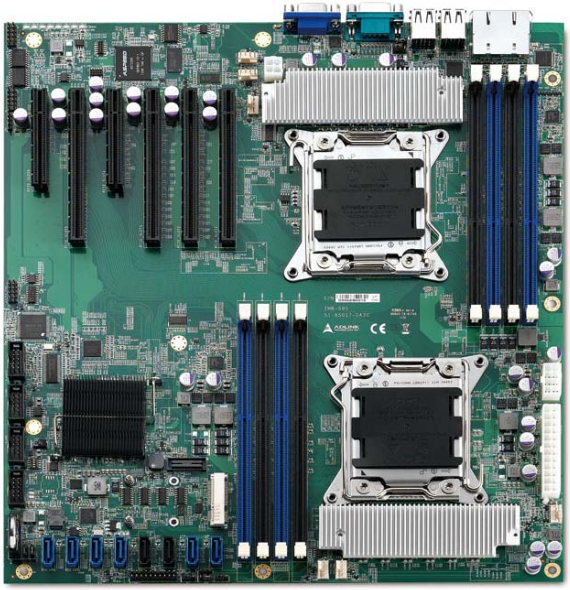
IMB-S90

E-ATX Dual Intel® Xeon® E5 Series
Industrial Motherboard

User's Manual



Manual Rev.: 2.03

Revision Date: Aug. 15, 2014

Part No: 50-1X004-1030

Recycled Paper

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

Advance Technologies; Automate the World.

Revision History

Revision	Release Date	Description of Change(s)
2.00	2013/11/25	Initial release
2.01	2014/1/10	Correct serial port specification
2.02	2014/5/9	Revised spec, chipset designation errata resolved
2.03	2014/8/15	Revised spec

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

Preface

Copyright 2014 ADLINK Technology, Inc.

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

Disclaimer

The information in this document is subject to change without prior notice in order to improve reliability, design, and function and does not represent a commitment on the part of the manufacturer.

In no event will the manufacturer be liable for direct, indirect, special, incidental, or consequential damages arising out of the use or inability to use the product or documentation, even if advised of the possibility of such damages.

Environmental Responsibility

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

Trademarks

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

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

Using this Manual

Audience and Scope

The IMB-S90 User's Manual is intended for hardware technicians and systems operators with knowledge of installing, configuring and operating industrial grade systems.

Manual Organization

This manual is organized as follows:

Preface: Presents important copyright notifications, disclaimers, trademarks, and associated information on the proper understanding and usage of this document and its associated product(s).

Chapter 1, Introduction: Introduces the IMB-S90, its features, applications, and specifications, including functional descriptions and board layout.

Chapter 2, Hardware Information: Provides technical information on connectors and jumpers for configuring the IMB-S90.

Chapter 3, Driver Installation: Provides information on how to install the IMB-S90 device drivers.

Important Safety Instructions: Presents safety instructions all users must follow for the proper setup, installation and usage of equipment and/or software.

Getting Service: Contact information for ADLINK's worldwide offices.

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

Conventions

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


NOTE:

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


CAUTION:

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


WARNING:

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

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

Table of Contents

Revision History ii

Preface iii

List of Figures ix

List of Tables xi

1 Introduction 1

1.1 Overview 1
1.2 Features 2
1.3 Specifications 3
1.4 Block Diagram 5
1.5 Functional Description 5
1.6 Power Consumption 6
1.7 Mechanical Drawings 8
1.8 Package Contents 9

2 Hardware Information 11

2.1 Rear I/O Connectors 11
2.2 Board Layout 13
2.3 Onboard Connectors 15
2.4 Jumpers & Switches 17

3 Driver Installation 21

Important Safety Instructions 23

Getting Service 25

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

This page intentionally left blank.

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

List of Figures

Figure 1-1: IMB-S90 Block Diagram 5
Figure 1-2: IMB-S90 Board Dimensions 8
Figure 2-1: IMB-S90 Rear IO Panel 11
Figure 2-2: IMB-S90 Board Layout 13

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 Tables

Table 1-1: Xeon® Processor E5-2658 Power Consumption 7
Table 1-2: Xeon® Processor E5-2648L Power Consumption 7
Table 2-1: IMB-S90 Board Layout Legend 14

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

This page intentionally left blank.

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

1 Introduction

1.1 Overview

The ADLINK IMB-S90 is an E-ATX industrial motherboard supporting the Intel® Xeon® Processor E5-2600 product family in LGA2011 package to deliver a scalable high performance platform for a wide array of industrial applications. The IMB-S90 supports 32/22nm dual CPUs at up to 2.4 GHz with integrated memory controllers and Direct Media Interface (DMI) connectivity to the Intel® C604 Chipset. Dual channel DDR3 1600 MHz memory is supported up to a maximum of 128 GB in eight DIMM slots.

These advanced features, coupled with integrated graphics, four PCI Express x16 slots, one PCI Express x8 slot, one PCI Express x4 slot, dual PCI Express-based Gigabit Ethernet, six SATA 6 Gb/s ports and two SATA 3Gb/s ports make the IMB-S90 ideal for vision and automation control, medical, test & measurement, and telecom applications requiring a high-performance, easy-to-deploy and reliable mainboard.

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

1.2 Features

- E-ATX form factor (305 mm x 330 mm)
- Supports dual Intel® Xeon® Processor E5-2600 series in LGA2011 package
- Dual channel DDR3 1600 MHz memory for each CPU, up to a maximum of 128 GB in eight DIMM slots
- Four PCIe x16 slots, one PCIe x8 slot, one PCIe x4 slot
- One PCIe Mini Card slot support interface either mSATA or PCIe Gen2/USB2.0 (selected by jumper)
- 6x SATA 6 Gb/s ports (one shared with mSATA, selected by jumper)
- 2x SATA 3 Gb/s ports
- 8x USB 2.0 ports (4x onboard, 4x on rear I/O)
- Two UART interfaces (1 D-sub 9 on rear I/O supports RS-232/422/485, 1 pin header supports RS-232)
- Dual Gigabit Ethernet
- Onboard pin header supports DB-Audio2 (optional accessory) with Mic-in, Line-in and Line-out
- BMC AST2300 built-in 64MB VRAM @1920x1200 resolution for VGA port
- IPMI support for Intelligent Platform Management Interface v.2.0
- AMI MegaRAC® Web GUI
- KVM/Media Redirection support
- Support for remote power-cycle, power-down, power-up and reset by NIC1
- Serial over LAN (supported by rear I/O COM port)
- HW monitor: +12V,+5V,+3.3V, CPU voltage, CPU/Motherboard temperature, CPU/System fan speed
- Watchdog Timer:1-65535 seconds software programmable, can generate system reset
- RoHS compliant

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

1.3 Specifications

System	
CPU	Intel® Xeon® (LGA2011) • E5-2658, 2.1GHz, QPI 8GT/s, 20MB cache, 32nm, 95W TDP (8C) • E5-2648L, 1.8GHz, QPI 8GT/s, 20MB cache, 32nm, 70W TDP (8C) • E5-2658 v2, 2.4GHz, QPI 8GT/s, 25MB cache, 22nm, 95W TDP (10C) • E5-2648L v2, 1.9GHz, QPI 8GT/s, 25MB cache, 22nm, 70W TDP (10C) • E5-2640 v2, 2.0GHz, QPI 7.2GT/s, 20MB cache, 22nm, 95W TDP (8C) • E5-2630 v2, 2.6GHz, QPI 7.2GT/s, 15MB cache, 22nm, 80W TDP (6C)
Chipset	Intel® C604 Chipset
Memory	Dual-channel DDR3 1600MHz for each CPU, 8x 240-pin DIMM sockets, up to 128GB ECC registered or non-ECC unbuffered DIMM support
BIOS	AMI in 64-Mbit SPI Flash
IPMI	• ASPEED AST2300 BMC • IPMI support for Intelligent Platform Management Interface v.2.0 • AMI MegaRAC® Web GUI • KVM/Media Redirection support • Support for remote power-cycle, power-down, power-up and reset by NIC1 • Serial over LAN (supported by rear I/O COM port) • HW monitor: +12V,+5V,+3.3V, CPU voltage, CPU/Motherboard temperature, CPU/System fan speed • Watchdog Timer:1-65535 seconds software programmable, can generate system reset
Operating Systems	• Microsoft Windows Server 2008 R2 64-bit • Microsoft Windows 7 64-bit • Red Hat Enterprise Linux 6
Display	
Graphics	BMC AST2300 built-in 64MB VRAM
VGA	Dsub-15 connector, up to 1920x1200 resolution @60 Hz
Ethernet	
Controller	• Dual Intel® GbE I210-AT Controllers (NIC0 and NIC1) • Supports Wake-On-LAN
Ports	Two RJ-45 Ethernet ports
I/O Interfaces	

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

Audio	Realtek ALC262 on DB-Audio2 daughter board (optional) Line-in, Line-out, Mic-in on DB-Audio2 daughter board
USB	8x USB 2.0 ports (4x rear I/O, 4x onboard pin headers)
Serial	1x RS-232 (pin header), 1x RS-232/422/485 (rear I/O)
Serial ATA	• 4x SATA 6 Gb/s from Marvell 88SE9230 (*RAID 0/1/10) • 2x SATA 6 Gb/s from PCH (*RAID 0/1/5/10) • 2x SATA 3 Gb/s from PCH (*RAID 0/1/5/10) • 1x Mini-PCIe full card slot supports PCIe Gen2/USB or mSATA (signal shared w/ SATA 6Gb/s from PCH) *Marvell (H/W) and PCH (S/W) RAID groups are independent
Expansion Slots	• Slot 1: PCIe x16 Gen3 from CPU1 • Slot 2: PCIe x16 Gen3 from CPU1 • Slot 3: PCIe x16 Gen3 from CPU2 • Slot 4: PCIe x8 Gen3 from CPU1 • Slot 5: PCIe x16 Gen3 from CPU2 • Slot 6: PCIe x4 Gen2 from PCH (physical PCIe x8 slot)
Mechanical and Environment	
Form Factor	E-ATX Industrial Motherboard
Dimensions	305 mm x 330 mm (W x L)
Operating Temp.	0ºC to 40ºC
Storage Temp.	-20°C to 80°C
Rel. Humidity	10% to 90% non-condensing
Safety	CE, FCC Class A

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

1.4 Block Diagram

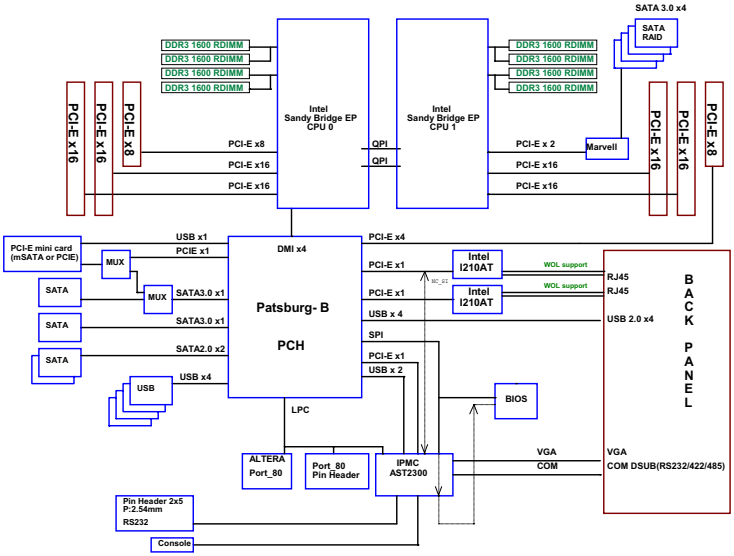


Figure 1-1: IMB-S90 Block Diagram

1.5 Functional Description

Processor Support

The IMB-S90 is a dual processor design based on the Intel® Xeon® Processor E5-2600 family. One LGA-2011 socket connects to an Intel C604 Chipset through a 5 GHz Direct Media Interface (DMI). The system clock generator is set by the processor delivering 100MHz host clock. Dual CPUs have their own onboard VRD compliant to the VRM 12 specification. The VRD regulates+12V from the DC-DC module to generate the required CPU core power based on the CPU SVID. Each Xeon® E5-2600 processor has dual-channel memory on 4 DIMMs supporting 800,1066, 1333, and 1600 MT/s registered or un-buffered DIMM. Platform Environment Control Interface (PECI) for thermal monitoring and other functions is supported.

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

Intel® C604 Chipset

The Intel C600 Series Chipset provides a connection point between various I/O components and Direct Media Interface based processors. Eight lanes of PCI Express Gen2 ports are supported.

Dual-Channel DDR3 Memory

The IMB-S90 supports dual channel DDR3 1600 MT/s ECC registered or non-ECC unbuffered DIMMs up to 128GB total system memory in eight DIMM slots.

Gigabit Ethernet

Dual Intel® GbE I210-AT Controllers are connected from Intel® C604 Chipset.

Serial ATA

The Marvell 88SE9230 is a four-port SATA RAID I/O processor that provides a two-lane PCI Express 2.0 in-terface and SATA controller functions. The 88SE9230 supplies four 6Gbps SATA ports. Intel® C604 Chipset supports 2x SATA 6 Gb/s and 2x SATA 3 Gb/s ports.

1.6 Power Consumption

Test Configuration	
Memory Slot	Transcend TS2GKR72V6Z DDR3-1600 16GB ECC Reg
SATA Channel	Seagate ST9160412AS Momentus 7200.4 160GB
Power Supply	FSP460-60PFG 460W
BIOS	0.93

Intel® Xeon® Processor E5-2658 2.1GHz

Mode	Current (A) / Voltage (V)	Power (W)	Total (W)
S1	6.24A / 12V	74.88	80.43
	0.45A / 5V	2.25	
	1A / 3.3V	3.3	

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

Mode	Current (A) / Voltage (V)	Power (W)	Total (W)
S3	983mA / 5VSB	4.915	4.915
S5	390mA / 5VSB	1.95	1.95
Idle Load	5.7A / 12V	68.4	72.958
	0.41A / 5V	2.05	
	0.76A / 3.3V	2.508	
CPU Max	20.3A / 12V	243.6	247.521
	0.54A / 5V	2.7	
	0.37A / 3.3V	1.221	
Max. Load	19.93A / 12V	239.16	244.132
	0.77A / 5V	3.85	
	0.34A / 3.3V	1.122	

Table 1-1: Xeon® Processor E5-2658 Power Consumption

Intel® Xeon® Processor E5-2648L 1.8GHz

Mode	Current (A) / Voltage (V)	Power (W)	Total (W)
S1	6.41A / 12V	76.92	82.27
	0.41A / 5V	2.05	
	1.0A / 3.3V	3.3	
S3	808mA / 5VSB	4.04	4.04
S5	346mA / 5VSB	1.73	1.73
Idle Load	6.04A / 12V	72.48	78.736
	0.38A / 5V	1.9	
	1.32A / 3.3V	4.356	
CPU Max	15.59A / 12V	187.08	193.669
	0.44A / 5V	2.2	
	1.33A / 3.3V	4.389	
Max. Load	15.69A / 12V	188.28	196.784
	0.79A / 5V	3.95	
	1.38A / 3.3V	4.554	

Table 1-2: Xeon® Processor E5-2648L Power Consumption

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

1.7 Mechanical Drawings

NOTE:

Dimensions in mm

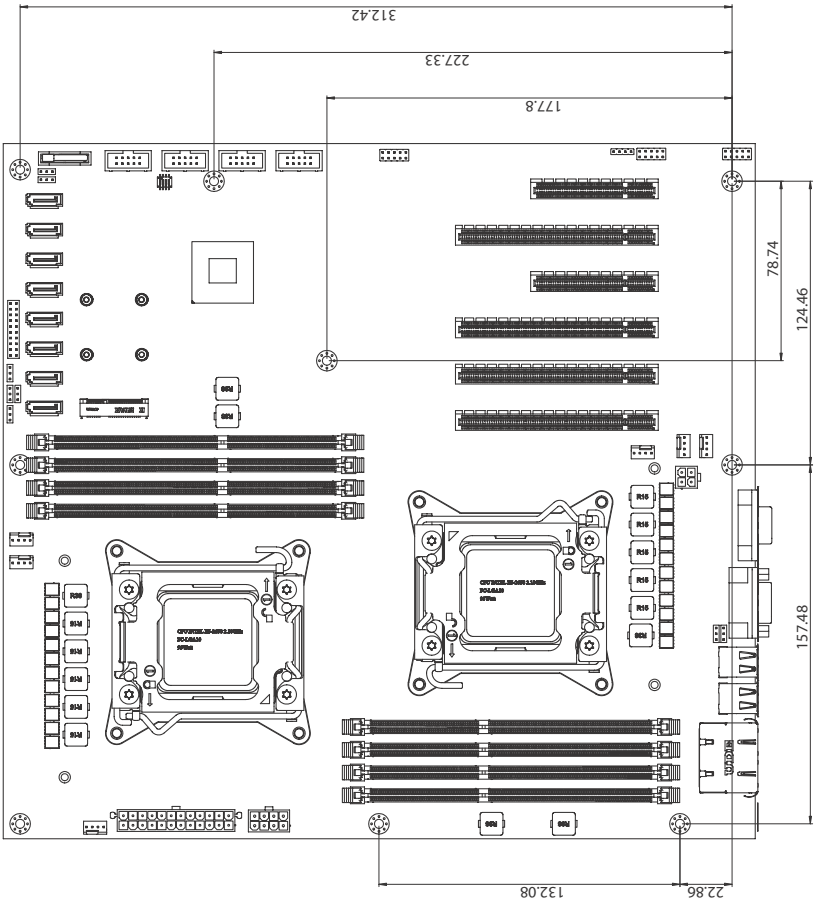


Figure 1-2: IMB-S90 Board Dimensions

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

1.8 Package Contents

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 the dealer before returning any product to ADLINK.

- IMB-S90 E-ATX Industrial Motherboard
- I/O shield
- SATA cable x2
- Driver CD
- User's manual



The IMB-S90 must be protected from static discharge and physical shock. Never remove any of the socketed parts except at a static-free workstation. Use the anti-static bag shipped with the product to handle the board. Wear a grounded wrist strap when installing and/or servicing.

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

2 Hardware Information

2.1 Rear I/O Connectors

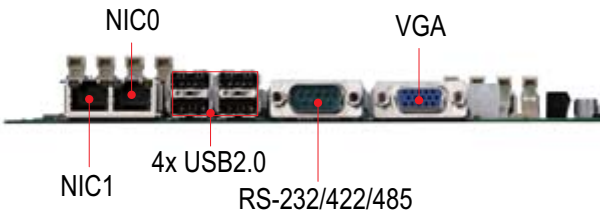
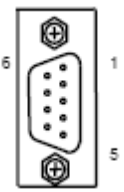


Figure 2-1: IMB-S90 Rear IO Panel

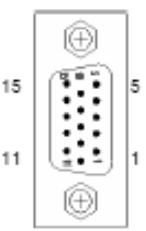
Serial Port Connector (COM1)

Pin #	RS-232	RS422	RS485
1	DCD, Data Carrier Detect	TXD-	Data-
2	RXD, Receive Data	TXD+	Data+
3	TXD, Transmit Data	RXD+	--
4	DTR, Data Terminal Ready	RXD-	--
5	GND, ground	GND	GND
6	DSR, Data Set Ready	--	--
7	RTS, Request to Send	--	--
8	CTS, Clear to Send	--	--
9	RI, Ring Indicator	--	--



VGA Connector.

Signal Name	Pin #	Pin #	Signal Name
Red	1	2	Green
Blue	3	4	VCC pull-up
GND	5	6	GND
GND	7	8	GND
VCC	9	10	GND
VCC pull-up	11	12	DDC2B DATA
HSYNC	13	14	VSYNC
DDC2B CLK	15		

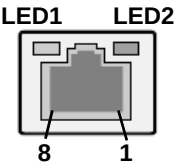


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

LAN Port (NIC0/1, RJ-45)

Refer to the tables below for the LAN port pin and LED definitions.

Pin #	10BASE-T/ 100BASE-TX	1000BASE-T
1	TX+	BI_DA+
2	TX-	BI_DA-
3	RX+	BI_DB+
4	--	BI_DC+
5	--	BI_DC-
6	RX-	BI_DB-
7	--	BI_DD+
8	--	BI_DD-



LAN Status	LED1 (left)	LED2(right)
Network link is not established or system power off	OFF	OFF
10 Mbps	OFF	Blinking
100 Mbps	Green	Blinking
1000 Mbps	Orange	Blinking

NOTE:

NIC1 supports NCSI for IPMI v2.0

USB Connectors

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



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

2.2 Board Layout

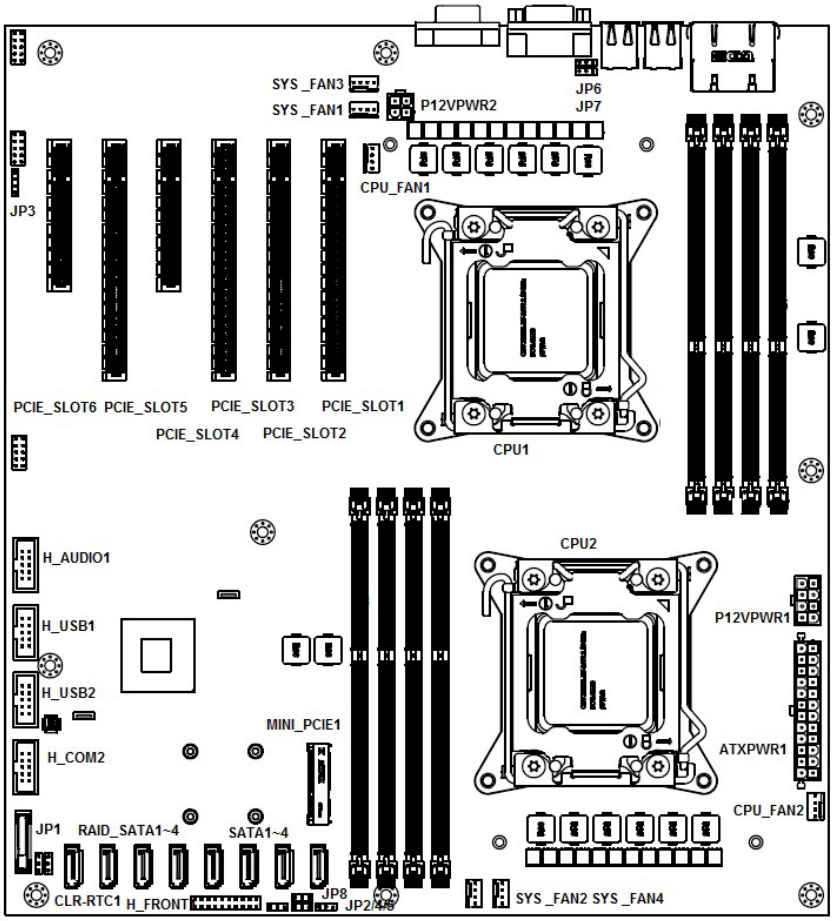


Figure 2-2: IMB-S90 Board Layout

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

ATXPWR1	ATX Power Connector (24-pin)
CLR-RTC1	Clear RTC Jumper
CPU_FAN1/2	CPU Fan Connectors
H_AUDIO1	Audio Daughter Board Header
H_COM2	Serial Port Connector
H_FRONT1	System Panel Pin Header
H_USB1~2	USB 2.0 Pin Headers
JP1	Clear CMOS Jumper
JP2	Marvell SATA RAID Test Mode Jumper
JP3	BMC Console Port
JP4/JP8	PCIe Mini-Card Function Selection Jumper
JP5	SATA1 Function Selection Jumper
JP6/JP7	COM1 Mode Selection Jumper
P12VPWR1	EPS 12V Power Connector (8-pin)
P12VPWR2	ATX12V Power Connector (4-pin)
PCIE_SLOT1~6	PCI Express Slots
RAID_SATA1~4	SATA Connector (RAID support)
SATA1~4	SATA Connector
SYS _FAN1~4	System Fan Connector

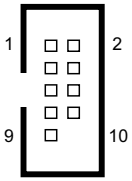
Table 2-1: IMB-S90 Board Layout Legend

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

2.3 Onboard Connectors

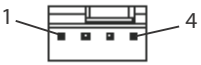
Serial Port Connector - RS-232 (COM2)

Pin #	Signal	Function
1	DCD	Data Carrier Detect
2	DSR	Data Set Ready
3	RXD	Receive Data
4	RTS	Request to Send
5	TXD	Transmit Data
6	CTS	Clear to Send
7	DTR	Data Terminal Ready
8	RI	Ring Indicate
9	GND	Ground
10	NC	Key



CPU/System Fan Connectors (CPU_FAN#/SYS_FAN#)

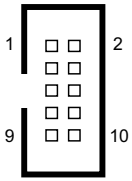
Pin #	Signal
1	Fan Speed Control
2	Fan Tachometer
3	Fan power (+12V)
4	GND



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

HD Audio Daughter Board Connector (H_AUDIO1)

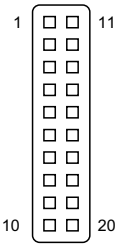
This connector is designed for use with the ADLINK DB-Audio2 daughter board.



Pin #	Signal	Function
1	GND	Ground
2	AUD_BCLK	Audio Clock
3	GND	Ground
4	ICH_AUD_SDIN1	Audio Data Input
5	P5V	+ 5V
6	ICH_AUD_SDOUT	Audio Data Output
7	P5V_AUD	+ 5V
8	P3V3_DVDD	3.3V
9	AUD_SYNC	Audio Synchronous
10	AUD_RSTJ	Audio Reset

System Panel Pin Header (H_FRONT1)

PIN	Signal Name	PIN	Signal Name
1	HC_SPKR_N	11	GND
2	NC	12	SYS_RSTBTN-L
3	NC	13	NC
4	5V	14	GND
5	NC	15	CN_PWRBTN-L
6	GND	16	NC
7	HC_LEYLOCK-L	17	NC
8	HC_PLED-L	18	LED_SATA_ACT-L
9	NC	19	3V_HLED
10	5V_PLED	20	NC



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

SATA Connectors

Pin #	Signal
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND



USB 2.0 Pin Headers (H_USB1~2)

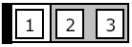
Pin #	Signal	Pin #	Signal
1	+5V	2	+5V
3	USB0-	4	USB1-
5	USB0+	6	USB1+
7	GND	8	GND
9	Key	10	NC



2.4 Jumpers & Switches

Clear RTC (CLR_RTC1)

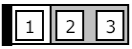
Clear BIOS settings and data/time.

CMOS Status	Connection	JP1
Normal	1 – 2	
Clear RTC	2 – 3	

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

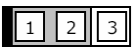
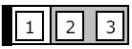
Clear CMOS (JP1)

Clear the BIOS settings.

CMOS Status	Connection	JP1
Normal	1 – 2	
Clear CMOS	2 – 3	

Marvell SATA RAID Test Mode (JP2)

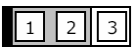
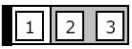
For debug use.

Status	Connection	JP2
Normal	1 – 2	
Enable	2 – 3	

BMC Console Port (JP3)

Pin #	Signal
1	VCC 3.3V
2	RX
3	TX
4	GND

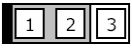
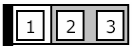
PCIe Mini-Card Function Selection (JP4/JP8)

Status	Connection	JP1
mSATA	1 – 2	
PCIe (default)	2 – 3	

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

SATA1 Function Selection (JP5)

Disable to use PCIe Mini-Card in mSATA mode.

Status	Connection	JP2
SATA (default)	1 – 2	
Disabled	2 – 3	

COM1 Mode Selection (JP6/JP7)

Status	JP6	JP7
RS-232	Short 2-3	Short 1-2
RS-422	Short 2-3	Short 2-3
RS-485	Short 1-2	Short 2-3

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

3 Driver Installation

This chapter provides information on how to install the IMB-S90 device drivers under Windows 7 64-bit. The device drivers are located in the following ADLINK All-in-One CD directories:

Display	X:\IMB-S90\Graphics
Chipset	X:\IMB-S90\Intel INF
Ethernet	X:\IMB-S90\LAN
Rapid Storage	X:\IMB-S90\Intel RST
RAID	X:\IMB-S90\Marvell

Follow the instructions below to install the required IMB-S90 drivers:

1. Install the Windows operating system before installing any driver. Most standard I/O device drivers are installed during Windows installation.
2. Install the **Display driver** by opening device manager. Navigate to the **INF** located in **X:\IMB-S90\Graphics\v098_whql \Windows_WDDM\Win7_S08R2_x64**. Follow the instructions given and reboot when instructed.
3. Install the **Chipset driver** by running the program **Setup.exe** in **X:\IMB-S90\Intel INF\infinst_autol for XXX** (where XXX is Sandy Bridge or Ivy Bridge). Follow the instructions given and reboot when instructed.
4. Install the **Ethernet driver** by running the program **Autorun.exe** in **X:\IMB-S90\LAN\513189_Release_17_4_OEM_Gene_284334_split**. Follow the instructions given and reboot if required.
5. Install the **Marvel RAID driver** by opening device manager. Navigate to the driver located in **X:\IMB-S90\Marvell\PSP2.3.0.1046 \windows\Driver\1.2.0.1032-WHQL\storport\amd64**. Follow the instructions given and reboot if required.

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

This page intentionally left blank.

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

Important Safety Instructions

For user safety, please read and follow all **instructions**, **WARNINGS**, **CAUTIONS,** and **NOTES** marked in this manual and on the associated equipment before handling/operating the equipment.

- Read these safety instructions carefully.
- Keep this user's manual for future reference.
- Read the specifications section of this manual for detailed information on the operating environment of this equipment.
- When installing/mounting or uninstalling/removing equipment:
  - Turn off power and unplug any power cords/cables.
- To avoid electrical shock and/or damage to equipment:
  - Keep equipment away from water or liquid sources;
  - Keep equipment away from high heat or high humidity;
  - Keep equipment properly ventilated (do not block or cover ventilation openings);
  - Make sure to use recommended voltage and power source settings;
  - Always install and operate equipment near an easily accessible electrical socket-outlet;
  - Secure the power cord (do not place any object on/over the power cord);
  - Only install/attach and operate equipment on stable surfaces and/or recommended mountings; and,
  - If the equipment will not be used for long periods of time, turn off and unplug the equipment from its power source.

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

- Never attempt to fix the equipment. Equipment should only be serviced by qualified personnel.

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. Dispose of used batteries appropriately.

- Equipment must be serviced by authorized technicians when:
  - The power cord or plug is damaged;
  - Liquid has penetrated the equipment;
  - It has been exposed to high humidity/moisture;
  - It is not functioning or does not function according to the user's manual;
  - It has been dropped and/or damaged; and/or,
  - It has an obvious sign of breakage.

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

Getting Service

Contact us should you require any service or assistance.

ADLINK Technology, Inc.
Address: 9F, No.166 Jian Yi Road, Zhonghe District
New Taipei City 235, Taiwan
新北市中和區建一路 166 號 9 樓
Tel: +886-2-8226-5877
Fax: +886-2-8226-5717
Email: service@adlinktech.com

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

ADLINK Technology (China) Co., Ltd.
Address: 上海市浦东新区张江高科技园区芳春路 300 号 (201203)
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 Beijing
Address: 北京市海淀区上地东路 1 号盈创动力大厦 E 座 801 室(100085)
Rm. 801, Power Creative E, No. 1 Shang Di East Rd.
Beijing, 100085 China
Tel: +86-10-5885-8666
Fax: +86-10-5885-8626
Email: market@adlinktech.com

ADLINK Technology Shenzhen
Address: 深圳市南山区科技园南区高新南七道 数字技术园
A1 栋 2 楼 C 区 (518057)
2F, C Block, Bldg. A1, Cyber-Tech Zone, Gao Xin Ave. Sec. 7
High-Tech Industrial Park S., Shenzhen, 518054 China
Tel: +86-755-2643-4858
Fax: +86-755-2664-6353
Email: market@adlinktech.com

LiPPERT ADLINK Technology GmbH
Address: Hans-Thoma-Strasse 11, D-68163
Mannheim, Germany
Tel: +49-621-43214-0
Fax: +49-621 43214-30
Email: emea@adlinktech.com

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

ADLINK Technology, Inc. (French Liaison Office)
Address: 6 allée de Londres, Immeuble Ceylan
91940 Les Ulis, France
Tel: +33 (0) 1 60 12 35 66
Fax: +33 (0) 1 60 12 35 66
Email: france@adlinktech.com

ADLINK Technology Japan Corporation
Address: 〒101-0045 東京都千代田区神田鍛冶町 3-7-4
神田 374 ビル 4F
KANDA374 Bldg. 4F, 3-7-4 Kanda Kajicho,
Chiyoda-ku, Tokyo 101-0045, Japan
Tel: +81-3-4455-3722
Fax: +81-3-5209-6013
Email: japan@adlinktech.com

ADLINK Technology, Inc. (Korean Liaison Office)
Address: 137-881 서울시 서초구 서초대로 326, 802 (서초동, 모인터빌딩)
802, Mointer B/D, 326 Seocho-daero, Seocho-Gu,
Seoul 137-881, Korea
Tel: +82-2-2057-0565
Fax: +82-2-2057-0563
Email: korea@adlinktech.com

ADLINK Technology Singapore Pte. Ltd.
Address: 84 Genting Lane #07-02A, Cityneon Design Centre
Singapore 349584
Tel: +65-6844-2261
Fax: +65-6844-2263
Email: singapore@adlinktech.com

ADLINK Technology Singapore Pte. Ltd. (Indian Liaison Office)
Address: #50-56, First Floor, Spearhead Towers
Margosa Main Road (between 16th/17th Cross)
Malleswaram, Bangalore - 560 055, India
Tel: +91-80-65605817, +91-80-42246107
Fax: +91-80-23464606
Email: india@adlinktech.com

ADLINK Technology, Inc. (Israeli Liaison Office)
Address: 27 Maskit St., Corex Building
PO Box 12777
Herzliya 4673300, Israel
Tel: +972-77-208-0230
Fax: +972-77-208-0230
Email: israel@adlinktech.com

ADLINK Technology, Inc. (UK Liaison Office)
Tel: +44 774 010 59 65
Email: UK@adlinktech.com

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