DEX-100

Data Extraction System

User's Manual



Manual Rev.:	1.0
Revision Date:	Apr.13, 2018
Part No:	50-1Z246-1000

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

Leading **EDGE COMPUTING**

Revision History

Revision	Release Date	Description of Change(s)
1.0	Apr. 13, 2018	Initial Release

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

Preface

Copyright 2018 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.

Trademarks

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

LRI 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.



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



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



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

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

Table of Contents

Revision History ii

Preface iii

List of Tables ix

List of Figures xi

1 Introduction 1

1.1 Features 2
1.2 Specifications 3
1.3 Mechanical Drawings 6
1.4 Front Panel I/O Connectors 9
1.4.1 Power Button 10
1.4.2 VGA Out 10
1.4.3 DisplayPort 11
1.4.4 PS/2 Ports 12
1.4.5 Serial ports (COM1 and COM2) 12
1.4.6 USB Ports 13
1.4.7 LAN Ports 15
1.4.8 USB Micro-b Connector 16
1.4.9 DI Connectors 17
1.4.10 LED Indicators 18
1.5 Right Side I/O Connectors 19
1.6 Left Side I/O Connectors 20
1.6.1 DC Power Connector 20
1.6.2 DVI Port 21
1.7 DI/O Sample Circuits 22
1.7.1 Isolated Digital Input Circuits 22

2 Getting Started 23

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

2.1 Unpacking Checklist 23
2.2 Adaptors & Additional Accessories 23
2.3 Wall Mounting 23
2.4 DIN Rail Mounting 26
2.4.1 DIN Rail Mount (Right Side Up) 26
2.4.2 DIN Rail Mount (Left Side Up) 28
2.5 Driver Installation 29

A Appendix: BIOS Setup 31
A.1 Main 32
A.1.1 BIOS Information 32
A.1.2 System Time/System Date 32
A.1.3 Board Information 33
A.2 Advanced 34
A.2.1 CPU Configuration 35
A.2.2 Graphics Configuration 36
A.2.3 Onboard Device Configuration 37
A.2.4 Advanced Power Management 45
A.2.5 USB Configuration 46
A.2.6 SATA Configuration 47
A.2.7 TPM Configuration 48
A.2.8 Network Stack Configuration 49
A.2.9 System Management 50
A.2.10 Miscellaneous 56
A.2.11 Intel® I210 Gigabit Network Connection 57
A.2.12 NIC Configuration 58
A.3 Security 59
A.3.1 Secure Boot 60
A.4 Boot 61
A.5 Save & Exit 62

Important Safety Instructions 65

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

Getting Service..... 69

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

This page intentionally left blank.

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

List of Tables

Table 1-1: Power Button LED Indicator Legend 10
Table 1-2: VGA Out Pin Assignment 11
Table 1-3: DisplayPort Pin Assignment 11
Table 1-4: PS/2 Port Pin Assignment 12
Table 1-5: COM1 and COM2 Connectors Pin Assignments..... 13
Table 1-6: USB 2.0 Pin Assignments 14
Table 1-7: USB 3.0 Pin Assignments 15
Table 1-8: LAN Port Pin Definitions 16
Table 1-9: LAN Port LED Legend 16
Table 1-10: USB Micro-b Connector Pin Definitions..... 17
Table 1-11: DI Connector Pin Assignment 18
Table 1-12: LED Indicator Legend..... 18
Table 1-13: DC Power Supply Pin Assignments 21
Table 1-14: DVI Port Pin Assignments 22

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

This page intentionally left blank.

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

List of Figures

Figure 1-1: Front View 6
Figure 1-2: Top View 7
Figure 1-3: (Right) Side View 8
Figure 1-4: (Left) Side View 8
Figure 1-5: Rear Side View 8
Figure 1-6: Front Panel I/O 9
Figure 1-7: VGA Out Connector 10
Figure 1-8: DisplayPort Connector 11
Figure 1-9: PS/2 Port 12
Figure 1-10: COM1 and COM2 Connectors 13
Figure 1-11: USB 2.0 14
Figure 1-12: USB 3.0 14
Figure 1-13: LAN Port 15
Figure 1-14: USB Micro-b Connector 17
Figure 1-15: DI Connector 17
Figure 1-16: Right Side Panel I/O 19
Figure 1-17: Left Side Panel I/O 20
Figure 1-18: Power Supply Connector 21
Figure 1-19: DVI Port 21
Figure 1-20: Digital Input Sample Application Circuit 22
Figure 2-1: Wall-mount (Rear Panel Up) 24
Figure 2-2: Wall-mount (Right Side Panel Up) 24
Figure 2-3: Wall-mount (Left Panel Up) 25
Figure 2-4: Wall-mount Bracket Attachment (Rear Panel Up) 25

LRI 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

1 Introduction



ADLINK's DEX-100 intelligent data extraction system utilizes built-in frame grabber and optical character recognition (OCR) to collect and process legacy system-based display content. Easy-to-use DEX-PRO utilities simplify mapping of acquired video content with no additional programming required, with the system acquiring and processing targeted display content from multiple pages.

2 DI connections interface with external devices and extend M2M function, enabling integration of new devices such as barcode scanners and providing synchronization of all collected data for subsequent distribution to anywhere in the network.

The DEX-100 utilizes the DDS (Data Distribution Services) protocol to deliver full data availability in real time, enhancing reliability and efficiency. Remote control is also available.

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

1.1 Features

- Non-intrusive system
- VGA/DVI output Port support
- Remote monitoring by PS/2 and USB keyboard mouse devices
- Pre-installed DEX-PRO utility supports keyboard/mouse script edits and image data transformation
- Real-time data extraction and OP screen presentation
- Offline script editing
- Windows 10 IoT
- Data extraction via OCR (optical character recognition):
  - Up to 500 tags/30 extraction pages
  - OCR speed 35ms/ROI (at 1080x768 screen resolution, 52x20 pixels, w/ Windows default font @ 9 pt, speed may vary with resolution and font size)
- Data Extraction and User Full Machine Control modes hard or soft switchable by user
- Script generation:
  - Over 50 script commands supported
  - Online and offline scripting supported (with offline reducing machine interference)
  - Pre-configured script loading for script deployment
- Event notification through machine alarm/warnings
- Data extraction summary page supports up to 500 rows of data
- Local Log file retained for up to 120 days

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

1.2 Specifications

System	
Processor	Quad core Intel® Atom® processor E3950
Operating System	Windows 10 IoT Enterprise 64
RAM	DDR3L 1066 4GB
Storage	128 GB SSD
I/O Interface	
▶ 2x GbE LAN (Intel® I210-IT)	
▶ 2x COM (2x RS-232/422/485)	
▶ 2x USB 2.0 + 2x USB 3.0 + 2x USB Micro-B	
▶ 2x PS/2 input+2x PS/2 output (keyboard/mouse)	
▶ VGA input, DVI input,	
▶ VGA output, DVI output,	
▶ DisplayPort (For local DP display)	
▶ 2x isolated DI	
Power Supply	
DC Input	12-36 VDC
AC Input	Optional 40W AC/DC adapter
LED Indicators	Power/Storage/WDT
Mechanical	
Dimensions	140 (W) x 110 (D) x 80 (H) mm
Weight	< 1 kg
Construction	Full aluminum alloy
Mounting	Wall mount, DIN rail
Communication Protocol and Interface	DDS (Distributed Data Service), REST
Field Bus Communication	Modbus TCP and Modbus RTU

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

Environmental & Electrical	
Operating Temperature	Standard: 0 to 50°C
Storage Temperature	-40°C to 85°C
Humidity	Approx. 95% @40°C (non-condensing)
Vibration	Operating 5 Grms, 5-500Hz, 3 axes w/ SD/mSATA SSD
ESD	mSATA SSD ESD Contact +/-4 KV, Air +/-8 KV
Shock	Operating 100G, half sine 11 ms duration w/ SD/mSATA SSD
EMC	CE & FCC Class A (EN610006-4/EN61000-6-2)
Safety	UL by CB

Machine Output Display Resolution Support		
VGA	▶ 640 x 480, 60fps ▶ 640 x 480, 75fps ▶ 640 x 480, 85fps ▶ 800 x 600, 60fps ▶ 800 x 600, 75fps ▶ 800 x 600, 85fps ▶ 1024 x 768, 60fps ▶ 1024 x 768, 75fps ▶ 1024 x 768, 85fps ▶ 1152 x 864, 75fps ▶ 1280x 720, 50 fps ▶ 1280x 720, 60 fps ▶ 1280 x 768, 60fps ▶ 1280 x 768, 75 fps ▶ 1280 x 768, 85 fps	▶ 1280 x 800, 60fps ▶ 1280 x 800, 75 fps ▶ 1280 x 800, 85 fps ▶ 1280 x 1024, 60fps ▶ 1280 x 1024, 75 fps ▶ 1280 x 1024, 85 fps ▶ 1360x 768, 60 fps ▶ 1400x 1050, 60 fps ▶ 1400x 1050, 75 fps ▶ 1440x 900, 60 fps ▶ 1600x 1200, 60fps ▶ 1680x 1050, 60 fps ▶ 1920x 1080, 50 fps ▶ 1920x 1080, 60 fps

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

DVI	▶ 640 x 480, 60 fps ▶ 800 x 600, 60 fps ▶ 1024 x 768, 60 fps ▶ 1024 x 768, 75 fps ▶ 1152 x 864, 75 fps ▶ 1280 x 720, 50 fps ▶ 1280 x 720 , 60 fps ▶ 1280 x 768, 60 fps ▶ 1280 x 800, 60 fps ▶ 1280 x 800, 60 fps ▶ 1280 x 960, 60 fps ▶ 1280 x1024, 60 fps	▶ 1360 x 768, 60 fps ▶ 1366 x 768, 60 fps ▶ 1440 x 900, 60 fps ▶ 1440 x 900, 75 fps ▶ 1600 x 1200, 60 fps ▶ 1680 x 1050, 60 fps ▶ 1920 x 1080, 24 fps ▶ 1920 x 1080, 50 fps ▶ 1920 x 1080, 60 fps ▶ 1920 x 1200, 50 fps ▶ 1920 x 1200, 60 fps

Power Consumption		
Power off	1.2W (0.05A@24VDC)	In shutdown mode with DC input and only USB keyboard/mouse
System idle	21W (0.86A@24VDC)	Under Windows Desktop with no application programs executed
System full load	164W (6.81A@24VDC)	▶ Total PoE loading is 32W ▶ Dummy load of 4.5W in connection to represent each USB 3.0 load ▶ Dummy load of 2.5W in connection to represent each USB 2.0 load ▶ HDD permanently accessed ▶ CPU(i7-6700) @ 100% loading (by Burn-in test program)
Recommended power supply	180W	

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

1.3 Mechanical Drawings

NOTE:

All dimensions shown are in millimeters (mm) unless otherwise stated.

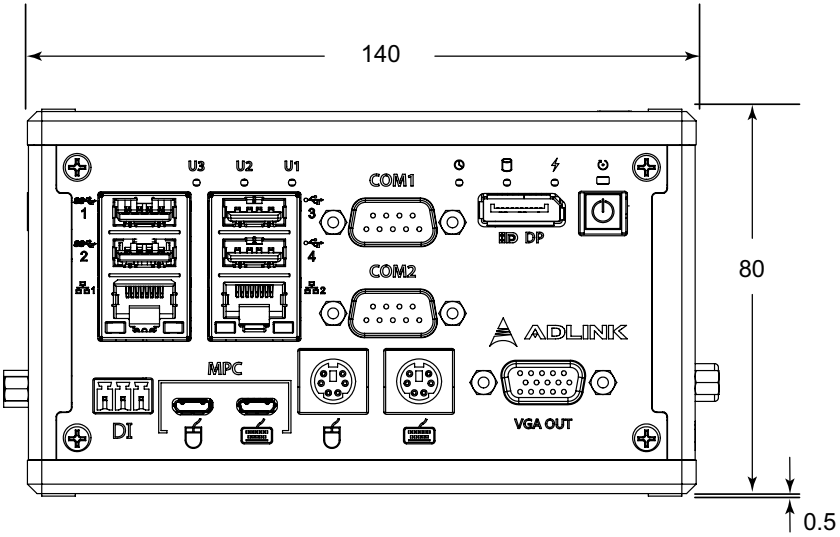


Figure 1-1: Front View

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

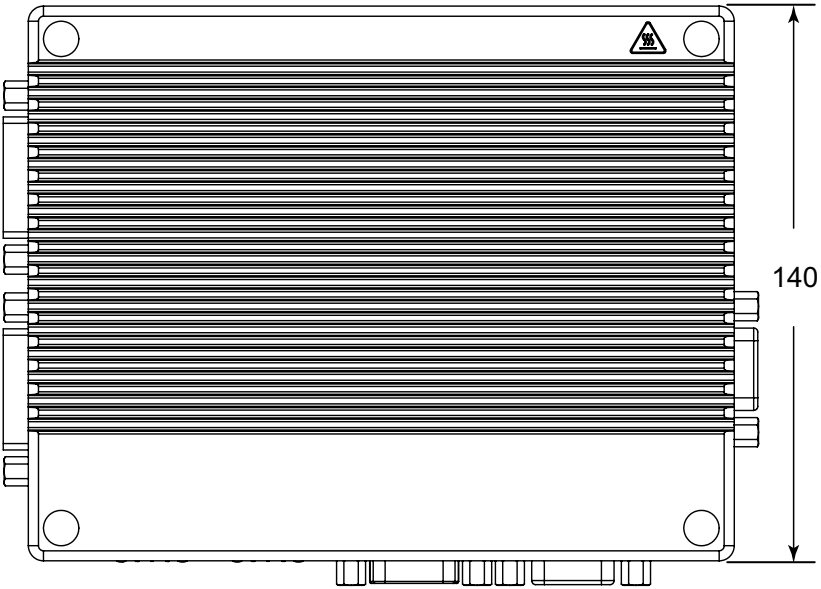
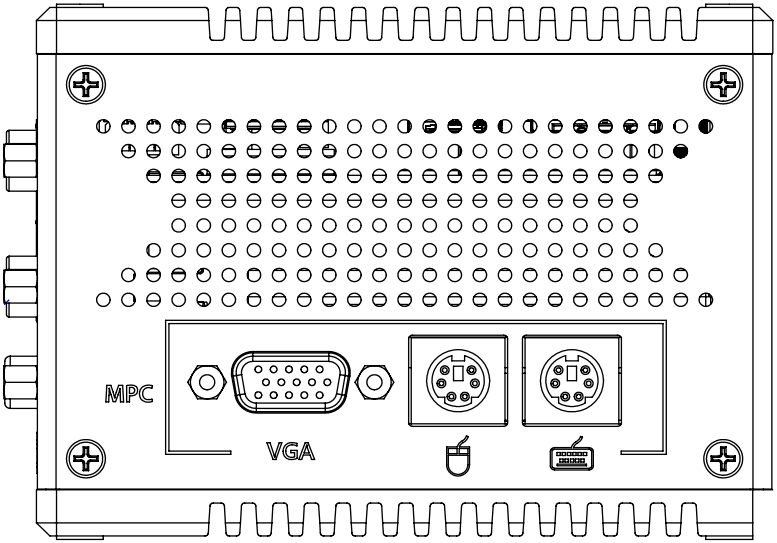


Figure 1-2: Top View



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

Figure 1-3: (Right) Side View

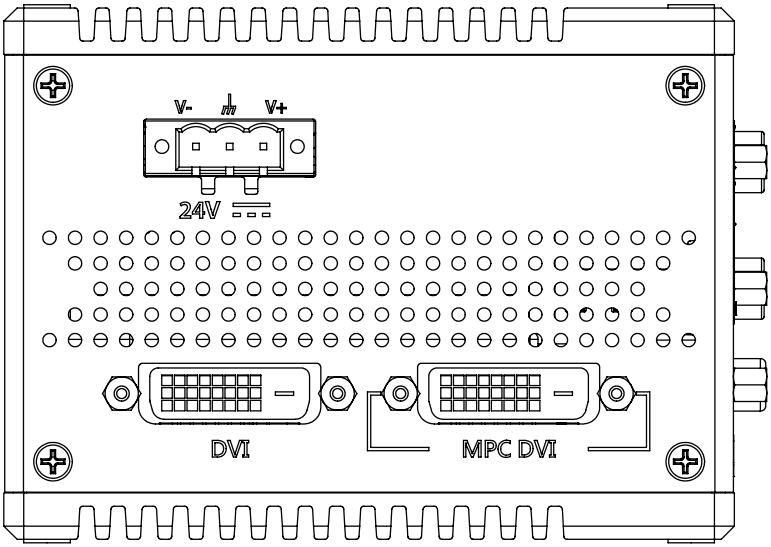


Figure 1-4: (Left) Side View

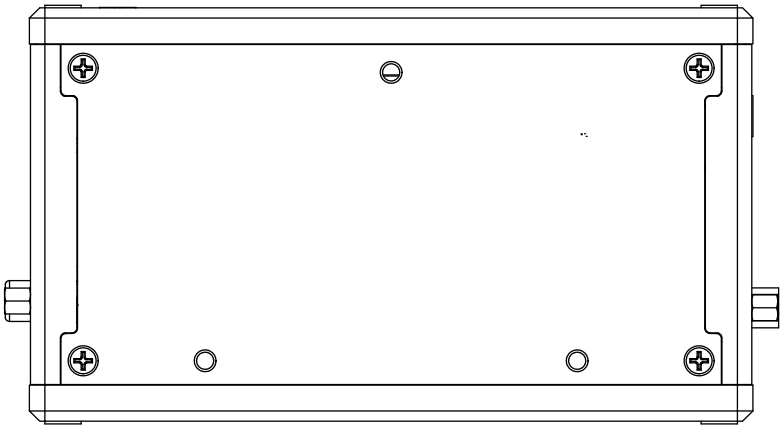


Figure 1-5: Rear Side View

1.4 Front Panel I/O Connectors

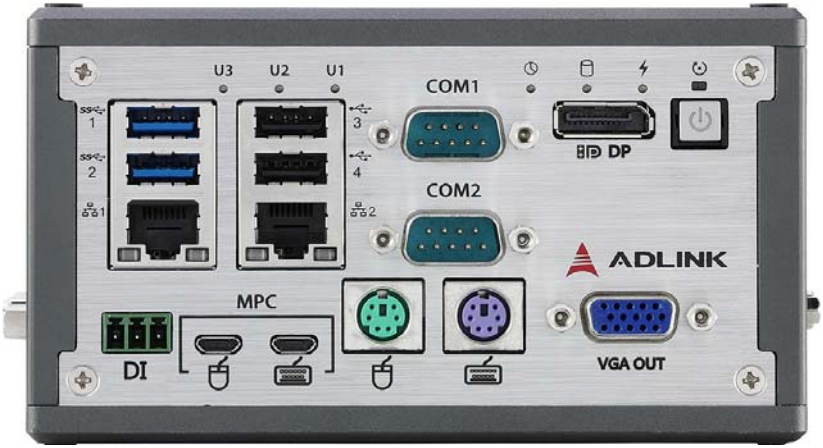


Figure 1-6: Front Panel I/O

I/O connectors and controls on the DEX-100 front panel, as labeled, are as follows

- Power button
- VGA Out
- DisplayPort
- PS/2 keyboard port
- PS/2 mouse port
- Serial ports (COM1 and COM2)
- USB2.0 port x2
- USB 3.0 port x2
- LAN port x2
- Micro USB type B x2
- DI connectors
- LED indicators

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

1.4.1 Power Button

System is turned on when button is pressed, and the power LED lit. If the system hangs, depressing the button for 5 seconds powers down the unit. LED indicator functions as follows

System Status	Power Button LED
Idle on OS	Lit
Power OFF	Off
Sleep (S3)	Blinking

Table 1-1: Power Button LED Indicator Legend

1.4.2 VGA Out

One VGA connector for output supports 1920x1080 60Hz timing signal.

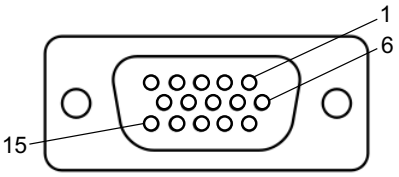


Figure 1-7: VGA Out Connector

Pin	Signal	Pin	Signal
1	RED	9	KEY/PWR
2	GREEN	10	GND
3	BLUE	11	ID0/RES
4	ID2/RES	12	ID1/SDA
5	GND	13	HSync
6	RED_RTN	14	VSync

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

Pin	Signal	Pin	Signal
7	GREEN_RTN	15	ID3/SCL
8	BLUE_RTN		

Table 1-2: VGA Out Pin Assignment

1.4.3 DisplayPort

The DisplayPort v1.1 connection supports up to 3840x2160 @ 30Hz.

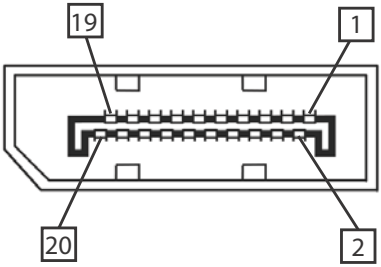


Figure 1-8: DisplayPort Connector

Pin	Signal	Pin	Signal
1	CN_DP0_P	2	GND
3	CN_DP0_N	4	CN_DP1_P
5	GND	6	CN_DP1_N
7	CN_DP2_P	8	GND
9	CN_DP2_N	10	CN_DP3_P
11	GND	12	CN_DP3_N
13	CN_CAD-L	14	CN_CEC
15	CN_AUX_P	16	GND
17	CN_AUX_N	18	DDP_HPD
19	GND	20	P3V3

Table 1-3: DisplayPort Pin Assignment

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

1.4.4 PS/2 Ports

Two PS/2 ports support keyboard and mouse connection.

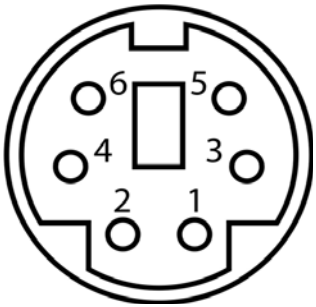


Figure 1-9: PS/2 Port

Pin	Signal	Description
1	+DATA	Data
2	N/A	N/C [b]
3	GND	Ground
4	Vcc	+5 V DC at 275 mA
5	+CK	Clock
6	N/A	N/C (c]

Table 1-4: PS/2 Port Pin Assignment

1.4.5 Serial ports (COM1 and COM2)

COM1 supports RS-232/422/485 based on switch setting on the mainboard, with RS-232 the default, and COM2 supports RS-232 only.

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

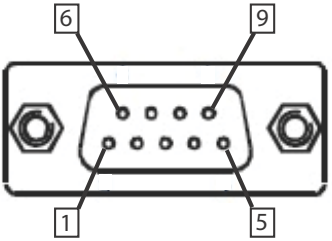


Figure 1-10: COM1 and COM2 Connectors

Pin	Signal		
	RS232	**RS422**	**RS485**
1	DCD#	TXD422-	485DATA-
2	RXD	TXD422+	485DATA+
3	TXD	RXD422+	N/S
4	DTR#	RXD422-	N/S
5	GND	N/S	N/S
6	DSR#	N/S	N/S
7	RTS#	N/S	N/S
8	CTS#	N/S	N/S
9	RI#	N/S	N/S

Table 1-5: COM1 and COM2 Connectors Pin Assignments

1.4.6 USB Ports

2 USB 3.0 and 2USB 2.0 ports each provide 5V power for connected devices.

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

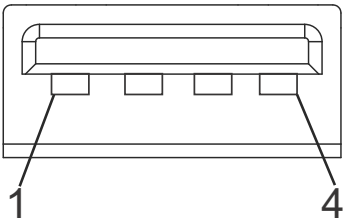


Figure 1-11: USB 2.0

Pin	Signal
1	Vcc
2	UV0-
3	UV0+
4	GNE

Table 1-6: USB 2.0 Pin Assignments

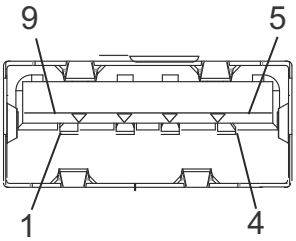


Figure 1-12: USB 3.0

Pin	Signal
1	USB3.0_P5VA
2	USB2_CMAN
3	USB2_CMAP
4	GND
5	USB3A_CMRXN
6	USB3A_CMRXP

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

Pin	Signal
7	GND
8	USB3A_CMTXN
9	USB3A_CMTXP

Table 1-7: USB 3.0 Pin Assignments

1.4.7 LAN Ports

Two Gigabit Ethernet ports support the intel i210IT GbE controller, providing

- IEEE 802.3az Energy Efficient Ethernet
- IEEE 1588/802.1AS precision time synchronization
- IEEE 802.3Qav traffic shaper
- Interrupt moderation, VLAN support, IP checksum offload
- PCIe OBFF (Optimized Buffer Flush/Fill)
- Four transmit and four receive queues
- RSS and MSI-X to lower CPU utilization in multi-core systems
- ECC - error correcting memory in packet buffers
- Wake-On-LAN
- NC-SI for increased bandwidth passthrough
- Preboot eXecution Environment (PXE) flash interface
- Jumbo frame support

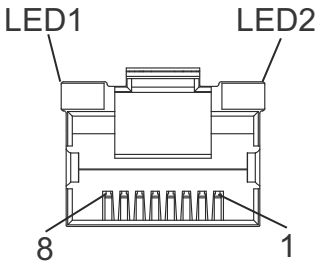


Figure 1-13: LAN Port

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

Pin	10BASE-T/100BASE-TX	1000BASE-T
1	TX+	LAN_MDI0+
2	TX-	LAN_MDI0-
3	RX+	LAN_MDI1+
4	N/A	LAN_MDI2+
5	N/A	LAN_MDI2-
6	RX-	LAN_MDI1-
7	N/A	LAN_MDI3+
8	N/A	LAN_MDI3-

Table 1-8: LAN Port Pin Definitions

LED	Activity	
LED1 (Active/Link)	Off	No Link
	Orange	Link Active
	Blinking	Data Activity
LED2 (Speed)	Off	10 Mb connection
	Green	100 Mb connection
	Orange	1 Gb connection

Table 1-9: LAN Port LED Legend

1.4.8 USB Micro-b Connector

USB keyboard and mouse bypass are provided by dual USB micro-b connectors, for connection to machine PC.

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

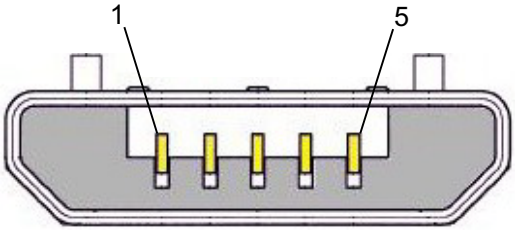


Figure 1-14: USB Micro-b Connector

Pin	Signal	Description
1	VBUS	+5 V
2	D−	Data−
3	D+	Data+
4	ID	N/A
5	GND	Signal ground

Table 1-10: USB Micro-b Connector Pin Definitions

1.4.9 DI Connectors

Dual channel digital input function is provided within a terminal block male connector.



Figure 1-15: DI Connector

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

Pin		VCOM=0V	VCOM=24V
1	Digital input 2	24V: Enabled	0V: Enabled
		0V/open: Disabled	24V/open: Disabled
2	VCOM	0V	24V
3	Digital input 1	24V: Enabled	0V: Enabled
		0V/open: Disabled	24V/open: Disabled

Table 1-11: DI Connector Pin Assignment

1.4.10 LED Indicators

In addition to the LED of the power button, LEDs on the front panel indicate operations as follows.

Indicator	Color	Description
U1	Green	User defined
U2	Green	User defined
U3	Green	User defined
Watchdog Timer (WDT)	Yellow	Indicates watchdog timer status, flashing when watchdog timer starts, with system will auto rebooting when timer expires
HDD	Red	Blinks when SATA HDD is active
Standby Power	Blue	Lights when DC input is plugged in, off when system powers on

Table 1-12: LED Indicator Legend

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

1.5 Right Side I/O Connectors



Figure 1-16: Right Side Panel I/O

I/O connectors and controls on the DEX-100 right side panel, as labeled, are as follows

- VGA In
- PS/2 mouse port
- PS/2 keyboard port

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

1.6 Left Side I/O Connectors



Figure 1-17: Left Side Panel I/O

I/O connectors and controls on the DEX-100 left side panel, as labeled, are as follows

- DC Power Connector
- DVI port
- MPC DVI port

1.6.1 DC Power Connector

Consists of V+, chassis ground, and V- pins. V+ and V- pins accept DC power input and chassis ground pin enhances EMC compatibility. The DC power input accepts 24 VDC input.

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

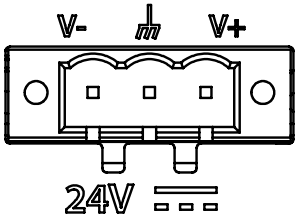


Figure 1-18: Power Supply Connector

Pin	Signal
1	V+(DC_IN)
2	GND(CHGND)
3	V- (DGND)

Table 1-13: DC Power Supply Pin Assignments

1.6.2 DVI Port

Both DVI-D connectors, one for input and the other for output, support 1920x1080 60Hz timing signal.

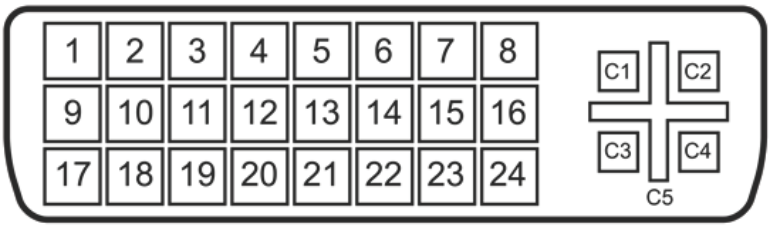


Figure 1-19: DVI Port

Pin	Signal
1	V+(DC_IN)

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

Pin	Signal
2	GND(CHGND)
3	V- (DGND)

Table 1-14: DVI Port Pin Assignments

1.7 DI/O Sample Circuits

1.7.1 Isolated Digital Input Circuits

The input can accept voltages up to 24V, with extra 10kΩ input resistors (Rs). Connections between outside signals are as follows.

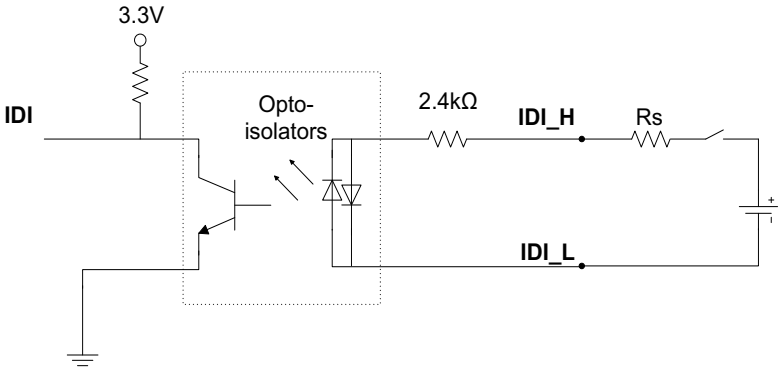


Figure 1-20: Digital Input Sample Application Circuit

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

2 Getting Started

2.1 Unpacking Checklist

Before unpacking, check the shipping carton for any damage. If the shipping carton and/or contents are damaged, inform your dealer immediately. Retain the shipping carton and packing materials for inspection. Obtain authorization from your dealer before returning any product to ADLINK. Ensure that the following items are included in the package.

- DEX-100
- DI Connector
- DC Power Connector
- Recovery CD
- Technical service card

2.2 Adaptors & Additional Accessories

Device adaptors and other optional accessories should only be obtained through your ADLINK dealer. For more information, see “Getting Service” on page 69.

2.3 Wall Mounting

The DEX-100 provides 3 wall-mount configurations.



Mounting screws must be at least size #10 (min. 0.1875 in. or 4.762 mm) or M5 type long enough to provide sufficient support.

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

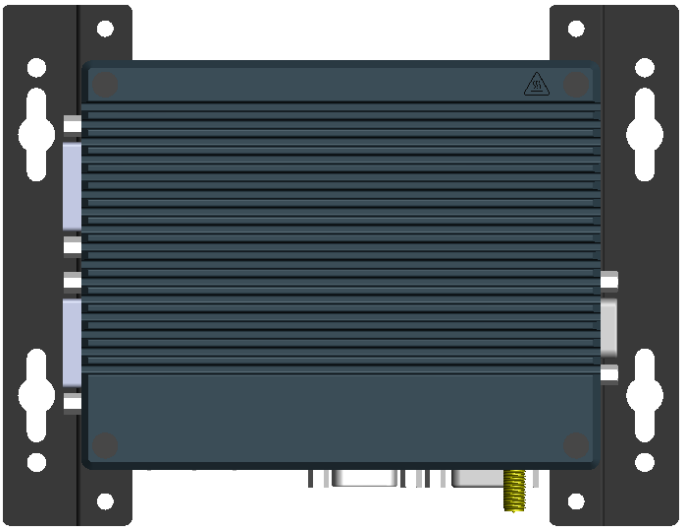


Figure 2-1: Wall-mount (Rear Panel Up)

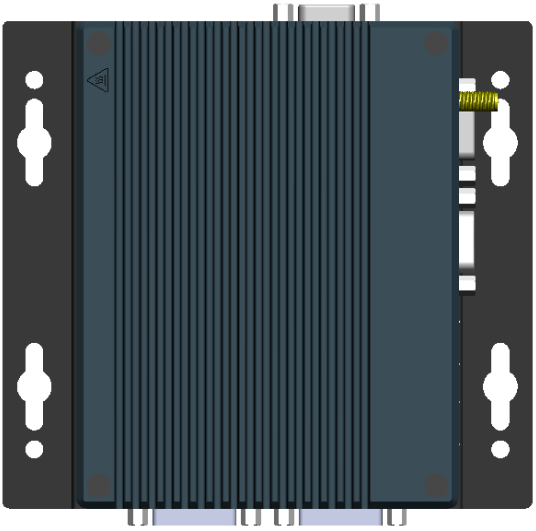


Figure 2-2: Wall-mount (Right Side Panel Up)

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

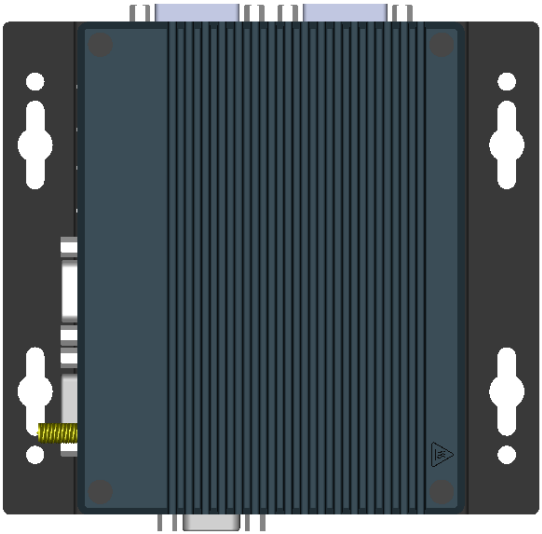


Figure 2-3: Wall-mount (Left Panel Up)

Attach the provided wall-mount brackets in the four screw holes on the underside of the chassis (use four M4 screws) according to the desired configuration (wall-mount with rear panel up is shown as an example).

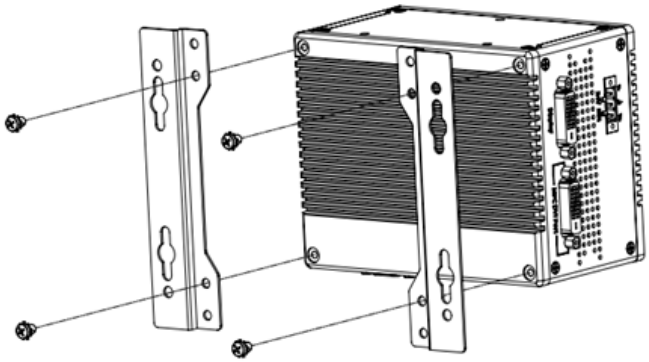


Figure 2-4: Wall-mount Bracket Attachment (Rear Panel Up)

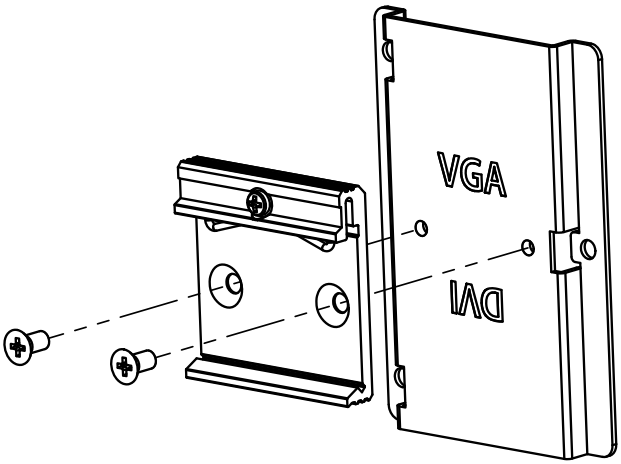
Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

2.4 DIN Rail Mounting

DEX-100 DIN rail installation is provided in right side up and left side up configurations.

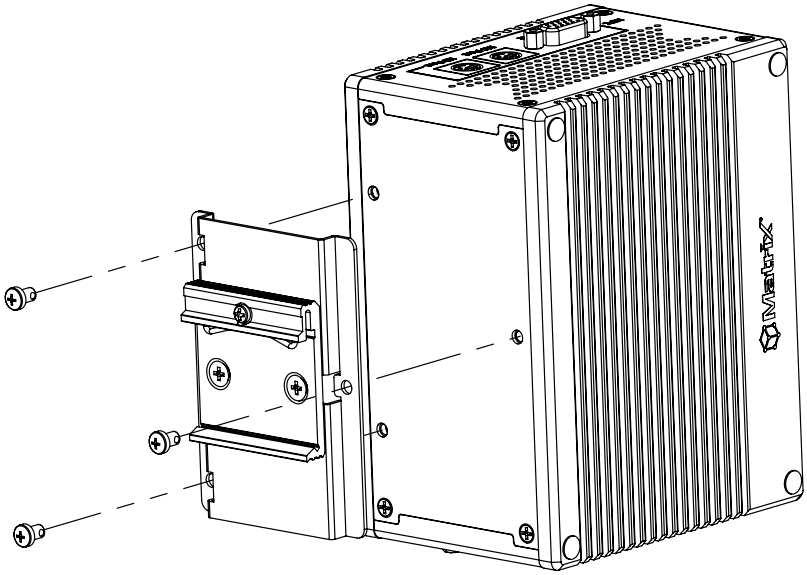
2.4.1 DIN Rail Mount (Right Side Up)

Place the terminal plate with VGA label up and secure the provided DIN rail bracket via the two screw holes on the rear side of the terminal plate.



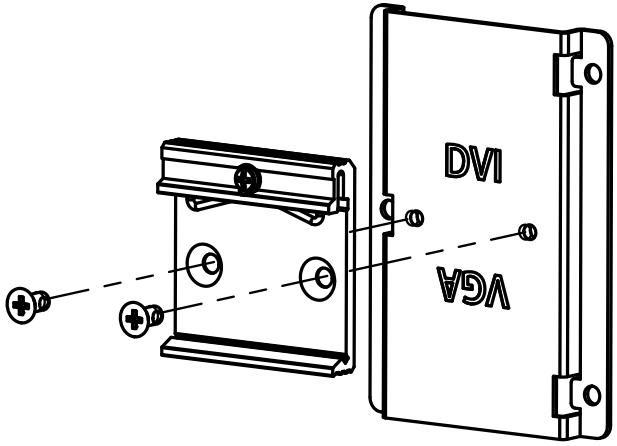
3. Secure the terminal plate via the 3 screw holes to the rear side of the chassis.

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

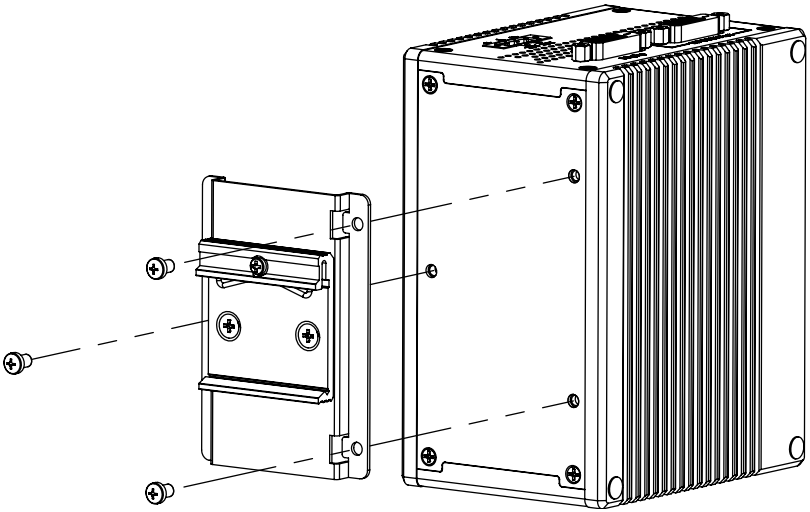


2.4.2 DIN Rail Mount (Left Side Up)

1. Place the terminal plate with DVI label up and secure the provided DIN rail bracket via the two screw holes on the rear side of the terminal plate.



2. Secure the terminal plate via the 3 screw holes to the rear side of the chassis.



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

2.5 Driver Installation



Due to lack of controller support under Windows 10, successful OS installation may be prevented. For available solutions, please contact your ADLINK representative.

Download requisite drivers, as follows, for your system from http://www.adlinktech.com and install.

- Chipset
- Graphics
- Ethernet
- USB3
- Serial I/O
- TXE (Intel® Trusted Execution Technology)
- DEX-PRO Utility

LRI 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

Appendix A BIOS Setup



NOTE:

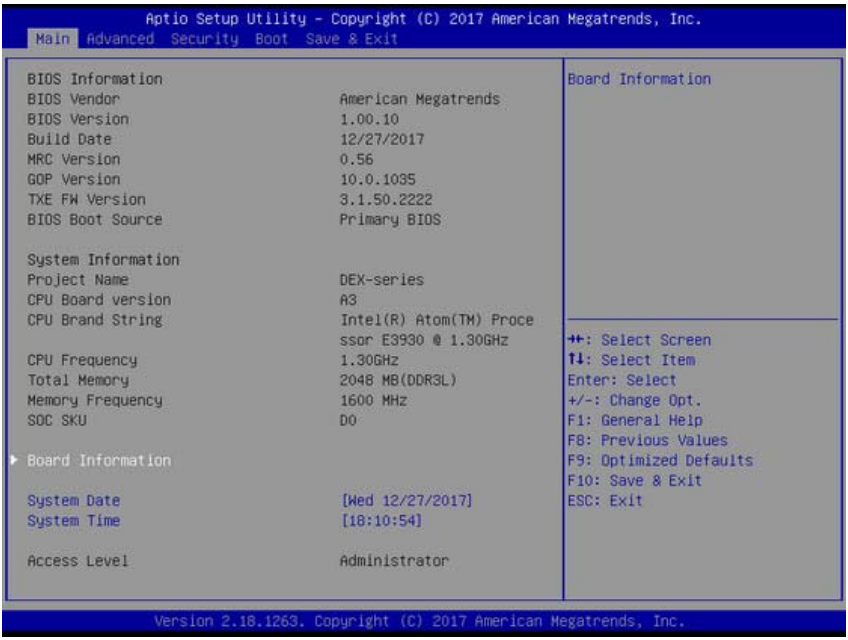
BIOS options in the manual are for reference only, and are subject to configuration.

The Basic Input/Output System (BIOS) is a program that provides a basic level of communication between the processor and peripherals. In addition, the BIOS also contains codes for various advanced features applied to the DEX-100. The BIOS setup program includes menus for configuring settings and enabling features of the DEX-100 series. Most users do not need to use the BIOS setup program, as the DEX-100 ships with default settings that work well for most configurations.

Enter BIOS setup by selecting DEL when the system is powered on. The POST (Power On Self Test) message appears. Selecting F7 at POST opens the one-time Boot Menu, allowing selection of boot device(s).

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

A.1 Main



A.1.1 BIOS Information

Shows current system BIOS core version, BIOS version and Board version.

A.1.2 System Time/System Date

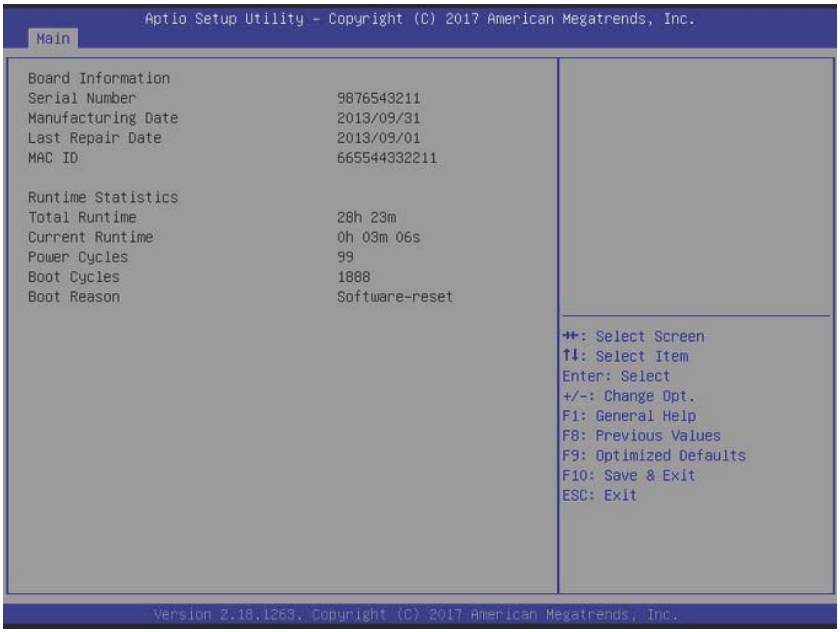
Changes system time and date. Highlight System Time or System Date using the up or down <Arrow> keys. Enter new values using the keyboard then <Enter>. Use < Tab > to move between fields. The date must be entered in MM/DD/YY format. The time is entered in HH:MM:SS format.

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

NOTE:

The time is in 24-hour format, for example, 5:30 A.M. appears as 05:30:00, and 5:30 P.M. as 17:30:00.

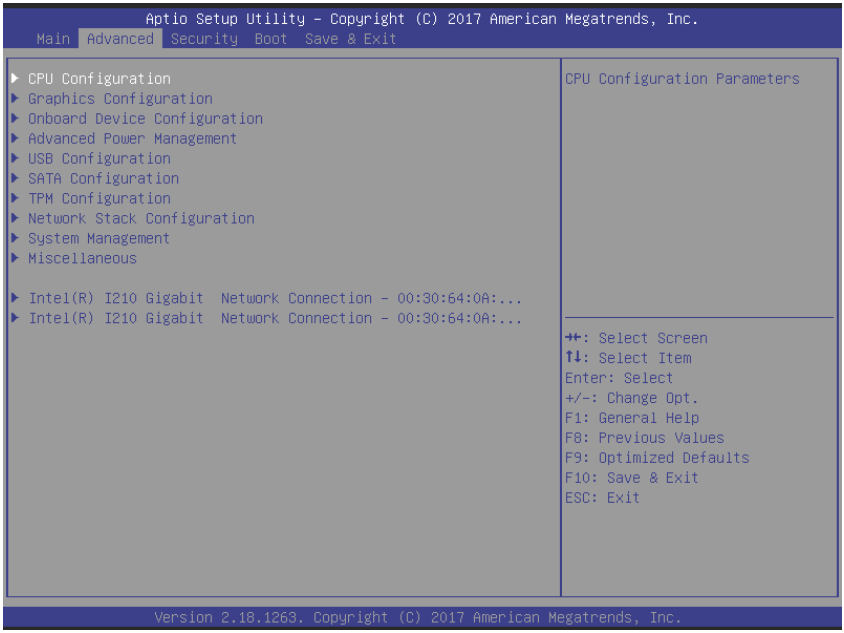
A.1.3 Board Information



Displays serial number, manufacturing date, last repair date, and MAC ID. As well, Runtime Statistics are listed, including total runtime, current runtime, power cycles, boot cycles, and boot reason.

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

A.2 Advanced



CAUTION:

Setting incorrect or conflicting values in Advanced BIOS Setup may cause system malfunction.

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

A.2.1 CPU Configuration



Active Processor Cores

Number of cores to enable in each processor package.

Intel Virtualization Technology

When enabled, allows a VMM to utilize the additional hardware capabilities provided by Vanderpool Technology

VT-d

Enables/disables CPU VT-d

Turbo Mode

Enables/disables Turbo Mode.

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

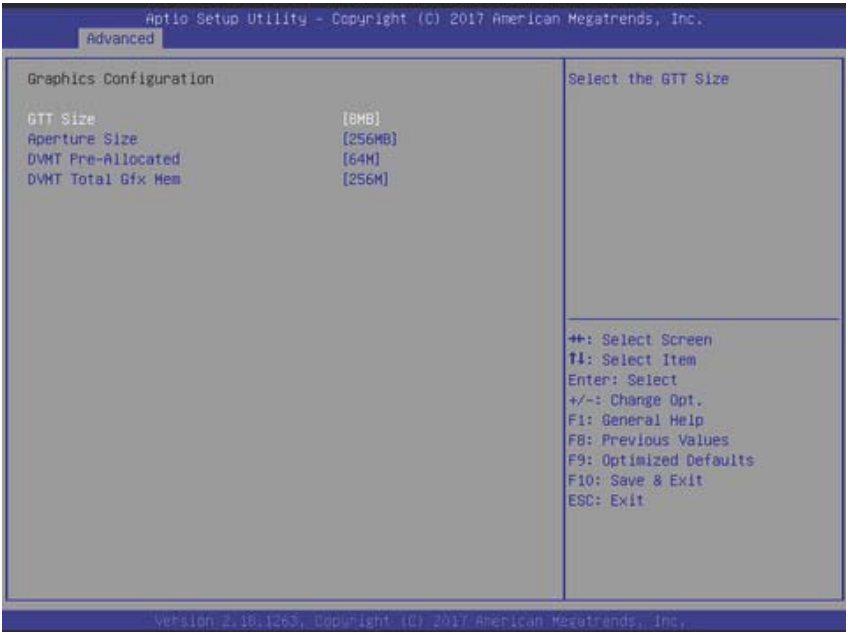
Critical Trip Point

Temperature threshold of the Critical Trip Point.

Passive Cooling Trip Point

Temperature threshold of the Passive Cooling Trip Point.

A.2.2 Graphics Configuration



GTT Size

Sets GTT size

Aperture Size

Sets aperture size

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

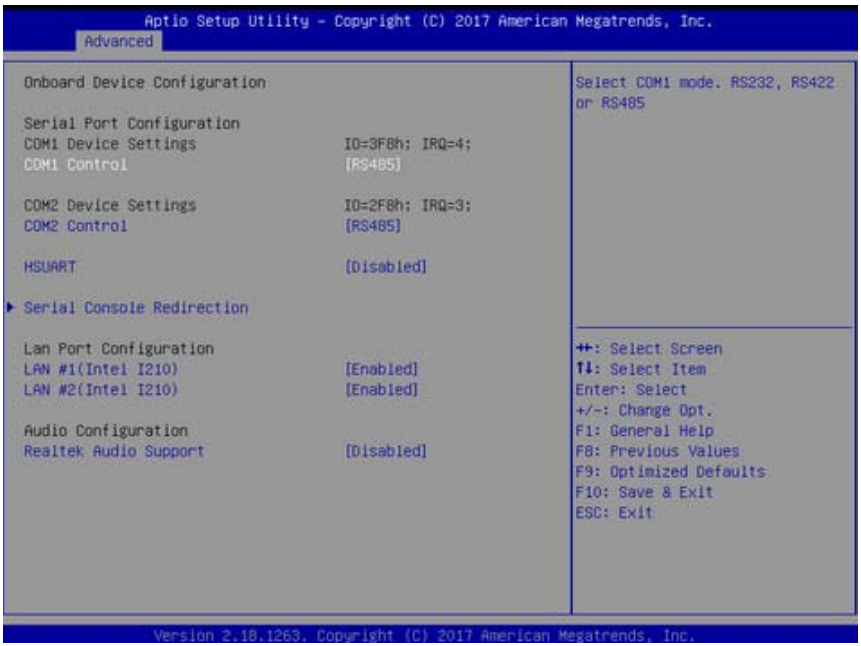
DVMT Pre-Allocated

Sets size of DVMT 5.0 pre-allocated (fixed) graphics memory used by internal graphics device

DVMT Total Gfx Mem

Sets size of DVMT5.0 total graphic memory used by internal graphics device

A.2.3 Onboard Device Configuration



COM1 Control

Selects COM1 mode from among RS232, RS422, and RS485.

COM2 Control

Selects COM2 mode from among RS232, RS422, and RS485.

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

HSUART

Enables/disables LPSS HSUART support.

LAN #1 (Intel I210)

Enables/disables LAN device #1.

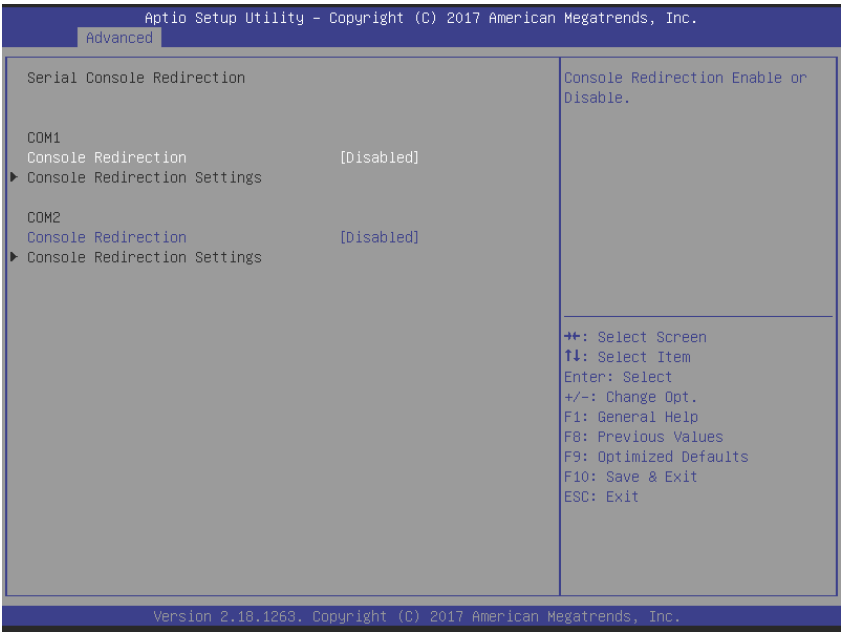
LAN #2 (Intel I210)

Enables/disables LAN device #2.

Realtek Audio Support

Enables/disables Realtek audio device.

Serial Console Redirection

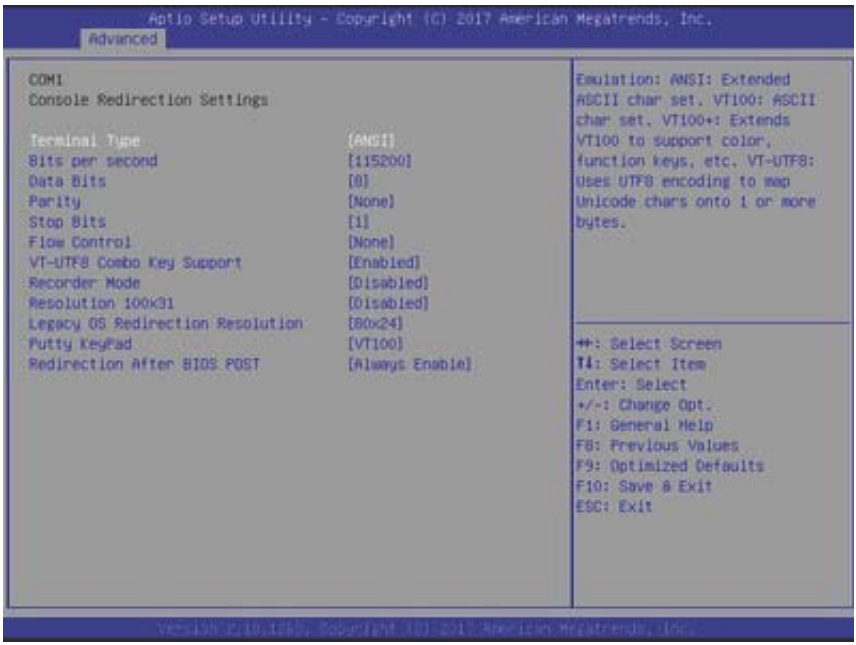


COM 1

Console Redirection

Enables/Disables COM 1 console redirection.

Console Redirection Settings (COM 1)



Terminal Type

Emulation:

ANSI: Extended ASCII char set.

VT100: ASCII char set.

VT100+: Extends VT100 to support color, function keys, etc.

VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.

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

Bits per second

Selects serial port transmission speed, which must be matched on the other side, where long or noisy lines may require lower speeds.

Data Bits

Number of data bits

Parity

Parity bit can be sent with data bits to detect transmission errors, where

Even: parity bit is 0 if the number of 1's in the data bits is even

Odd: parity bit is 0 if number 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, and can be used as an additional data bit.

Stop Bits

Indicate the end of a serial data packet (a start bit indicates the beginning), with standard setting 1 stop bit, and communication with slow devices may require more than 1 stop bit.

Flow Control

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

VT-UTF8 Combo Key Support

Enables VT-UTF8 Combination Key Support for ANSI/VT100 terminals

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

Recorder Mode

When enabled, only text will be sent, to capture terminal data.

Resolution 100x31

Enables/disables extended terminal resolution

Legacy OS Redirection Resolution

In legacy OS, the number of rows and columns supporting redirection

Putty KeyPad

Selects FunctionKey and KeyPad on PuTTY

Redirection After BIOS Post

When Bootloader is selected, Legacy Console Redirection is disabled before booting to legacy OS.

When Always Enable is selected, Legacy Console Redirection is enabled for legacy OS.

Default is set to Always Enable.

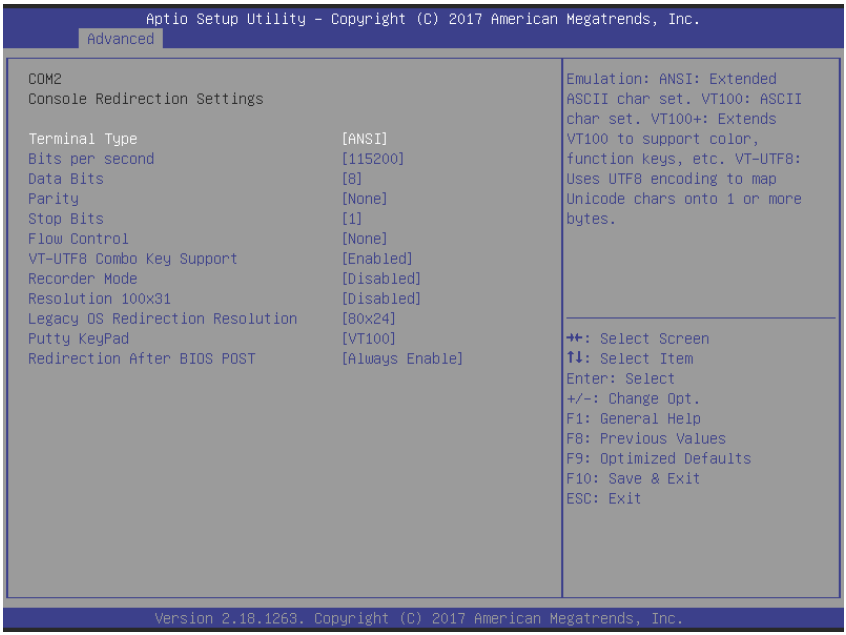
LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

COM 2

Console Redirection

Enables/Disables COM 2 console redirection.

Console Redirection Settings (COM 2)



Terminal Type

Emulation:

ANSI: Extended ASCII char set.

VT100: ASCII char set.

VT100+: Extends VT100 to support color, function keys, etc.

VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.

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

Bits per second

Selects serial port transmission speed, which must be matched on the other side, where long or noisy lines may require lower speeds.

Data Bits

Number of data bits

Parity

Parity bit can be sent with data bits to detect transmission errors, where

Even: parity bit is 0 if the number of 1's in the data bits is even

Odd: parity bit is 0 if number 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, and can be used as an additional data bit.

Stop Bits

Indicate the end of a serial data packet (a start bit indicates the beginning), with standard setting 1 stop bit, and communication with slow devices may require more than 1 stop bit.

Flow Control

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

VT-UTF8 Combo Key Support

Enables VT-UTF8 Combination Key Support for ANSI/VT100 terminals

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

Recorder Mode

When enabled, only text will be sent, to capture terminal data.

Resolution 100x31

Enables/disables extended terminal resolution

Legacy OS Redirection Resolution

In legacy OS, the number of rows and columns supporting redirection

Putty KeyPad

Selects FunctionKey and KeyPad on PuTTY

Redirection After BIOS Post

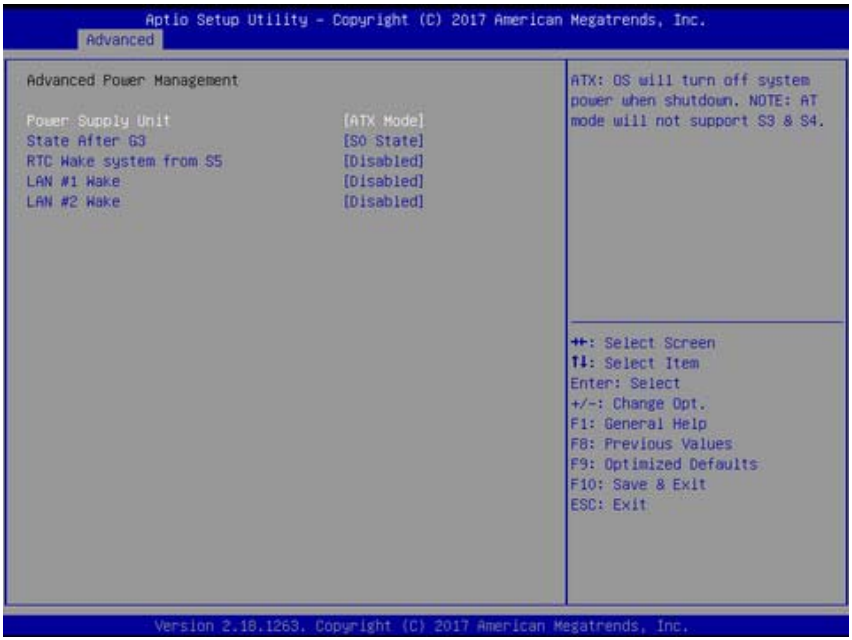
When Bootloader is selected, Legacy Console Redirection is disabled before booting to legacy OS.

When Always Enable is selected, Legacy Console Redirection is enabled for legacy OS.

Default is set to Always Enable.

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

A.2.4 Advanced Power Management



Power Supply Unit

ATX: OS will turn off system power when shutdown, where AT mode does not support S3 & S4.

State After G3

Specifies state to enter when power is re-applied after a power failure (G3 state).

RTC Wake system from S5

Enables/disables System Wake on alarm event, where selecting FixedTime wakes system at hr::min::sec specified, and Dynamic-Time wakes system at the current time + Increase minute(s) specified

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

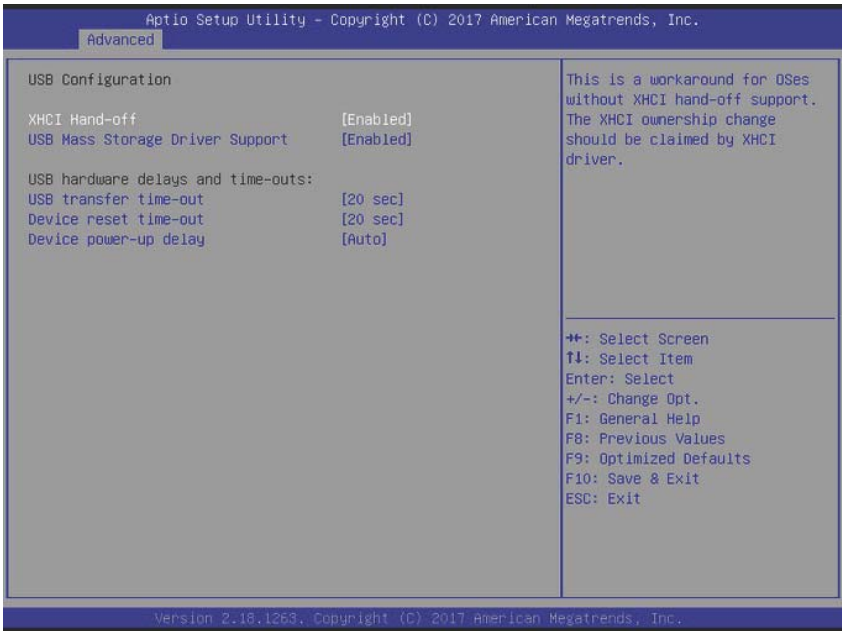
LAN #1 Wake

Enables/disables onboard Wake on LAN for #1

LAN #2 Wake

Enables/disables onboard Wake on LAN for #2

A.2.5 USB Configuration



XHCI Hand-off

A workaround for OS without XHCI handoff support, where XHCI ownership change should be claimed by the XHCI driver.

USB Mass Storage Driver Support

Enables/disables USB mass storage driver support.

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

USB transfer time-out

Timeout value for Control, Bulk, and Interrupt transfers.

Device reset time-out

USB mass storage device Start Unit command timeout.

Device power-up delay

Maximum time the device will take before reporting to the Host Controller, where Auto uses default value, for a Root port 100 ms, and for a Hub port the delay is taken from the Hub descriptor.

A.2.6 SATA Configuration

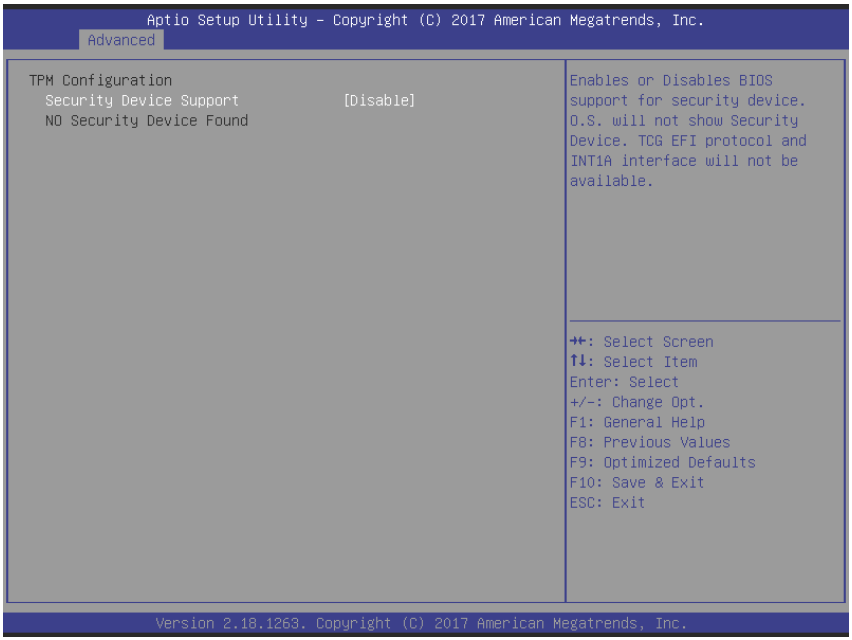


Port

Enables/disables SATA Port

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

A.2.7 TPM Configuration

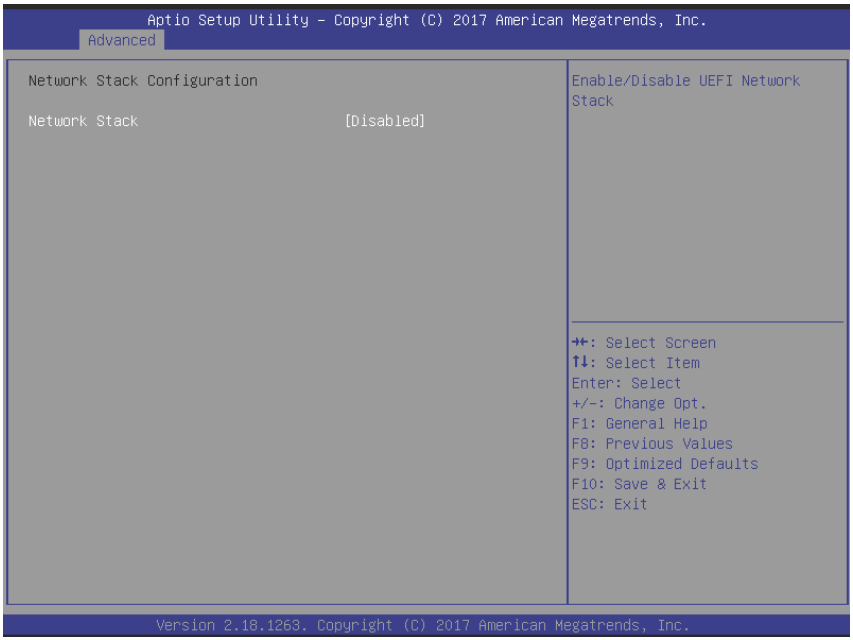


Security Device Support

Enables/disables BIOS support for security device, when enabled, OS will not show the security device, and TCG EFI protocol and INT1A interface will not be available.

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

A.2.8 Network Stack Configuration

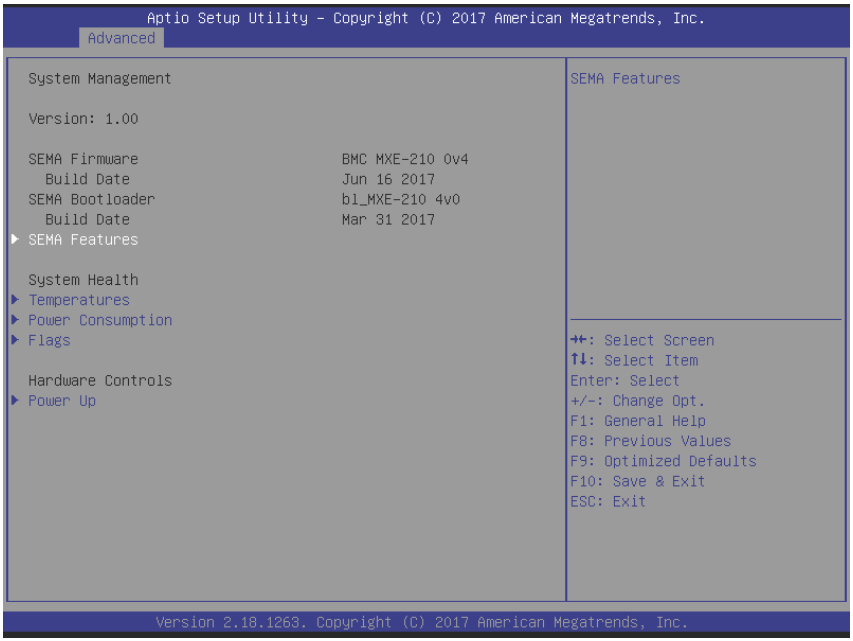


Network Stack

Enables/disables UEFI network stack

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

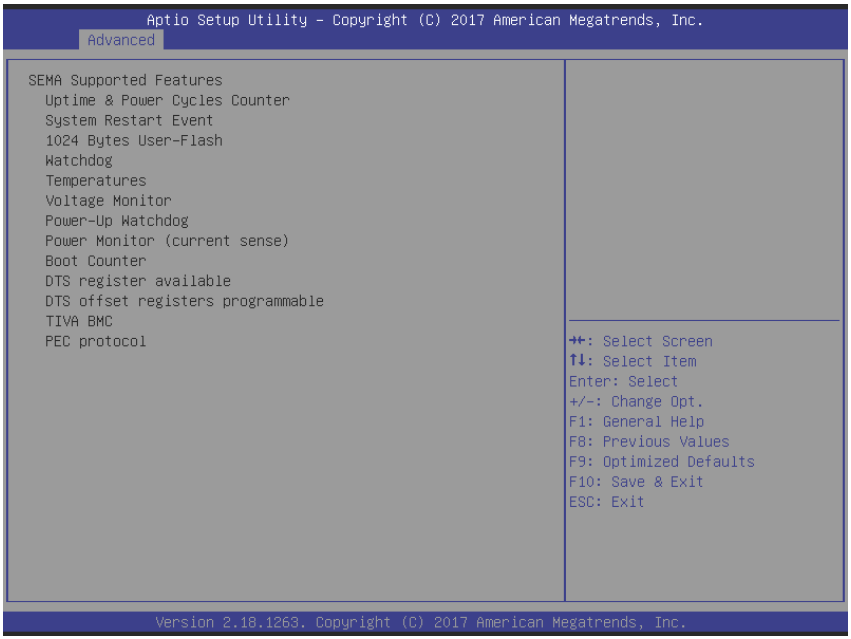
A.2.9 System Management



Shows SEMA firmware and bootloader versions and build dates.

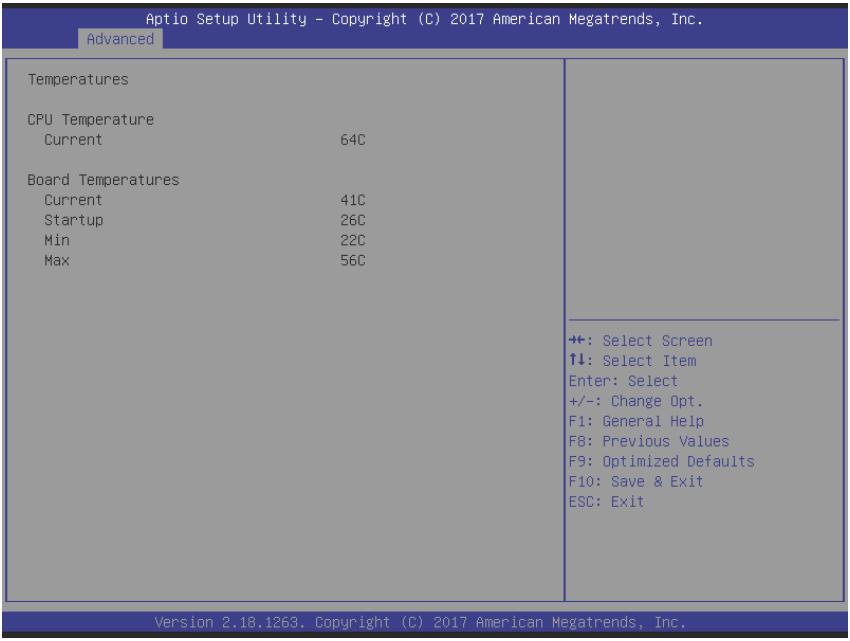
LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

SEMA Features



Shows features supported by the SEMA version.

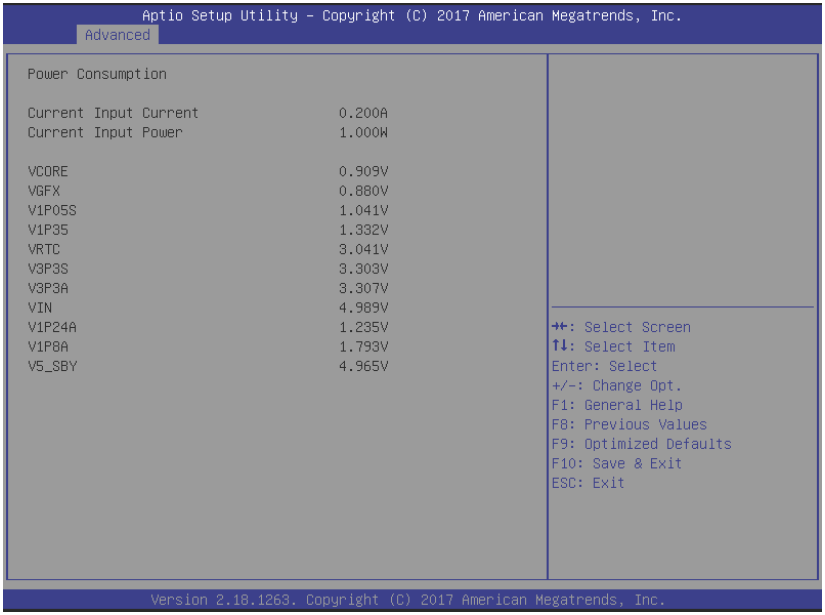
Temperatures



Shows current CPU temperature, and current, startup, minimum, and maximum board temperatures.

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

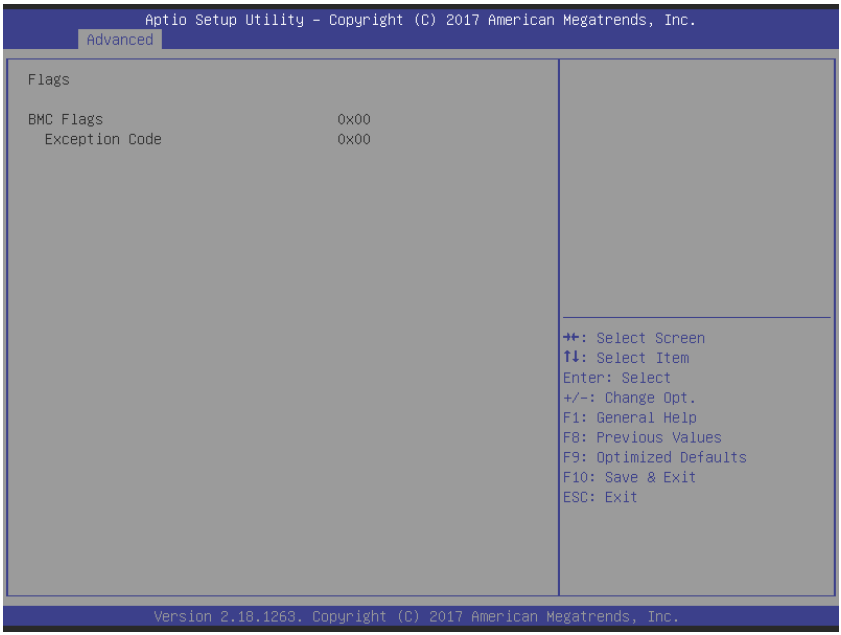
Power Consumption



Shows current input current and power, as well as system voltages.

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

Flags



Shows BMC flags with exception codes.

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

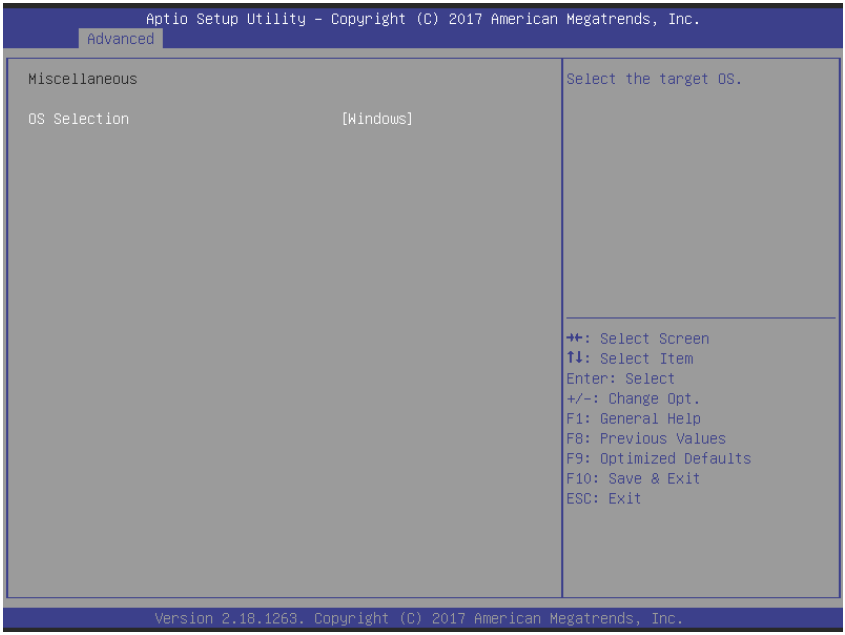
Power Up



Lists Power-Up Watchdog status.

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

A.2.10 Miscellaneous

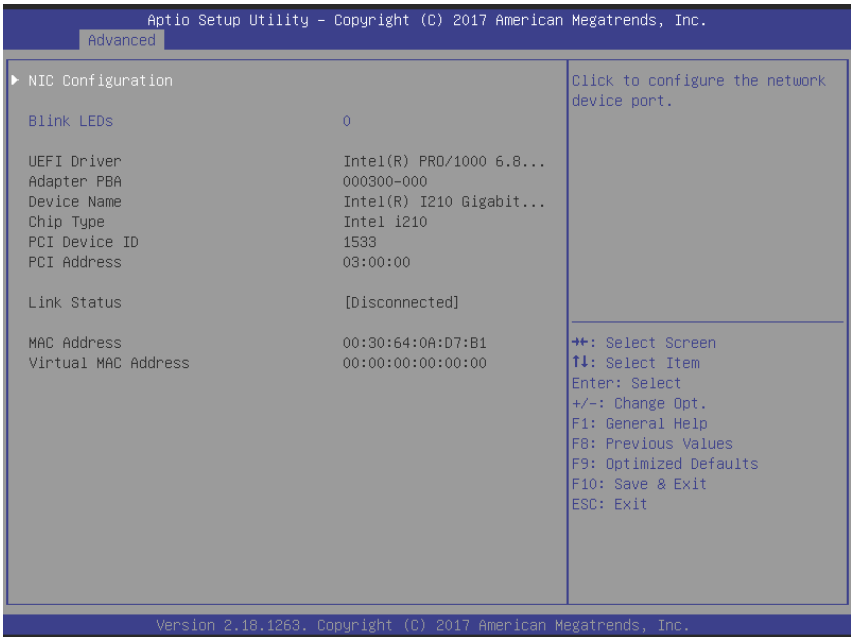


OS Selection

Allows selection of active OS.

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

A.2.11 Intel® I210 Gigabit Network Connection

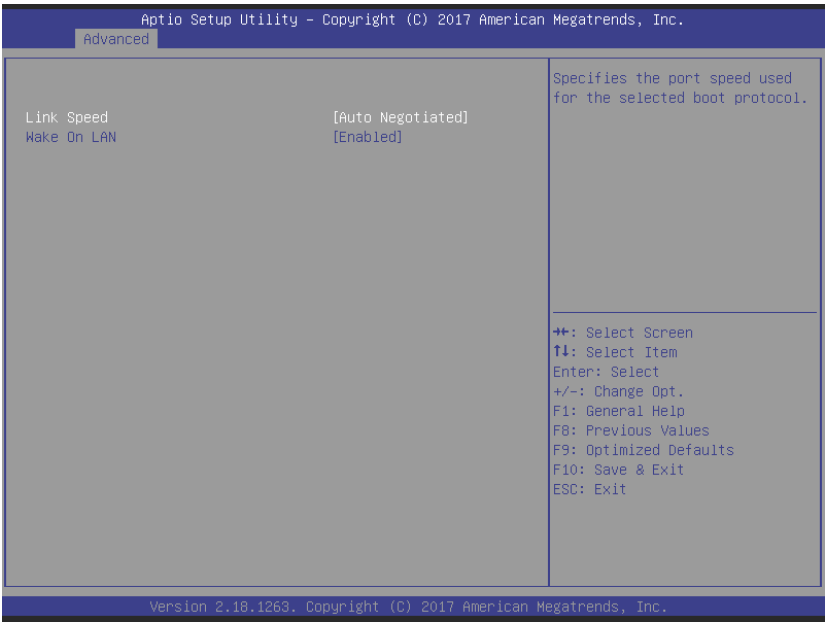


Blink LEDs

Identifies the physical network port by flashing the associated LED.

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

A.2.12 NIC Configuration



Link Speed

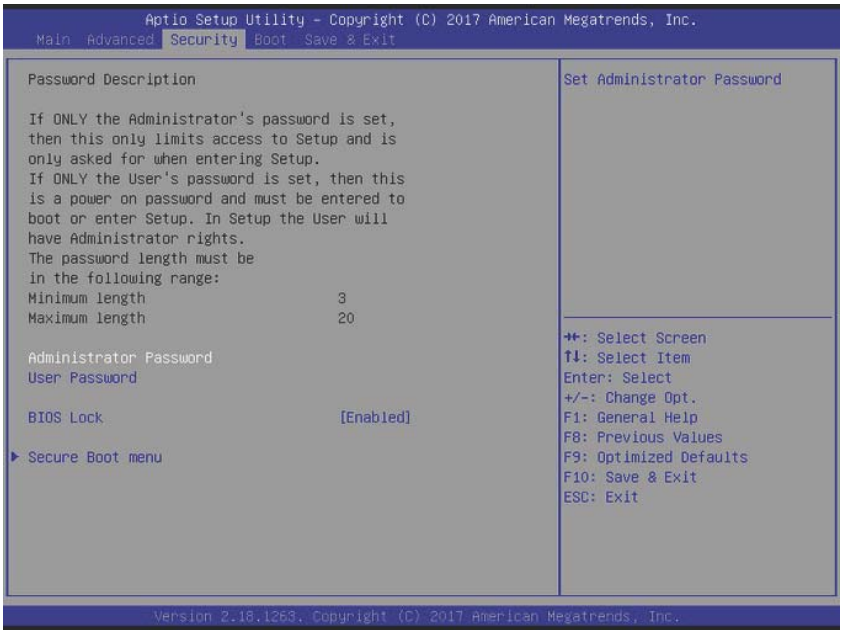
Specifies the port speed used for the selected boot protocol.

Wake On LAN

Enables server power-up using an in-band magic packet.

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

A.3 Security



NOTE: If only the Administrator's password is set, only access to Setup is limited and authorization requested only when entering Setup. If only the User's password is set, a password must be entered to boot or enter setup. In Setup the user has Administrator rights.

Administrator Password

Sets Administrator password.

User Password

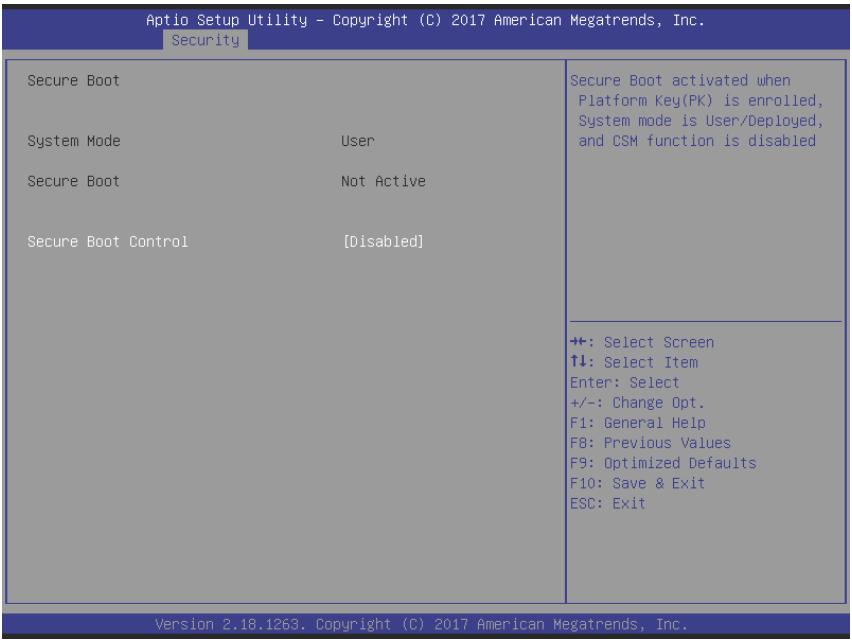
Sets User password.

BIOS Lock

Enables/disable SC BIOS Lock, which must be enabled to ensure SMM flash protection.

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

A.3.1 Secure Boot



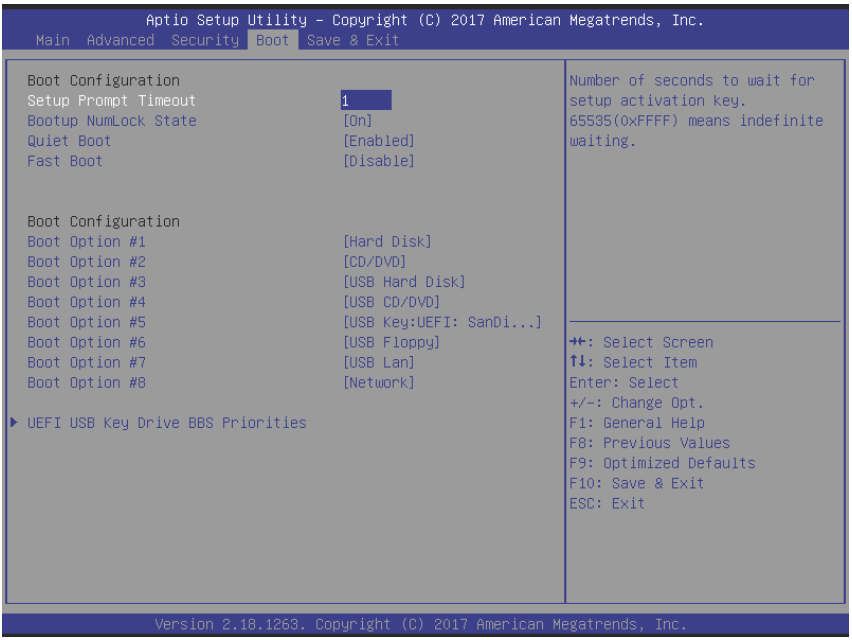
Shows System Mode and Secure Boot status.

NOTE:

Secure Boot is activated when Platform Key (PK) is enrolled, where System Mode is User/Deployed, and CSM function is disabled.

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

A.4 Boot



Setup Prompt Timeout

Number of seconds to wait for setup activation key, with 65535(0xFFFF) indicating infinite wait.

Bootup NumLock State

Sets keyboard NumLock status

Quiet Boot

Enables/disables Quiet Boot option

Fast Boot

Enables/disables boot with the minimal device initialization required to launch active boot option, with no effect on BBS boot options.

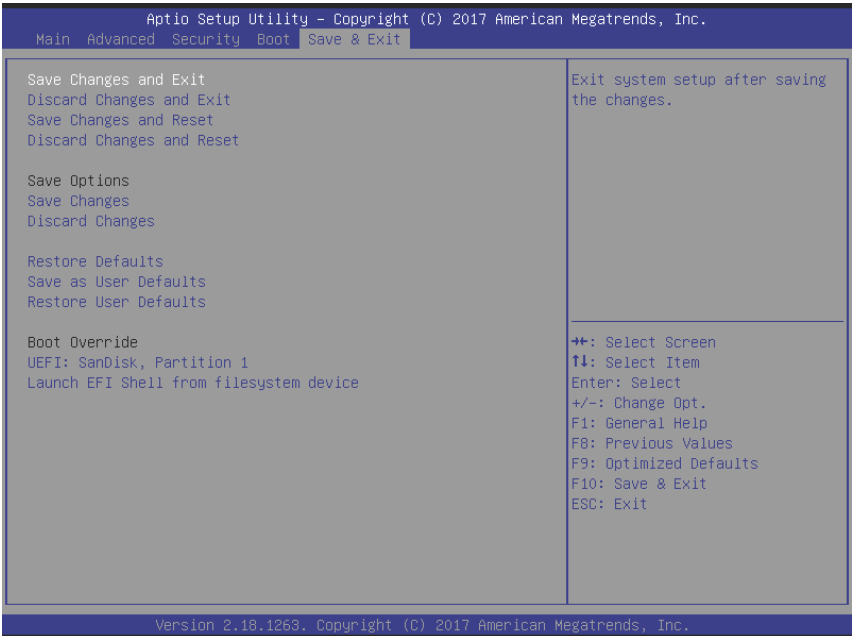
LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Sets number of seconds to wait for setup activation key.

Boot Option Priorities

Specifies the priority of boot devices, with all installed boot devices detected during POST and displayed, where selecting Boot Option # specifies the desired boot device.

A.5 Save & Exit



Save Changes and Exit

Exits system setup after saving the changes.

Discard Changes and Exit

Exits system setup without saving any changes.

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

Save Changes and Reset

Resets the system after saving changes.

Discard Changes and Reset

Resets system setup without saving any changes.

Save Changes

Saves changes to any setup options.

Discard Changes

Discards changes to any of the setup options.

Restore Defaults

Restores/loads default values for all setup options.

Save as User Defaults

Saves changes as User Defaults.

Restore User Defaults

Restores User Defaults to all setup options.

Launch EFI Shell from filesystem device

Attempts to launch EFI Shell application (Shell.efi) from one of the available filesystem devices.

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

This page intentionally left blank.

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

Important Safety Instructions

For user safety, please read and follow all instructions, Warnings, Cautions, and Notes marked in this manual and on the associated device before handling/operating the device, to avoid injury or damage.

S'il vous plaît prêter attention stricte à tous les avertissements et mises en garde figurant sur l'appareil , pour éviter des blessures ou des dommages.

- Read these safety instructions carefully
- Keep the User's Manual for future reference
- Read the Specifications section of this manual for detailed information on the recommended operating environment
- The device can be operated at an ambient temperature of 50ºC;
- When installing/mounting or uninstalling/removing device; or when removal of a chassis cover is required for user servicing (See "Getting Started" on page 23.):
  - Turn off power and unplug any power cords/cables
  - Reinstall all chassis covers before restoring power
- To avoid electrical shock and/or damage to device:
  - Keep device away from water or liquid sources
  - Keep device away from high heat or humidity
  - Keep device properly ventilated (do not block or cover ventilation openings)
  - Always use recommended voltage and power source settings
  - Always install and operate device near an easily accessible electrical outlet
  - Secure the power cord (do not place any object on/over the power cord)
  - Only install/attach and operate device on stable surfaces and/or recommended mountings
- If the device will not be used for long periods of time, turn off and unplug from its power source

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

- Never attempt to repair the device, which should only be serviced by qualified technical personnel using suitable tools
- A Lithium-type battery may be provided for uninterrupted backup or emergency power.



Risk of explosion if battery is replaced with one of an incorrect type; please dispose of used batteries appropriately.
Risque d'explosion si la pile est remplacée par une autre de type incorrect. Veuillez jeter les piles usagées de façon appropriée.

- The device must be serviced by authorized technicians when:
  - The power cord or plug is damaged
  - Liquid has entered the device interior
  - The device has been exposed to high humidity and/or moisture
  - The device is not functioning or does not function according to the User's Manual
  - The device has been dropped and/or damaged and/or shows obvious signs of breakage
- Disconnect the power supply cord before loosening the thumbscrews and always fasten the thumbscrews with a screwdriver before starting the system up
- It is recommended that the device be installed only in a server room or computer room where access is:
  - Restricted to qualified service personnel or users familiar with restrictions applied to the location, reasons therefor, and any precautions required
  - Only afforded by the use of a tool or lock and key, or other means of security, and controlled by the authority responsible for the location
- If PoE (Power over Ethernet) is enabled for the device, the system can ONLY be deployed indoors. Unless otherwise noted, the PoE system is NOT designed to withstand the rigors of outdoor use.

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

	**BURN HAZARD** Touching this surface could result in bodily injury. To reduce risk, allow the surface to cool before touching. ***RISQUE DE BRÛLURES*** *Ne touchez pas cette surface, cela pourrait entraîner des blessures.* *Pour éviter tout danger, laissez la surface refroidir avant de la toucher.*

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

This page intentionally left blank.

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

Getting Service

Ask an Expert: http://askanexpert.adlinktech.com

ADLINK Technology, Inc.
9F, No.166 Jian Yi Road, Zhonghe District
New Taipei City 235, Taiwan
Tel: +886-2-8226-5877
Fax: +886-2-8226-5717
Email: service@adlinktech.com

Ampro ADLINK Technology, Inc.
5215 Hellyer Avenue, #110
San Jose, CA 95138, USA
Tel: +1-408-360-0200
Toll Free: +1-800-966-5200 (USA only)
Fax: +1-408-360-0222
Email: info@adlinktech.com

ADLINK Technology (China) Co., Ltd.
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

LiPPERT ADLINK Technology GmbH
Hans-Thoma-Strasse 11
D-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