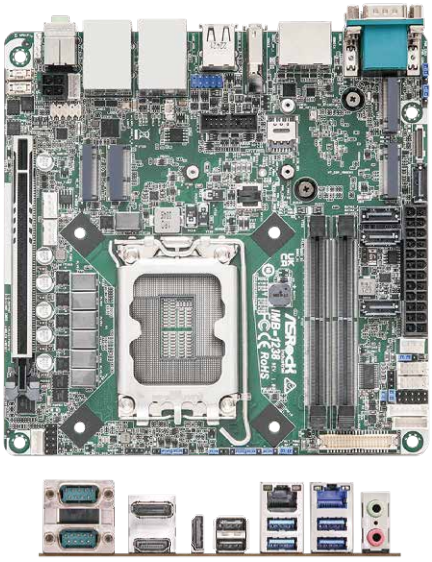
ASRock Industrial

IMB-1238

Mini-ITX Motherboard



KEY FEATURES

- Intel® Core™ Processor Series 2 (Bartlett Lake-S) and 14th/13th/12th Gen (Raptor Lake-S Refresh/Raptor Lake-S/Alder Lake-S) Core™ Processors with Q670 chipset
- 2 x 262-pin SO-DIMM 4800/5600 MHz, up to 96GB (48GB per DIMM)
- 1 x PCIe x16 (Gen5), 4 x USB 3.2 Gen2, 2 x USB 3.2 Gen1, 4 x USB 2.0, 1 x M.2 Key B, 1 x M.2 Key E, 2 x M.2 Key M, 4 x COM, 4 x SATA3
- 1 x Intel 2.5 Gigabit LAN, 1 x Intel 1 Gigabit LAN
- Supports Quad display, 1 x HDMI 2.0b, 1 x HDMI 1.4b, 1 x DP 1.4a, 1 x LVDS or eDP
- TPM 2.0 onboard IC
- Supports Intel® vPro, VMD RAID 0/1/5/10
- ATX-PWR (24+4-pin) and +12V DC-In co-design

SPECIFICATIONS

Form Factor

Dimensions (LxWxH)	Mini-ITX (6.7-in x 6.7-in x 1.5-in, 17.0 cm x 17.0 cm x 3.8 cm)

Processor System

CPU	Intel® Core™ Processor Series 2 (Bartlett Lake-S) and 14th/13th/12th Gen (Raptor Lake-S Refresh/Raptor Lake-S/ Alder Lake-S) Core™ Processors, up to 65W
Chipset	Intel® Q670
Socket	LGA1700
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel DDR5 4800/5600 MHz* *Actual memory frequency depends on the CPU types and DRAM modules, for more information refer to https://www.asrockind.com/en-gb/index.php?route=newsblog/faq&faq_id=90 technical FAQ *If motherboard ambient temp. is over 55°C, the memory thermal solution should be added to avoid thermal issue
Capacity	96 GB (48 GB per DIMM)
Socket	2 x 262-pin SO-DIMM

Graphics

Controller	Intel® UHD Graphics
HDMI	HDMI 2.0b Max resolution up to 4096x2160@60Hz HDMI 1.4a Max resolution up to 4096x2160@30Hz
DisplayPort	DisplayPort 1.4a, DP++ Max resolution up to 4096x2160@60Hz
LVDS	Dual channel 24 bit up to 1920x1200@60Hz (Connector shared with eDP)
eDP	Max resolution up to 1920 x 1200@60Hz (Connector shared with LVDS)
MultiDisplay	Quad Display

Expansion Slot

PCIe	1 x PCIe x16 (Gen5, Support riser card x8/x8)
M.2	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless 1 x M.2 (Key B, 3042/3052) with PCIe x1, USB 3.2 Gen1, USB 2.0 and SIM for 4G/5G
SIM Socket	1 x Socket connected to M.2 Key B

Audio

Interface	Realtek ALC897, High Definition Audio. Line-out, Mic-in

Ethernet

Controller/ Speed	LAN1: Intel® I226V with 10/100/1000/2500 Mbps LAN2: Intel® I219LM with 10/100/1000 Mbps, supports vPro
Connector	2 x RJ-45

Rear I/O

HDMI	1 x HDMI 2.0b 1 x HDMI 1.4b
DisplayPort	1 x DP 1.4a++
Ethernet	1 x 2.5 Gigabit LAN 1 x 1 Gigabit LAN
USB	4 x USB 3.2 Gen2 2 x USB 2.0
Audio	2 (Mic-in, Line-out)
COM	COM1, COM2 (RS-232/422/485)

Internal Connector

USB	2 x USB 3.2 Gen1 (1 x USB 3.2 header) 2 x USB 2.0 (1 x 2.54 pitch header)
COM	COM3, COM4 (RS-232)
GPIO	4 x GPI, 4 x GPO
LVDS	1 (Connector with LVDS/eDP signal, switch by BIOS)
SATA PWR Output	1
Speaker Header	1

Storage

M.2	1 x M.2 (Key M, 2242/2280) with PCIe Gen4 x4 for SSD 1 x M.2 (Key M, 2242) with PCIe Gen3 x4 and SATA3 for SSD* *Recommend using M2X4-SATA-4P module to support extra 4 SATA ports (Support by special BIOS)
SATA	4 x SATA3 (6Gb/s)
RAID	Intel® VMD RAID 0/1/5/10 **supported by identical interface (PCIe or SATA) PCIe interface: M.2 Key B + M.2 Key M1/2 or 2*M.2 Key M SATA interface: SATA por

Security

TPM	TPM 2.0 onboard IC

Watchdog Timer

Output	From Super I/O to drag RESETCON#
Interval	256 Segments, 0, 1, 2, ...255sec

Power Requirements

Input PWR	ATX PWR (24+4-pin) and +12V DC-In co-design
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready

Environment

Operating Temp	-20°C ~ 70°C
Storage Temp	-40°C ~ 85°C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

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BLOCK DIAGRAM