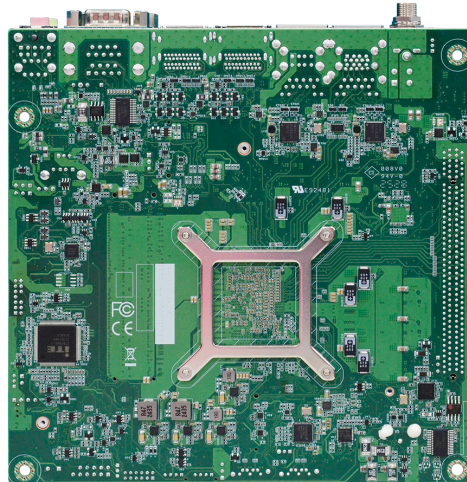
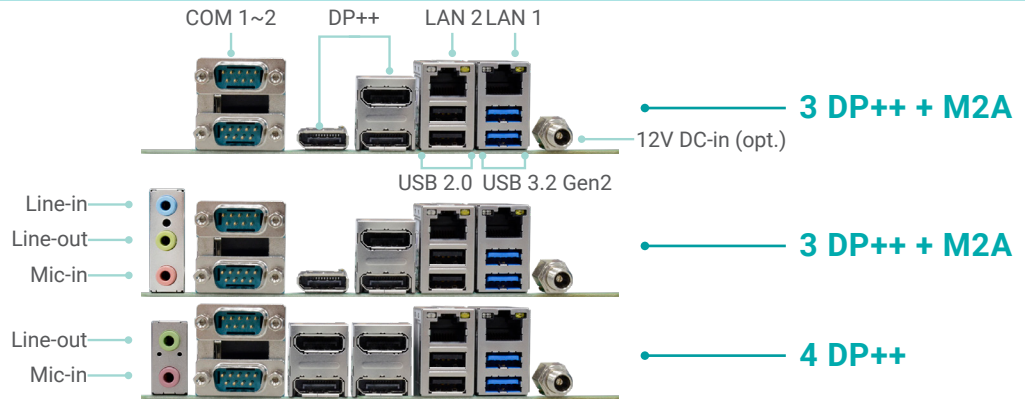
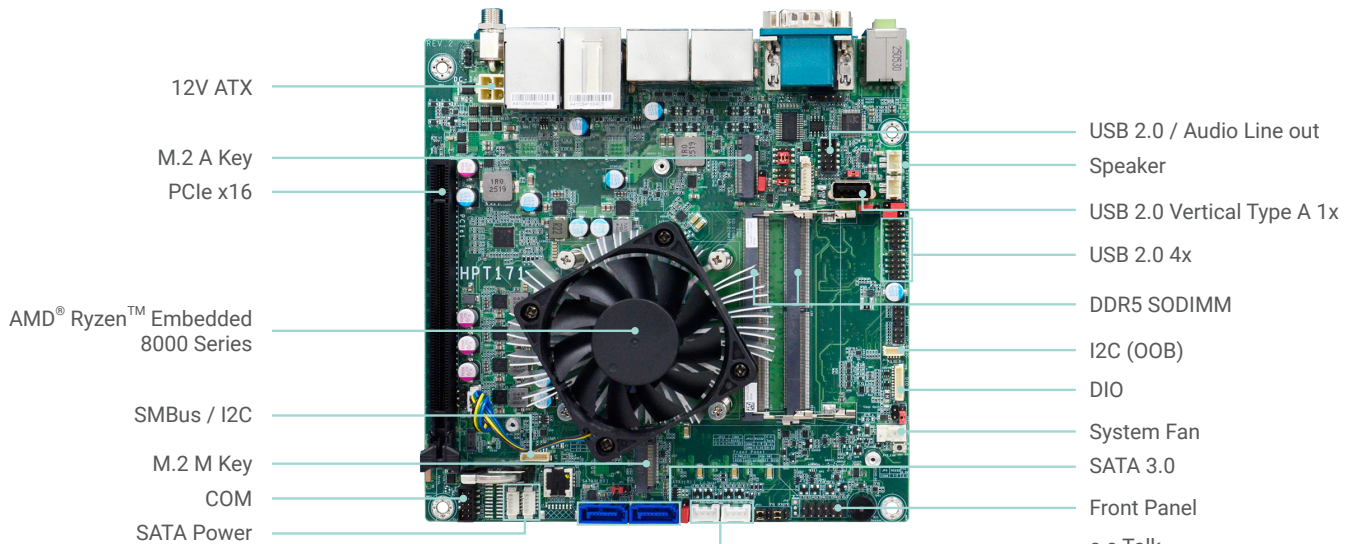


HPT171

AMD® Ryzen™ Embedded 8000 Series
mini-ITX



Bottom View



Top View

KEY FEATURES



DDR5

2 DDR5 SODIMM up to 64GB
(Non-ECC support)



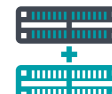
4K High Resolution

Supports 4K/ 2K resolution



4 Independent Displays

4 DP++ or
3 DP++ + 1 M.2 A display



Expansion

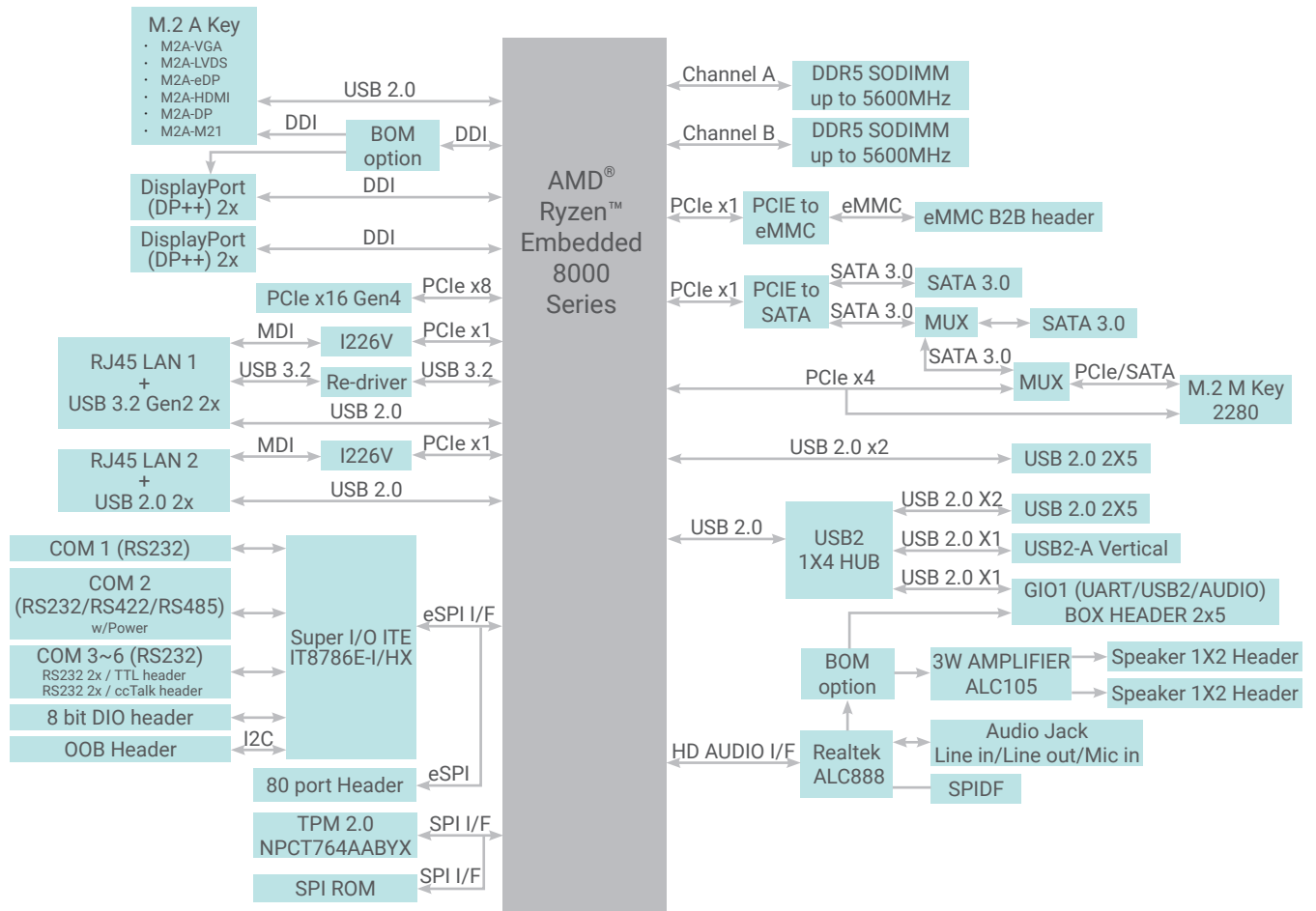
1 PCIe Gen4 x16 Slot (x8 Signal),
1 M.2 M key (PCIe/SATA),
1 M.2 A key (LVDS/eDP/HDMI/DP/
VGA) and M21(USB 2.0) module
support, 1 DFI eMMC modular port



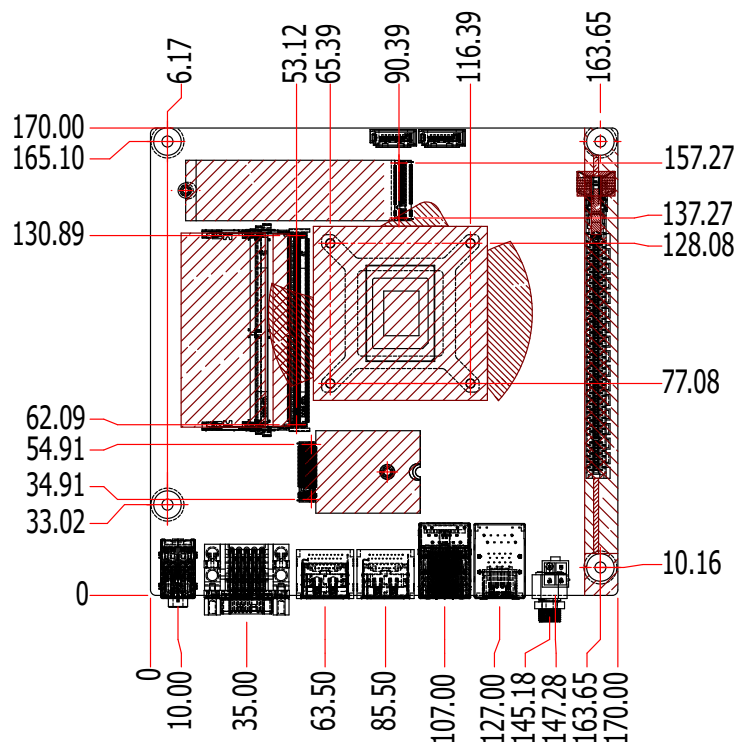
Rich I/O

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(UART/USB 2.0/Audio Line out)

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 (Non-ECC support) up to 96GB (48GB per Dimm)
	BIOS	AMI SPI 256Mbit
GRAPHICS	Controller	RDNA3 graphics with up to 6 WGP's (Work Group processors)
	Display	4 x DP++ or 3 x DP++ + 1 x M.2 A display DP1.2: resolution up to 3840x2160@60Hz
	Quad Displays	4 x DP++ or 3 x DP++ + 1 x M.2 A 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) 1 x M.2 A Key, Standoff at 3030 (DP, USB 2.0) Support M2A-display 3042 module (LVDS, eDP, HDMI, DP, VGA) Support M2A-M21 3060 (USB 2.0)
	eMMC	1 x eMMC B2B header, Support DFI eMMC module
	Gaming I/O	GIO (UART, USB2, AUDIO R/L)
AUDIO	Audio Codec	1 x Realtek ALC888S 1 x Realtek ALC105(3W)
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++ or 3 x DP++ + 1 x M.2 A display
	Audio	1 x Front audio (Line-out, Line-in, Mic-in) (Co-layout with audio header and line-out / mic-in audio jack by request)
	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 3W Speaker L/R header (Amp controller: ALC105) 1 x S/PDIF (audio in & out) (Signal from ALC888S)
	SMBus/ I2C	1 x SMBus / 1 x I2C
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 12V +/-5% DC
	Connector	DC-in Jack (Default) Straight Type Connector (4-pin) (available upon request)
	Consumption	Idle: HPT171-CB-8845HS 45W: 12V@ 0.83A (9.96W) Max: HPT171-CB-8845HS 45W: 12V@ 8.16A (97.92W)
	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	HPT171-CB-8845HS. 304,440 hrs @ 25°C; 127,632 hrs @ 45°C; 58,382 @ 60°; 33,032 hrs @ 70°C; Calculation model: Telcordia Issue 4 Environment: GB, GC – Ground Benign, Controlled
MECHANICAL	Dimensions	Mini-ITX Form Factor 170mm (6.7") x 170mm (6.7")
	Height	PCB: 1.6mm Top Side: 20mm Bottom Side: 3mm
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
HPT171-CB-8845HS 45W(35~54W)	770-HPT1711-000G	3	2	2	2	2	1
HPT171-CB-8645HS 45W(35~54W)	770-HPT1711-100G	4	2	2	2	2	1
HPT171-CB-8840U 28W(15~30W)	770-HPT1711-200G	3	2	2	2	2	1
HPT171-CB-8640U 28W(15~30W)	770-HPT1711-300G	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	M.2 A-Key	USB 2.0 Type A	USB 2.0 header	GIO (Audio/USB2.0)	3W Speaker
Max # of port		1	2	1	2	2	1	1	1	4	1	2
HPT171-CB-8845HS 45W(35~54W)	770-HPT1711-000G	1	2	1	2	2	1	1	0	4	1	2
HPT171-CB-8645HS 45W(35~54W)	770-HPT1711-100G	1	2	1	2	2	1	0	1	4	1	2
HPT171-CB-8840U 28W(15~30W)	770-HPT1711-200G	1	2	1	2	2	1	1	0	4	1	2
HPT171-CB-8640U 28W(15~30W)	770-HPT1711-300G	1	2	1	2	2	1	0	1	4	1	2

Model Name	P/N	Miscellaneous		
		Power Input	OOB	Operating Temp.
Max # of port		2	-	-
HPT171-CB-8845HS 45W(35~54W)	770-HPT1711-000G	12V DC-Jack/2x2P ATX (Vertical)	EXT-OOB	-5~65°C
HPT171-CB-8645HS 45W(35~54W)	770-HPT1711-100G	12V DC-Jack/2x2P ATX (Vertical)	EXT-OOB	-5~65°C
HPT171-CB-8840U 28W(15~30W)	770-HPT1711-200G	12V DC-Jack/2x2P ATX (Vertical)	EXT-OOB	-5~65°C
HPT171-CB-8640U 28W(15~30W)	770-HPT1711-300G	12V DC-Jack/2x2P ATX (Vertical)	EXT-OOB	-5~65°C

OPTIONAL ITEMS

Optional Items	Part Number	Description
eMMC6-4G	774-EMMCBD1-000G	EMMC Board: EMMC Board 64G for EC700-ADN, -40°C~+85°C
eMMC-128G	774-EMMCBD1-200G	EMMC Board: EMMC Board 128G for EC700-ADN, -40°C~+85°C
M2A-HDMI	774-M2AHDM-000G	M2A-HDMI20: DFI M.2 A key DP-to-HDMI 2.0 Internal Module
M2A-VGA	774-M2AVGA-000G	M2A-VGA: DFI M.2 A key DP-to-VGA Internal Module
M2A-LVDS	774-M2ALVD-000G	M2A-LVDS: DFI M.2 A key DP-to-LVDS Display Module
M2A-DP	774-M2ADP1-000G	M2A-DP: DFI M.2 A key DP-to-Internal DP Module w/re-driver
M2A-EDP	774-M2AEDP-000G	M2A-EDP: DFI M.2 A key DP-to-EDP Display Module
M2A-M21	770-M2AM21-000G	M2A-M21: DFI M.2 A key-to-M.2 M/B key(PCIe) (3042) adapter wi SIM slot, 4 USB2.0
	770-M2AM21-100G	M2A-M21: DFI M.2 A key-to-M.2 M/B key(USB3/2) (3042) adapter wi SIM slot, 4 USB2.0
	770-M2AM21-200G	M2A-M21: DFI M.2 A key to USB module with 2 USB3.2 Gen1, 4 USB2.0
HDMI-to-DVI cable	A81-013010-017G	DVI CABLE, DVI-I 24+5P W/SCREW to HDMI, L=300mm
Audio cable	A81-022034-016G	Line-out/Mic-in, Length: 300mm, w/bracket
	A81-022036-016G	Line-out/Mic-in, Length: 110m
Speaker	293-130020-010G	SPEAKER 3W,150mm
COM port cable	A81-015011-001G	1-port D-Sub, Length: 250mm, w/bracket
	A81-015019-004G	1-port D-Sub, Length: 250mm
DIO cable	A81-009159-018G	Loopback, Length: 100mm
Front Panel cable	A81-009615-016G	Length:270mm
SATA cable	A81-002144-018G	Serial ATA data & power cable w/lock (Length: 300mm)
SATA PWR adapter cable	A81-009794-018G	SATA Power 5P/1.25mm to4P/2.5mm,Length: 100mm
USB 2.0 cable	A81-001091-016G	USB 2.0 2-port cable (Length: 250mm,Pitch 2.0mm) W/Bracket

PACKING LIST

• 1 HPT171 motherboard	
• 1 I/O shield	
---- 4 DP	A49-HPT171-000G
---- 3 DP	A49-HPT171-010G