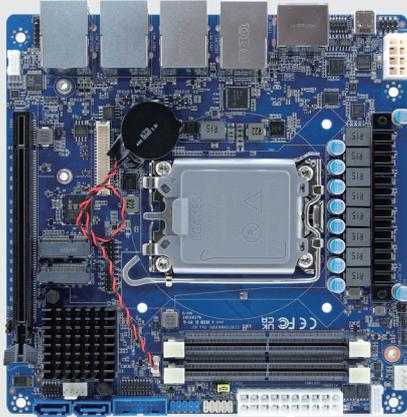# EMX-W880P

Intel® Core™ Ultra Processors, Mini ITX Motherboard with Intel® W880 Chipset

Features

- LGA 1851 Socket Supports Intel® Core™ Ultra Processors with Intel® W880 Chipset (Max. TDP at 125W)
- 2 x 262-Pin DDR5 6400MHz Dual Channel CSO-DIMM Socket Supports Up to 96GB
- 1 x DP (from Type C), 1 x DP++, 1 x HDMI 2.1, 1 x eDP or LVDS
- 1 x PCIe x16 (Gen4)
- 1 x Intel® i226LM, 2 x Intel® i226V 2.5 Gigabit, 1 x Intel® i210AT controller
- 8 x USB 3.2 Gen2, 2 x USB 3.2 Gen2, 2 x USB 2.0
- 1 x M.2 (2230) E-Key, 2 x M.2 (2242/2280/22110) M-Key
- 5 x COM
- ATX Power

HDMI	DP++	Type C	USB 3.2	RS232/422/485

Specifications

System Information

Processor	LGA 1851 Socket Supports Intel® Core™ Ultra Processors (Max. TDP at 125W)
Platform Controller Hub	Intel® W880 Chipset
System Memory	2 x 262-Pin DDR5 6400MHz Dual Channel SO-DIMM Socket Supports Up to 96GB
I/O Chipset	uBMC IT5792 (IPMI) or equivalent
Watchdog Timer	H/W Reset, 5~255 Seconds/5~255 Minutes
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 support TPM2.0
Board	Mini ITX

Expansion

Expansion	1 x PCIe x16 Gen4 (from CPU) support graphic & NVMe 1 x M.2 (2230) E-Key, Support WiFi Module with PCIe x2 Gen4 & USB 2.0 1 x M.2 (2242/2280) M-Key, Support PCIe x4 Gen4 & SATA signal SSD 1 x M.2 (2280/22110) M-Key, Support PCIe x4 Gen4 SSD

Display

Graphic Chipset	Intel® Xe LPG graphics architecture CPU integrated
Spec. & Resolution	1 x DP 1.4: 7680 x 4320@60Hz 1 x USB4 Type C at I/O with DP-alt mode 1 x HDMI 2.1: 8K@60Hz 1 x LVDS: 1920 x 1080@60Hz Dual channel 18/24-bits LVDS (Chrontel CH7513A-BF eDP to LVDS) Or 1 x eDP 1.4b 1920 x 1080@60Hz (2 Lanes)
Multiple Display	4 Independent Displays
LVDS	Dual Channel 18/24-bits LVDS (Chrontel CH7513A-BF eDP to LVDS) or 1 x eDP 1920 x 1080@60Hz (2 Lanes)

Audio

Audio Codec	Realtek ALC888S HD Audio Decoding Controller
Audio Interface	Support Line-out & Mic-in & Front Audio Pin-header
Audio Amplifier	2 x 3W 4Ω Amplifier

Ethernet

LAN Chipset	1 x Intel® i226LM, 2 x Intel® i226V 2.5 Gigabit, 1 x Intel® i210AT Controller
Ethernet Interface	100/1000/2500 Base-Tx GbE compatible Gigabit Ethernet
LAN Port	4 x RJ-45

Software Support

OS	Windows 11, Linux

Certification

Certification Information	CE, FCC, RoHS Compliant

I/O

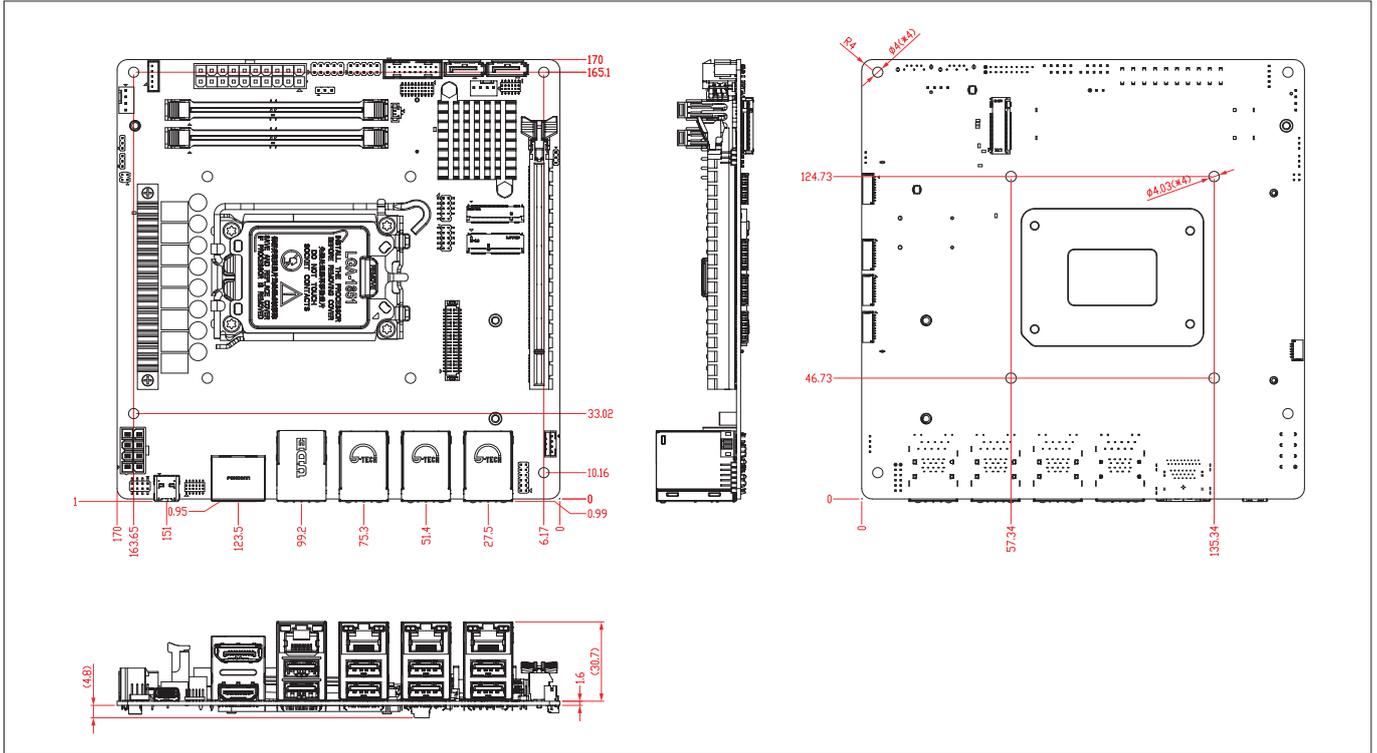|	
USB	8 x USB 3.2 Gen2 at I/O 1 x USB4 Type C Gen1 x2 with 15W PD, 5V@3A & DP-Alt mode at I/O 2 x USB 3.2 Gen2 by pin header 2 x USB 2.0 by pin header
COM Port	3 x RS232 2 x RS232/422/485
SATA	2 x SATA III
RAID	Support RAID 0, 1
DIO	1 x 16-bit GPIO

Mechanical & Environmental

Operating Temp.	0 ~ 55°C (32 ~ 131°F) w/HDD/SSD, ambient 0.5m/s air flow
Storage Temp.	-40 ~ 75°C (-40 ~ 167°F)
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing
Weight	0.88lbs (0.4Kgs)
Power Requirement	+12V / +5V / 5VSB /+3.3V /-12V
Power Mode	AT/ATX (Default Setting: ATX)
Dimension (L x W)	6.7" x 6.7" (170mm x 170mm)

Mechanical Drawing

Ordering Information

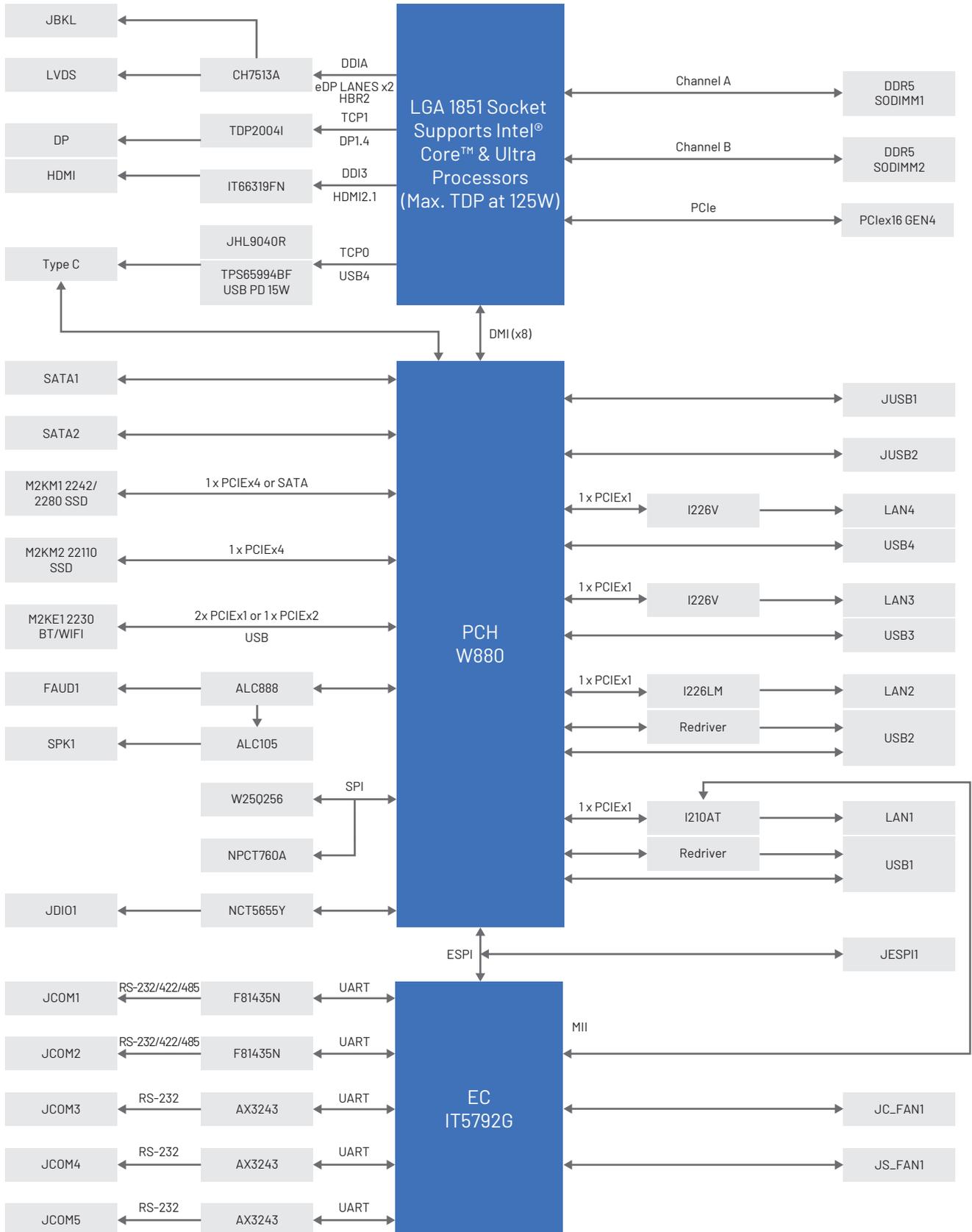| P/N	Processor	Chipset	LAN	USB	COM	PCIe Slot	Power Input	Temp.	Note
EMX-W880P-A1R	Intel® Core™ Ultra Processors, LGA 1851 Socket, 125W TDP	Intel® W880	4	12	5	1	ATX Power	0°C ~ 55°C (32°F ~ 131°F)	NA

Packing List

Item	Quantity
IO Shield	1
SATA cables	2

Optional Items

P/N	Optional Items
EMX-W880P-A1R	Cooler

Block Diagram

EMX-W880P

Intel® Core™ Ultra Processors, Mini ITX Motherboard
with Intel® W880 Chipset

I/O Overview

Top side labels:
JBKL1, SODIMM2, SODIMM1, ATXPWR1, JSATX1, JFPT1, JUSB2, JUSB1, JDIO1, JS_FAN1, SATA1, SATA2

Left side labels:
JC_FAN1, JPWM1, JCFGID1, JPEG_SET1, ATXPWR2, JAUXP1

Bottom labels:
TYPEC1, JTCP_SPI_PD1, DP_HDMI1, LAN_USB1, LAN_USB2, LAN_USB3, LAN_USB4, JFAUD1

Right side labels:
JESPI1, BT1, JRTC1, JCOM1, M2KM1, JCOM2, M2KE1, CPU1, PEG1, JLVDS1, JSPK1

Labels:
M2KM2, JSPI1, JCOM3, JCOM4, JCOM5, JPC1

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