



INDUSTRIAL MOTHERBOARD

CT-MRL01

MicroATX Industrial Motherboard with LGA 1700 Socket supporting 12/13/14th Gen Intel® Core™ i3/i5/i7/i9 Processor, Q670E



Features

- Support 12/13/14th Gen. Intel® Alder lake-S / Raptor Lake-S Processor
- Intel® Q670E chipset
- 4x 288-pin DDR4 DIMM. Max. up to 128GB
- 1x 1GbE, 1x 2.5GbE (Support Wake-on-LAN and PXE)
- 4 independent display supported DP++
- 1x PCIe x16 (Gen 5), 2x PCIe x4 (Gen4, Gen3), 1x PCIe x16 (Gen 4)
- 2x M.2 (M Key, NVMe PCIe x4, SATA, 2242/2260/2280); 1x M.2 (E Key, PCIe x2, USB 2.0, 2230)
- 6x RS-232/422/485, 2x USB 3.0 Gen 1, 4x USB 2.0 Internal header, 6x USB 3.1
- 4x SATA 6.0Gb/s
- TPM 2.0

Specifications

System	
Processor	Support 12/13/14th Gen Intel® Core™ i9/i7/i5/i3 Alder lake-S, Raptor Lake-S Processor (LGA 1700, 65W Max TDP)
System Chipset	Intel® Q670E PCH
LAN Chipset	GbE1: Intel® I219LM, 1GbE (Support Wake-on-LAN and PXE) GbE2: Intel® I225-V, 2.5GbE (Support Wake-on-LAN and PXE)
Audio Codec	Realtek ALC888S HD Audio Codec, support 5.1 channel
System Memory	4x DDR4 2133/2400/2666MHz DIMM. 128 GB Max
Graphics	Intel® Integrated Iris Xe Graphic (CPU Dependent)
BIOS	AMI uEFI 256MB SPI flash
Watchdog	Software Programmable Supports 1~255 sec. System Reset
iAMT	Intel® AMT 12.0 supported
TPM	TPM 2.0

Display	
Display Port	4x DP++ (4096 x 2304)
Multiple Display	Quad Display

Storage	
M.2	1x M.2 M / NVMe PCIe x4 Gen 4/ 2242, 2260, 2280 1x M.2 M / NVMe PCIe x4 Gen 4/ SATA / 2242, 2260, 2280 1x M.2 E / PCIe x2 Gen 3/ USB 2.0 / 2230
SATA	4x SATA

Expansion	
PCIe	1x PCIe x16 Slot (Gen 5) 1x PCIe x16 Slot (Gen 4, 4-Lane) 1x PCIe x4 Slot (Gen 4, Open End) 1x PCIe x4 Slot (Gen 3, Open End)

I/O	
Audio	1x Mic-in, 1x Line-in, 1x Line-out
USB	6x USB 3.1 Gen 2 (10 Gbps) 1x USB 3.2 Gen 2x2 (20 Gbps) Type C

Internal I/O	
Audio	1x Front panel audio
COM	6x RS-232
DIO	1x 8-bit DIO (4-in/4-out)
SATA	4 x SATA Gen 3, support RAID 0/1/5/10)
USB	2x USB 3.0 Gen 1 4x USB 2.0
Others	1x SPI header 1x Front panel 1x CPU fan 2x System fan

Operating System	
Windows	Windows 10/11
Linux	Linux Kernel 5.X

Power	
Power Management	ACPI 5.0 compliant
Power Mode	ATX Power
Power Connector	2x12-pin and 2x2-pin power connector

Mechanical & Environment	
Form Factor	MicroATX
Operating Temperature	0 °C to 60 °C
Storage Temperature	-40 °C to 85 °C
Relative Humidity	10% ~ 90% relative humidity, non-condensing
Certification	CE, FCC Class B

Physical	
Dimensions	244mm x 244mm

Compliances and Standards

Shock	IEC60068-2-27:2008 Designed to comply with MIL-STD-810H Method 516.8 Procedure I
Vibration	IEC60068-2-64:2008 Designed to comply with MIL-STD-810H Method 514.8 Procedure I
Operating Temperature	0 °C to 60 °C IEC60068-2-1:2007 (Cold test procedure) IEC60068-2-2:2007 (Dry heat test procedure) IEC60068-2-3:2007 (Damp heat, steady state, test procedure) IEC60068-2-14:2009 (Wide temperature range thermal shock)
EMI	• FCC Class B • CE • ICES-003 • UKCA

Available Models

Model No.	Description
CT-MRL01-MB	Micro ATX LGA 1700 Socket for 12/13/14th Gen Core, i7/i5/i3 Processor, Q670E PCH DDR4, w/ USB C

Packing List

1x CT-MRL01
1x SATA cable
1x I/O port bracket

US Exports And Tariff Codes

ECCN	5A992.c
HTS	8504.90.2000
ScheduleB	8473.30.0002

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