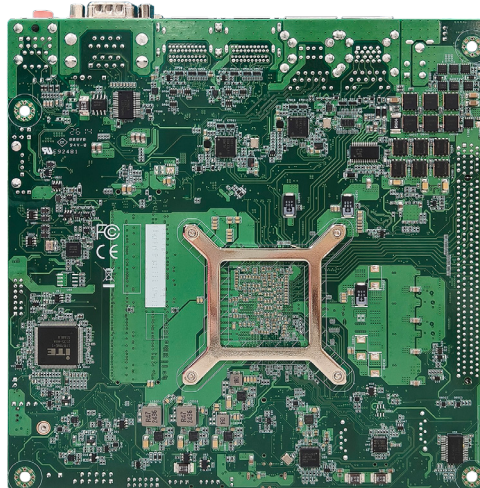
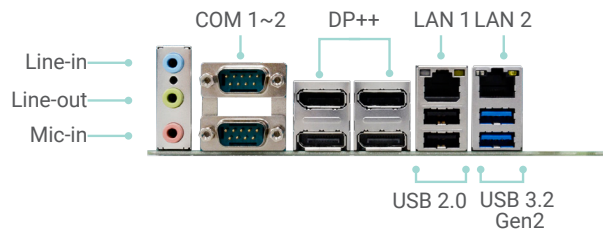
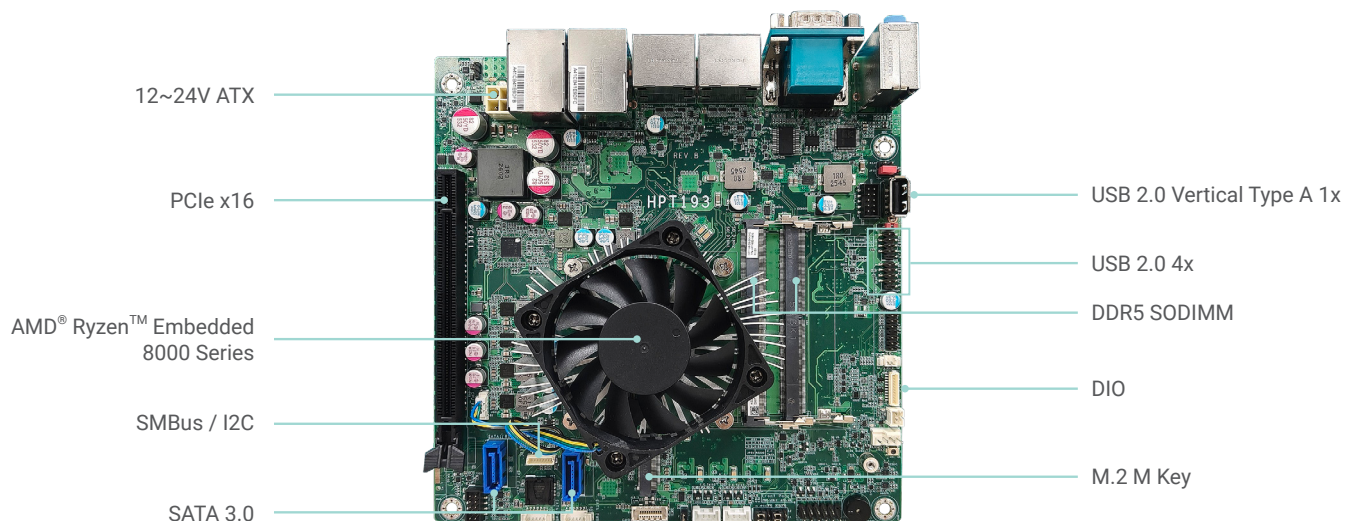


HPT193

AMD® Ryzen™ Embedded 8000 Series
mini-ITX



Bottom View



Top View

KEY FEATURES



DDR5

2 DDR5 SODIMM up to 64GB with ECC support



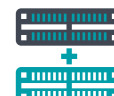
4K High Resolution

Supports 4K/ 2K resolution



4 Independent Displays

4 DP++ display



Expansion

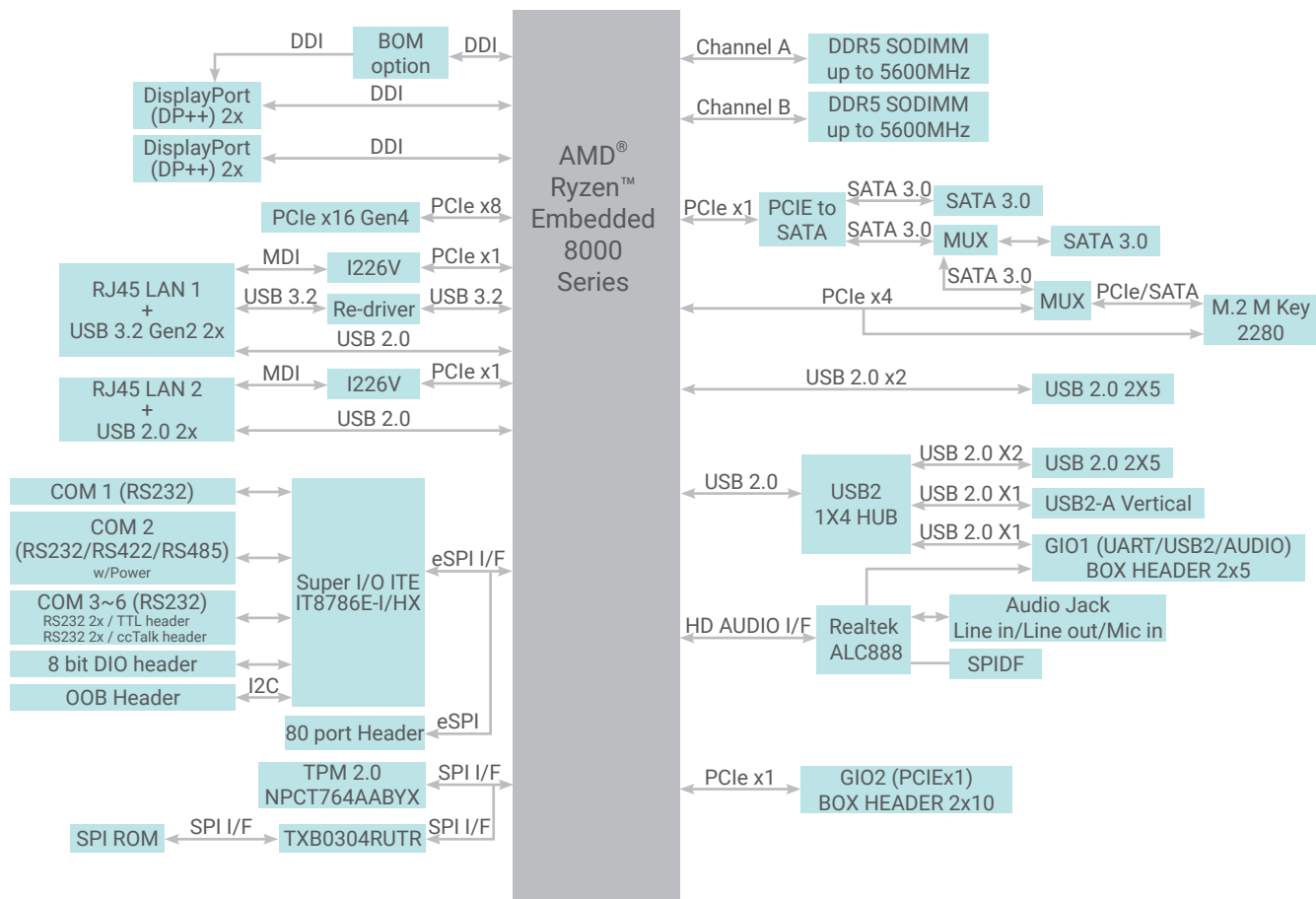
1 PCIe Gen4 x16 Slot (x8 Signal),
1 M.2 M key (PCIe/SATA)



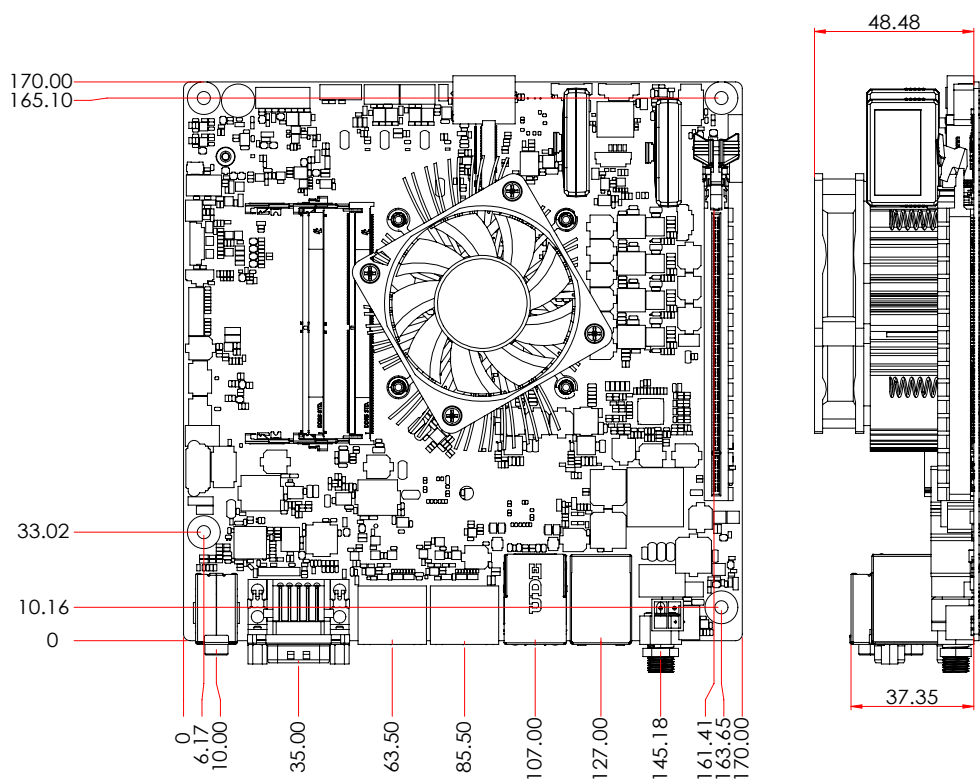
Rich I/O

2 2.5GbE RJ45, 2 USB 3 Type-A,
2 USB2.0 Type A, 2 COM D-Sub,
1 Audio Jack Line-in/Line-out/Mic-in,
4 RS232(ccTalk/TTL),
4 USB2.0 headers,
Gaming I/O(PCIe,UART/USB2.0,Audio)

BLOCK DIAGRAM



MECHANICAL DRAWING



SPECIFICATION

SYSTEM	Processor	AMD® Ryzen™ Embedded 8000 Series Processors, TDP up to 54W AMD® Ryzen™ Embedded 8845HS, 8C/16T, 8MB Cache, 3.8GHz (5.1GHz), 45W (35-54W) AMD® Ryzen™ Embedded 8645HS, 6C/12T, 6MB Cache, 4.3GHz (5.0GHz), 45W (35-54W) AMD® Ryzen™ Embedded 8840U, 8C/16T, 8MB Cache, 3.3GHz (5.1GHz), 28W (15-30W) AMD® Ryzen™ Embedded 8640U, 6C/12T, 6MB Cache, 3.5GHz (4.9GHz), 28W (15-30W)
	Memory	2 x 262-pin dual-channel SODIMM DDR5 5600/5200/4800MHz with ECC/non-ECC support up to 96GB (48GB per Dimm)
	BIOS	AMI SPI 256Mbit
GRAPHICS	Controller	RDNA3 graphics with up to 6 WGP (Work Group processors)
	Display	4 x DP++ display DP1.2: resolution up to 3840x2160@60Hz
	Quad Displays	4 x DP++ display
EXPANSION	PCIE Slot	1 x PCIE Gen4 x16 slot (x8 Signal)
	M.2	1 x M.2 M Key 2280 slot (PCIE Gen4 x4 or SATA3)
	Gaming I/O	GIO1 (UART, USB2, AUDIO R/L) GIO2 (PCIE x1)
AUDIO	Audio Codec	1 x Realtek ALC888S
ETHERNET	Controller	2 x Intel I226-V (10/100/1000/2500 Mbps)
REAR I/O	Ethernet	2 x 2.5GbE (RJ-45)
	USB	2 x USB 3.2 Gen2 2 x USB 2.0
	Display	4 x DP++ display
	Audio	1 x Front audio (Line-out, Line-in, Mic-in)
	Serial	1 x Full RS232 1 x RS232/RS422/RS485
INTERNAL I/O	Serial	2 x RS232 / TTL header 2 x RS232 / ccTalk header
	USB	4 x USB 2.0 port (pitch 2.0mm) 1 x USB 2.0 vertical Type A
	SATA	2 x SATA3 (6Gb/s) (one signal shared with M.2 M key, selected by BIOS) 2 x SATA Power
	DIO	1 x 8-bit header with power
	Case Open	1 1x2p header
	Audio	1 x S/PDIF (audio in & out) (Signal from ALC888S)
	SMBus/ I2C	2 x I2C 1 x SPI
WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds
SECURITY	TPM	dTPM 2.0(Default), fTPM (Option)
POWER	Type	Single 12~24V +/-5% DC
	Connector	DC-in Jack (Request) Straight Type Connector (4-pin) (Default)
	Consumption	TBD
	RTC Battery	CR2032 coin cell
OS SUPPORT	Microsoft	Windows 11 22H2 GAC Windows 11 LTSC
	Linux	Ubuntu 22.04
ENVIRONMENT	Temperature	Operating: -5 to 65°C Storage: -40 to 85°C
	Humidity	10 to 90% RH
	MTBF	TBD
MECHANICAL	Dimensions	Mini-ITX Form Factor 195mm (7.7") x 170mm (6.7")
	Height	PCB: 1.6mm Top Side: TBD Bottom Side: TBD
STANDARDS AND CERTIFICATIONS	Certification	CE, FCC, RoHS

ORDERING INFORMATION

Model Name	P/N	Rear I/O					
		DP++	2.5 GbE LAN	USB3.2 Type-A	USB2.0 Type A	COM	Audio Jack (Mic-in/Line-in/Line-out)
Max # of port		4	2	2	2	2	1
HPT193-CB-8845HS 45W(35~54W)	770-HPT1932-080G	4	2	2	2	2	1
HPT193-CB-8645HS 45W(35~54W)	770-HPT1932-180G	4	2	2	2	2	1
HPT193-CB-8840U 28W(15~30W)	770-HPT1932-280G	4	2	2	2	2	1
HPT193-CB-8640U 28W(15~30W)	770-HPT1932-380G	4	2	2	2	2	1

Model Name	P/N	Internal I/O								
		PCIe x16 (x8 Signal)	SATA3	eMMC	RS232/TTL	RS232/ccTalk	M.2 M-Key	USB 2.0 Type A	USB 2.0 header	GIO (Audio/ USB2.0)
Max # of port		1	2	1	2	2	1	1	4	1
HPT193-CB-8845HS 45W(35~54W)	770-HPT1932-080G	1	2	1	2	2	1	1	4	1
HPT193-CB-8645HS 45W(35~54W)	770-HPT1932-180G	1	2	1	2	2	1	1	4	1
HPT193-CB-8840U 28W(15~30W)	770-HPT1932-280G	1	2	1	2	2	1	1	4	1
HPT193-CB-8640U 28W(15~30W)	770-HPT1932-380G	1	2	1	2	2	1	1	4	1

Model Name	P/N	Miscellaneous	
		Power Input	Operating Temp.
Max # of port		2	-
HPT193-CB-8845HS 45W(35~54W)	770-HPT1932-080G	12V~24V DC-Jack/2x2P ATX (Vertical)	-5~65°C
HPT193-CB-8645HS 45W(35~54W)	770-HPT1932-180G	12V~24V DC-Jack/2x2P ATX (Vertical)	-5~65°C
HPT193-CB-8840U 28W(15~30W)	770-HPT1932-280G	12V~24V DC-Jack/2x2P ATX (Vertical)	-5~65°C
HPT193-CB-8640U 28W(15~30W)	770-HPT1932-380G	12V~24V DC-Jack/2x2P ATX (Vertical)	-5~65°C

PACKING LIST

• 1 HPT193 motherboard	
• 1 I/O shield	A49-HPT171-000G