

IMB-ARL-Q870

Micro-ATX Industrial Motherboard

Quick Installation Guide

Version 1.00

October, 2025

Features

- LGA1851 Intel® 15th Generation Ultra processor
- Dual-channel DDR5 5600MHz
- Support DisplayPort, HDMI and USB4
- Support two M.2 M key
- Support one PCIe x16 and three PCIe x4

Packing List

- 1 x IMB-ARL-Q870 single board computer
- 1 x I/O Shielding
- 2 x SATA cable
- 1 x QIG (Quick Installation Guide)

Jumpers & Connectors

J_CMOS1: Clear CMOS jumper	
STATUS	DESCRIPTION
NC	Keep CMOS setup (normal operation)
Press Button	Clear CMOS setup

J_ATX_AT1: AT/ATX Power Mode Setting	
PIN NO.	DESCRIPTION
1-2 (Right)	ATX Power Mode (default)
2-3 (Left)	AT Power Mode

F_PANEL1: External Switches and Indicators panel			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+5V	2	PC_BEEP_P
3	NC	4	NC
5	GND	6	NC-
7	PWR_BTN_N	8	PC_BEEP_N
9	GND	10	NC
11	HD_LED_P	12	PM_SYSRST_N
13	HD_LED_N	14	GND

USB2_CN1/2: Internal USB Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	2	GND
3	USB_DN	4	USB_DP
5	USB_DP	6	USB_DN-
7	GND	8	VCC

SYS_FAN1: System Fan Connector	
PIN NO.	DESCRIPTION
1	GND
2	+12V
3	FANIN
4	PWM(+5V)

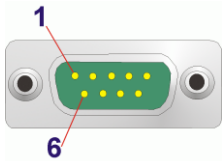
CPU_FAN1: CPU Fan Connector	
PIN NO.	DESCRIPTION
1	GND
2	+12V
3	FANIN
4	PWM(+5V)

CPU12V1: +12V Power Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	+12V
3	GND	4	+12V
5	GND	6	+12V
7	GND	8	+12V

J_SMB1: SMBus Connector	
PIN NO.	DESCRIPTION
1	GND
2	SMB_DATA_MAIN
3	SMB_CLK_MAIN
4	+5V

J_I2C1: I2C Connector	
PIN NO.	DESCRIPTION
1	GND
2	SMDAT0_EC
3	SMCLK0_EC
4	+5V

CHASSIS1: Chassis Status Connector	
PIN NO.	DESCRIPTION
1	CASEOPEN_N
2	GND

COM1/COM2: COM Port Connector				
PIN NO.	RS-232	RS-422	RS-485	
1	DCD	TXD422-	TXD485-	
2	RXD	TXD422+	TXD485+	
3	TXD	RXD422+	--	
4	DTR	RXD422-	--	
5	GND	--	--	
6	DSR	--	--	
7	RTS	--	--	
8	CTS	--	--	
9	RI	--	--	

COM3~6: Internal Serial Port Connectors	
PIN NO.	DESCRIPTION
1	DATA CARRIER DETECT (DCD)
2	DATA SET READY (DSR)
3	RECEIVE DATA (RXD)

4	REQUEST TO SEND (RTS)
5	TRANSMIT DATA (TXD)
6	CLEAR TO SEND (CTS)
7	DATA TERMINAL READY (DTR)
8	RING INDICATOR (RI)
9	GND
10	GND

ATX1: ATX Power Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	GND	15	GND
4	+5V	16	PS_ON
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	PWRGD_PS	20	NC
9	+5V	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	GND

JLAN_LED1/2	
PIN NO.	DESCRIPTION
1	+3.3V
2	I226_LINK_ACT_N

FRONT-AUDIO1: Audio Source Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	LMIC2-L	2	GND
3	LMIC2-R	4	PRESENCE#
5	LLINE2-R	6	MIC2-JD
7	FRONT-IO	8	NC
9	LINE2-L	10	LINE2-JD

TPM1: Trusted Platform Module Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
		2	N/C
3	+1.8V	4	N/C
5	GND	6	+1.8V
7	SPI_TPM_CLK_SW	8	N/C
9	N/C	10	SPI_TPM_SO_SW
11	N/C	12	SPI_TPM_SI_SW
13	SPI_TPM_CS#_SW	14	GND

15	N/C	16	N/C
17	TPM_PIRQ_L	18	+1.8V

Get more information:



IMB-ARL-Q870



IEI Resource Download Center

Safety Instructions



Warning! Read the user manual before connecting the system to the power source.

Warning! To prevent the system from overheating, do not operate it in an area that exceeds the maximum operating temperature described in the user manual.

Warning! Ultimate disposal of this product should be handled according to all national laws and regulations.

Support



IEI Support URL

http://new.ieiworld.com/tw/online_support_form

Compliance



This equipment has been tested and found to comply with specifications for CE marking. If the user modifies and/or installs other devices in the equipment, the CE conformity declaration may no longer apply.



This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



According to the requirement of the WEEE legislation the following user information is provided to customers for all branded IEI Electronics products subject to the WEEE directive.

This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop o- your waste equipment for recycling, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

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