



INDUSTRIAL MOTHERBOARD

CT-XAR01

Mini-ITX Industrial Motherboard with LGA 1851 Intel® Core™ Ultra Series 2 Processors, Arrow Lake-S, W880 PCH



Features

- Support Intel® Core Ultra 200S Series Processors
- Intel W880 chipset support ECC-Memory
- 2x 262-pin DDR5 5600MT/s SO-DIMM. Max. up to 96GB
- 2x SATA-3.0
- 3x 2.5GbE
- 4x independent display supported 2x DP, HDMI, LVDS/eDP
- 1x PCIe x16 (Gen 5)
- 1x M.2 M Key, 1x M.2 B Key, 1x M.2 E Key
- 6x USB 3.2 Gen 2 Type A
- TPM 2.0
- 1x MCIO Gen4 x4



Specifications

System

Processor

Intel®Arrow Lake-S Core™ Ultra Processors (Series 2, FCLGA1851)

- Intel® Core™ Ultra 5 Processor 225T, 35W
- Intel® Core™ Ultra 5 Processor 225, 65W
- Intel® Core™ Ultra 7 Processor 265T, 35W
- Intel® Core™ Ultra 7 Processor 265, 65W
- Intel® Core™ Ultra 9 Processor 285T, 35W
- Intel® Core™ Ultra 9 Processor 285, 65W

System Chipset Intel W880

LAN Chipset GbE1: Intel® I226-LM 2.5GbE LAN iAMT
GbE2: Intel® I226-V 2.5GbE LAN
GbE3: Intel® I226-V 2.5GbE LAN

Audio Codec Realtek® ALC888 Audio Codec

System Memory 2x 262-pin DDR5 5600MT/s ECC & non-ECC SODIMM. Max Up to 96GB

BIOS AMI UEFI

Watchdog 256-level Watchdog Timer

TPM TPM2.0

Display

Display Port 2x DP up to 4096 x 2160@60Hz

eDP 1x eDP up to 3840 x 2160@60Hz

HDMI 1x HDMI up to 4096 x 2160@30Hz

LVDS 1x LVDS up to 1920 x 1200@60Hz

Multiple Display Quad Independent Displays

Storage

M.2 1x M key (PCIe x4 NVMe, SATA-3.0), 2280

SSD/HDD 2x SATA-3.0
(RAID 0/1, AHCI Mode Supported)

Expansion

PCIe 1x PCIe x16 (Gen 5) (lockable connector) (BIOS support 2 x8 or 1 x16 configure)

Expansion Modules

1x E key (PCIe x1 & USB 2.0), 2230

1x B key (PCIe x2 NVMe,USB3.0), 2242/3042/3052 with SIM Holder

I/O

Audio 1x Mic-in, 1x Line-out

COM 2x COM ports
COM1/2 RS-232/422/485, No Signal/5V/12V, Auto-flow Control (real IO)

LAN 3x 2.5GbE RJ45

USB 6x USB 3.2 Gen 2 TYPE A

Internal I/O

COM COM3/4 RS-232 Pin header

GPIO GPIO 8 bit non-isolation

USB 1x USB 3.0 vertical Type A
2x USB 2.0-Ports Pin header

MCIO 1x PCIe Gen 4 x4-lane

Operating System

Windows Windows 10 IoT Enterprise LTSC (64-bit)
Windows 11 IoT Enterprise LTSC (64-bit)

Linux Ubuntu 22.04 / 24.04 LTS , Linux 5.x / 6.x

Power

Power Mode ATX24P

Environment

Form Factor Mini-ITX

Operating Temperature 0°C to 60°C

Storage Temperature -20°C to 80°C

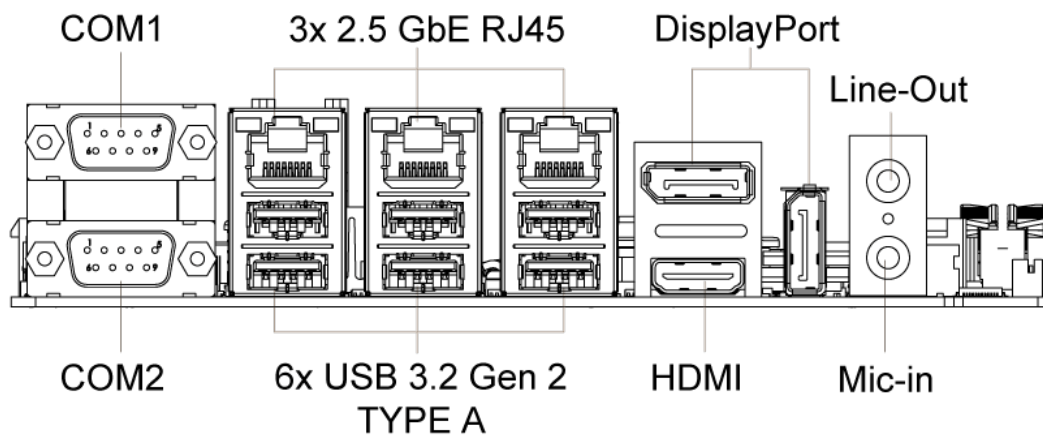
Relative Humidity 10% ~ 90% relative humidity, non-condensing

Certification CE, FCC Class A , UKCA

Physical

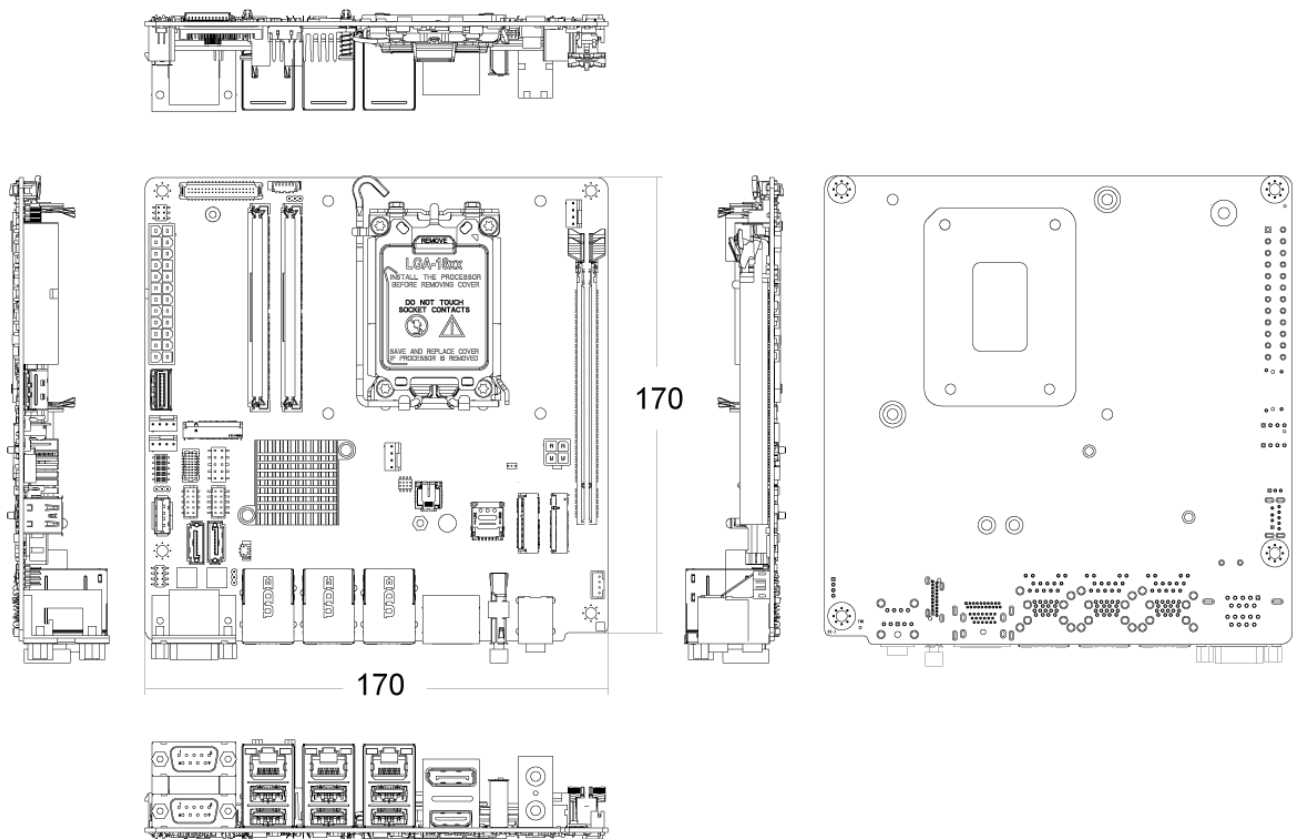
Dimensions 170mm x 170mm

External I/O Mechanical Layout



Dimension

Unit: mm



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 A (47 CFR part 15.109 and part 15.107) - CE - ICES-003 - UKCA

Available Models

Model No.	Description
CT-XAR01-MB	MB, MINI ITX, W880, LGA1851, DDR5 6x USB, 2xDP, HDMI w/ 1x PCIe x16

Packing List

1x CT-XAR01 Industrial Motherboard

Exports And Tariff Codes

ECCN	5A992.c
HTS	8504.90.2000
ScheduleB	8473.30.0002

Premio Inc.

918 Radecki Ct., City of Industry
CA 91748, United States
Toll Free: 800.977.3646

Premio Taiwan Inc.

18F, No.176, Jianyi Road, Zhonghe District,
New Taipei City 235603, Taiwan
Toll Free: 886.2.7731.7888

Email: sales@premioinc.com
Website: <https://premioinc.com>