **Info-only.**<br>x.y.zzzz | *GOP Version:* When video option ROM is set to "UEFI Only", it will show up. |


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

| | | |
|---|---|---|
| ME FW Version | **Info-only.**<br>ww.x.yy.zzzz | Display the version of Intel manageability firmware which is implemented in BIOS. |
| BIOS Boot Source | **Info-only.**<br>Primary BIOS/Backup BIOS | It shows which BIOS flash boots the system.<br>*Primary BIOS:* usually means that boots from SPI0<br>*Backup BIOS:* usually means that boots from SPI1 |

### 7.2.2 System Information

| BIOS Item | Options | Description |
|---|---|---|
| Project Name | **Info-only.** | It shows the project name. |
| CPU Board Version | **Info-only.**<br>A1/A2/A3/… | It shows the CPU board HW version. |
| CPU Brand String | **Info-only.**<br>Intel(R) Core, … | It shows what CPU is booting the system. |
| CPU Frequency | **Info-only.**<br>XXXX MHz | It shows CPU's frequency. |
| Total Memory | **Info-only.**<br>XXXX MB (DDRx) | It shows total memory size used on the motherboard and memory type. |
| Memory Frequency | **Info-only.**<br>XXXX MHz | It shows memory's frequency. |
| PCH SKU | **Info-only.**<br>QMxx | It shows what PCH SKU is designed on motherboard. |

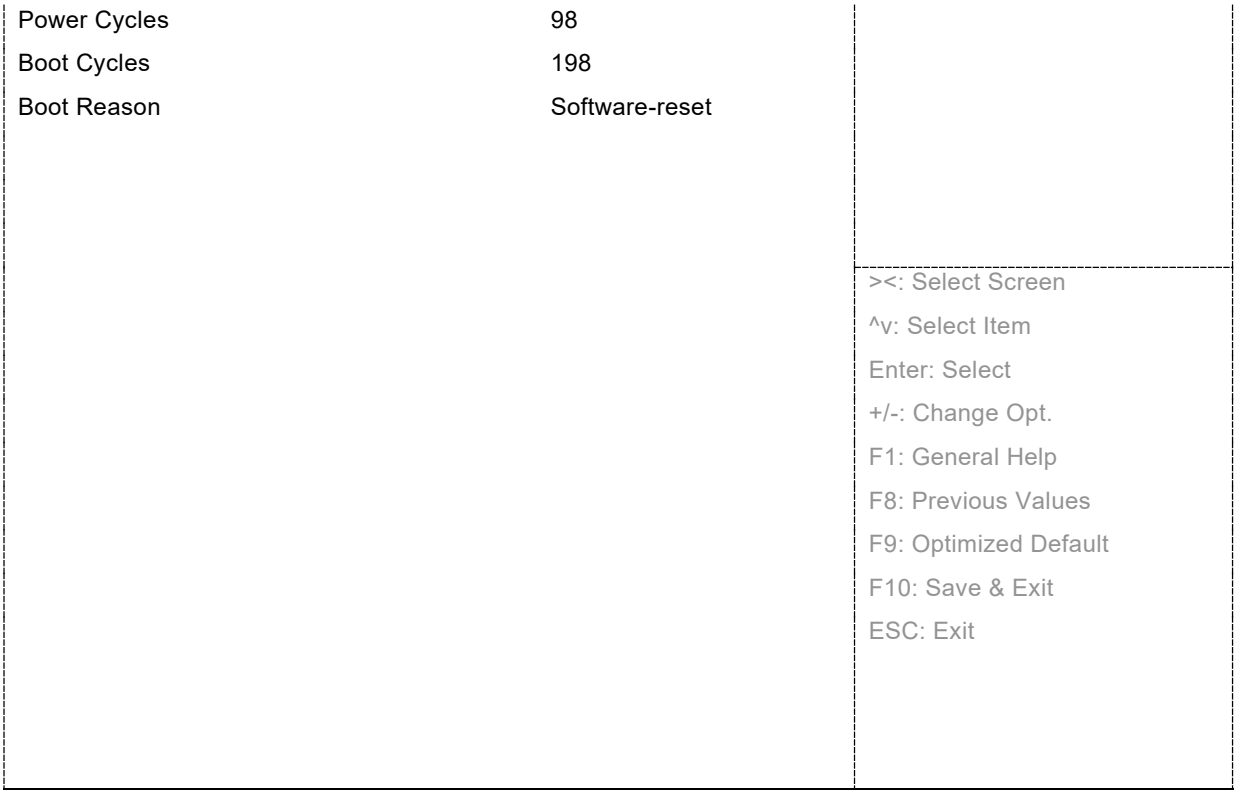
| BIOS Item | Options | Description |
|---|---|---|
| System Date | MM/DD/YYYY | For configuring/showing system date. When setting the Date, use <Tab> key to switch between Date elements. |
| System Time | HH:MM:SS | For configuring/showing system time. When setting the Time, use <Tab> key to switch between Time elements. |
| Access Level | **Info-only.**<br>Administrator/User | It shows what access level is used to enter BIOS setup menu. |

#### 7.2.2.1 Board Information

Main

| | | |
|---|---|---|
| Board Information | | |
| Serial Number | | |
| Manufacturing Date | | |
| Last Repair Date | | |
| MAC ID | | |
| Total Runtime | 12h 51m | |
| Current Runtime | 0h 01m 29s | |


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

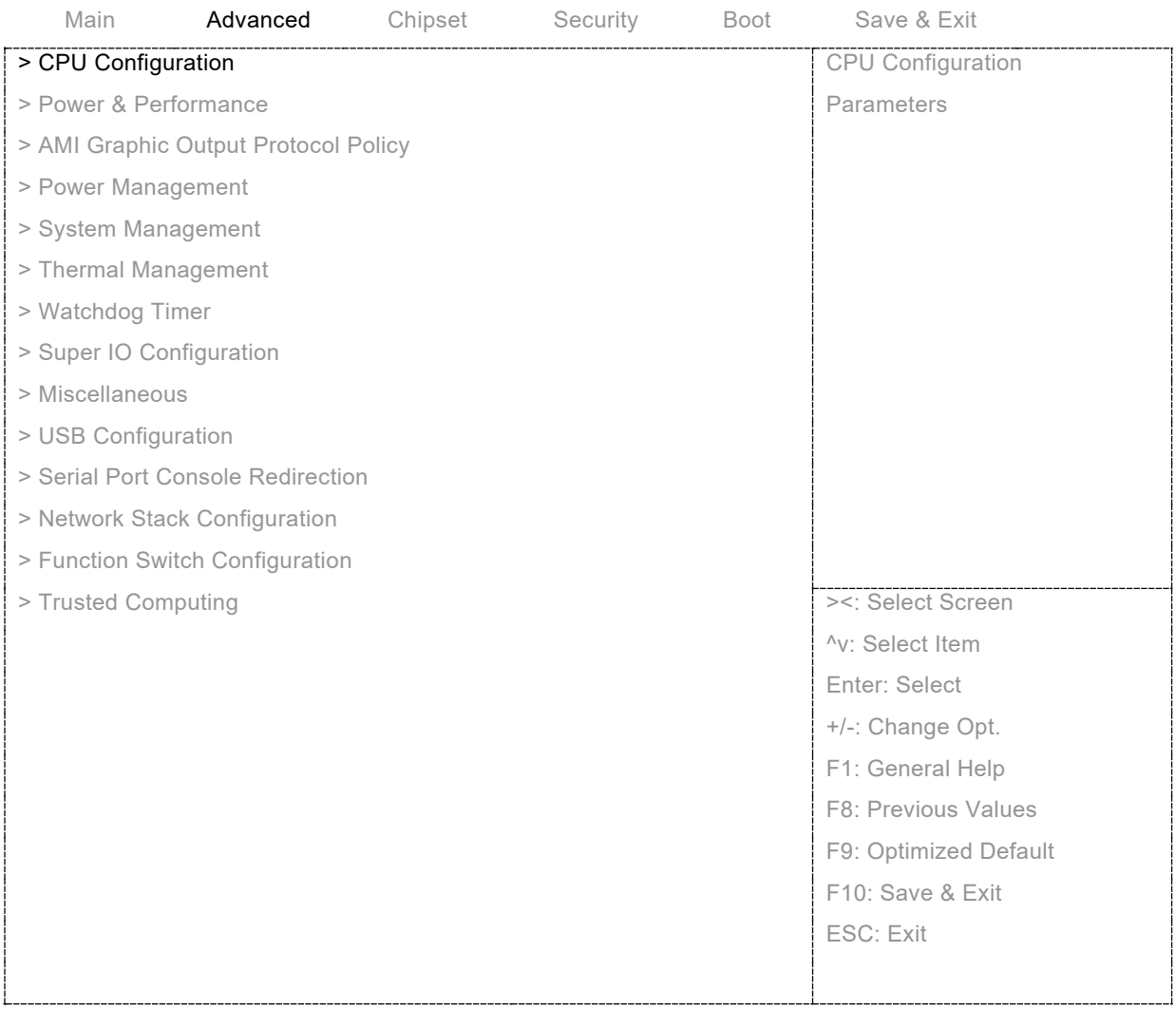



| BIOS Item | Options | Description |
|---|---|---|
| Serial Number | **Info-only.** | Display board's serial number. |
| Manufacturing Date | **Info-only.** | Display manufacturing date. |
| Last Repair Date | **Info-only.** | Display Last Repair Date. |
| MAC ID | **Info-only.** | Shows onboard Ethernet's MAC ID. |
| Total Runtime | **Info-only.** | The returned value specifies the total time in minutes the system is running in S0 state. |
| Current Runtime | **Info-only.** | The returned value specifies the time in seconds the system is running in S0 state.<br>This counter is cleared when the system is removed from the external power supply. |
| Power Cycle | **Info-only.** | The returned value specifies the number of times the external power supply has been shut down. |
| Boot Cycles | **Info-only.** | The boot cycle is increased after a HW or SW reset or after a successful power-up. |
| Boot Reason | **Info-only.** | The boot reason is the event which causes the reboot of the system. |


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

## 7.3 Advanced Menu

This menu contains the settings for most of the user interfaces in the system.




| BIOS Item | Options | Description |
|---|---|---|
| CPU Configuration | **Submenu** | For configuring CPU features/functions. |
| Power & Performance | **Submenu** | For Power & Performance Options |
| AMI Graphic Output Protocol Policy | **Submenu** | User Select Monitor Output by Graphic Output Protocol |
| Power Management | **Submenu** | For Power Management |
| System Management | **Submenu** | ADLINK SEMA Information |
| Thermal Management | **Submenu** | For Thermal Management |
| Watchdog Timer | **Submenu** | For configuring Watchdog Timer parameter |
| Super IO Configuration | **Submenu** | Set Parameters of Super IO device. |
| Miscellaneous | **Submenu** | For Miscellaneous Device |
| USB Configuration | **Submenu** | For USB Configuration setting. |
| Serial Port Console Redirection | **Submenu** | Set Parameters of Serial Console Redirection. |
| Network Stack Configuration | **Submenu** | Enabled/Disable Network Stack |
| Function Switch Configuration | **Submenu** | For SW control VGA/LAN/SATA1/SATA2/COM1/COM2 |


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

| | | |
|---|---|---|
| | | output path or settings |
| Trusted Computing | **Submenu** | For TPM related settings |

### 7.3.1 CPU Configuration

Advanced

| | | |
|---|---|---|
| CPU Configuration | | |
| Type | Intel Atom(R) x6413E Processor @ 1.50GHz | |
| ID | 0x90661 | |
| Speed | 1500 MHz | |
| Stepping | B0 | |
| L1 Data Cache | 32 KB x 4 | |
| L1 Instruction Cache | 32 KB x 4 | |
| L2 Cache | 1536 KB x 4 | |
| L3 Cache | 4 MB | |
| L4 Cache | N/A | |
| VMX | Supported | |
| SMX/TXT | Not Supported | >: Select Screen |
| | | ^v: Select Item |
| Intel (VMX) Virtualization Technology | [Enabled] | Enter: Select |
| Active Processor Cores | [All] | +/-: Change Opt. |
| | | F1: General Help |
| | | F8: Previous Values |
| | | F9: Optimized Default |
| | | F10: Save & Exit |
| | | ESC: Exit |

| BIOS Item | Options | Description |
|---|---|---|
| Intel (VMX) Virtualization Technology | **Enabled**<br>Disabled | When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology. |
| Active Processor Cores | **All**<br>1<br>2<br>3 | Number of cores to enable in each processor package. |


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

### 7.3.2 Power & Performance

Advanced

| | |
|---|---|
| > CPU - Power Management Control<br>> GT - Power Management Control | |
| | ><: Select Screen<br>^v: Select Item<br>Enter: Select<br>+/-: Change Opt.<br>F1: General Help<br>F8: Previous Values<br>F9: Optimized Default<br>F10: Save & Exit<br>ESC: Exit |

| BIOS Item | Options | Description |
|---|---|---|
| CPU - Power Management Control | **Submenu** | CPU - Power Management Control Options |
| GT - Power Management Control | **Submenu** | GT - Power Management Control Options |

#### 7.3.2.1 Power & Performance > CPU – Power Management Control

Advanced

| | | |
|---|---|---|
| CPU – Power Management Control | | |
| P0 Fused Max Core Ration | N/A | |
| P1 Fused Max Core Ration | N/A | |
| P2 Fused Max Core Ration | N/A | |
| P3 Fused Max Core Ration | N/A | |
| Boot performance mode | [Max Non-Turbo Performance] | |
| Intel® SpeedStep™ | [Enabled] | |



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

| | | |
|---|---|---|
| Race to Halt(RTH) | [Enabled] | |
| Intel® Speed Shift Technology | [Enabled] | |
| HwP Atuonomous EPP Grouping | [Enabled] | |
| EPB override over PECI | [Disabled] | |
| HwP Fast MSR Support | [Enabled] | |
| HDC Control | [Enabled] | |
| Turbo Mode | [Enabled] | |
| > View/Configure Turbo Options | | |
| > CPU VR settings | | ><: Select Screen |
| Platform PL1 Enable | [Disabled] | ^v: Select Item |
| Platform PL2 Enable | [Disabled] | Enter: Select |
| Power Limit 4 Override | [Disabled] | +/-: Change Opt. |
| C states | [Enabled] | F1: General Help |
| Enhanced C-states | [Enabled] | F8: Previous Values |
| C-State Auto Demotion | [C1] | F9: Optimized Default |
| C-state Un-demotion | [C1] | F10: Save & Exit |
| Package C-state Demotion | [Enabled] | ESC: Exit |
| Package C-state Un-demotion | [Enabled] | |
| CState Pre-Wake | [Enabled] | |
| IO MWAIT Redirection | [Disabled] | |
| Package C State Limit | [Auto] | |
| C6/C7 Short Latency Control(MSR 0x60B) | | |
| Time Unit | [1024 ns] | |
| Latency | 0 | |
| C6/C7 Short Latency Control(MSR 0x60C) | | |
| Time Unit | [1024 ns] | |
| Latency | 0 | |
| C8 Short Latency Control(MSR 0x633) | | |
| Time Unit | [1024 ns] | |
| Latency | 0 | |
| C9 Short Latency Control(MSR 0x634) | | |
| Time Unit | [1024 ns] | |
| Latency | 0 | |
| C10 Short Latency Control(MSR 0x635) | | |
| Time Unit | [1024 ns] | |
| Latency | 0 | |
| Thermal Monitor | [Enabled] | |
| Interrupt Redirection Mode Selection | [Fixed Priority] | |
| Timed MWAIT | [Disabled] | |
| > Custom P-state Table | | |
| EC Turbo Control Mode | [Disabled] | |
| Energy Performance Gain | [Disabled] | |
| EPG DIMM Idd3N | 26 | |


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

| | | |
|---|---|---|
| EPG DIMM Idd3P<br>> Power Limit 3 Settings<br>> CPU Lock Configuration | 11 | |

| BIOS Item | Options | Description |
|---|---|---|
| P0 Fused Max Core Ration | **Info-only** | |
| P1 Fused Max Core Ration | **Info-only** | |
| P2 Fused Max Core Ration | **Info-only** | |
| P3 Fused Max Core Ration | **Info-only** | |
| Boot performance mode | Max Battery<br>**Max Non-Turbo Performance**<br>Turbo Performance | Select the performance state that the BIOS will set starting from reset vector. |
| Intel® SpeedStep™ | Disabled<br>**Enabled** | Allows more than two frequency ranges to be supported. |
| Race to Halt(RTH) | Disabled<br>**Enabled** | Enable/Disable Race To Halt feature. RTH will dynamically increase CPU frequency in order to enter pkg C-state faster to reduce overall power. (RTH is controlled through MSR 1FV bit 20) |
| Intel® Speed Shift Technology | Disabled<br>**Enabled** | Enable/Disable Intel® Speed Shift Technology support. Enabling will expose the CPPCv2 interface to allow for hardware controlled P-states. |
| HwP Atuonomous EPP Grouping | Disabled<br>**Enabled** | Enable EPP grouping (default Bit 29=0, command x11) Autonomous will request the same values for all cores with same EPP. Disable EPP grouping (Bit 29 = 1, command 0x11) autonomous will not necessarily request same values for all cores with same EPP. |
| EPB override over PECI | **Disabled**<br>Enabled | Enable/Disable EPB override over PECI. Enable by sending pcode command 0x2b, subcommand 0x3 to 1. This will allow OOB EPB PECI override control. |
| HwP Fast MSR Support | Disabled<br>**Enabled** | Enable/Disable HwP Fast MSR Support for IA32_HWP_REQUEST MSR. |
| HDC Control | Disabled<br>**Enabled** | This option allows HDC configuration.<br>Disabled: Disable HDC<br>Enabled: Can be enabled by OS if OS native support is available. |
| Turbo Mode | Disabled<br>**Enabled** | Enable/Disable processor Turbo Mode (requires EMTTM enabled too). AUTO means enabled. |
| >View/Configure Turbo Options | **Submenu** | |
| > CPU VR settings | **Submenu** | |
| Platform PL1 Enable | **Disabled**<br>Enabled | Enable/Disable Platform Power Limit 1 programming. If this option is enabled, it activates the PL1 value to be used by the processor to limit the average power of given time window. |


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

| | | |
|---|---|---|
| Platform PL2 Enable | **Disabled**<br>Enabled | Enable/Disable Platform Power Limit 2 programming. If this option is disabled, BIOS will program the default values for Platform Power Limit 2. |
| Power Limit 4 Override | **Disabled**<br>Enabled | Enable/Disable Power Limit 4 override. If this option is disabled, BIOS will leave the default values for Power Limit 4. |
| C states | Disabled<br>**Enabled** | Enable/Disable CPU Power Management. Allows CPU to go to C states when it's not 100% utilized. |
| Enhanced C-states | Disabled<br>**Enabled** | Enable/Disable C1E. When enabled, CPU will switch to minimum speed when all cores enter C-State |
| C-State Auto Demotion | Disabled<br>**C1** | Configure C-State Auto Demotion |
| C-state Un-demotion | Disabled<br>**C1** | Configure C-State Un-demotion |
| Package C-state Demotion | Disabled<br>**Enabled** | Package C-State Demotion |
| Package C-state Un-demotion | Disabled<br>**Enabled** | Package C-State Un-demotion |
| CState Pre-Wake | Disabled<br>**Enabled** | Disable – Sets bit 30 of POWER_CTL MSR(0x1FC) to 1 to disable the Cstate Pre-Wake |
| IO MWAIT Redirection | **Disabled**<br>Enabled | When set, will map IO_read instructions sent to IO refisters PMG_IO_BASE_ADDRBASE+offset to MWAIT(offset) |
| Package C State Limit | C0/C1<br>C2<br>C3<br>C6<br>C7<br>C7S<br>C8<br>C9<br>C10<br>Cpu Default<br>**Auto** | Maximum Package C state Limit Setting. Cpu Default: Leaves to Factory default value. Auto: Initializes to deepest available package C State Limit. |
| C6/C7 Short Latency Control(MSR 0x60B) | **Info-only** | |
| Time Unit | 1 ns<br>32 ns<br>**1024 ns**<br>32768 ns<br>1048576 ns<br>33554432 ns | Unit of measurement for IRTL value – bits [12:10] |
| Latency | **0** | Interrupt Response Time Limit value – bits [9:0], Enter 0-1023 |


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

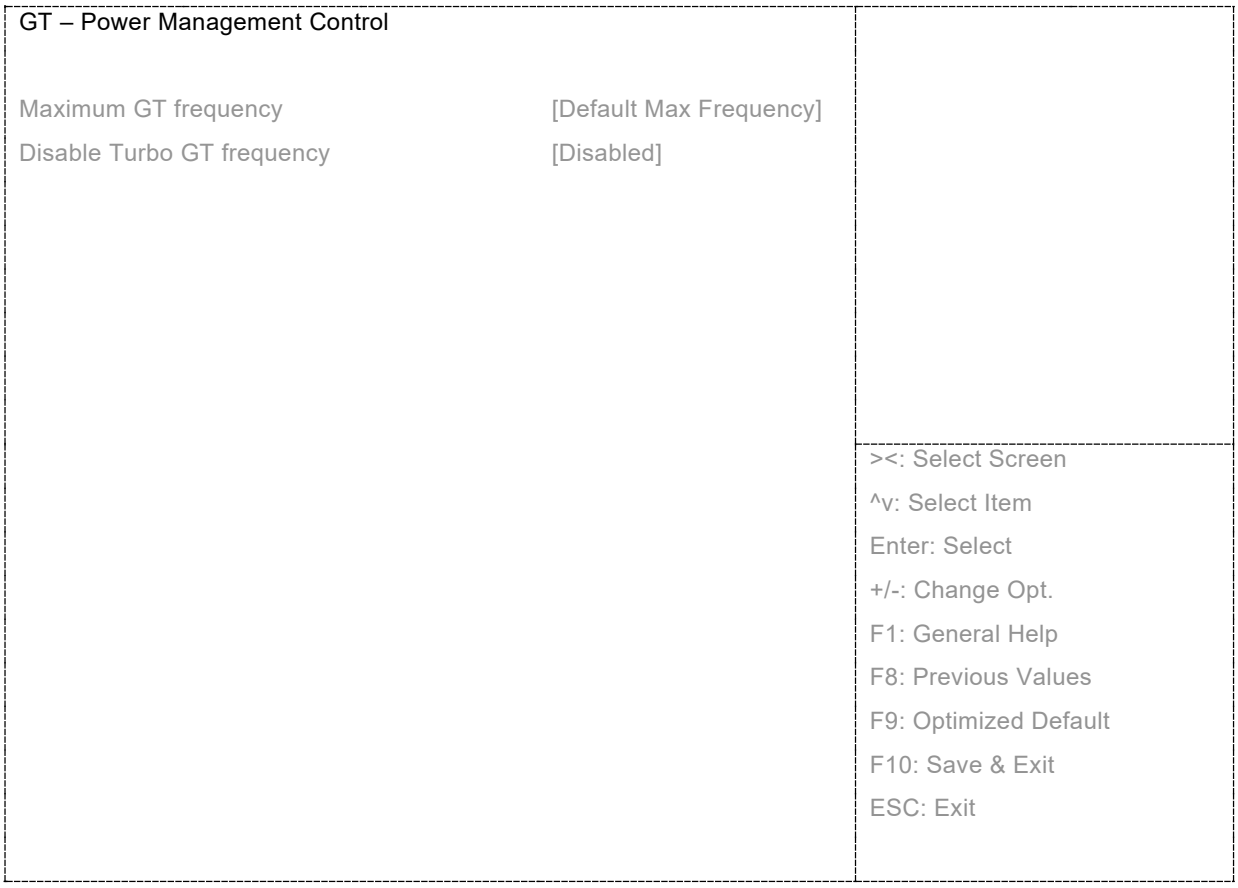
| | | |
|---|---|---|
| C6/C7 Short Latency Control(MSR 0x60C) | **Info-only** | |
| Time Unit | 1 ns<br>32 ns<br>**1024 ns**<br>32768 ns<br>1048576 ns<br>33554432 ns | Unit of measurement for IRTL value – bits [12:10] |
| Latency | **0** | Interrupt Response Time Limit value – bits [9:0], Enter 0-1023 |
| C8 Short Latency Control(MSR 0x633) | **Info-only** | |
| Time Unit | 1 ns<br>32 ns<br>**1024 ns**<br>32768 ns<br>1048576 ns<br>33554432 ns | Unit of measurement for IRTL value – bits [12:10] |
| Latency | **0** | Interrupt Response Time Limit value – bits [9:0], Enter 0-1023 |
| C9 Short Latency Control(MSR 0x634) | **Info-only** | |
| Time Unit | 1 ns<br>32 ns<br>**1024 ns**<br>32768 ns<br>1048576 ns<br>33554432 ns | Unit of measurement for IRTL value – bits [12:10] |
| Latency | **0** | Interrupt Response Time Limit value – bits [9:0], Enter 0-1023 |
| C10 Short Latency Control(MSR 0x635) | **Info-only** | |
| Time Unit | 1 ns<br>32 ns<br>**1024 ns**<br>32768 ns<br>1048576 ns<br>33554432 ns | Unit of measurement for IRTL value – bits [12:10] |
| Latency | **0** | Interrupt Response Time Limit value – bits [9:0], Enter 0-1023 |
| Thermal Monitor | Disabled<br>**Enabled** | Enable/Disable Thermal Monitor |
| Interrupt Redirection Mode Selection | **Fixed Priority**<br>Round robin<br>Hash Vector<br>No Change | Interrupt Redirection Mode Select for Logical Interrupts |


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

| | | |
|---|---|---|
| Timed MWAIT | **Disabled**<br>Enabled | Enable/Disable Timed MWAIT Support |
| > Custom P-state Table | **Submenu** | |
| EC Turbo Control Mode | **Disabled**<br>Enabled | Enable/Disable EC Turbo Control mode |
| Energy Performance Gain | **Disabled**<br>Enabled | Enable/Disable Energy Performance Gain. |
| EPG DIMM Idd3N | **Info-only** | |
| EPG DIMM Idd3P | **Info-only** | |
| > Power Limit 3 Settings | **Info-only** | |
| > CPU Lock Configuration | **Submenu** | |

### 7.3.2.2 Power & Performance > GT – Power Management Control

Advanced




| BIOS Item | Options | Description |
|---|---|---|
| Maximum GT frequency | **Default Max Frequency**<br>100Mhz<br>150Mhz<br>…….<br>1150Mhz<br>1200Mhz | Maximum GT frequency limited by the user. Choose between 200Mhz (RPN) and 750Mhz (RP0). Value beyond the range will be clipped to min/max supported by SKU. |


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

| | | |
|---|---|---|
| Disable Turbo GT frequency | Enabled<br>**Disabled** | Enabled: Disables Turbo GT frequency. Disabled: GT frequency is not limited. |

### 7.3.3 AMI Graphic Output Protocol Policy

Advanced

| | |
|---|---|
| Intel® Graphics Controller<br>Intel® GOP Driver [18.0.1031]<br>Output Select [DP1[ACTIVE]] | ><: Select Screen<br>^v: Select Item<br>Enter: Select<br>+/-: Change Opt.<br>F1: General Help<br>F8: Previous Values<br>F9: Optimized Default<br>F10: Save & Exit<br>ESC: Exit |

| BIOS Item | Options | Description |
|---|---|---|
| Intel® Graphics Controller | **Info-only** | |
| Output Select | **[DP1[ACTIVE]]** | Output Interface |

### 7.3.4 Power Management

Advanced

| | |
|---|---|
| Power Management<br>Enable ACPI Auto Configuration [Disabled]<br>> Power Consumption | ><: Select Screen |



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

| | |
|---|---|
| | ^v: Select Item<br>Enter: Select<br>+/-: Change Opt.<br>F1: General Help<br>F8: Previous Values<br>F9: Optimized Default<br>F10: Save & Exit<br>ESC: Exit |

| BIOS Item | Options | Description |
|---|---|---|
| Enable ACPI Auto Configuration | **Disabled**<br>Enabled | Enable/disable BIOS ACPI auto configuration function. |
| Power Consumption | **Submenu** | |

### 7.3.4.1 Power Management > Power Consumption

Advanced

| | | |
|---|---|---|
| Power Consumption | | |
| Current Input Current | XXX | |
| Current Input Power | XXX | |
| | | |
| RTC | XXX | |
| 5VSB | XXX | |
| VIN | XXX | |
| 3.3V | XXX | |
| VMEM | XXX | |
| 3.3VSB | XXX | |
| VCORE | XXX | |
| | | ><: Select Screen<br>^v: Select Item<br>Enter: Select<br>+/-: Change Opt.<br>F1: General Help<br>F8: Previous Values<br>F9: Optimized Default<br>F10: Save & Exit<br>ESC: Exit |


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

| BIOS Item | Options | Description |
|---|---|---|
| Power Consumption | **Info-only** | Indicate this is the page to show power consumption on system. |
| Current Input Current | **Read only** | Display current input current. |
| Current Input Power | **Read only** | Display current input power. |
| RTC | **Read only** | Display RTC voltage. |
| 5VSB | **Read only** | Display 5VSB voltage. |
| VIN | **Read only** | Display VIN voltage. |
| 3.3V | **Read only** | Display 3.3V voltage. |
| VMEM | **Read only** | Display VMEM voltage. |
| 3.3VSB | **Read only** | Display 3.3VSB voltage. |
| VCORE | **Read only** | Display VCORE voltage. |

### 7.3.5 System Management

Advanced

| | |
|---|---|
| System Management | |
| SEMA Firmware Version ADLINK XXX | |
| > Flags | |
| SEMA Supported Features | |
| Uptime & Power Cycles Counter | |
| System Restart Event | |
| 4096 Bytes User-Flash | |
| Runtime Watchdog | |
| Temperatures | |
| Voltage Monitor | |
| Power-UP Watchdog | |
| Power Monitor (Current Sense) | ><: Select Screen |
| Dual-BIOS | ^v: Select Item |
| I2C Bus 1 | Enter: Select |
| I2C Bus 2 | +/-: Change Opt. |
| I2C Bus 3 | F1: General Help |
| ACPI Thermal Trigger | F8: Previous Values |
| Other BMC | F9: Optimized Default |
| Error Log | F10: Save & Exit |
| Wake-By-BMC | ESC: Exit |
| Parameter Memory | |

| BIOS Item | Options | Description |
|---|---|---|
| System Management | **Info-only** | |



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

| | | |
|---|---|---|
| SEMA Firmware Version | **Info-only** | Display EC version |
| Flags | **Submenu** | |
| SEMA Supported Features | **Info-only** | SEMA provides many features for selection. Following reported feature is to indicate that the feature is implemented on system |
| Uptime & Power Cycles Counter | **Info-only** | If this item is shown, it means SEMA supports “Uptime & Power Cycles counter”. |
| System Restart Event | **Info-only** | If this item is shown, it means SEMA supports “System Reset Event”. |
| 4096 Bytes User-Flash | **Info-only** | If this item is shown, it means SEMA supports “4096 Bytes User-Flash”. |
| Runtime Watchdog | **Info-only** | If this item is shown, it means SEMA supports “Runtime Watchdog”. |
| Temperatures | **Info-only** | If this item is shown, it means SEMA supports “Temperature”. |
| Voltage Monitor | **Info-only** | If this item is shown, it means SEMA supports “Voltage Monitor”. |
| Power-UP Watchdog | **Info-only** | If this item is shown, it means SEMA supports “Power-up Watchdog”. |
| Power Monitor (Current Sense) | **Info-only** | If this item is shown, it means SEMA supports “Power Monitor (current sense)”. |
| Dual-BIOS | **Info-only** | If this item is shown, it means SEMA supports “Dual-BIOS”. |
| I2C Bus 1 | **Info-only** | If this item is shown, it means SEMA supports “I2C bus 1”. |
| I2C Bus 2 | **Info-only** | If this item is shown, it means SEMA supports “I2C bus 2”. |
| I2C Bus 3 | **Info-only** | If this item is shown, it means SEMA supports “I2C bus 3”. |
| ACPI Thermal Trigger | **Info-only** | If this item is shown, it means SEMA supports “ACPI Thermal Trigger”. |
| Power-up to Last State | **Info-only** | If this item is shown, it means SEMA supports “Power-up to last state”. |
| Other BMC | **Info-only** | If this item is shown, it means SEMA supports “Other BMC”. |
| Error Log | **Info-only** | If this item is shown, it means SEMA supports “Error Log”. |
| Wake-by-BMC | **Info-only** | If this item is shown, it means SEMA supports “Wake-by-BMC”. |
| Parameter Memory | **Info-only** | If this item is shown, it means SEMA supports “Parameter Memory”. |


LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

### 7.3.5.1 System Management > SEMA Features

Advanced

| | |
|---|---|
| SEMA Supported Features | |
| Uptime & Power Cycles Counter | |
| System Restart Event | |
| 512 Bytes User-Flash/1024 Bytes User-Flash | |
| Watchdog | |
| Temperatures | |
| Voltage Monitor | |
| Storage of failure reason | |
| Bootloader timeout programmable | |
| Display Backlight control | |
| Power-Up Watchdog | |
| Power monitor (current sense) | |
| Boot Counter | |
| 5V Input-Voltage / 12V Input-Voltage / 3V Input-Voltage | ><: Select Screen |
| 8mR Rsense for Input-Voltage/4mR Rsense for Input-Voltage | ^v: Select Item |
| Dual-BIOS | Enter: Select |
| I2C bus 1 | +/-: Change Opt. |
| I2C bus 2 | F1: General Help |
| Programmable CPU fan | F8: Previous Values |
| Programmable System fan | F9: Optimized Default |
| AT/ATX mode | F10: Save & Exit |
| ACPI Thermal Trigger | ESC: Exit |
| Power-Up to last state | |
| Backlight restore | |
| DTS register available | |
| DTS offset registers programmable | |

| BIOS Item | Options | Description |
|---|---|---|
| SEMA Supported Features | **Info-only** | SEMA provides many features for selection. Following reported feature is to indicate that the feature is implemented on system. |
| Uptime & Power Cycles Counter | **Info-only** | If this item is shown, it means SEMA supports “Uptime & Power Cycles counter”. |
| System Reset Event | **Info-only** | If this item is shown, it means SEMA supports “System Reset Event”. |
| User-Flash size | **Info-only** | It will show 512 bytes or 1024 bytes depends on the design. |
| Watchdog | **Info-only** | If this item is shown, it means SEMA supports “Watchdog”. |
| Temperatures | **Info-only** | If this item is shown, it means SEMA supports “Temperature”. |
| Voltage Monitor | **Info-only** | If this item is shown, it means SEMA supports “Voltage Monitor”. |


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

| | | |
|---|---|---|
| Storage of failure reason | **Info-only** | If this item is shown, it means SEMA supports “Storage of failure reason”. |
| Bootloader timeout programmable | **Info-only** | If this item is shown, it means SEMA supports “Bootloader timeout programmable”. |
| Display Backlight control | **Info-only** | If this item is shown, it means SEMA supports “Display Backlight control”. |
| Power-up Watchdog | **Info-only** | If this item is shown, it means SEMA supports “Power-up Watchdog”. |
| Power Monitor (current sense) | **Info-only** | If this item is shown, it means SEMA supports “Power Monitor (current sense)”. |
| Boot Counter | **Info-only** | If this item is shown, it means SEMA supports “Boot Counter”. |
| Input Voltage | **Info-only** | It will show 5V, 12V or 3V depends on the design. |
| Rsense of Power Monitor | **Info-only** | It will show 8mR or 4mR depends on the design. |
| Dual BIOS | **Info-only** | If this item is shown, it means SEMA supports “dual BIOS”. |
| I2C bus 1 | **Info-only** | If this item is shown, it means SEMA supports “I2C bus 1”. |
| I2C bus 2 | **Info-only** | If this item is shown, it means SEMA supports “I2C bus 2”. |
| AT/ATX mode | **Info-only** | If this item is shown, it means SEMA supports “AT/ATX mode”. |
| ACPI Thermal Trigger | **Info-only** | If this item is shown, it means SEMA supports “ACPI Thermal Trigger”. |
| Power-up to last state | **Info-only** | If this item is shown, it means SEMA supports “Power-up to last state”. |
| Backlight restore | **Info-only** | If this item is shown, it means SEMA supports “Backlight restore”. |
| DTS register | **Info-only** | If this item is shown, it means SEMA supports “DTS register”. |
| DTS offset registers | **Info-only** | If this item is shown, it means SEMA supports “DTS offset registers”. |
| GPIO | **Info-only** | If this item is shown, it means SEMA supports “GPIO”. |
| I2C bus 3 | **Info-only** | If this item is shown, it means SEMA supports “I2C bus 3”. |
| I2C bus 4 | **Info-only** | If this item is shown, it means SEMA supports “I2C bus 4”. |


LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

### 7.3.5.2 System Management > Flags

Advanced

| Flags | | |
|---|---|---|
| BMC Flags | 0x00 | |
| BIOS Select | Standard BIOS | |
| ATX/AT-Mode | AT Mode | |
| | | ><: Select Screen |
| | | ^v: Select Item |
| | | Enter: Select |
| | | +/-: Change Opt. |
| | | F1: General Help |
| | | F8: Previous Values |
| | | F9: Optimized Default |
| | | F10: Save & Exit |
| | | ESC: Exit |

| BIOS Item | Options | Description |
|---|---|---|
| Flags | **Info-only** | |
| Flags | **Read only** | Show current BMC settings. |
| BIOS Select | **Read only** | Display current boot BIOS ROM chip. |
| ATX/AT-Mode | **Read only** | Display current power mode setting, AT or ATX mode. |



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

## 7.3.6 Thermal Management

Advanced

| | | |
|---|---|---|
| Temperature and Fan Speed | | |
| Critical Trip Point | [Disabled] | |
| Passive Cooling Trip Point | [Disabled] | |
| Active Cooling Trip Point | [Refer to BMC] | |
| Watch ACPI Event Shutdown | [Disabled] | |
| > Temperatures and Fan Speed | | |
| | | ><: Select Screen<br>^v: Select Item<br>Enter: Select<br>+/-: Change Opt.<br>F1: General Help<br>F8: Previous Values<br>F9: Optimized Default<br>F10: Save & Exit<br>ESC: Exit |

| BIOS Item | Options | Description |
|---|---|---|
| Thermal Management | **Info-only** | |
| Critical Trip Point | **Disabled**<br>80 C<br>90 C<br>95 C | This value is the temperature threshold of the critical trip point. |
| Passive Cooling Trip Point | **Disabled**<br>70 C<br>80 C<br>90 C | This value is the temperature threshold of the passive cooling trip point. |
| Active Cooling Trip Point | 40 C<br>50 C<br>60 C<br>70 C<br>**Refer to BMC** | This value is the temperature threshold of the active cooling trip point. |
| Watch ACPI Event Shutdown | **Disabled**<br>Enabled | Watchdog ACPI Event Shutdown Enabled/Disabled |
| Temperatures and Fan Speed | **Submenu** | Temperatures and Fan Speed |


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

### 7.3.6.1 Submenu: Thermal Management > Temperatures and Fan Speed

Advanced

| | | |
|---|---|---|
| Smart Fan | | |
| CPU Temperature | | |
| Current | 37C | |
| Startup | 35C | |
| Min | 24C | |
| Max | 61C | |
| Board Temperatures | | |
| Current | 30C | |
| Startup | 22C | |
| Min | 22C | |
| Max | 46C | |
| CPU Fan Speed | 0RPM | ><: Select Screen |
| | | ^v: Select Item |
| > Smart Fan | | Enter: Select |
| | | +/-: Change Opt. |
| | | F1: General Help |
| | | F8: Previous Values |
| | | F9: Optimized Default |
| | | F10: Save & Exit |
| | | ESC: Exit |

| BIOS Item | Options | Description |
|---|---|---|
| Temperatures and Fan Speed | **Info-only** | |
| CPU Temperatures | **Info-only** | |
| Current | **Read only** | Show current CPU temperature gotten from sensor. |
| Startup | **Read only** | Show the CPU temperature at system power up. |
| Min | **Read only** | Show the minimum CPU temperature after system boot. |
| Max | **Read only** | Show the maximum CPU temperature after system boot. |
| Board Temperatures | **Info-only** | |
| Current | **Read only** | Show current board temperature gotten from sensor. |
| Startup | **Read only** | Show the board temperature at system power up. |
| Min | **Read only** | Show the minimum board temperature after system boot. |
| Max | **Read only** | Show the maximum board temperature after system boot. |
| CPU Fan Speed | **Read only** | Show CPU fan operating speed (RPM). |



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

| | | |
|---|---|---|
| Smart Fan | **Submenu** | |

### 7.3.7 Watchdog Timer

Advanced

| | |
|---|---|
| Watchdog Timer<br>Power-Up Watchdog [Disabled]<br>ATTENTION: Pressing F12 during start up disables the Power Up Watchdog.<br><br>Runtime Watchdog [Disabled] | ><: Select Screen<br>^v: Select Item<br>Enter: Select<br>+/-: Change Opt.<br>F1: General Help<br>F8: Previous Values<br>F9: Optimized Default<br>F10: Save & Exit<br>ESC: Exit |

| BIOS Item | Options | Description |
|---|---|---|
| Watchdog Timer | **Info-only** | |
| Power-Up Watchdog | Enabled<br>**Disabled** | The Power-Up Watchdog resets the system after a certain amount of time after power-up.<br>Pressing F12 key during startup will disable the power-up watchdog timer. |
| RunTime Watchdog | Enabled<br>**Disabled** | The RunTime Watchdog resets the system after a certain amount of time after power up. |


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

### 7.3.8 Super IO Configuration

Advanced

| | |
|---|---|
| Super IO Configuration<br><br>> Nct6126dSec Super IO Configuration | |
| | ><: Select Screen<br>^v: Select Item<br>Enter: Select<br>+/-: Change Opt.<br>F1: General Help<br>F8: Previous Values<br>F9: Optimized Default<br>F10: Save & Exit<br>ESC: Exit |

#### 7.3.8.1 Super IO Configuration > Nct6126dSec Super IO Configuration

Advanced

| | |
|---|---|
| Nct6126dSec Super IO Configuration<br><br>Super IO Chip Nct6126dSec<br>> Serial Port 1 Configuration<br>> Serial Port 2 Configuration<br>> Serial Port 3 Configuration | |
| | ><: Select Screen<br>^v: Select Item<br>Enter: Select<br>+/-: Change Opt.<br>F1: General Help<br>F8: Previous Values<br>F9: Optimized Default<br>F10: Save & Exit<br>ESC: Exit |



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

7.3.8.1.1 Super IO Configuration > Nct6126dSec Super IO Configuration > Serial Port 1 Configuration

Advanced

| Serial Port 1 Configuration | | |
|---|---|---|
| Serial Port 1 | [Enabled] | ><: Select Screen |
| Device Settings | IO=240h; IRQ=4; | ^v: Select Item |
| Change Settings | [Auto] | Enter: Select |
| | | +/-: Change Opt. |
| | | F1: General Help |
| | | F8: Previous Values |
| | | F9: Optimized Default |
| | | F10: Save & Exit |
| | | ESC: Exit |

| BIOS Item | Options | Description |
|---|---|---|
| Serial Port 1 | Disabled<br>**Enabled** | Enable or disable serial port (COM). |
| Device Setting | **Info-only** | It will show current resource assignment of serial port (COM). |
| Change Settings | **Auto**<br>IO=240;IRQ=4;<br>IO=240;IRQ=3,4,5,6,7,10,11,12<br>IO=248;IRQ=3,4,5,6,7,10,11,12<br>IO=250;IRQ=3,4,5,6,7,10,11,12<br>IO=258;IRQ=3,4,5,6,7,10,11,12 | Select an optimal setting for Super IO device. |



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

7.3.8.1.2 Super IO Configuration > Nct6126dSec Super IO Configuration > Serial Port 2 Configuration

Advanced

| Serial Port 2 Configuration | | |
|---|---|---|
| Serial Port 2 | [Enabled] | |
| Device Settings | IO=250h; IRQ=5; | |
| Change Settings | [Auto] | |
| | | ><: Select Screen<br>^v: Select Item<br>Enter: Select<br>+/-: Change Opt.<br>F1: General Help<br>F8: Previous Values<br>F9: Optimized Default<br>F10: Save & Exit<br>ESC: Exit |

| BIOS Item | Options | Description |
|---|---|---|
| Serial Port 2 | Disabled<br>**Enabled** | Enable or disable serial port (COM). |
| Device Setting | **Info-only** | It will show current resource assignment of serial port (COM). |
| Change Settings | **Auto**<br>IO=250;IRQ=5;<br>IO=240;IRQ=3,4,5,6,7,10,11,12<br>IO=248;IRQ=3,4,5,6,7,10,11,12<br>IO=250;IRQ=3,4,5,6,7,10,11,12<br>IO=258;IRQ=3,4,5,6,7,10,11,12 | Select an optimal setting for Super IO device. |



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

7.3.8.1.3 Super IO Configuration > Nct6126dSec Super IO Configuration > Serial Port 3 Configuration

Advanced

| Serial Port 3 Configuration | | |
|---|---|---|
| Serial Port 3 | [Enabled] | ><: Select Screen |
| Device Settings | IO=258h; IRQ=7; | ^v: Select Item |
| Change Settings | [Auto] | Enter: Select |
| | | +/-: Change Opt. |
| | | F1: General Help |
| | | F8: Previous Values |
| | | F9: Optimized Default |
| | | F10: Save & Exit |
| | | ESC: Exit |

| BIOS Item | Options | Description |
|---|---|---|
| Serial Port 3 | Disabled<br>**Enabled** | Enable or disable serial port (COM). |
| Device Setting | **Info-only** | It will show current resource assignment of serial port (COM). |
| Change Settings | **Auto**<br>IO=258;IRQ=7;<br>IO=240;IRQ=3,4,5,6,7,10,11,12<br>IO=248;IRQ=3,4,5,6,7,10,11,12<br>IO=250;IRQ=3,4,5,6,7,10,11,12<br>IO=258;IRQ=3,4,5,6,7,10,11,12 | Select an optimal setting for Super IO device. |



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

### 7.3.9 Miscellaneous

Advanced

| Miscellaneous | | |
|---|---|---|
| Power Supply Unit | [ATX Mode] | |
| I2C Speed Control | [100 Kbps] | |
| Smart Battery Function | [Disabled] | |
| SD Card/GPIO Mode | [GPIO] | |
| SMBUS Select | [From PCH] | |
| | | ><: Select Screen<br>^v: Select Item<br>Enter: Select<br>+/-: Change Opt.<br>F1: General Help<br>F8: Previous Values<br>F9: Optimized Default<br>F10: Save & Exit<br>ESC: Exit |

| BIOS Item | Options | Description |
|---|---|---|
| Power Supply Unit | Emulate AT mode<br>**ATX Mode** | Select Emulation AT or ATX function. If this option set to [Emulation AT], BIOS will report no suspend functions (S3 & S4) to ACPI OS. In windows XP, it will make OS show shutdown message during system shutdown. ATX: OS will turn off system power when shutdown. |
| I2C Speed Control | **100 Kbps**<br>400 Kbps | I2C Speed Control |
| Smart Battery Function | **Disabled**<br>Enabled<br>Auto | Enable/Disable Smart Battery function. Auto: disable Smart Battery function if charger IC not be detected. |
| SD Card/GPIO Mode | **GPIO**<br>SD Card | Select SD Card or GPIO |
| SMBUS Select | **From PCH** | Select SMBUS Routine |


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

| | | |
|---|---|---|
| | From EC | |

## 7.3.10 USB Configuration

Advanced

| | | |
|---|---|---|
| USB Configuration | | |
| USB module version | 25 | |
| USB Controllers: | | |
| 1 XHCI | | |
| USB Devices: | | |
| 1 Keyboard | | |
| Legacy USB Support | [Enabled] | |
| XHCI Hand-off | [Enabled] | |
| USB Mass Storage Driver Support | [Enabled] | |
| USB hardware delays and time-outs: | | |
| USB transfer time-out | [20 sec] | |
| Device reset time-out | [20 sec] | |
| Device power-up delay | [Auto] | |
| | | ><: Select Screen<br>^v: Select Item<br>Enter: Select<br>+/-: Change Opt.<br>F1: General Help<br>F8: Previous Values<br>F9: Optimized Default<br>F10: Save & Exit<br>ESC: Exit |

| BIOS Item | Options | Description |
|---|---|---|
| USB module version | **Info-only** | |
| USB Controllers | **Info-only** | |
| USB Devices | **Info-only** | |
| Legacy USB Support | **Enabled**<br>Disabled<br>Auto | 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. |
| XHCI Hand-off | **Enabled**<br>Disabled | This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver. |


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

| | | |
|---|---|---|
| USB Mass Storage Driver Support | Disabled<br>**Enabled** | Enable/Disable USB Mass Storage Driver Support. |
| USB transfer time-out | 1 sec<br>5 sec<br>10 sec<br>**20 sec** | The time-out value for Control, Bulk, and Interrupt transfers. |
| Device reset time-out | 10 sec<br>**20 sec**<br>30 sec<br>40 sec | USB mass storage device Start Unit command time-out. |
| Device power-up delay | **Auto**<br>Manual | Maximum time the device will take before it properly reports itself to the Host Controller. 'Auto' uses default value: for a Root port it is 100 ms, for a Hub port the delay is taken form Hub descriptor. |

### 7.3.11 Serial Console Redirection

Advanced

| | | |
|---|---|---|
| Serial Console Redirection | | |
| COM0 | | |
| Console Redirection | [Enabled] | |
| > Console Redirection Settings | | |
| COM1 | | |
| Console Redirection | [Disabled] | |
| > Console Redirection Settings | | |
| COM2 | | |
| Console Redirection | [Disabled] | |
| > Console Redirection Settings | | |
| COM3 (Disabled) | | ><: Select Screen |
| Console Redirection | Port is Disabled | ^v: Select Item |
| > Console Redirection Settings | | Enter: Select |
| | | +/-: Change Opt. |
| | | F1: General Help |
| | | F8: Previous Values |
| | | F9: Optimized Default |
| | | F10: Save & Exit |
| | | ESC: Exit |



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

| BIOS Item | Options | Description |
|---|---|---|
| Console Redirection | **Disabled**<br>Enabled | To enable or disable console redirection of COMx. |
| Console Redirection Settings | **Submenu** | The settings specify how the host computer and the remote computer (which the user is using) will exchange data. Both computers should have the same or compatible settings. |

### 7.3.11.1 Serial Console Redirection > Console Redirection Settings

Advanced

| | | |
|---|---|---|
| COMx | | Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set. VT100+: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more |
| Console Redirection Settings | | |
| Terminal Type | [ANSI] | |
| Bits per second | [115200] | |
| Data Bits | [8] | |
| Parity | [None] | |
| Stop Bits | [1] | |
| Flow Control | [None] | |
| VT-UTF8 Combo Key Support | [Enabled] | |
| Recorder Mode | [Disabled] | |
| Resolution 100x31 | [Disabled] | |
| Putty KeyPad | [VT100] | ><: Select Screen<br>^v: Select Item<br>Enter: Select<br>+/-: Change Opt.<br>F1: General Help<br>F8: Previous Values<br>F9: Optimized Default<br>F10: Save & Exit<br>ESC: Exit |

| BIOS Item | Options | Description |
|---|---|---|
| Terminal Type | **VT100**<br>VT100+<br>VT-UTF8<br>ANSI | Configure the type of console emulation.<br>Emulation:<br>**ANSI:** Extended ASCII char set.<br>**VT100:** ASCII char set.<br>**VT100+:** Extends VT100 to support color, function keys, etc.<br>**VT-UTF8:** Uses UTF8 encoding to map Unicode chars onto 1 or more bytes. |
| Bits per second | 9600<br>19200<br>38400 | Selects serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speed. |


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

| | | |
|---|---|---|
| | 57600<br>**115200** | |
| Data Bits | 7<br>**8** | Configure the number of data bits in each transmitted or received serial character for both serial ports. |
| Parity | **None**<br>Even<br>Odd | Configures if parity bit is generated (transmit data) or checked.<br>A parity bit can be sent with the data bits to detect some transmission errors. Even: parity bit is 0 if the num of 1's in the data bits is even. Odd: parity bit is 0 if num of 1's in the data bits is odd. Mark: parity bit is always 1. Space: Parity bit is always 0. Mark and Space Parity do not allow for error detection. They can be used as an additional data bit. |
| Stop Bits | **1**<br>2 | Configures the number of stop bits transmitted and received in each serial character for both serial ports.<br>Stop bits indicate the end of a serial data packet. (A start bit indicates the beginning). The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit. |
| Flow Control | **None**<br>Hardware<br>Software | Configures flow control for console redirection. Hardware flow control uses RTC/CTS. Software flow control uses XON/XOFF. |
| VT-UTF8 Combo Key Support | Disabled<br>**Enabled** | Enable VT-UTF8 combination key support for ANSI/VT100 terminals. |
| Recorder Mode | **Disabled**<br>Enabled | With this mode enabled only text will be sent. This is to capture terminal data. |
| Resolution 100x31 | **Disabled**<br>Enabled | Enables or disables extended terminal resolution. |
| Putty KeyPad | **VT100**<br>LINUX<br>XTERMR6<br>SCO<br>ESCN<br>VT400 | Select Function Keys and Key Pad on Putty. |

## 7.3.12 Network Stack Configuration

Advanced

| | | |
|---|---|---|
| Network Stack | [Disabled] | |
| | | ><: Select Screen<br>^v: Select Item<br>Enter: Select<br>+/-: Change Opt. |



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

| | |
|---|---|
| | F1: General Help<br>F8: Previous Values<br>F9: Optimized Default<br>F10: Save & Exit<br>ESC: Exit |

| BIOS Item | Options | Description |
|---|---|---|
| Network Stack | **Disabled**<br>Enabled | Enable/Disable UEFI Network Stack |

### 7.3.13 Function Switch Configuration

Advanced

| | | |
|---|---|---|
| VGA Switch Controller | [FRONT] | |
| LAN Switch Controller | [FRONT] | |
| SATA1 Switch Controller | [B2B1] | |
| SATA2 Switch Controller | [B2B2] | |
| COM1 Switch Controller | [RS232] | |
| COM2 Switch Controller | [RS232] | |
| COM3 Switch Controller | [RS232] | |
| | | ><: Select Screen<br>^v: Select Item<br>Enter: Select<br>+/-: Change Opt.<br>F1: General Help<br>F8: Previous Values<br>F9: Optimized Default<br>F10: Save & Exit<br>ESC: Exit |

| BIOS Item | Options | Description |
|---|---|---|
| VGA Switch Controller | [RTM]<br>**[FRONT]** | Select which VGA port to output the image. |
| LAN Switch Controller | **[FRONT]**<br>[RTM] | Select which LAN port to use. |
| SATA1 Switch Controller | **[B2B]**<br>[MSATA] | Select which function for SATA1 port. |



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

| | | |
|---|---|---|
| SATA2 Switch Controller | **[B2B]**<br>[RTM] | Select which function for SATA2 port. |
| COM1 Switch Controller | **[RS232]**<br>[RS485]<br>[RS422] | Select which function for COM1 port. |
| COM2 Switch Controller | **[RS232]**<br>[RS485]<br>[RS422] | Select which function for COM2 port. |
| COM3 Switch Controller | **[RS232]**<br>[RS485]<br>[RS422] | Select which function for COM3 port. |

### 7.3.14 Trusted Computing

Advanced

| | | |
|---|---|---|
| TPM 2.0 Device Found | | |
| Firmware Version: | 13.11 | |
| Vendor: | IFX | |
| | | |
| Security Device Support | [Enable] | |
| Active PCR banks | SHA256 | |
| Available PCR banks | SHA256 | |
| | | |
| SHA256 PCR Bank | [Enabled] | |
| | | |
| Pending operation | [None] | |
| Platform Hierarchy | [Enabled] | |
| Storage Hierarchy | [Enabled] | |
| Endorsement Hierarchy | [Enabled] | ><: Select Screen |
| Physical Presence Spec Version | [1.3] | ^v: Select Item |
| TPM 2.0 InterfaceType | [TIS] | Enter: Select |
| Device Select | [Auto] | +/-: Change Opt. |
| | | F1: General Help |
| | | F8: Previous Values |
| | | F9: Optimized Default |
| | | F10: Save & Exit |
| | | ESC: Exit |



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

| BIOS Item | Options | Description |
|---|---|---|
| Firmware Version: | **Info-only** | |
| Vendor: | **Info-only** | |
| Security Device Support | [Disable]<br>**[Enable]** | Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available. |
| Active PCR banks | **Info-only** | |
| Available PCR banks | **Info-only** | |
| SHA256 PCR Bank | [Disabled]<br>**[Enabled]** | Enable or Disable SHA256 PCR Bank |
| Pending operation | **[None]**<br>[TPM Clear] | Schedule an Operation for the Security Device. NOTE: Your Computer will reboot during restart in order to change State of Security Device. |
| Platform Hierarchy | [Disabled]<br>**[Enabled]** | Enable or Disable Platform Hierarchy |
| Storage Hierarchy | [Disabled]<br>**[Enabled]** | Enable or Disable Storage Hierarchy |
| Endorsement Hierarchy | [Disabled]<br>**[Enabled]** | Enable or Disable Endorsement Hierarchy |
| Physical Presence Spec Version | [1.2]<br>**[1.3]** | Select to Tell O.S. to support PPI Spec Version 1.2 or 1.3. Note some HCK tests might not support 1.3. |
| TPM 2.0 InterfaceType | **Info-only** | |
| Device Select | [TPM 1.2]<br>[TPM 2.0]<br>**[Auto]** | TPM 1.2 will restrict support to TPM 1.2 devices, TPM 2.0 will restrict support to TPM 2.0 devices, Auto will support both with the default set to TPM 2.0 devices if not found, TPM 1.2 devices will be enumerated |

## 7.4 Security Menu

This menu contains the settings for security in the system.

Main Advanced Chipset **Security** Boot Save & Exit

Password Description

If ONLY the Administrator's password is set, then this only limits access to Setup and is Only asked for when entering Setup.
If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the user will have Administrator rights.
The password length must be in the following range:
Minimum length 3
Maximum length 20


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

| | |
|---|---|
| | ><: Select Screen |
| Administrator Password | ^v: Select Item |
| User Password | Enter: Select |
| | +/-: Change Opt. |
| | F1: General Help |
| | F8: Previous Values |
| HDD Security Configuration | F9: Optimized Default |
| | F10: Save & Exit |
| > Secure Boot menu | ESC: Exit |

| BIOS Item | Options | Description |
|---|---|---|
| Administrator Password | **Enter to set password** | Configure/Clear Administrator Password.<br>When pressing enter, a menu will be popped up for creating new password. When password installed, press enter without inputting password, it will clear password. |
| User Password | **Enter to set password** | Configure/Clear User Password. When pressing enter, a menu will be popped up for creating new password. When password installed, press enter without inputting password, it will clear password. |
| Secure Boot menu | **Submenu** | |

When selecting a hard drive (HDD) to configure passwords, the BIOS will display a new setup page similar to the one shown below. The method of configuring an HDD password is the same as for BIOS passwords. Once a password is set, the status will be reflected on the screen, such as the change to ‘INSTALLED’ under ‘HDD User Pwd Status’.

If no HDD user password is installed, you can change the master password at any time without needing to confirm the previous password. However, once an HDD user password is installed, the master password can no longer be changed.

Security

| | |
|---|---|
| HDD Password Description | |
| Allows Access to Set, Modify and Clear<br>HardDisk User and Master Passwords.<br>User Password need to be installed for<br>Enabling Security. Master Password can<br>be Modified only when successfully unlocked<br>with Master Password in POST | |
| HDD PASSWORD CONFIGURATION | |


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

| | | |
|---|---|---|
| Security Supported | Yes | |
| Security Enabled | No | |
| Security Locked | No | |
| Security Frozen | No | ><: Select Screen |
| HDD User Pwd Status | NOT INSTALLED | ^v: Select Item |
| HDD Master Pwd Status | INSTALLED | Enter: Select |
| | | +/-: Change Opt. |
| Set User Password | | F1: General Help |
| Set Master Password | | F8: Previous Values |
| | | F9: Optimized Default |
| | | F10: Save & Exit |
| | | ESC: Exit |

### 7.4.1 Secure Boot

Security

| | | |
|---|---|---|
| Secure Boot | | |
| | | |
| System Mode | User | |
| Secure Boot | [Disabled] | |
| | Not Active | |
| Secure Boot Control | [Standard] | |
| | | ><: Select Screen |
| | | ^v: Select Item |
| | | Enter: Select |
| | | +/-: Change Opt. |
| | | F1: General Help |
| | | F8: Previous Values |
| | | F9: Optimized Default |
| | | F10: Save & Exit |
| | | ESC: Exit |


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

| BIOS Item | Options | Description |
|---|---|---|
| System Mode | **Info-only** | |
| Secure Boot | **Disabled**<br>Enabled | Secure Boot feature is Active if Secure Boot is Enabled, Platform Key(PK) is enrolled and the System is in user mode. The mode change requires platform reset. |
| Secure Boot Control | **Standard**<br>Custom | Secure Boot mode options:<br>Standard or Custom.<br>In Custom mode, Secure Boot Policy variables can be configured by a physically present user without full authentication. |

## 7.5 Boot Menu

This menu contains the settings for bootable devices in the system.

Main Advanced Chipset **Boot** Security Save & Exit

| | | |
|---|---|---|
| Boot Configuration | | |
| Setup Prompt Timeout | 1 | |
| Bootup NumLock State | [On] | |
| Quiet Boot | [Enabled] | |
| Fast Boot | [Enabled] | |
| SATA Support | [Last Boot SATA Devices Only] | |
| NVMe Support | [Enabled] | |
| VGA Support | [EFI Driver] | |
| USB Support | [Full Initial] | |
| PS2 Devices Support | [Enabled] | |
| Network Stack Driver Support | [Disabled] | |
| Redirection Support | [Disabled] | |
| | | |
| Boot Configuration | | |
| Boot Option #1 | [Hard Disk] | |
| Boot Option #2 | [CD/DVD] | |
| Boot Option #3 | [USB Hard Disk] | |
| Boot Option #4 | [USB CD/DVD] | |
| Boot Option #5 | [USB Key] | |
| Boot Option #6 | [USB Floppy] | ><: Select Screen |
| Boot Option #7 | [USB Lan] | ^v: Select Item |
| Boot Option #8 | [Network] | Enter: Select |
| | | +/-: Change Opt. |
| > Hard Disk Drive BBS Priorities | | F1: General Help |
| > USB Key Drive BBS Priorities | | F8: Previous Values |
| | | F9: Optimized Default |
| | | F10: Save & Exit |



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

ESC: Exit

| BIOS Item | Options | Description |
|---|---|---|
| Setup Prompt Timeout | **1** | Number of seconds to wait for setup activation key. 65535 (0xFFFF) means indefinite waiting. |
| Bootup NumLock State | On<br>**Off** | Select the keyboard NumLock state after system boot. |
| Quiet Boot | Disabled<br>**Enabled** | **Enabled:** will show splash screen during POST.<br>**Disabled:** will show boot message during POST. |
| Fast Boot | Disabled<br>**Enabled** | Enable or disabled Fast boot feature. Most probes are skipped to reduce time cost during boot. |
| SATA Support | **Last Boot SATA Devices Only**<br>All SATA Devices | If Last Boot SATA Devices Only, Only last boot SATA device will be available in Post. If All SATA Devices, All SATA devices will be available in OS and Post. |
| NVMe Support | Disabled<br>**Enabled** | If Disabled, NVMe device will be skipped. |
| VGA Support | **Info-only** | |
| USB Support | Disabled<br>**Full Initial**<br>Partial Initial | If Disabled, all USB devices will NOT be available until after OS boot. If Partial Initial, USB Mass Storage and specific USB port/device will NOT be available before OS boot. If Enabled, all USB devices will be available in OS and Post. |
| PS2 Devices Suppot | Disabled<br>**Enabled** | If Disabled, PS2 devices will be skipped. |
| Network Stack Driver Support | **Disabled**<br>Enabled | If Disabled, Network Stack Driver will be skipped. |
| Redirection Support | **Disabled**<br>Enabled | If disable, Redirection function will be disabled. |
| Boot Option #1~#11 | Hard Disk<br>NVMe<br>UEFI AP:UEFI:Built-in EFI Shell<br>CD/DVD<br>SD<br>USB Hard Disk<br>USB CD/DVD<br>USB Key<br>USB Floppy<br>UAB Lan<br>Network | Set system boot order. |


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

## 7.6 Save & Exit Menu

Main Advanced Chipset Boot Security Save & Exit

| | |
|---|---|
| Save Options<br>Save Changes and Exit<br>Discard Changes and Exit<br>Save Changes and Reset<br>Discard Changes and Reset<br><br>Save Options<br>Save Changes<br>Discard Changes<br><br>Default Options<br>Restore Defaults<br>Save as User Defaults<br>Restore User Defaults | Exit system setup after<br><br>saving the changes. |
| Boot Override<br>Launch EFI Shell from filesystem device | ><: Select Screen<br>^v: Select Item<br>Enter: Select<br>+/-: Change Opt.<br>F1: General Help<br>F8: Previous Values<br>F9: Optimized Default<br>F10: Save & Exit<br>ESC: Exit |


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

| BIOS Item | Options | Description |
|---|---|---|
| Save Changes and Exit | **Enter** | Save changed settings and exit BIOS setup utility. |
| Discard Changes and Exit | **Enter** | Skip changed setting and exit BIOS setup utility. |
| Save Changes and Reset | **Enter** | Save all changed settings and let system do reset to boot system. |
| Discard Changes and Reset | **Enter** | Discard all changed settings and let system do reset to boot system. |
| Save Changes | **Enter** | Save all changed settings. |
| Discard Changes | **Enter** | Discard changes done so far to any of the setup options. |
| Restore Default | **Enter** | Load the default made when BIOS was built. |
| Save as User Default | **Enter** | Save all changed done so far as User Defaults. |
| Restore User Default | **Enter** | Load the default that user save as user defaults. |
| Boot Override | **Info-only** | |


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

# Safety Instructions

Read and follow all instructions marked on the product and in the documentation before you operate your system. Retain all safety and operating instructions for future use.

- Please read these safety instructions carefully.
- Please keep this User‘s Manual for later reference.
- Read the specifications section of this manual for detailed information on the operating environment of this equipment.
- When installing/mounting or uninstalling/removing equipment, turn off the power and unplug any power cords/cables.
- To avoid electrical shock and/or damage to equipment:
  - Keep equipment away from water or liquid sources.
  - Keep equipment away from high heat or high humidity.
  - Keep equipment properly ventilated (do not block or cover ventilation openings).
  - Make sure to use recommended voltage and power source settings.
  - Always install and operate equipment near an easily accessible electrical socket-outlet.
  - Secure the power cord (do not place any object on/over the power cord).
  - Only install/attach and operate equipment on stable surfaces and/or recommended mountings.
  - If the equipment will not be used for long periods of time, turn off and unplug the equipment from its power source.
- Never attempt to fix the equipment. Equipment should only be serviced by qualified personnel.


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

# Getting Services

**Ask an Expert:** https://www.adlinktech.com/en/Askanexpert


**ADLINK Technology, Inc.**
Address: No. 66, Huaya 1st Road, Guishan District
Taoyuan City 333, Taiwan
Tel: +886-3-216-5088
Fax: +886-3-328-5723
Email: service@adlinktech.com

**Ampro ADLINK Technology, Inc.**
Address: 6450 Via Del Oro, San Jose, CA 95119-1208, USA
Tel: +1-408-360-0200
Toll Free: +1-800-966-5200 (USA only)
Fax: +1-408-600-1189
Email: info@adlinktech.com

**ADLINK Technology (China) Co., Ltd.**
Address: 300 Fang Chun Rd., Zhangjiang Hi-Tech Park, Pudong New Area
Shanghai, 201203 China
Tel: +86-21-5132-8988
Fax: +86-21-5132-3588
Email: market@adlinktech.com

**ADLINK Technology GmbH**
Address: Hans-Thoma-Strasse 8-10, 68163, Mannheim, Germany
Tel: +49-621-43214-0
Fax: +49-621 43214-30
Email: emea@adlinktech.com


Please visit the Contact page at www.adlinktech.com for information on how to contact the ADLINK regional office nearest you.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000