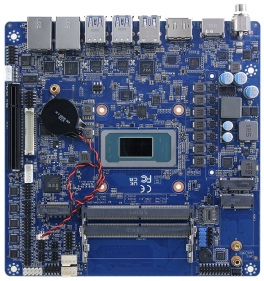
EMX-PTLP

Onboard Intel® Core™ Ultra BGA processor (Series 3), Thin Mini ITX Motherboard



Product Features

- Intel® Core™ Ultra processor (Series 3) Series
- 3 x DP (2 from Type C), 1 x HDMI, 1 x LVDS/eDP
- 1 x Intel® I210AT, 1 x Intel® I226LM
- 2 x M.2 Type M, 1 x M.2 Type B, 1 x M.2 Type E
- DC in +12V~24V
- 2 x 262-Pin DDR5 (H404) 6400MHz, (H484) 7200MHz SoDIMM/CSoDIMM Socket Supports Up to 64GB
- 1 x PCIe x8 Gen5 (H484 only)
- 4 x USB 3.2 Gen2 x1, 3 x USB 2.0
- 2 x USB Type C, 5V@3A, supports USB3.2 Gen2 and DP
- 5 x COM

Specification

System Information	
Processor	Intel® Core™ Ultra processor (Series 3) Series
System Memory	2 x 262-Pin DDR5 (H404)6400MHz, (H484)7200MHz SoDIMM/CSoDIMM Socket Supports Up to 64GB
I/O Chipset	uBMC IT5792 or equivalent for remote out-of-band management and IPMI support.
Watchdog Timer	H/W Reset: 1Sec. ~ 65535Sec./Min. and1 Sec. or 1Min./Step
BIOS	AMI uEFI BIOS, 256Mbit SPI Flash ROM
H/W Status Monitor	CPU Temperature Monitoring Voltage Monitoring CPU Fan Speed Control
TPM	Onboard nuvoTon NPCT760AABYX (7.2.3.1) support TPM 2.0
Board	Thin Mini ITX

Expansion	
Expansion	1 x PCIe x8 Gen5 (H484 only) 1 x M.2 Type B 2242/3042/3052 (with 1 x PCIe x1 (Default), USB2.0, USB 3.2 Gen2 with 1 x SIM Card Slot Support WWAN+GNSS 1 x M.2 Key E 2230 Support Wi-Fi Module and CNVi (1 x PCIe x1 & USB 2.0 Signal) 1 x M.2 Key M 2280 (PCIe x4 Gen5) Slot for Storage NVMe SSD 1 x M.2 Key M 2280 (PCIe x4 Gen4) Slot for Storage NVMe SSD

Display	
Graphic Chipset	Intel® Xe LPG Graphics
Spec. & Resolution	1 x HDMI 2.1: 7680 x 4320 @30Hz 1 x DP1.4a: Max: 7680 x 4320@30Hz 2 x USB Type C supports 3840 x 2160@60Hz LVDS: 1920 x 1080 Dual channel 18/24-bits LVDS (Chrontel CH7511B eDP to LVDS) or eDP1.2: Max 4096 x 2304@60 Hz
Multiple Display	2 x DP, 2 x HDMI, 1 x LVDS, 1 x eDP (Maximum: 6 for Quadruple Independent Displays)
LVDS	1 x Dual Channel 18/24-bits LVDS (Chrontel CH7511B eDP to LVDS)

Audio	
Audio Codec	Realtek ALC888S HD Audio Decoding Controller
Audio Interface	Support MIC-in, Line-out, Line-in via internal connector
Audio Amplifier	2 x 6W 8Ω Amplifier

Ethernet	
LAN Chipset	1 x Intel® i210AT Gigabit Ethernet Controller 1 x Intel® i226LM 2.5 Gigabit Ethernet Controller

Ethernet Interface	10/100/1000 Base-Tx GbE compatible & 2.5 Gigabit Ethernet
LAN Port	2 x RJ-45

Power Requirement

DC Input	12~24V

Software Support

OS	Windows 11 LTSC Linux

Certification

Certification Information	CE, FCC, RoHS Compliant

I/O

USB	2 x USB Type C, 5V@3A 4 x USB 3.2 Gen2 x1 3 x USB 2.0
COM Port	3 x RS232 (JCOM1 ~ JCOM3) 2 x RS422/485 (JCOM1 and JCOM2, need to modify BIOS Setup settings and change pin header & cable)
DIO	1 x 16-bit GPIO

Mechanical & Environmental

Operating Temp.	Intel@ Commercial Temperature CPU SKU support: 0~60°C **w/HDD/SSD, ambient with 0.5 m/s Air flow
Storage Temp.	-40 ~ 75°C (-40 ~ 167°F)
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing
Weight	Shipping w/o cooler: 0.603lbs (0.27kgs)
Power Requirement	DC in +12V~24V
Power Mode	AT/ATX (Default Setting: ATX)
Dimension (L x W)	6.7" x 6.7" (170mm x 170mm)

Ordering Information

Ordering Information	EMX-PTLP-H404-A1R EMX-PTLP-H484-A1R