STC2-AL/KL Series

Smart Touch Computer

User's Manual



Manual Rev.:	1.0
Revision Date:	February 2, 2023
Part No:	50M-00114-1000

LEADING EDGE COMPUTING

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

Revision History

Revision	Release Date	Description of Change(s)
1.0	2023-02-02	Initial release

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

Preface

Copyright © 2023 ADLINK Technology Inc.

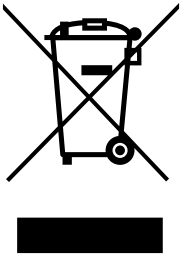
This document contains proprietary information protected by copyright. All rights are reserved. No part of this manual may be reproduced by any mechanical, electronic, or other means in any form without prior written permission of the manufacturer.

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)



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

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.

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.
ATTENTION: Informations destinées à prévenir les blessures corporelles mineures, les dommages aux composants, la perte de données et/ou la corruption de programme lors de l'exécution d'une tâche.

WARNING: Information to prevent ***serious*** physical injury, component damage, data loss, and/or program corruption when trying to complete a specific task.
AVERTISSEMENT: Informations destinées à prévenir les blessures corporelles graves, les dommages aux composants, la perte de données et/ou la corruption de programme lors de l'exécution d'une tâche spécifique.

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

Table of Contents

Preface iii

List of Tables vii

List of Figures ix

1 Introduction 1
- 1.1 Overview 1
- 1.2 Features 1
- 1.3 Packing List 2
- 1.4 Optional Accessories 2

2 Specifications 3
- 2.1 STC2-AL/KL Series Specifications 3
- 2.2 Power 7
- 2.3 Mechanical Dimensions 8
- 2.4 Mounting 11

3 System Layout 15
- 3.1 External I/O Connectors 15

4 BIOS Setup (STC2-AL) 23
- 4.1 BIOS Setup Menu 23
- 4.2 Menu Structure 25
- 4.3 Main Menu 27
- 4.4 Advanced Menu 29
- 4.5 Chipset 50
- 4.6 Security 54
- 4.7 Boot 55
- 4.8 Save & Exit 58

5 BIOS Setup (STC2-KL) 59

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

5.1 BIOS Setup Menu 59
5.2 Menu Structure 61
5.3 Main Menu 63
5.4 Advanced Menu 65
5.5 Chipset 87
5.6 Security 94
5.7 Boot 95
5.8 Save & Exit 98

6 Driver & Application Installation 99
6.1 Driver Installation Order 99
6.2 Chipset Driver Installation 100
6.3 Graphics Driver Installation 101
6.4 Ethernet Driver Installation 102
6.5 Management Engine Driver Installation 102
6.6 Serial I/O Driver Installation 103
6.7 DI/O Driver Installation 103

Important Safety Instructions 105

Consignes de Sécurité Importante 107

EMC Compliance 110

Getting Service 111

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

List of Tables

Table 2-1: STC2-AL Series Specifications 3
Table 2-2: STC2-KL Series Specifications 5
Table 2-3: Power Consumption 7
Table 3-1: External I/O Legend 15
Table 3-2: DC In Pin Definition 16
Table 3-3: COM1 Port Pin Definition 17
Table 3-4: COM2 Port Pin Definition 18
Table 3-5: USB 3.0 + USB 2.0 Connector Pin Definition 19
Table 3-6: DisplayPort Pin Definition 20
Table 3-7: Active/Link and Speed LED Indicators 21
Table 3-8: Ethernet Port Pin Definition 22

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

List of Figures

Figure 2-1: STC2-10WP-AL/KL Dimensions 8
Figure 2-2: STC2-15WP-AL/KL Dimensions 9
Figure 2-3: STC2-21WP-KL Dimensions 10
Figure 2-4: STC2-10/15WP-AL/KL VESA mounting 12
Figure 2-5: STC2-21WP-KL VESA mounting 13
Figure 3-1: STC2-AL/KL Series External I/O (10WP/15WP) 15
Figure 3-2: STC2-AL/KL Series External I/O (21WP-KL) 15
Figure 3-3: DC In Pin Definition 16
Figure 3-4: COM1 Port Pin Definition 17
Figure 3-5: COM2 Port Pin Definition 18
Figure 3-6: USB 3.0 + USB 2.0 Connector Pin Definition 19
Figure 3-7: DisplayPort Connector Pin Definition 20
Figure 3-8: Ethernet Port and LEDs 21

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

1.1 Overview

The STC2-AL/KL Series of Smart Touch Computers designed for industrial automation and other applications in harsh environments requiring an IP65-compliant front bezel with projected capacitive multi-touch display. Typical applications include industrial control systems for the food and beverage industries, automated buildings, transportation, hospitals, factories, and leisure facilities.

1.2 Features

- Flexible processor options, with high power efficiency with Intel Atom® x7-E3950 Processor (AL series) or high performance with Intel® Core™ i3-7100U/i5-7300U/i7-7600U (KL series)
- Extensive I/O
- High applicability and reliability in case of power fluctuation with a 9-36V DC voltage range
- Display outputs: LVDS output (eDP on request) for integrated display, DisplayPort

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

1.3 Packing List

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.

- 1x STC2-AL/KL Smart Touch Computer

1.4 Optional Accessories

- Wi-Fi Kit
- 4G/LTE Kits (market dependent)
- 60W power supply (12V/5A), (STC2-10WP/15WP, AL and KL variants)
- 84W power supply (12V/7A), (STC2-21WP-KL)

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

2 Specifications

2.1 STC2-AL/KL Series Specifications

2.1.1 STC2-AL Series Specifications

Model	STC2-10WP-AL	STC2-15WP-AL
System		
Processor	Intel Atom® x7-E3950 Processor,1.6(2.0)GHz, 2MB, 12W (4C)	
Memory	4GB DDR3L default (up to 8GB)	
Storage	64GB SSD default (up to 1TB)	
Display		
Size	10.1”	15.6”
Resolution	1280 x 800	1920 x 1080
Aspect Ratio	16:9	
Brightness	400 nits (w/ touch)	
Backlight Life (hrs)	50,000	
Viewing Angle (U/ D/R/L)	89°/89°/89°/89°	
Contrast Ratio	800:1	1000:1
Touchscreen	10-point, PCAP, anti-fingerprint coating	
I/O		
Ethernet	2x GbE LAN, RJ45	
Serial Ports	2x COM ports, RS-232/422/485	
USB Port	1x USB 2.0, Type-A 1x USB 3.0, Type-A	
Expansion	1x Mini PCIe card with PCIe and USB interface	
Wi-Fi and Bluetooth	IEEE 802.11 a/b/g/n/ac and Bluetooth 4.0 (optional with Mini PCIe card)	
4G/LTE	For USA/Europe/TW/NZ/AU regions (optional)	
Video	1x DP Port	

Table 2-1: STC2-AL Series Specifications

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

Model	STC2-10WP-AL	STC2-15WP-AL
Audio	1x audio port (line out)	
Environmental		
Operating Temperature	-10°C to 50°C (SSD)	
Storage Temperature	-20°C to 60°C	
Humidity	10% to 80% @ 40°C (non-condensing)	
Vibration	Operating: 1G random 5 to 500Hz	
Shock	Operating: 20G/11ms	
IP Rating	Front IP65	
Certifications & Compliance	CE/FCC	
Power Input	9-36V DC input	
Power Consumption	29.4W	39.8W
Software		
Watchdog Timer	Watchdog timer supported	
Operating System	Windows® 10 IoT Enterprise	
Weight	1.9 kg	3.16 kg
Dimensions (HxW xD) (mm)	256x174x44	390x239x47
Packing Dimensions (HxWxD) (mm)	355x145x288	505x155x368
Gross Weight	2.5 kg	4.2 kg
Mounting	VESA Mount, MIS-D 75mm x 75mm, 100mm x 100mm	

Table 2-1: STC2-AL Series Specifications

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

2.1.2 STC2-KL Series Specifications

Model	STC2-10WP-KL	STC2-15WP-KL	STC2-21WP-KL
System			
Processor	Intel® Core™ i3-7100U Processor,2.4GHz,3MB,14W (2C) Intel® Core™ i5-7300U Processor,2.6(3.5)GHz,3MB,15W (2C) Intel® Core™ i7-7600U Processor,2.8(3.9)GHz,4MB,15W (2C)		
Memory	4GB DDR3L default (up to 8GB)		
Storage	64GB SSD default (up to 1TB)		
Display			
Size	10.1"	15.6”	21.5”
Resolution	1280 x 800	1920 x 1080	1920 x 1080
Aspect Ratio	800:1	1000:1	1000:1
Brightness	400 cd/m^2 (typ.)	400 cd/m^2 (typ.)	400 cd/m^2 (typ.)
Backlight Life (hrs)	50,000		
Viewing Angle (U/D/R/L)	89°/89°/89°/89°		
Contrast Ratio	800:1	1000:1	
Touchscreen	10-point, PCAP, anti-fingerprint coating		
I/O			
Ethernet	2x GbE LAN, RJ45		
Serial Port	2x COM ports, RS-232/422/485		
USB Port	1x USB 2.0, Type-A 1x USB 3.0, Type-A		
Expansion	1x Mini PCIe card with PCIe and USB interface		
Wi-Fi and Bluetooth	IEEE 802.11 a/b/g/n/ac and Bluetooth 4.0 (optional with Mini PCIe card)		
4G/LTE	For USA/Europe/TW/NZ/AU regions (optional)		
Video	1x DisplayPort		
Audio	1x audio port (line out)		
Environmental			

Table 2-2: STC2-KL Series Specifications

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

Model	STC2-10WP-KL	STC2-15WP-KL	STC2-21WP-KL
Operating Temperature	-10°C to 50°C (SSD)		
Storage Temperature	-20°C to 60°C		
Humidity	10% to 80% @ 40°C (non-condensing)		
Vibration	Operating: 1G random 5 to 500Hz		
Shock	Operating: 20G/11ms		
IP Rating	Front IP65		
Certifications & Compliance	CE/FCC		
Power Input	9-36V DC input OVP/UVP protection		
Power Consumption	40.9W	50.4W	64.1W
Software			
Watchdog Timer	Watchdog timer supported		
Operating System	Windows® 10 IoT Enterprise		
Weight	2.05kg	4.2kg	6.9kg
Dimensions (HxWxD) (mm)	256x174x44	390x239x47	524x316x51
Packing Dimensions (HxWxD) (mm)	355x145x288	505x155x368	645x165x438
Gross Weight	2.5 kg	4.2 kg	6.9 kg
Mounting	VESA Mount, MIS-D 75mm x 75mm, 10mm x 10mm		

Table 2-2: STC2-KL Series Specifications

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

2.2 Power

Power supply options:

- 60W (12V/5A)
- 84W (12V/7A)

2.2.1 DC Input Options

12V DC (default) or 9-36V DC (optional) input are supported.

2.2.2 Power Consumption

Power consumption is based on lab data in which 12V DC is applied and current is measured by the DC power supply. The power consumption (W) is calculated as the product of applied voltage (V) and current (A). Platforms tested for this data have available external I/O interfaces, and are attached to supported devices such as keyboard/ mouse, USB dummy load, COM loop-back, LAN port, and with an internal SSD drive installed. Information is presented for reference only. Actual power consumption will vary with different attached devices and operating systems.

Configuration	Full Load
STC2-10WP-AL, 12V	29.4W
STC2-15WP-AL, 12V	39.8W
STC2-10WP-KL, 12V	40.9W
STC2-15WP-KL, 12V	50.4W
STC2-21WP-KL, 12V	64.1W

Table 2-3: Power Consumption

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

2.3 Mechanical Dimensions

NOTE:

All dimensions are in millimeters, unless noted.

2.3.1 STC2-10WP-AL/KL Dimensions

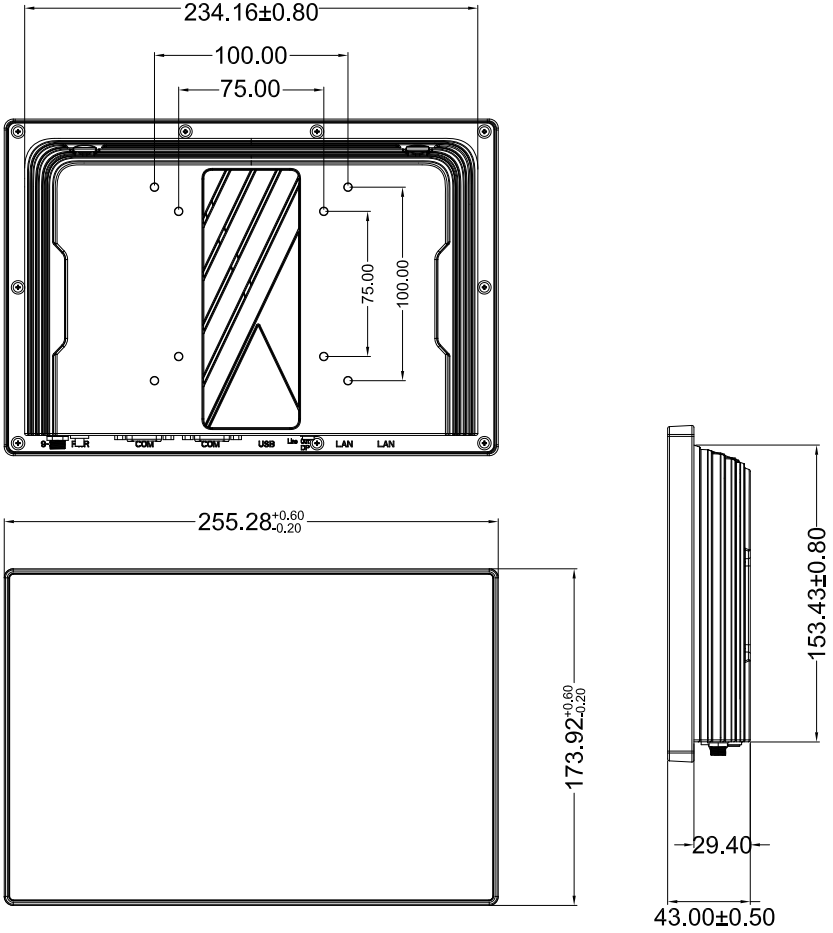


Figure 2-1: STC2-10WP-AL/KL Dimensions

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

2.3.2 STC2-15WP-KL Dimensions

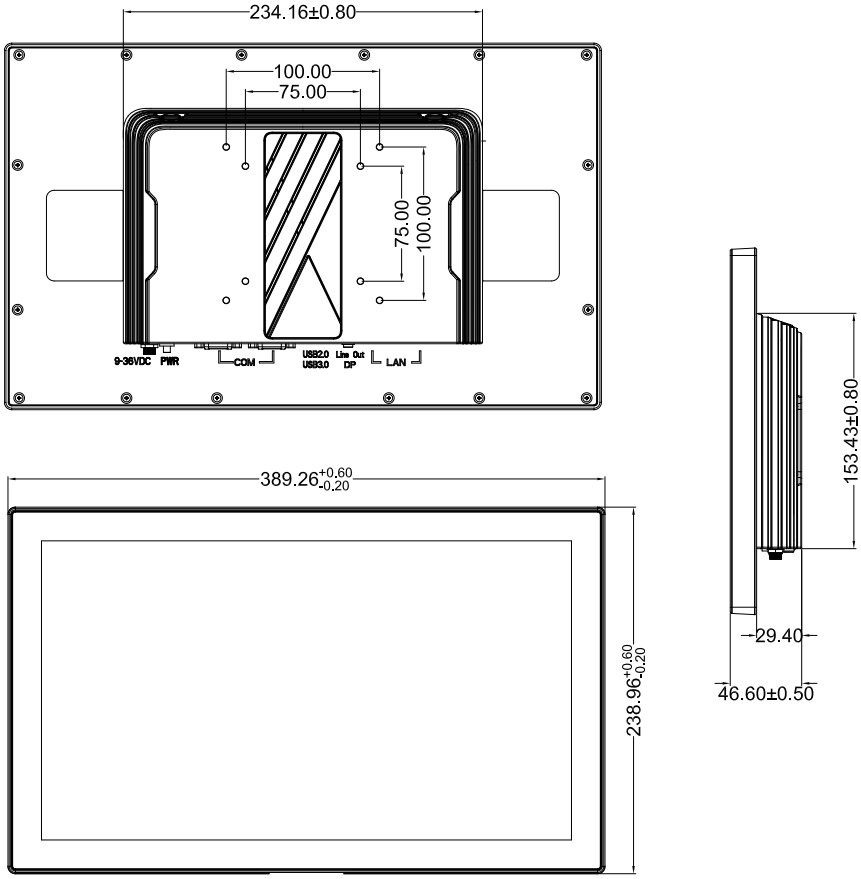


Figure 2-2: STC2-15WP-AL/KL Dimensions

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

2.3.3 STC2-21WP-KL Dimensions

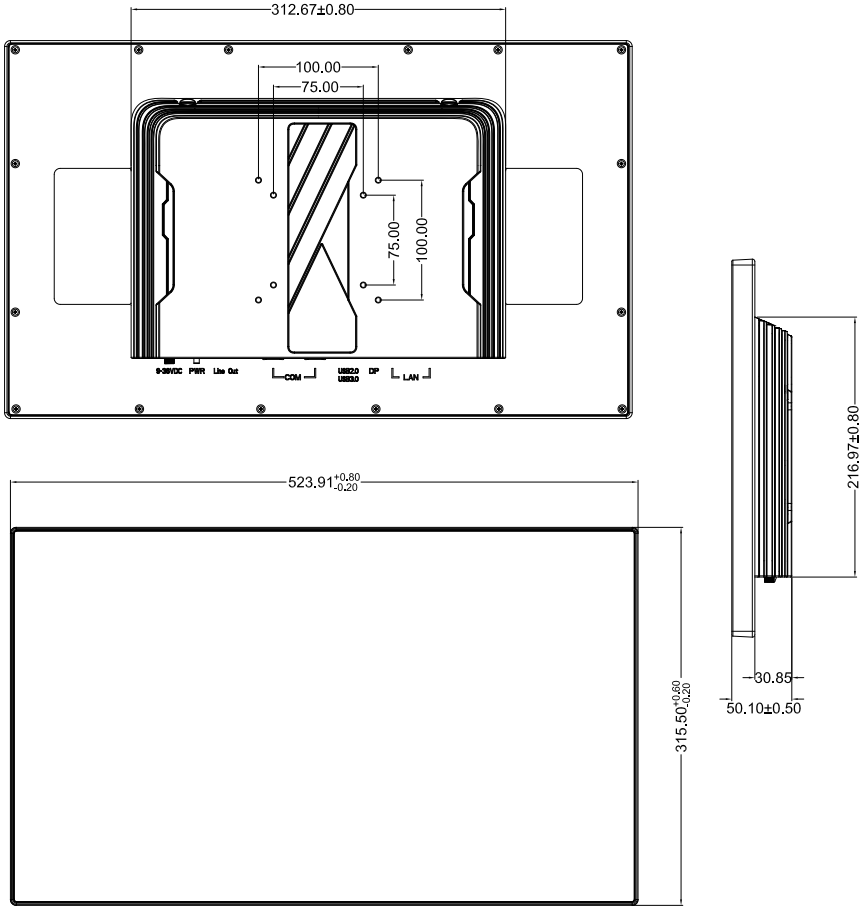


Figure 2-3: STC2-21WP-KL Dimensions

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

2.4 Mounting

This section includes details for panel and VESA mounting options.



Risk of physical injuries and / or property damage:
When mounting the device, use the screws to mount the VESA bracket to the rear of the device. Tighten all four screws firmly to support the weight of the device. Make sure that the suspension system is capable of carrying the device!



Risk of burns to the user caused by hot surfaces:
Turn off power and allow the device to cool down prior to performing any mounting or demounting operations. Do not touch the enclosure for over 10 seconds when the device is in operation or is still hot from previous use.



All dimensions are in millimeters, unless noted.

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

2.4.1 VESA Mounting

The STC2-AL/KL Series can be VESA mounted from the back panel as shown.

NOTE:

All I/O ports **must** face down.
All dimensions are in millimeters, unless noted.

.

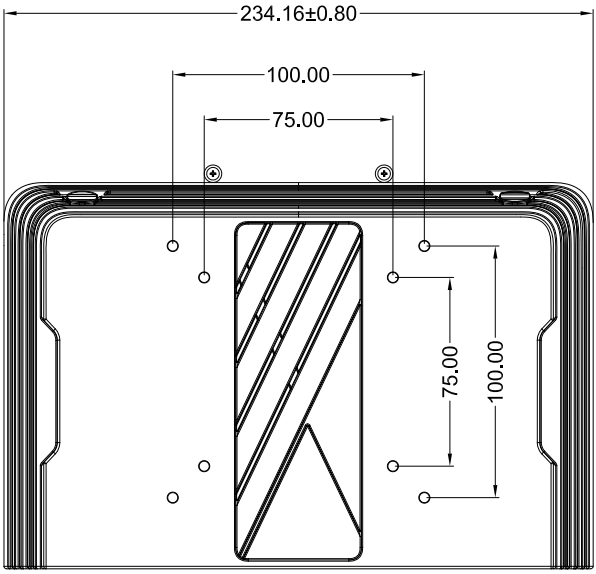


Figure 2-4: STC2-10/15WP-AL/KL VESA mounting

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

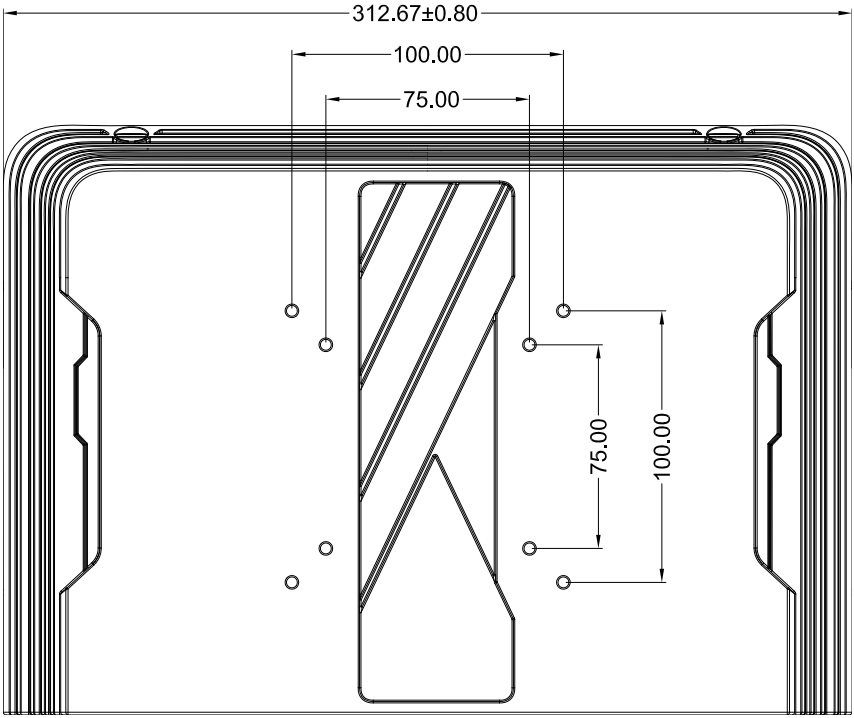


Figure 2-5: STC2-21WP-KL VESA mounting

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

3 System Layout

3.1 External I/O Connectors

The STC2-AL/KL Series provides the following external I/O connectors.

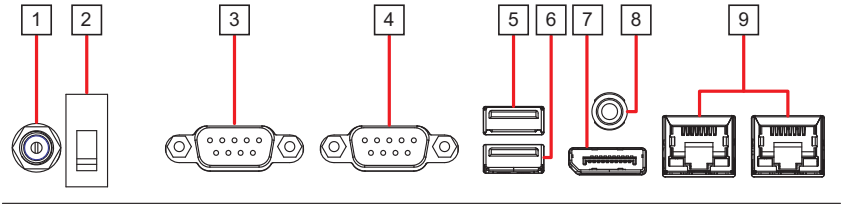


Figure 3-1: STC2-AL/KL Series External I/O (10WP/15WP)

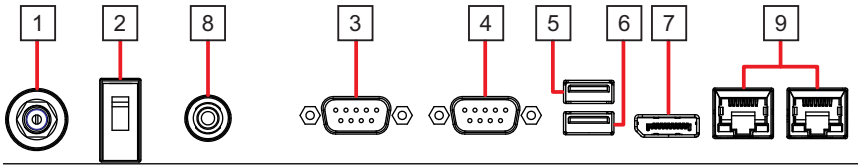


Figure 3-2: STC2-AL/KL Series External I/O (21WP-KL)

1	1x DC In
2	1x Power switch
3	DB-9P COM1 port supports RS-232/422/485
4	DB-9P COM2 port supports RS-232/422/485
5	1x USB 3.2 Gen1 (5Gbps) Type-A
6	1x USB 2.0 Type-A
7	1x DisplayPort
8	1x 3.5mm Line Out
9	2x RJ45 GbE LAN I225 type, up to 1Gbps (STC2-AL) or 2.5Gbps (STC2-KL)

Table 3-1: External I/O Legend

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

3.1.1 DC In

The DC in port supports 12V DC In with the default configuration. For flexible power options, contact your ADLINK sales representative.

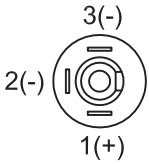


Figure 3-3: DC In Pin Definition

Pin	Signal
1	DC +
2	DC -
3	DC -

Table 3-2: DC In Pin Definition

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

3.1.2 COM1 Port Connector

The COM1 port is a D-sub 9-pin connector supporting RS-232/ 422/485 modes by BIOS setting.

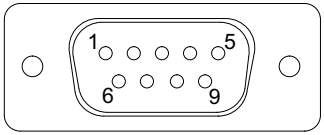


Figure 3-4: COM1 Port Pin Definition

Pin	Signal	RS-232	RS-422	RS-485
1	COM1_DCD-L_CN	DCD#	TXD422-	485DATA-
2	COM1_RXD_CN	RXD	TXD422+	485DATA+
3	COM1_TXD_CN	TXD	RXD422+	N/S
4	COM1_DTR-L_CN	DTR#	RXD422-	N/S
5	GND	GND	N/S	N/S
6	COM1_DSR-L_CN	DSR#	N/S	N/S
7	COM1_RTS-L_CN	RTS#	N/S	N/S
8	COM1_CTS-L_CN	CTS#	N/S	N/S
9	COM1_RI-L_CN	RI#	N/S	N/S

Table 3-3: COM1 Port Pin Definition

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

3.1.3 COM2 Port Connector

The COM2 port is a D-sub 9-pin connector supporting RS-232/422/485 modes by BIOS setting.

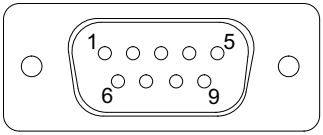


Figure 3-5: COM2 Port Pin Definition

Pin	Signal	RS-232	RS-422	RS-485
1	COM2_DCD-L_CN	DCD#	TXD422-	485DATA-
2	COM2_RXD_CN	RXD	TXD422+	485DATA+
3	COM2_TXD_CN	TXD	RXD422+	N/S
4	COM2_DTR-L_CN	DTR#	RXD422-	N/S
5	GND	GND	N/S	N/S
6	COM2_DSR-L_CN	DSR#	N/S	N/S
7	COM2_RTS-L_CN	RTS#	N/S	N/S
8	COM2_CTS-L_CN	CTS#	N/S	N/S
9	COM2_RI-L_CN	RI#	N/S	N/S

Table 3-4: COM2 Port Pin Definition

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

3.1.4 USB 3.0 + USB 2.0 Combo Connector

USB 3.0 Gen1 (5 Gbps) Type-A + USB 2.0 Type-A connectors are provided compatible with SuperSpeed, Hi-Speed, Full-Speed, and Low-Speed USB devices suitable for USB peripherals.

- USB 3.2 Gen1 connector up to 5Gbps with 1600 mA power and OCP protection
- USB 2.0 connector up to 480 Mbps with 1000 mA power and OCP protection.

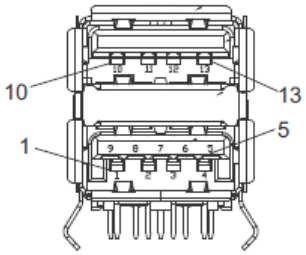


Figure 3-6: USB 3.0 + USB 2.0 Connector Pin Definition

Pin	Signal	Pin	Signal
1	P_+5V_USB3	10	P_+5V_USB2
2	CN_U2_P1_N	11	CN_U2_P2_N
3	CN_U2_P1_P	12	CN_U2_P2_P
4	GND		
5	CN_U3_RX1_N		
6	CN_U3_RX1_P		
7	GND		
8	CN_U3_TX1_N		
9	CN_U3_TX1_P		

Table 3-5: USB 3.0 + USB 2.0 Connector Pin Definition

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

3.1.5 DisplayPort Connector

One DisplayPort connector, supporting the DP++ standard specification, can connect to VGA, DVI, HDMI, and DisplayPort with a DisplayPort to VGA adapter cable, DisplayPort to DVI adapter cable, or DisplayPort to HDMI adapter cable, or a DisplayPort cable, with DP1.4 support for resolutions up to 5120 x 3200 at 60Hz.

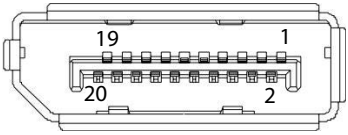


Figure 3-7: DisplayPort Connector Pin Definition

Pin	Signal	Pin	Signal
1	CON_DDI1_TX0_P	11	GND
2	GND	12	CON_DDI1_TX3_N
3	CON_DDI1_TX0_N	13	CON_DDI1_DDC_AUX_SEL
4	CON_DDI1_TX1_P	14	CON_DDI1_CONFIG_2
5	GND	15	CON_DDI1_I2CCLK_AUX_P
6	CON_DDI1_TX1_N	16	GND
7	CON_DDI1_TX2_P	17	CON_DDI1_I2CCLK_AUX_N
8	GND	18	CON_DDI1_HPD
9	CON_DDI1_TX2_N	19	GND
10	CON_DDI1_TX3_P	20	P_+3V3_DP1

Table 3-6: DisplayPort Pin Definition

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

3.1.6 Gigabit Ethernet Port

Two 2.5 Gigabit Intel® Ethernet Controller i225 Series (V, IT or LM) RJ45 connectors support up to 1000/100/10 Mbit/s connections (STC2-AL) or up to 2.5 Gbit/s (STC2-KL).

- Other combinations supported on a by-project basis. Contact your ADLINK sales representative for more information.

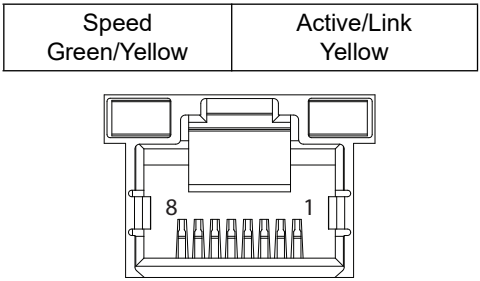


Figure 3-8: Ethernet Port and LEDs

LED	Color	Status	Description
Active/Link	Yellow	On	LAN is connected
		Blinking	LAN is initializing
Speed	None	Off	10/100 Mbps
	Green	On	1000 Mbps
	Yellow	On	2500 Mbps (STC2-KL only)

Table 3-7: Active/Link and Speed LED Indicators

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

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 3-8: Ethernet Port Pin Definition

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

4 BIOS Setup (STC2-AL)

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 STC2-AL. The BIOS setup program includes menus for configuring settings and enabling features of the STC2-AL. Most users do not need to use the BIOS setup program, as the STC2-AL ships with default settings that work well for most configurations.



BIOS options used in this manual are for reference only, and are subject to change. Users can download the latest BIOS version from the ADLINK website.



Changing BIOS settings may lead to unexpected system behavior and the possible inability to boot.

4.1 BIOS Setup Menu

The BIOS Setup Utility is invoked by pressing <ESC> or <DEL> when the system boots. A system reboot is required when changes are made in the BIOS Setup Utility.

The BIOS Setup Utility includes the following hotkeys.

- <F1>: General help
- <F8>: Load previous BIOS values
- <F9>: Load BIOS default values
- <F10>: Save & Exit the Setup Utility

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

Menu Selection Bar

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

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

Menu Conventions

The appearance of the setup menus and items listed in this chapter are based on a VT100 terminal connection via serial console with the following menu conventions.

- Using color

  The default BIOS setup fields are black. The BIOS setup fields currently not used are grey. The display strings are black.

- Using brackets

  Editable menu options are marketed with square brackets, '[' and ']'.

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

4.2 Menu Structure

This section presents the six primary menus of the BIOS Setup Utility. Use the following tables as a quick reference for the contents of the BIOS Setup Utility. The remainder of this chapter describe the sub-menus and options for each menu item. The default settings are presented in bold, and the function of each setting is described in the right hand column of the table.

Main	Advanced
- BIOS Information - System Information - Board Information	- CPU Configuration ► - Graphics Configuration ► - Power Management ► - System Management ► - Thermal Management ► - Watchdog Timer ► - Super IO Configuration ► - Serial Console Redirection ► - Network Stack Configuration ► - Trusted Computing ► - USB Configuration ►

Chipset	Security
- North Bridge ► - Uncore Configuration ► - South Cluster Configuration ►	- Secure Boot menu

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

Boot	Save & Exit
- Boot Configuration - UEFI Hard Disk Drive BBS Priorities - UEFI NVME Drive BBS Priorities - UEFI CDROM/DVD Drive BBS Priorities - UEFI SD Drive BBS Priorities - UEFI USB Hard Disk Drive BBS Priorities - UEFI USB CDROM/DVD Drive BBS Priorities - UEFI USB Key Drive BBS Priorities - UEFI USB Floppy Drive BBS Priorities - UEFI USB Lan Drive BBS Priorities - UEFI NETWORK Drive BBS Priorities	- Save Changes and Exit - Discard Changes and Exit - Save Changes and Reset - Discard Changes and Reset - Save Options - Save Changes - Discard Changes - Restore Defaults - Save as User Defaults - Restore User Defaults - Boot Override - Launch EFI Shell from filesystem device


NOTE:

- ► indicates a submenu
- Gray text indicates info only
- **Bold text** indicates a default setting

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

4.3 Main Menu

This menu provides read-only information about your system and also allows you to set the System Date and Time. Refer to the tables below for details of the submenus and settings.

4.3.1 Main > BIOS Information

Feature	Options	Description
BIOS Vendor	Info only	BIOS Vendor
BIOS Version	Info only	BIOS Version
Build Date	Info only	BIOS build date
MRC Version	Info only	MRC Version
GOP Version	Info only	GOP Version
TXE FW Version	Info only	TXE FW Version
BIOS Boot Source	Info only	BIOS Boot Source

4.3.2 Main > System Information

Feature	Options	Description
Project Name	Info only	Project Name
CPU Board Version	Info only	CPU Board Version
CPU Brand String	Info only	CPU Brand String
CPU Frequency	Info only	CPU Frequency
Total Memory	Info only	Total Memory
Memory Frequency	Info only	Memory Frequency
SOC SKU	Info only	SOC SKU
FM Board	Info only	FM Board

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

4.3.3 Main > Board Information

Feature	Options	Description
Board Information	Info only	Board Information
Serial Number	Info only	Serial Number
Manufacturing Date	Info only	Manufacturing Date
Last Repair Date	Info only	Last Repair Date
Runtime Statistics	Info only	Runtime Statistics
Total Runtime	Info only	Total Runtime
Current Runtime	Info only	Current Runtime
Power Cycles	Info only	Power Cycles
Boot Cycles	Info only	Boot Cycles
Boot Reason	Info only	Boot Reason

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

4.4 Advanced Menu

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

4.4.1 Advanced > CPU Configuration

Feature	Options	Description
CPU Signature	Info only	Displays the CPU Signature
Microcode Patch	Info only	Displays the Microcode Patch
Max CPU Speed	Info only	Displays the CPU Speed
Min CPU Speed	Info only	Displays the Min CPU Speed
Processor Cores	Info only	Displays the number of Processor Cores
Intel HT Technology	Info only	Displays Intel HT Technology status
Intel VT-x Technology	Info only	Displays Intel VT-x Technology status
L1 Data Cache	Info only	Displays the Processor L1 Data Cache size.
L1 Instruction Cache	Info only	Displays the Processor L1 Instruction Cache size.
L2 Cache	Info only	Displays the Processor L2 Cache size.
L3 Cache	Info only	Displays the Processor L3 Cache size.
L4 Cache	Info only	Displays the Processor L4 eDRAM size.
VMX	Info only	VMX Supported or Not
SMX/TXT	Info only	SMX/TXT Supported or Not
Intel(R) SpeedStep(tm)	Disabled **Enabled**	Allows more than two frequency ranges to be supported.
Turbo Mode	Disabled **Enabled**	Enable/Disable processor Turbo Mode (requires EMTTM enabled too). AUTO means enabled, unless max turbo ratio is bigger than 16 - SKL A0 W/A
C states	**Enabled** Disabled	Enable/Disable CPU Power Management. Allows CPU to go to C states when it's not 100% utilized.
Enhanced C-states	Disabled **Enabled**	Enable/Disable C1E. When enabled, CPU will switch to minimum speed when all cores enter C-State.

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

Feature	Options	Description
C-State Auto Demotion	Disabled C1 C3 **C1 and C3**	Configure C-State Auto Demotion
C-State Un-demotion	Disabled C1 C3 **C1 and C3**	Configure C-State Un-demotion
Package C-State Demotion	Disabled Enabled **Auto**	Enable or Disable Package C-State Demotion. 0: Disable; 1: Enable; 2: Auto (Auto: Enabled for Skylake; Disabled for Kabylake)
Package C-State Un-demotion	Disabled Enabled **Auto**	Enable or Disable Package C-State UnDemotion. 0: Disable; 1: Enable; 2: Auto (Auto: Enabled for Skylake; Disabled for Kabylake)
DTS SMM	Disabled **Enabled** Critical Temp Reporting (Out Of spec)	Disabled: ACPI thermal management uses EC reported temperature values.

4.4.2 Advanced > Graphics Configuration

Feature	Options	Description
Graphics Configuration		
FM Display Type	No Device DisplayPort HDMI **DisplayPort with HDMI/DVI Compatible**	FM display type switch
For LVDS Only		

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

Feature	Options	Description
Data format and Color Depth	**Auto** VESA 24 bpp JEIDA 24 bpp JEIDA/VESA 18 bpp	Data format and Color Depth select
LVDS Output Mode	**Auto** Dual LVDS bus Single LVDS bus	Single/Dual mode select
DE Polarity	**Active High** Active Low	DE Polarity select
Vsync Polarity	**Active High** Active Low	Vsync Polarity select
Hsync Polarity	**Active High** Active Low	Hsync Polarity select
Spreading depth	No Spreading 0.5% 1.0% 1.5% 2.0% **2.5%**	Clock frequency center spreading depth.
For eDP/LVDS		
LFP Panel Type	Auto 640x480 800x600 1024x768 1280x1024 1400x1050 1024x600 1600x1200 1366x768 1680x1050 1920x1200 1440x900 1600x900 **1280x800** 1920x1080 2048x1536	Select LFP panel used by Internal Graphics Device.

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

4.4.3 Advanced > Power Management

Feature	Options	Description
Enable ACPI Auto Configuration	**Disabled** Enabled	Enables/Disables BIOS ACPI Auto Configuration.
Enable Hibernation	Disabled **Enabled**	Enables/Disables System ability to Hibernate (OS/S4 Sleep State). This option may not be effective with some operating systems.
ACPI Sleep State	Suspend Disabled **S3 (Suspend to RAM)**	Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.
mPCI Slot Wake	Disabled **Enabled**	Enables/Disables PCIe wake function
RTC Wake system from S5	**Disabled** Fixed Time Dynamic Time	Enables/Disables System wake on alarm event. Select FixedTime, system will wake on the hr::min::sec specified. Select DynamicTime, System will wake on the current time + Increase minute(s)
Wake up hour	**0x00**	Wake up hour in hex. Range: 0x00-0x17 in increments of 0x01 (0-23 hrs, 1 hr increments)
Wake up minute	**0x00**	Wake up hour in hex. Range: 0x00-0x3B in increments of 0x01 (0-59 mins, 1 min increments)
Wake up second	**0x00**	Wake up second in hex. Range: 0x00-0x3B in increments of 0x01 (0-59 sec, 1 sec increments)

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

Feature	Options	Description
Wake up minute increase	**0x01**	Wake up minute increase in hex for Dynamic RTC Wake. Range: 0x00-0x05 in increments of 0x01 (0-5 min, 1 min increments)
Backup Battery Function	**Disabled** Enabled	Toggles battery function for to run device on battery power if a battery is installed.
Emulation AT/ATX	Emulation AT **ATX**	Select Emulation AT or ATX function. If this option is set to [Emulation AT], BIOS will report no suspend functions to ACPI OS. On Windows XP, the OS will show a shutdown message during system shutdown.
Power Consumption >	Sub-menu	

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

4.4.4 Advanced > Power Management > Power Consumption

Feature	Options	Description
Power Consumption	Info only	
Current Input Current	Info only	Current Input Current
Current Input Power	Info only;	Current Input Power
CPU-Vcore	Info only	CPU-Vcore
VGFX	Info only	VGFX
V1P05S	Info only	V1P05S
VMEM	Info only	VMEM
VIN(12V)	Info only	VIN(12V)
V5SBY	Info only	V5SBY
V5S	Info only	V5S
P_+3V3_A	Info only	P_+3V3_A
P_+3V3_S	Info only	P_+3V3_S
VRTC	Info only	VRTC
P_+1V24_S	Info only	P_+1V24_S
P_+1V8_S	Info only	P_+1V8_S

4.4.5 Advanced > System Management

Feature	Options	Description
EC Version	Info only	Version of EC Firmware
SEMA Firmware	Info only	Version of SEMA Firmware
Build Date	Info only	Build Date of SEMA Firmware
SEMA Bootloader	Info only	Version of SEMA Bootloader
Build Date	Info only	Build Date of SEMA Bootloader

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

4.4.6 Advanced > System Management > SEMA Features

Feature	Options	Description
SEMA Features	Info only	
SEMA Supported Features	Info only	SEMA Supported Features
Uptime & Power Cycles Counter	Info only	Uptime & Power Cycles Counter
System Restart Event	Info only	System Restart Event
512 Bytes User-Flash	Info only	512 Bytes User-Flash
1024 Bytes User-Flash	Info only	1024 Bytes User-Flash
Watchdog	Info only	Watchdog
Temperatures	Info only	Temperatures
Voltage Monitor	Info only	Voltage Monitor
Power-Up Watchdog	Info only	Power-Up Watchdog
Power Monitor (current sense)	Info only	Power Monitor (current sense)
Boot Counter	Info only	Boot Counter
I2C bus 2	Info only	I2C bus 2
System Fan 1	Info only	System Fan 1
ACPI Thermal Trigger	Info only	ACPI Thermal Trigger
DTS register available	Info only	DTS register available
TIVA BMC	Info only	TIVA BMC
SEMA Error Log	Info only	SEMA Error Log

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

4.4.7 Advanced > System Management > Flags

Feature	Options	Description
BMC Flags	Info only	BMC Flags
BIOS Select	Info only	BIOS Select
ATX/AT-Mode	Info only	ATX/AT-Mode
Exception Code	Info only	Exception Code

4.4.8 Advanced > System Management > SEMA > Temperature

Feature	Options	Description
CPU Temperature ►	Sub-Menu	
Current	Info only	Current CPU temperature
Startup	Info only	Startup CPU temperature
Min	Info only	Min. CPU temperature
Max	Info only	Max. CPU temperature
Board Temperatures ►	Sub-Menu	
Current	Info only	Current Board temperature
Startup	Info only	Startup Board temperature
Min	Info only	Min. Board temperature
Max	Info only	Max. Board temperature
Board2 Temperatures ►	Sub-Menu	
Current	Info only	Current Board temperature
Startup	Info only	Startup Board temperature
Min	Info only	Min. Board temperature
Max	Info only	Max. Board temperature
CPU Fan Speed	Info only	CPU Fan Speed
Smart Fan ►	Sub-Menu	
Critical Trip Point	**Disabled** 60 C 70 C 80 C	This value is the temperature threshold of the Critical Trip Point.

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

Feature	Options	Description
Passive Cooling Trip Point	**Disabled** 60 C 70 C 80 C	This value is the temperature threshold of the Passive Cooling Trip Point.

4.4.9 Advanced > Watchdog Timer

Feature	Options	Description
Power-Up Watchdog	**Disabled** Enabled	Enables/Disables the Watchdog Timer
Timeout	**0xFFFF**	Number of minutes before the power up watchdog resets the system OS in hex. Range 0x018-0xFFFF (18-65535 minutes, 1 min increments)
ATTENTION: Pressing F12 during start up disables the Power Up Watchdog.		
RunTime Watchdog	**Disabled** Enabled	The RunTime Watchdog resets the system after a certain amount of time after power up.
Timeout	**0x0018**	Time Power Up Watchdog should wait until it resets the system in hex. Range 0x018-0xFFFF (18-65535 minutes, 1 min increments)

4.4.10 Advanced > Super IO Configuration

Feature	Options	Description
Super IO Chip	Info only	
► Serial Port 1 Configuration	Sub-Menu	
► Serial Port 2 Configuration	Sub-Menu	
► Serial Port 3 Configuration	Sub-Menu	
► Serial Port 4 Configuration	Sub-Menu	

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

4.4.11 Advanced > Super IO Configuration > Serial Port 1 Configuration

Feature	Options	Description
Serial Port	Disabled **Enabled**	Enables/Disables the serial port (COM)
Device Settings	IO=3F8h; IRQ=4	
Change Settings	**Auto** IO=3F8h; IRQ=4 IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12 IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12 IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12 IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12	Selects optimal settings for Super IO Device
COM1 Control	**RS232** RS422 RS485	Sets COM1 mode as RS-232, RS-422 or RS-485

4.4.12 Advanced > Super IO Configuration > Serial Port 2 Configuration

Feature	Options	Description
Serial Port	Disabled **Enabled**	Enables/Disables the serial port (COM)
Device Settings	IO=2F8h; IRQ=3	
Change Settings	**Auto** IO=2F8h; IRQ=3; IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12 IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12 IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12 IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12	Selects optimal settings for Super IO Device
COM2 Control	**RS232** RS422 RS485	Sets COM2 mode as RS-232, RS-422 or RS-485

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

4.4.13 Advanced > Super IO Configuration > Serial Port 3 Configuration

Feature	Options	Description
Serial Port	**Disabled** Enabled	Enables/Disables the serial port (COM)
Device Settings	Reset Required	
Change Settings	Auto IO=3E8h; IRQ=7; IO=3F8h; IRQ=3,4,5,6,7,9,**10**,11,12 IO=2F8h; IRQ=3,4,5,6,7,9,**10**,11,12 IO=3E8h; IRQ=3,4,5,6,7,9,**10**,11,12 IO=2E8h; IRQ=3,4,5,6,7,9,**10**,11,12 IO=220h; IRQ=3,4,5,6,7,9,**10**,11,12 IO=228h; IRQ=3,4,5,6,7,9,**10**,11,12	Selects optimal settings for Super IO Device

4.4.14 Advanced > Super IO Configuration > Serial Port 4 Configuration

Feature	Options	Description
Serial Port	**Disabled** Enabled	Enables/Disables the serial port (COM)
Device Settings	Reset Required	
Change Settings	Auto IO=3E8h; IRQ=7; IO=3F8h; IRQ=3,4,5,6,7,9,**10**,11,12 IO=2F8h; IRQ=3,4,5,6,7,9,**10**,11,12 IO=3E8h; IRQ=3,4,5,6,7,9,**10**,11,12 IO=2E8h; IRQ=3,4,5,6,7,9,**10**,11,12 IO=220h; IRQ=3,4,5,6,7,9,**10**,11,12 IO=228h; IRQ=3,4,5,6,7,9,**10**,11,12	Selects optimal settings for Super IO Device

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

4.4.15 Advanced > Serial Console Redirection

Feature	Options	Description
COM0		
Console Redirection	**Disabled** Enabled	Enables/Disables console redirection on COM0 port.
Console Redirection Settings ▶	Sub-Menu	
COM1		
Console Redirection	**Disabled** Enabled	Enables/Disables console redirection on COM1 port.
Console Redirection Settings ▶	Sub-Menu	

4.4.16 Advanced > Console Redirection > COM 0 > Console Redirection Settings

Feature	Options	Description
Terminal Type	VT100 VT100Plus VT-UTF8 **ANSI**	Emulation: ANSI: Extended ASCII character set. VT100: ASCII character set. VT100Plus: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.
Bits per second	9600 19200 38400 57600 **115200**	Selects serial port transmission speed. The speed must be matched on both connected systems. Long or noisy lines may require lower speeds.
Data Bits	7 **8**	Data Bits.

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

Feature	Options	Description
Parity	**None** Even Odd Mark Space	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** 2	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** Hardware RTS/CTS	Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a 'stop' signal can be sent to stop the data flow. Once the buffers are empty, a 'start' signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop
VT-UTF8 Combo Key Support	Disabled **Enabled**	Enable VT-UTF8 Combination Key Support for ANSI/VT100 terminals
Recorder Mode	**Disabled** Enabled	With this mode enabled only text will be sent. This is to capture terminal data.
Resolution 100x31	**Disabled** Enabled	Enables/Disables extended terminal resolution
Putty KeyPad	**VT100** LINUX XTERMR6 SCO ESCN VT400	Select FunctionKey and KeyPad on Putty.

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

4.4.17 Advanced > Console Redirection > COM 1 > Console Redirection Settings

Feature	Options	Description
Terminal Type	VT100 VT100Plus VT-UTF8 **ANSI**	Emulation: ANSI: Extended ASCII character set. VT100: ASCII character set. VT100Plus: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.
Bits per second	9600 19200 38400 57600 **115200**	Selects serial port transmission speed. The speed must be matched on both connected systems. Long or noisy lines may require lower speeds.
Data Bits	7 **8**	Data Bits.
Parity	**None** Even Odd Mark Space	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** 2	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.

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

Feature	Options	Description
Flow Control	**None** Hardware RTS/CTS	Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a 'stop' signal can be sent to stop the data flow. Once the buffers are empty, a 'start' signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop
VT-UTF8 Combo Key Support	Disabled **Enabled**	Enable VT-UTF8 Combination Key Support for ANSI/VT100 terminals
Recorder Mode	**Disabled** Enabled	With this mode enabled only text will be sent. This is to capture terminal data.
Resolution 100x31	**Disabled** Enabled	Enables/Disables extended terminal resolution
Putty KeyPad	**VT100** LINUX XTERMR6 SCO ESCN VT400	Select FunctionKey and KeyPad on Putty.

4.4.18 Advanced > Console Redirection > COM 2 > Console Redirection Settings

Feature	Options	Description
Terminal Type	VT100 VT100Plus VT-UTF8 **ANSI**	Emulation: ANSI: Extended ASCII character set. VT100: ASCII character set. VT100Plus: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.
Bits per second	9600 19200 38400 57600 **115200**	Selects serial port transmission speed. The speed must be matched on both connected systems. Long or noisy lines may require lower speeds.
Data Bits	7 **8**	Data Bits.

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

Feature	Options	Description
Parity	**None** Even Odd Mark Space	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** 2	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** Hardware RTS/CTS	Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a 'stop' signal can be sent to stop the data flow. Once the buffers are empty, a 'start' signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop
VT-UTF8 Combo Key Support	Disabled **Enabled**	Enable VT-UTF8 Combination Key Support for ANSI/VT100 terminals
Recorder Mode	**Disabled** Enabled	With this mode enabled only text will be sent. This is to capture terminal data.
Resolution 100x31	**Disabled** Enabled	Enables/Disables extended terminal resolution
Putty KeyPad	**VT100** LINUX XTERMR6 SCO ESCN VT400	Select FunctionKey and KeyPad on Putty.

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

4.4.19 Advanced > Console Redirection > COM 3 > Console Redirection Settings

Feature	Options	Description
Terminal Type	VT100 VT100Plus VT-UTF8 **ANSI**	Emulation: ANSI: Extended ASCII character set. VT100: ASCII character set. VT100Plus: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.
Bits per second	9600 19200 38400 57600 **115200**	Selects serial port transmission speed. The speed must be matched on both connected systems. Long or noisy lines may require lower speeds.
Data Bits	7 **8**	Data Bits.
Parity	**None** Even Odd Mark Space	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** 2	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** Hardware RTS/CTS	Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a 'stop' signal can be sent to stop the data flow. Once the buffers are empty, a 'start' signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop

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

Feature	Options	Description
VT-UTF8 Combo Key Support	Disabled **Enabled**	Enable VT-UTF8 Combination Key Support for ANSI/VT100 terminals
Recorder Mode	**Disabled** Enabled	With this mode enabled only text will be sent. This is to capture terminal data.
Resolution 100x31	**Disabled** Enabled	Enables/Disables extended terminal resolution
Putty KeyPad	**VT100** LINUX XTERMR6 SCO ESCN VT400	Select FunctionKey and KeyPad on Putty.

4.4.20 Advanced > Miscellaneous > Network Stack Configuration

Feature	Options	Description
Network Stack	**Disabled** Enabled	Enables/Disables UEFI Network Stack
IPv4 PXE Support	**Disabled** Enabled	Enables/Disables IPv4 PXE boot support. If disabled, IPv4 PXE boot support will not be available.
IPv6 PXE Support	**Disabled** Enabled	Enables/Disables IPv6 PXE boot support. If disabled, IPv6 PXE boot support will not be available.
PXE boot wait time	**0x00**	Time in seconds to wait to press ESC key to abort PXE boot. Use +/- or numeric keys to set. Range: 0x00-0x05 in increments of 0x01 (0-5 sec, 1 sec increments)

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

4.4.21 Advanced > Trusted Computing > TPM 1.2 Configuration

Feature	Options	Description
Configuration	Info only	
Security Device Support	Disable **Enable**	Enables or Disables BIOS support for security device. OS will not show Security Device. TCG EFI protocol and INT1A interface will not be available.
TPM State	Disabled **Enabled**	Enable/Disable Security Device. NOTE: Your Computer will reboot during restart in order to change State of the Device.
Pending operation	**None** TPM Clear	Schedule an Operation for the Security Device. NOTE: Your Computer will reboot during restart in order to change State of Security Device.
Security Device Support*	Disable **Enable**	Enables or Disables BIOS support for security device. OS will not show Security Device. TCG EFI protocol and INT1A interface will not be available.
TCM State	Disabled **Enabled**	Enable/Disable Security Device. NOTE: Your Computer will reboot during restart in order to change State of the Device.
Pending operation*	**None** TPM Clear	Schedule an Operation for the Security Device. NOTE: Your Computer will reboot during restart in order to change State of Security Device.
Device Select	TPM 1.2 TPM 2.0 **Auto**	TPM 1.2 restricts support to TPM 1.2 devices, TPM 2.0 restricts support to TPM 2.0 devices, Auto supports both with the default set to TPM 2.0 devices if not found, TPM 1.2 devices will be enumerated
Current Status Information		
TPM Enabled Status:	N/A, reset required	
TPM Active Status:	N/A, reset required	
TPM Owner Status:	N/A, reset required	
TCM Enabled Status:	N/A, reset required	
TCM Active Status:	N/A, reset required	

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

Feature	Options	Description
TCM Owner Status:	N/A, reset required	

4.4.22 Advanced > TPM 2.0 Configuration

Feature	Options	Description
Security Device Support*	Disable **Enable**	Enables or Disables BIOS support for security device. OS will not show Security Device. TCG EFI protocol and INT1A interface will not be available.
Active PCR banks	N/A, reset required	
Available PCR banks	N/A, reset required	
SHA-1 PCR Bank	**Disabled** Enabled	Enable or Disable SHA-1 PCR Bank
SHA256 PCR Bank	Disabled **Enabled**	Enable or Disable SHA256 PCR Bank
SHA384 PCR Bank	**Disabled** Enabled	Enable or Disable SHA384 PCR Bank
SHA512 PCR Bank	**Disabled** Enabled	Enable or Disable SHA512 PCR Bank
SM3_256 PCR Bank	**Disabled** Enabled	Enable or Disable SM3_256 PCR Bank
Pending operation	**None** 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 **Enabled**	Enable or Disable Platform Hierarchy
Storage Hierarchy	Disabled **Enabled**	Enable or Disable Storage Hierarchy
Endorsement Hierarchy	Disabled **Enabled**	Enable or Disable Endorsement Hierarchy
TPM 2.0 UEFI Spec Version	TCG_1_2 **TCG_2**	Select the TCG2 Spec Version Support,
Physical Presence Spec Version	1.2 **1.3**	Select to Tell OS to support PPI Spec Version 1.2 or 1.3. Note some HCK tests might not support 1.3.

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

Feature	Options	Description
TPM 2.0 InterfaceType	**CRB** TIS	Select the Communication Interface to TPM 20 Device.
Device Select*	TPM 1.2 TPM 2.0 **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

4.4.23 Advanced > USB Configuration

Feature	Options	Description
XHCI Hand-off	**Enabled** Disabled	This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by the XHCI driver.
USB Mass Storage Driver Support	Disabled **Enabled**	Enables/Disables USB Mass Storage Driver Support.
USB hardware delays and time-outs:		
USB transfer time-out	1 sec 5 sec 10 sec **20 sec**	The time-out value for Control, Bulk, and Interrupt transfers.
Device reset time-out	10 sec **20 sec** 30 sec 40 sec	USB mass storage device Start Unit command time-out.
Device power-up delay	**Auto** Manual	Maximum time the device will take before it properly reports itself to the Host Controller. 'Auto' uses the default value: 100 ms for a Root port, for a Hub port the delay is taken from the Hub descriptor.
Device power-up delay in seconds	**0x05**	Delay in hex. Range: 0x01-0x28, (1-40 seconds, 1 second increments)

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

4.5 Chipset

4.5.1 Chipset > North Bridge

Feature	Options	Description
Memory Information	Info only	
Total Memory	Info only	
Memory Voltage	Info only	
Memory Slot0	Info only	
Max TOLUD	**2 GB** 2.25 GB 2.5 GB 2.75 GB 3 GB	Maximum Value of TOLUD.
Above 4GB MMIO BIOS assignment	Enabled **Disabled**	Enable/Disable MemoryMappedIO BIOS assignment above 4GB

4.5.2 Chipset > Uncore Configuration

Feature	Options	Description
IGD Configuration	Info only	
Integrated Graphics Device	Disable **Enable**	Enable : Enable Integrated Graphics Device (IGD) when selected as the Primary Video Adapter. Disable: Always disable IGD
Primary Display	**IGD** PCIe HG	Select which of IGD/PCI Graphics device should be Primary Display
GTT Size	2MB 4MB **8MB**	Select the GTT Size
Aperture Size	128MB **256MB** 512MB	Select the Aperture Size

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

Feature	Options	Description
DVMT Pre-Allocated	**64M** 96M 128M 160M 192M 224M 256M 288M 320M 352M 384M 416M 448M 480M 512M	Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device
DVMT Total Gfx Mem	128M **256M** MAX	Select DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device

4.5.3 Chipset > South Cluster Configuration

Feature	Options	Description
HD-Audio Configuration ►	Sub-Menu	
PCI Express Configuration ►	Sub-Menu	
SATA Drives ►	Sub-Menu	
SCC Configuration ►	Sub-Menu	
Miscellaneous Configuration ►	Sub-Menu	

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

4.5.4 Chipset > South Cluster Configuration > HD-Audio Configuration

Feature	Options	Description
HD-Audio Configuration	Info Only	
HD-Audio Support	Disable Enable	Enable/Disable HD-Audio Support

4.5.5 Chipset > South Cluster Configuration > PCI Express Configuration

Feature	Options	Description
PCI Express Root Port 1 ►	Sub-Menu	
PCI Express Root Port 5 ►	Sub-Menu	
PCI Express Root Port 6 ►	Sub-Menu	

4.5.6 Chipset > South Cluster Configuration > SATA Drives

Feature	Options	Description
SATA Drives		
Chipset-SATA Controller Configuration		
Chipset SATA	**Enable** Disable	Enables or Disables the Chipset SATA Controller. The Chipset SATA controller supports the 2 black internal SATA ports (up to 3Gb/s supported per port).
SATA Interface Speed	**Auto** Gen1 Gen2 Gen3	Select SATA Interface Speed, CHV A1 always with Gen1 Speed.

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

Feature	Options	Description
SATA Port 0 (M.2)	Info only	
Software Preserve	Info only	
Port 0	Disabled **Enabled**	Enable or Disable SATA Port
Configured as eSATA	Info only	
SATA Device Type	**Hard Disk Drive** Solid State Drive	Identify the SATA port is connected to Solid State Drive or Hard Disk Drive
DITO Value	**0x0271**	DITO value in hex. Range: 0x0000-0x03FF in increments of 1.
DM Value	**0x0F**	DM value in hex. Range: 0x0F-0x00 in increments of 1.
SATA Port 1 (2.5' SSD)	Info only	
Software Preserve	Info only	
Port 1	Disabled **Enabled**	Enable or Disable SATA Port
Configured as eSATA	Info only	
SATA Device Type*	**Hard Disk Drive** Solid State Drive	Identify the SATA port is connected to Solid State Drive or Hard Disk Drive
DITO Value	**0x0271**	DITO value in hex. Range: 0x0000-0x03FF in increments of 1.
DM Value	**0x0F**	DM value in hex. Range: 0x0F-0x00 in increments of 1.

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

4.5.7 Chipset > South Cluster Configuration > SCC Configuration

Feature	Options	Description
SCC eMMC Support (D28:F0)	Disable **Enable**	Enable/Disable SCC eMMC Support
eMMC Max Speed	**HS400** HS200 DDR50	Select the eMMC max Speed allowed.

4.5.8 Chipset > South Cluster Configuration > Miscellaneous Configuration

Feature	Options	Description
SCC eMMC Support (D28:F0)	Disable **Enable**	Enable/Disable SCC eMMC Support
eMMC Max Speed	**HS400** HS200 DDR50	Select the eMMC max Speed allowed.

4.6 Security

Feature	Options	Description
Minimum length	3	Password length for both user and administrator passwords.
Maximum length	20	

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

4.7 Boot

4.7.1 Boot > Boot Configuration

Feature	Options	Description
Setup Prompt Timeout	**0x0001**	Number of seconds to wait for setup activation key in hex. Range: 0x0001-0xFFFF (0 to 65535 seconds, 1 second increments). 0xFFFF (65535 seconds) means indefinite waiting.
Bootup NumLock State	On **Off**	Selects the keyboard NumLock state.
Quiet Boot	Disabled **Enabled**	Enables/Disables Quiet Boot option.
Fast Boot	**Disabled** Enabled	Enables/Disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.

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

Feature	Options		Description
Boot Option #1	Hard Disk NVME CD/DVD SD USB Hard Disk USB CD/DVD USB Key USB Floppy USB Lan Network Disabled	**Hard Disk**	Sets the system boot order。
Boot Option #2		**NVME**	
Boot Option #3		**CD/DVD**	
Boot Option #4		**SD**	
Boot Option #5		**USB Hard Disk**	
Boot Option #6		**USB CD/DVD**	
Boot Option #7		**USB Key**	
Boot Option #8		**USB Floppy**	
Boot Option #9		**USB Lan**	
Boot Option #10		**Network**	

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

Feature	Options	Description
UEFI Hard Disk Drive BBS Priorities ►	Sub-Menu	
UEFI CDROM/DVD Drive BBS Priorities ►	Sub-Menu	
UEFI USB Hard Disk Drive BBS Priorities ►	Sub-Menu	
UEFI USB CDROM/ DVD Drive BBS Priorities ►	Sub-Menu	
UEFI USB Key Drive BBS Priorities ►	Sub-Menu	
UEFI USB Floppy Drive BBS Priorities ►	Sub-Menu	
UEFI USB Lan Drive BBS Priorities ►	Sub-Menu	
UEFI NETWORK Drive BBS Priorities ►	Sub-Menu	
Hard Disk Drive BBS Priorities ►	Sub-Menu	
CDROM/DVD Drive BBS Priorities ►	Sub-Menu	
USB Hard Disk Drive BBS Priorities ►	Sub-Menu	
CDROM/DVD Drive BBS Priorities ►	Sub-Menu	
USB Key Drive BBS Priorities ►	Sub-Menu	
USB Floppy Drive BBS Priorities ►	Sub-Menu	

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

4.8 Save & Exit

Feature	Options	Description
Save Changes and Exit	Yes No	Exits system setup after saving the changes.
Discard Changes and Exit	Yes No	Exits system setup without saving any changes.
Save Changes and Reset	Yes No	Resets the system after saving the changes.
Discard Changes and Reset	Yes No	Resets system setup without saving any changes.
Save Options	Info only	
Save Changes	Yes No	Saves changes done so far to any of the setup options.
Discard Changes	Yes No	Discards changes done so far to any of the setup options.
Restore Defaults	Yes No	Restores/Loads default values for all the setup options.
Save as User Defaults	Yes No	Saves the changes done so far as User Defaults.
Restore User Defaults	Yes No	Restores the User Defaults to all the setup options.
Boot Override	Info only	
Launch EFI Shell from filesystem device		

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

5 BIOS Setup (STC2-KL)

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 STC2-KL. The BIOS setup program includes menus for configuring settings and enabling features of the STC2-KL. Most users do not need to use the BIOS setup program, as the STC2-KL ships with default settings that work well for most configurations.



BIOS options used in this manual are for reference only, and are subject to change. Users can download the latest BIOS version from the ADLINK website.



Changing BIOS settings may lead to unexpected system behavior and the possible inability to boot.

5.1 BIOS Setup Menu

The BIOS Setup Utility is invoked by pressing <ESC> or <DEL> when the system boots. A system reboot is required when changes are made in the BIOS Setup Utility.

The BIOS Setup Utility includes the following hotkeys.

- <F1>: General help
- <F8>: Load previous BIOS values
- <F9>: Load BIOS default values
- <F10>: Save & Exit the Setup Utility

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

Menu Selection Bar

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

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

Menu Conventions

The appearance of the setup menus and items listed in this chapter are based on a VT100 terminal connection via serial console with the following menu conventions.

- Using color

  The default BIOS setup fields are black. The BIOS setup fields currently not used are grey. The display strings are black.

- Using brackets

  Editable menu options are marketed with square brackets, '[' and ']'.

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

5.2 Menu Structure

This section presents the six primary menus of the BIOS Setup Utility. Use the following tables as a quick reference for the contents of the BIOS Setup Utility. The remainder of this chapter describe the sub-menus and options for each menu item. The default settings are presented in bold, and the function of each setting is described in the right hand column of the table.

Main	Advanced
- BIOS Information - System Information - Board Information	- CPU Configuration ► - Graphics Configuration ► - Power Management ► - System Management ► - Thermal Management ► - Watchdog Timer ► - CSM Configuration ► - Super IO Configuration ► - Serial Console Redirection ► - Network Stack Configuration ► - Trusted Computing ►

Chipset	Security
- System Agent (SA) Configuration ► - PCH-IO Configuration ►	- Secure Boot menu

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

Boot	Save & Exit
- Boot Configuration ▶ - UEFI Hard Disk Drive BBS Priorities ▶ - UEFI NVME Drive BBS Priorities ▶ - UEFI CDROM/DVD Drive BBS Priorities ▶ - UEFI SD Drive BBS Priorities ▶ - UEFI USB Hard Disk Drive BBS Priorities ▶ - UEFI USB CDROM/DVD Drive BBS Priorities ▶ - UEFI USB Key Drive BBS Priorities ▶ - UEFI USB Floppy Drive BBS Priorities ▶ - UEFI USB Lan Drive BBS Priorities ▶ - UEFI NETWORK Drive BBS Priorities ▶	- Save Changes and Exit - Discard Changes and Exit - Save Changes and Reset - Discard Changes and Reset - Save Options - Save Changes - Discard Changes - Restore Defaults - Save as User Defaults - Restore User Defaults - Boot Override - Launch EFI Shell from filesystem device


NOTE:

- ▶ indicates a submenu
- Gray text indicates info only
- **Bold text** indicates a default setting

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

5.3 Main Menu

This menu provides read-only information about your system and also allows you to set the System Date and Time. Refer to the tables below for details of the sub-menus and settings.

5.3.1 Main > BIOS Information

Feature	Options	Description
BIOS Vendor	Info only	BIOS Vendor
BIOS Version	Info only	BIOS Version.
Build Date	Info only	BIOS build date
MRC Version	Info only	MRC Version
GOP Version	Info only	GOP Version
ME FW Version	Info only	ME FW Version
BIOS Boot Source	Info only	BIOS Boot Source

5.3.2 Main > System Information

Feature	Options	Description
Project Name	Info only	Project Name
CPU Board Version	Info only	CPU Board Version
CPU Brand String	Info only	CPU Brand String
CPU Frequency	Info only	CPU Frequency
Total Memory	Info only	Total Memory
Memory Frequency	Info only	Memory Frequency
PCH SKU	Info only	Consumer SKU
FM Board	Info only	FM Board

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

5.3.3 Main > Board Information

Feature	Options	Description
Board Information	Info only	Board Information
Serial Number	Info only	Serial Number
Manufacturing Date	Info only	Manufacturing Date
Last Repair Date	Info only	Last Repair Date
Runtime Statistics	Info only	Runtime Statistics
Total Runtime	Info only	Total Runtime
Current Runtime	Info only	Current Runtime
Power Cycles	Info only	Power Cycles
Boot Cycles	Info only	Boot Cycles
Boot Reason	Info only	Boot Reason

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

5.4 Advanced Menu

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

5.4.1 Advanced > CPU Configuration

Feature	Options	Description
CPU Signature	Info only	Displays the CPU Signature
Microcode Patch	Info only	Displays the Microcode Patch
Max CPU Speed	Info only	Displays the CPU Speed
Min CPU Speed	Info only	Displays the Min CPU Speed
Processor Cores	Info only	Displays the number of Processor Cores
Intel HT Technology	Info only	Displays Intel HT Technology status
Intel VT-x Technology	Info only	Displays Intel VT-x Technology status
L1 Data Cache	Info only	Displays the Processor L1 Data Cache size.
L1 Instruction Cache	Info only	Displays the Processor L1 Instruction Cache size.
L2 Cache	Info only	Displays the Processor L2 Cache size.
L3 Cache	Info only	Displays the Processor L3 Cache size.
L4 Cache	Info only	Displays the Processor L4 eDRAM size.
VMX	Info only	VMX Supported or Not
SMX/TXT	Info only	SMX/TXT Supported or Not
Intel(R) SpeedStep(tm)	Disabled, **Enabled**	Allows more than two frequency ranges to be supported.

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

Feature	Options	Description
Turbo Mode	Disabled, **Enabled**	Enable/Disable processor Turbo Mode (requires EMTTM enabled too). AUTO means enabled, unless max turbo ratio is bigger than 16 - SKL A0 W/A
C states	**Enabled**, Disabled	Enable/Disable CPU Power Management. Allows CPU to go to C states when it's not 100% utilized.
Enhanced C-states	Disabled, **Enabled**	Enable/Disable C1E. When enabled, CPU will switch to minimum speed when all cores enter C-State.
C-State Auto Demotion	Disabled C1 C3 **C1 and C3**	Configure C-State Auto Demotion
C-State Un-demotion	Disabled C1 C3 **C1 and C3**	Configure C-State Un-demotion
Package C-State Demotion	Disabled Enabled **Auto**	Enable or Disable Package C-State Demotion. Auto: Enabled for Skylake; Disabled for Kabylake
Package C-State Un-demotion	Disabled Enabled **Auto**	Enable or Disable Package C-State UnDemotion. Auto: Enabled for Skylake; Disabled for Kabylake
DTS SMM	Disabled **Enabled** Critical Temp Reporting (Out Of spec)	Disabled: ACPI thermal management uses EC reported temperature values.

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

5.4.2 Advanced > Graphics Configuration

Feature	Options	Description
LVDS	Info Only	
eDP/LVDS	Disabled **Enabled**	Enable/Disable eDP/ LVDS
Data format and Color Depth	**Auto** VESA 24 bpp JEIDA 24 bpp JEIDA/vesa 18 bpp	Data format and Color Depth select
LVDS Output Mode	**Auto** Dual LVDS bus Single LVDS bus	Single/Dual mode select
DE Polarity	Active High Active Low	DE Polarity select
Vsync Polarity	**Active High** Active Low	Vsync Polarity select
Hsync Polarity	**Active High** Active Low	Hsync Polarity select
Spreading depth	No Spreading 0.5% 1.0% 1.5% 2.0% **2.5%**	Clock frequency center spreading depth.
FM Board DDI port	No Device DisplayPort HDMI **DisplayPort with HDMI/ DVI Compatible**	DDI port 1 function choose to DisplayPort or HDMI

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

Feature	Options	Description
LFP Panel Type	Auto 640x480 800x600 1024x768 1280x1024 1400x1050 LVDS1 1400x1050 LVDS2 1600x1200 1366x768 1680x1050 1920x1200 1440x900 1600x900 **1280x800** 1920x1080 2048x1536	Select LFP panel used by Internal Graphics Device by selecting the appropriate setup item.

5.4.3 Advanced > Power Management

Feature	Options	Description
Enable ACPI Auto Configuration	**Disabled** Enabled	Enables/Disables BIOS ACPI Auto Configuration.
Enable Hibernation	Disabled **Enabled**	Enables/Disables System ability to Hibernate (OS/S4 Sleep State). This option may not be effective with some operating systems.
ACPI Sleep State	Suspend Disabled **S3 (Suspend to RAM)**	Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.
PCIE Wake	Disabled **Enabled**	Enables/Disables PCIe wake function
RI Wake	Disabled **Enabled**	

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

Feature	Options	Description
RTC Wake system from S5	**Disabled** Fixed Time Dynamic Time	Enable or disable System wake on alarm event. FixedTime: system will wake on the hr::min::sec specified. Select DynamicTime: system will wake on the current time + Increase minute(s)
Wake up hour	**0x00**	Wake up hour in hex. Range: 0x00-0x17 in increments of 0x01 (0-23 hrs, 1 hr increments)
Wake up minute	**0x00**	Wake up hour in hex. Range: 0x00-0x3B in increments of 0x01 (0-59 mins, 1 min increments)
Wake up second	**0x00**	Wake up second in hex. Range: 0x00-0x3B in increments of 0x01 (0-59 sec, 1 sec increments)
Wake up minute increase	**0x01**	Wake up minute increase in hex for Dynamic RTC Wake. Range: 0x00-0x05 in increments of 0x01 (0-5 min, 1 min increments)
Emulation AT/ATX	Emulation AT **ATX**	Select Emulation AT or ATX function. If this option is set to [Emulation AT], BIOS will report no suspend functions to ACPI OS. On Windows XP, the OS will show a shutdown message during system shutdown.
Power Consumption >	Sub-menu	

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

5.4.4 Advanced > Power Management > Power Consumption

Feature	Options	Description
Power Consumption	Info only	
Current Input Current	Info only	Current Input Current
Current Input Power	Info only	Current Input Power
CPU-Vcore	Info only	CPU-Vcore
VGFX	Info only	VGFX
VCCIO	Info only	VCCIO
VCCSTG	Info only	VCCSTG
VCCSA	Info only	VCCSA
1V8_A	Info only	1V8_A
1V0_A	Info only	1V0_A
VDDQ	Info only	VDDQ
VIN	Info only	VIN
V12	Info only	V12
V5SBY	Info only	V5SBY
V5S	Info only	V5S
P_+3V3_A	Info only	P_+3V3_A
P_+3V3_S	Info only	P_+3V3_S
VRTC	Info only	VRTC
AIN15	Info only	AIN15

5.4.5 Advanced > System Management

Feature	Options	Description
EC Version	Info only	Version of EC Firmware
SEMA Firmware	Info only	Version of SEMA Firmware
Build Date	Info only	Build Date of SEMA Firmware
SEMA Bootloader	Info only	Version of SEMA Bootloader
Build Date	Info only	Build Date of SEMA Bootloader

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

5.4.6 Advanced > System Management > SEMA Features

Feature	Options	Description
SEMA Features	Info only	
SEMA Supported Features	Info only	SEMA Supported Features
• Uptime & Power Cycles Counter	Info only	• Uptime & Power Cycles Counter
• System Restart Event	Info only	• System Restart Event
• 512 Bytes User-Flash	Info only	• 512 Bytes User-Flash
• 1024 Bytes User-Flash	Info only	• 1024 Bytes User-Flash
• Watchdog	Info only	• Watchdog
• Temperatures	Info only	• Temperatures
• Voltage Monitor	Info only	• Voltage Monitor
• Power-Up Watchdog	Info only	• Power-Up Watchdog
• Power Monitor (current sense)	Info only	• Power Monitor (current sense)
• Boot Counter	Info only	• Boot Counter
• I2C bus 2	Info only	• I2C bus 2
• System Fan 1	Info only	• System Fan 1
• ACPI Thermal Trigger	Info only	• ACPI Thermal Trigger
• DTS register available	Info only	• DTS register available
• TIVA BMC	Info only	• TIVA BMC
• SEMA Error Log	Info only	• SEMA Error Log

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

5.4.7 Advanced > System Management > Flags

Feature	Options	Description
BMC Flags	Info only	BMC Flags
BIOS Select	Info only	BIOS Select
ATX/AT-Mode	Info only	ATX/AT-Mode
Exception Code	Info only	Exception Code

5.4.8 Advanced > System Management > SEMA > Temperature

Feature	Options	Description
CPU Temperature ►	Sub-Menu	
Current	Info only	Current CPU temperature
Startup	Info only	Startup CPU temperature
Min	Info only	Min. CPU temperature
Max	Info only	Max. CPU temperature
Board Temperatures ►	Sub-Menu	
Current	Info only	Current Board temperature
Startup	Info only	Startup Board temperature
Min	Info only	Min. Board temperature
Max	Info only	Max. Board temperature
Board2 Temperatures ►	Sub-Menu	
Current	Info only	Current Board temperature
Startup	Info only	Startup Board temperature
Min	Info only	Min. Board temperature
Max	Info only	Max. Board temperature
CPU Fan Speed	Info only	CPU Fan Speed
Smart Fan ►	Sub-Menu	
Critical Trip Point	**Disabled** 60 C 70 C 80 C	This value is the temperature threshold of the Critical Trip Point.

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

Feature	Options	Description
Passive Cooling Trip Point	**Disabled** 60 C 70 C 80 C	This value is the temperature threshold of the Passive Cooling Trip Point.

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

5.4.9 Advanced > Watchdog Timer

Feature	Options	Description
Power-Up Watchdog	**Disabled** Enabled	Enbles/Disables the Watchdog Timer
Timeout	**0xFFFF**	Time Power Up Watchdog should wait until it resets the system in hex. Range 0x018-0xFFFF (18-65535 minutes, 1 min increments)
ATTENTION: Pressing F12 during start up disables the Power Up Watchdog.		

5.4.10 Advanced > CSM Configuration

Feature	Options	Description
CSM Support	Disabled **Enabled**	Enable/Disable CSM Support.
CSM16 Module Version	Info only	
GateA20 Active	**Upon Request** Always	Upon Request: GA20 can be disabled using BIOS services. ALWAYS: do not allow disabling GA20; this option is useful when any RT code is executed above 1MB.
Boot option filter	**UEFI and Legacy** Legacy only UEFI only	This option controls Legacy/UEFI ROMs priority
Option ROM execution	Info only	
Network	Do not launch **UEFI** Legacy	Controls the execution of UEFI and Legacy PXE OpROM

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

Feature	Options	Description
Storage	Do not launch **UEFI** Legacy	Controls the execution of UEFI and Legacy Storage OpROM
Video	Do not launch **UEFI** Legacy	Controls the execution of UEFI and Legacy Video OpROM
Other PCI devices	Do not launch UEFI **Legacy**	Determines OpROM execution policy for devices other than Network, Storage, or Video

5.4.11 Advanced > Super IO Configuration

Feature	Options	Description
Super IO Chip	Info only	
► Serial Port 1 Configuration	Sub-Menu	
► Serial Port 2 Configuration	Sub-Menu	
► Serial Port 3 Configuration	Sub-Menu	
► Serial Port 4 Configuration	Sub-Menu	

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

5.4.12 Advanced > Super IO Configuration > Serial Port 1 Configuration

Feature	Options	Description
Serial Port	Disabled **Enabled**	Enables/Disables the serial port (COM)
Device Settings	IO=3F8h; IRQ=4	
Change Settings	**Auto** IO=3F8h; IRQ=4 IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12 IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12 IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12 IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12	Selects optimal settings for Super IO Device
COM1 Control	**RS232** RS422 RS485	Sets COM1 mode as RS-232, RS-422 or RS-485

5.4.13 Advanced > Super IO Configuration > Serial Port 2 Configuration

Feature	Options	Description
Serial Port	Disabled **Enabled**	Enables/Disables the serial port (COM)
Device Settings	IO=2F8h; IRQ=3	
Change Settings	**Auto** IO=2F8h; IRQ=3; IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12 IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12 IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12 IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12	Selects optimal settings for Super IO Device

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

Feature	Options	Description
COM2 Control	**RS232** RS422 RS485	Sets COM2 mode as RS-232, RS-422 or RS-485

5.4.14 Advanced > Super IO Configuration > Serial Port 3 Configuration

Feature	Options	Description
Serial Port	**Disabled** Enabled	Enables/Disables the serial port (COM)
Device Settings	Reset Required	
Change Settings	Auto IO=3E8h; IRQ=7; IO=3F8h; IRQ=3,4,5,6,7,9,**10**,11,12 IO=2F8h; IRQ=3,4,5,6,7,9,**10**,11,12 IO=3E8h; IRQ=3,4,5,6,7,9,**10**,11,12 IO=2E8h; IRQ=3,4,5,6,7,9,**10**,11,12 IO=220h; IRQ=3,4,5,6,7,9,**10**,11,12 IO=228h; IRQ=3,4,5,6,7,9,**10**,11,12	Selects optimal settings for Super IO Device

5.4.15 Advanced > Super IO Configuration > Serial Port 4 Configuration

Feature	Options	Description
Serial Port	**Disabled** Enabled	Enables/Disables the serial port (COM)
Device Settings	Reset Required	

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

Feature	Options	Description
Change Settings	Auto IO=3E8h; IRQ=7; IO=3F8h; IRQ=3,4,5,6,7,9,**10**,11,12 IO=2F8h; IRQ=3,4,5,6,7,9,**10**,11,12 IO=3E8h; IRQ=3,4,5,6,7,9,**10**,11,12 IO=2E8h; IRQ=3,4,5,6,7,9,**10**,11,12 IO=220h; IRQ=3,4,5,6,7,9,**10**,11,12 IO=228h; IRQ=3,4,5,6,7,9,**10**,11,12	Selects optimal settings for Super IO Device

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

5.4.16 Advanced > Serial Console Redirection

Feature	Options	Description
COM0		
Console Redirection	**Disabled** Enabled	Enables/Disables console redirection on COM0 port.
Console Redirection Settings ►	Sub-Menu	
COM1		
Console Redirection	**Disabled** Enabled	Enables/Disables console redirection on COM1 port.
Console Redirection Settings ►	Sub-Menu	
Legacy Console Redirection		
Legacy Console Redirection settings ►	Sub-Menu	

5.4.17 Advanced > Console Redirection > COM 0 > Console Redirection Settings

Feature	Options	Description
Terminal Type	VT100 VT100Plus VT-UTF8 **ANSI**	Emulation: ANSI: Extended ASCII character set. VT100: ASCII character set. VT100Plus: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.
Bits per second	9600 19200 38400 57600 **115200**	Selects serial port transmission speed. The speed must be matched on both connected systems. Long or noisy lines may require lower speeds.
Data Bits	7 **8**	Data Bits.

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

Feature	Options	Description
Parity	**None** Even Odd Mark Space	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** 2	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** Hardware RTS/CTS	Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a 'stop' signal can be sent to stop the data flow. Once the buffers are empty, a 'start' signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop
VT-UTF8 Combo Key Support	Disabled **Enabled**	Enable VT-UTF8 Combination Key Support for ANSI/VT100 terminals
Recorder Mode	**Disabled** Enabled	With this mode enabled only text will be sent. This is to capture terminal data.
Resolution 100x31	**Disabled** Enabled	Enables/Disables extended terminal resolution
Putty KeyPad	**VT100** LINUX XTERMR6 SCO ESCN VT400	Select FunctionKey and KeyPad on Putty.

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

5.4.18 Advanced > Console Redirection > COM 1 > Console Redirection Settings

Feature	Options	Description
Terminal Type	VT100 VT100Plus VT-UTF8 **ANSI**	Emulation: ANSI: Extended ASCII character set. VT100: ASCII character set. VT100Plus: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.
Bits per second	9600 19200 38400 57600 **115200**	Selects serial port transmission speed. The speed must be matched on both connected systems. Long or noisy lines may require lower speeds.
Data Bits	7 **8**	Data Bits.
Parity	**None** Even Odd Mark Space	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** 2	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** Hardware RTS/CTS	Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a 'stop' signal can be sent to stop the data flow. Once the buffers are empty, a 'start' signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop

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

Feature	Options	Description
VT-UTF8 Combo Key Support	Disabled **Enabled**	Enable VT-UTF8 Combination Key Support for ANSI/VT100 terminals
Recorder Mode	**Disabled** Enabled	With this mode enabled only text will be sent. This is to capture terminal data.
Resolution 100x31	**Disabled** Enabled	Enables/Disables extended terminal resolution
Putty KeyPad	**VT100** LINUX XTERMR6 SCO ESCN VT400	Select FunctionKey and KeyPad on Putty.

5.4.19 Advanced > Console Redirection > Legacy Console Redirection Settings

Feature	Options	Description
Legacy Console Redirection Settings		
Redirection COM Port	**COM0** COM1 COM2 COM3 (Disabled)	Select a COM port to display redirection of Legacy OS and Legacy OPROM Messages
Resolution	**80x24** 80x25	On Legacy OS, the Number of Rows and Columns supported redirection
Redirect After POST	**Always Enable** BootLoader	When Bootloader is selected, then Legacy Console Redirection is disabled before booting to legacy OS. When Always Enable is selected, then Legacy Console Redirection is enabled for legacy OS. Default setting for this option is set to Always Enable.

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

5.4.20 Advanced > Miscellaneous > Network Stack Configuration

Feature	Options	Description
Network Stack	**Disabled** Enabled	Enables/Disables UEFI Network Stack
IPv4 PXE Support	**Disabled** Enabled	Enables/Disables IPv4 PXE boot support. If disabled, IPv4 PXE boot support will not be available.
IPv6 PXE Support	**Disabled** Enabled	Enables/Disables IPv6 PXE boot support. If disabled, IPv6 PXE boot support will not be available.
PXE boot wait time	**0x00**	Time in seconds to wait to press ESC key to abort PXE boot. Use +/- or numeric keys to set. Range: 0x00-0x05 in increments of 0x01 (0-5 sec, 1 sec increments)

5.4.21 Advanced > Trusted Computing > TPM 1.2 Configuration

Feature	Options	Description
Configuration	Info only	
Security Device Support	Disable **Enable**	Enables or Disables BIOS support for security device. OS will not show Security Device. TCG EFI protocol and INT1A interface will not be available.
TPM State	Disabled **Enabled**	Enable/Disable Security Device. NOTE: Your Computer will reboot during restart in order to change State of the Device.
Pending operation	**None** TPM Clear	Schedule an Operation for the Security Device. NOTE: Your Computer will reboot during restart in order to change State of Security Device.
Security Device Support*	Disable **Enable**	Enables or Disables BIOS support for security device. OS will not show Security Device. TCG EFI protocol and INT1A interface will not be available.

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

Feature	Options	Description
TCM State	Disabled **Enabled**	Enable/Disable Security Device. NOTE: Your Computer will reboot during restart in order to change State of the Device.
Pending operation*	**None** TPM Clear	Schedule an Operation for the Security Device. NOTE: Your Computer will reboot during restart in order to change State of Security Device.
Device Select	TPM 1.2 TPM 2.0 **Auto**	TPM 1.2 restricts support to TPM 1.2 devices, TPM 2.0 restricts support to TPM 2.0 devices, Auto supports both with the default set to TPM 2.0 devices if not found, TPM 1.2 devices will be enumerated
Current Status Information		
TPM Enabled Status:	N/A, reset required	
TPM Active Status:	N/A, reset required	
TPM Owner Status:	N/A, reset required	
TCM Enabled Status:	N/A, reset required	
TCM Active Status:	N/A, reset required	
TCM Owner Status:	N/A, reset required	

5.4.22 Advanced > TPM 2.0 Configuration

Feature	Options	Description
Security Device Support*	Disable **Enable**	Enables or Disables BIOS support for security device. OS will not show Security Device. TCG EFI protocol and INT1A interface will not be available.
Active PCR banks	N/A, reset required	
Available PCR banks	N/A, reset required	
SHA-1 PCR Bank	**Disabled** Enabled	Enable or Disable SHA-1 PCR Bank
SHA256 PCR Bank	Disabled **Enabled**	Enable or Disable SHA256 PCR Bank
SHA384 PCR Bank	**Disabled** Enabled	Enable or Disable SHA384 PCR Bank

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

Feature	Options	Description
SHA512 PCR Bank	**Disabled** Enabled	Enable or Disable SHA512 PCR Bank
SM3_256 PCR Bank	**Disabled** Enabled	Enable or Disable SM3_256 PCR Bank
Pending operation	**None** 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 **Enabled**	Enable or Disable Platform Hierarchy
Storage Hierarchy	Disabled **Enabled**	Enable or Disable Storage Hierarchy
Endorsement Hierarchy	Disabled **Enabled**	Enable or Disable Endorsement Hierarchy
TPM 2.0 UEFI Spec Version	TCG_1_2 **TCG_2**	Select the TCG2 Spec Version Support,
Physical Presence Spec Version	1.2 **1.3**	Select to Tell OS to support PPI Spec Version 1.2 or 1.3. Note some HCK tests might not support 1.3.
TPM 2.0 InterfaceType	**CRB** TIS	Select the Communication Interface to TPM 20 Device.
Device Select*	TPM 1.2 TPM 2.0 **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

5.4.23 Advanced > USB Configuration

Feature	Options	Description
XHCI Hand-off	**Enabled** Disabled	This is a workaround for OSs without XHCI hand-off support. The XHCI ownership change should be claimed by the XHCI driver.
USB Mass Storage Driver Support	Disabled **Enabled**	Enables/Disables USB Mass Storage Driver Support.
USB hardware delays and time-outs:		

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

Feature	Options	Description
USB transfer time-out	1 sec 5 sec 10 sec **20 sec**	The time-out value for Control, Bulk, and Interrupt transfers.
Device reset time-out	10 sec **20 sec** 30 sec 40 sec	USB mass storage device Start Unit command time-out.
Device power-up delay	**Auto** Manual	Maximum time the device will take before it properly reports itself to the Host Controller. 'Auto' uses the default value: 100 ms for a Root port, for a Hub port the delay is taken from the Hub descriptor.
Device power-up delay in seconds	**0x05**	Delay in hex. Range: 0x01-0x28, (1-40 seconds, 1 second increments)

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

5.5 Chipset

This menu contains chipset configuration information.

5.5.1 Chipset > System Agent (SA) Configuration

Feature	Options	Description
System Agent (SA) Configuration		
VT-d	Supported	
Memory Configuration ►	Sub-menu	
Graphics Configuration ►	Sub-menu	
VT-d*	Disabled **Enabled**	VT-d capability
Above 4GB MMIO BIOS assignment	Enabled **Disabled**	Enable/Disable above 4GB MemoryMappedIO BIOS assignment

5.5.2 Chipset > System Agent (SA) Configuration > Memory Configuration

Feature	Options	Description
Memory Configuration	Info only	Memory Configuration
Memory RC Version	Info only	Memory RC Version
Memory Frequency	Info only	Memory Frequency
Memory Timings (tCL-tRCD-tRP-tRAS)	Info only	Memory Timings (tCL-tRCD-tRP-tRAS)
Controller 0 Channel 0 Slot 0	Info only	Controller 0 Channel 0 Slot 0
Size	Info only	Size
Number of Ranks	Info only	Number of Ranks
Manufacturer	Info only	Manufacturer

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

Feature	Options	Description
Maximum Memory Frequency	**Auto** 1067 1200 1333 1400 1600 1800 1867 2000 2133 2200 2400 2600 2667 2800 2933 3000 3100 3200 3467 3733 4000 4133	Maximum Memory Frequency Selections in Mhz.
Max TOLUD	**Dynamic** 1 GB 1.25 GB 1.5 GB 1.75 GB 2 GB 2.25 GB 2.5 GB 2.75 GB 3 GB 3.25 GB 3.5 GB	Maximum Value of TOLUD. Dynamic assignment would adjust TOLUD automatically based on largest MMIO length of installed graphic controller

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

5.5.3 Chipset > System Agent (SA) Configuration > Graphics Configuration

Feature	Options	Description
Graphics Configuration	Info only	Graphics Configuration
Skip Scaning of External Gfx Card	**Disabled** Enabled	If Enabled, system will not scan for External Gfx Card on PEG and PCH PCIE Ports
Primary Display	**Auto** IGFX PEG PCI SG	Select which IGFX/PEG/PCI graphics device should be primary display. Select SG for switchable graphics.
Select PCIE Card	**Auto** Elk Creek 4 PEG Eval	Select the card used on the platform
Internal Graphics	**Auto** Disabled Enabled	Keep IGFX enabled based on the setup options.
GTT Size	2MB 4MB **8MB**	Select the GTT Size
Aperture Size	128MB **256MB** 512MB 1024MB 2048MB	Select the Aperture Size

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

Feature	Options	Description
DVMT Pre-Allocated	0M 32M 64M 4M 8M 12M 16M 20M 24M 28M **32M**/F7 36M 40M 44M 48M 52M 56M 60M	Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.
DVMT Total Gfx Mem	**256M** 128M MAX	Select DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device.
Gfx Low Power Mode	**Enabled** Disabled	This option is applicable for SFF only.

5.5.4 Chipset > PCH-IO Configuration

Feature	Options	Description
PCH-IO Configuration	Info Only	PCH-IO Configuration
PCI Express Configuration ►	Sub Menu	PCI Express Configuration
SATA And RST Configuration ►	Sub Menu	SATA And RST Configuration
USB Configuration ►	Sub Menu	USB Configuration
Miscellaneous Configuration ►	Sub Menu	Miscellaneous Configuration
HD Audio Configuration ►	Sub Menu	HD Audio Configuration
SeriaIIo Configuration ►	Sub Menu	Serial IO Configuration

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

Feature	Options	Description
SCS Configuration ►	Sub Menu	SCS Configuration

5.5.5 Chipset > PCH-IO Configuration > PCI Express Configuration

Feature	Options	Description
PCI Express Configuration	Info Only	
PCI Express Root Port 1 ►	Sub Menu	
PCI Express Root Port 6 ►	Sub Menu	
PCI Express Root Port 9 ►	Sub Menu	
PCI Express Root Port 10 ►	Sub Menu	
PCI Express Root Port 11 ►	Sub Menu	
PCI Express Root Port 12 ►	Sub Menu	

5.5.6 Chipset > PCH-IO Configuration > SATA and RST Configuration

Feature	Options	Description
SATA And RST Configuration	Info Only	
SATA Controller(s)	**Enabled** Disabled	Enable/Disable SATA Device.
SATA Mode Selection	**AHCI** Intel RST Premium With Intel Optane System Acceleration	Determines how SATA controller(s) operate.
SATA Controller Speed	**Default** Gen1 Gen2 Gen3	Indicates the maximum speed the SATA controller can support.
Serial ATA Port 0	Empty	
Software Preserve	Unknown	
Port 0	Disabled **Enabled**	Enable or Disable SATA Port

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

Feature	Options	Description
Hot Plug	**Disabled** Enabled	Designates this port as Hot Pluggable.
Configured as eSATA	Hot Plug supported	
DITO Value	**0x0271**	DITO value in hex. Range: 0x0000-0x03FF in increments of 1.
DM Value	**0x0F**	DM value in hex. Range: 0x0F-0x00 in increments of 1.
Serial ATA Port 1	Empty	
Software Preserve	Unknown	
Port 1	Disabled **Enabled**	Enable or Disable SATA Port
Hot Plug*	**Disabled** Enabled	Designates this port as Hot Pluggable.
Configured as eSATA	Hot Plug supported	
DITO Value	**0x0271**	DITO value in hex. Range: 0x0000-0x03FF in increments of 1.
DM Value	**0x0F**	DM value in hex. Range: 0x0F-0x00 in increments of 1.

5.5.7 Chipset > PCH-IO Configuration > Miscellaneous Configuration

Feature	Options	Description
Miscellaneous Configuration	Info Only	
RTC Lock	**Disabled** Enabled	Enable will lock bytes 38h-3Fh in the lower/upper 128-byte bank of RTC RAM
BIOS Lock	**Disabled** Enabled	Enable/Disable the PCH BIOS Lock Enable feature. Required to be enabled to ensure SMM protection of flash.

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

Feature	Options	Description
State After G3	**S0 State** S5 State	Specify what state to go to when power is re-applied after a power failure (G3 state).

5.5.8 Chipset > PCH-IO Configuration > HD Audio Configuration

Feature	Options	Description
HD Audio Subsystem Configuration Settings	Info Only	
HD Audio	Disabled Enabled **Auto**	Control Detection of the HD-Audio device.
Audio Output Selection	Speaker-out **Line out**	Audio Output Selection

5.5.9 Chipset > PCH-IO Configuration > SerialIO Configuration

Feature	Options	Description
Seriallo Configuration	Info Only	
I2C0 Controller*	Disabled **Enabled**	Enables/Disables Seriallo Controller
I2C1 Controller*	Disabled **Enabled**	Enables/Disables Seriallo Controller
I2C2 Controller	Disabled **Enabled**	Enables/Disables Seriallo Controller
I2C3 Controller	Disabled **Enabled**	Enables/Disables Seriallo Controller
SPI0 Controller	**Disabled** Enabled	Enables/Disables Seriallo Controller
> Serial IO I2C0 Settings		
> Serial IO I2C1 Settings		
> Serial IO I2C2 Settings		
> Serial IO I2C3 Settings		

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

5.6 Security

Feature	Options	Description
Minimum length	3	Password length for both user and administrator passwords.
Maximum length	20	

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

5.7 Boot

5.7.1 Boot > Boot Configuration

Feature	Options	Description
Setup Prompt Timeout	**0x0001**	Number of seconds to wait for setup activation key in hex. Range: 0x0001-0xFFFF (0 to 65535 seconds, 1 second increments). 0xFFFF (65535 seconds) means indefinite waiting.
Bootup NumLock State	On **Off**	Selects the keyboard NumLock state.
Quiet Boot	Disabled **Enabled**	Enables/Disables Quiet Boot option.
Fast Boot	**Disabled** Enabled	Enables/Disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.

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

Feature	Options		Description
Boot Option #1	Hard Disk NVME CD/DVD SD USB Hard Disk USB CD/DVD USB Key USB Floppy USB Lan Network Disabled	**Hard Disk**	Sets the system boot order
Boot Option #2		**CD/DVD**	
Boot Option #3		**USB Hard Disk:UEFI: Sandisk**	
Boot Option #4		**Partition 1**	
Boot Option #5		**USB CD/DVD**	
Boot Option #6		**USB Key**	
Boot Option #7		**USB Floppy**	
Boot Option #8		**USB Lan**	

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

Feature	Options	Description
UEFI Hard Disk Drive BBS Priorities ▶	Sub-Menu	
UEFI CDROM/DVD Drive BBS Priorities ▶	Sub-Menu	
UEFI USB Hard Disk Drive BBS Priorities ▶	Sub-Menu	
UEFI USB CDROM/ DVD Drive BBS Priorities ▶	Sub-Menu	
UEFI USB Key Drive BBS Priorities ▶	Sub-Menu	
UEFI USB Floppy Drive BBS Priorities ▶	Sub-Menu	
UEFI USB Lan Drive BBS Priorities ▶	Sub-Menu	
UEFI NETWORK Drive BBS Priorities ▶	Sub-Menu	
Hard Disk Drive BBS Priorities ▶	Sub-Menu	
CDROM/DVD Drive BBS Priorities ▶	Sub-Menu	
USB Hard Disk Drive BBS Priorities ▶	Sub-Menu	
USB Floppy Drive BBS Priorities ▶	Sub-Menu	
USB Lan Drive BBS Priorities ▶	Sub-Menu	
NETWORK Drive BBS Priorities ▶	Sub-Menu	

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

5.8 Save & Exit

Feature	Options	Description
Save Changes and Exit	Yes No	Exits system setup after saving the changes.
Discard Changes and Exit	Yes No	Exits system setup without saving any changes.
Save Changes and Reset	Yes No	Resets the system after saving the changes.
Discard Changes and Reset	Yes No	Resets system setup without saving any changes.
Save Options	Info only	
Save Changes	Yes No	Saves changes done so far to any of the setup options.
Discard Changes	Yes No	Discards changes done so far to any of the setup options.
Restore Defaults	Yes No	Restores/Loads default values for all the setup options.
Save as User Defaults	Yes No	Saves the changes done so far as User Defaults.
Restore User Defaults	Yes No	Restores the User Defaults to all the setup options.
Boot Override	Info only	
Launch EFI Shell from filesystem device	Launch EFI Shell from available filesystems.	

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

6 Driver & Application Installation

After installing the operating system, all related drivers must be installed for the system to function properly. This section describes the drivers needed for Windows operating systems and the procedures to install them. For other operating system support, contact ADLINK for further information.

Visit the ADLINK web site to download drivers.

6.1 Driver Installation Order

Install drivers in the following order.

1. Fully install Microsoft Windows before installing any drivers. Most standard I/O device drivers have been included in Microsoft Windows. For Windows 10 IoT Enterprise users, Administrator privilege is required to install the drivers.

2. Install the chipset driver.
   See “Chipset Driver Installation” on page 100.

3. Install the graphics driver.
   See “Graphics Driver Installation” on page 101.

4. Install the Ethernet driver.
   See “Ethernet Driver Installation” on page 102.

5. Install the Management Engine driver
   See “Management Engine Driver Installation” on page 102.

6. Install the Serial I/O driver.
   See “Serial I/O Driver Installation” on page 103.

7. DI/O Driver Installation
   See “DI/O Driver Installation” on page 103.

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

6.2 Chipset Driver Installation

The chipset driver directs the operating system to configure the Intel® chipset components in order to ensure that the following features function properly:

- SATA Storage Support
- USB Support
- Identification of Intel® Chipset Components in the Device Manager

Windows 10 IoT Enterprise must be fully installed and running on the system before installing this software.

To install the chipset driver for the STC2-AL/KL:

1. Close any running applications.
2. From ADLINK's website, download Windows 10 IoT Enterprise drivers for the appropriate STC2 model.
3. Execute Setup.exe and follow the on-screen instructions to complete the installation.
4. After the installation is complete, reboot the system.

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

6.3 Graphics Driver Installation

The STC2-AL/KL is equipped with the Intel® Graphics Media Accelerator Driver package, which supports Windows 10 IoT Enterprise.

To install the graphics driver:

1. Close any running applications.
2. From ADLINK's website, download Windows 10 IoT Enterprise drivers for the STC2-AL/KL.
3. Execute Setup.exe and follow the on-screen instructions to complete the installation.
4. After the installation is complete, reboot the system.

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

6.4 Ethernet Driver Installation

To install the driver for the Intel I225 Gigabit Ethernet controller:

1. Close any running applications.
2. From ADLINK's website, download Windows 10 IoT Enterprise drivers for the STC2-AL/KL.
3. Execute Setup.exe and follow the on-screen instructions to complete the installation.
4. After the installation is complete, reboot the system.

6.5 Management Engine Driver Installation

To install the driver for the ME controller:

1. Close any running applications.
2. From ADLINK's website, download Windows 10 IoT Enterprise drivers for the STC2-AL/KL.
3. Execute Setup.exe and follow the on-screen instructions to complete the installation.
4. After the installation is complete, reboot the system.

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

6.6 Serial I/O Driver Installation

To install the driver for the serial I/O controller:

1. Close any running applications.
2. From ADLINK's website, download Windows 10 IoT Enterprise drivers for the STC2-AL/KL.
3. Execute Setup.exe and follow the on-screen instructions to complete the installation.
4. After the installation is complete, reboot the system.

6.7 DI/O Driver Installation

Download DI/O drivers from the ADLINK website at:

https://www.adlinktech.com/Products/Panel_PCs_Monitors/smart-touch-computer-industrial-panel-pc/STC2-AL_Series

https://www.adlinktech.com/Products/Panel_PCs_Monitors/smart-touch-computer-industrial-panel-pc/STC2-KL_Series

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

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.

- 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.
- It is recommended that the device be installed in Information Technology Rooms that are in accordance with Article 645 of the National Electrical Code and NFPA 75.
- When installing/mounting or uninstalling/removing device is required:
  - 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.
  - The device is powered by an adapter or DC source. Ensure that the adapter or DC source is properly grounded.
- If the device will not be used for long periods of time, turn off and unplug from its power source.
- Never attempt to repair the device, which should only be serviced by qualified technical personnel using suitable tools.

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

- 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.

- 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.

	**BURN HAZARD** Touching this surface could result in bodily injury. To reduce risk, allow the surface to cool before touching.

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

Consignes de Sécurité Importante

Pour la sécurité de l'utilisateur, veuillez lire et suivre toutes les instructions, avertissements, mises en garde et notes marqués dans ce manuel et sur l'appareil associé avant de manipuler/d'utiliser l'appareil, afin d'éviter toute blessure ou tout dommage.

- *Lisez attentivement ces consignes de sécurité*
- *Conservez le manuel de l'utilisateur pour pouvoir le consulter ultérieurement*
- *Lisez la section Spécifications de ce manuel pour des informations détaillées sur l'environnement d'exploitation recommandé*
- *Il est recommandé d'installer l'appareil dans Information Salles technologiques conformes à l'article 645 du Code national de l'électricité et NFPA 75.*
- *Lorsque l'installation/le montage ou la désinstallation/le retrait du périphérique est requis:*
  - *Mettez l'appareil hors tension et débranchez tous les cordons/câbles d'alimentation*
  - *Réinstallez tous les couvercles de châssis avant de rétablir l'alimentation*
- *Pour éviter les chocs électriques et/ou d'endommager l'appareil:*
  - *Tenez l'appareil à l'écart de toute source d'eau ou de liquide.*
  - *Tenez l'appareil à l'écart d'une forte chaleur ou d'une humidité élevée.*
  - *Maintenez l'appareil correctement ventilé (n'obstruer ou ne couvrez pas les ouvertures de ventilation).*
  - *Utilisez toujours les réglages de tension et de source d'alimentation recommandés.*
  - *Installez et utilisez toujours l'appareil près d'une prise de courant facilement accessible.*
  - *Fixez le cordon d'alimentation (ne placez aucun objet sur le cordon d'alimentation).*

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

- *Installez/fixez et utilisez l'appareil uniquement sur des surfaces stables et/ou sur les fixations recommandées.*
- *L'ordinateur Smart Touch est alimenté par un adaptateur ou une source CC. Veuillez vous assurer que l'adaptateur ou la source CC doit conserver la connexion à la terre s'il est doté d'une protection.*

- *Si l'appareil ne doit pas être utilisé pendant de longues périodes, éteignez-le et débranchez-le de sa source d'alimentation*
- *N'essayez jamais de réparer l'appareil, qui ne doit être réparé que par un personnel technique qualifié à l'aide d'outils appropriés*
- *Une batterie de type Lithium peut être fournie pour une alimentation de secours ininterrompue ou d'urgence.*



ATTENTION: Risque d'explosion si la pile est remplacée par une autre de type incorrect. Veuillez jeter les piles usagées de façon appropriée.

- *L'appareil doit être entretenu par des techniciens agrees lorsque:*
  - *Le cordon d'alimentation ou la prise est endommagé(e)*
  - *Un liquide a pénétré à l'intérieur de l'appareil.*
  - *L'appareil a été exposé à une forte humidité et/ou de la buée.*
  - *L'appareil ne fonctionne pas ou ne fonctionne pas selon le manuel de l'utilisateur.*
  - *L'appareil est tombé et/ou a été endommagé et/ou présente des signes évidents de dommage.*
- *Débranchez le cordon d'alimentation avant de desserrer les vis à oreilles et serrez toujours les vis à oreilles avec un tournevis avant de mettre le système en marche.*

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

- *Il est recommandé d'installer l'appareil uniquement dans une salle de serveurs ou une salle informatique où l'accès est:*
  - *Réservé au personnel de service qualifié ou aux utilisateurs familiarisés avec les restrictions appliquées à l'emplacement, aux raisons de ces restrictions et toutes les précautions requises*
  - *Uniquement autorisé par l'utilisation d'un outil, d'une serrure et d'une clé, ou d'un autre moyen de sécurité, et contrôlé par l'autorité responsable de l'emplacement.*

	***RISQUE DE BRÛLURES*** ***Partie chaude!*** *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

EMC Compliance

CE Warning

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

FCC Warning

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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.
No. 66, Huaya 1st Rd., Guishan District,
Taoyuan City 333411, Taiwan
Tel: +886-3-216-5088
Fax: +886-3-328-5706
Email: service@adlinktech.com

Ampro ADLINK Technology, Inc.
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.
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
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