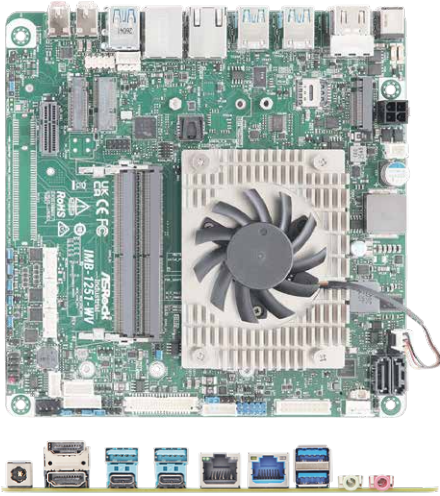


IMB-1251-WV

Mini-ITX Motherboard



KEY FEATURES

- Intel® Core™ Ultra Series 3 Processors (Panther Lake-H)
- 2 x 262-pin SO-DIMM DDR5 7200/6400 MHz, up to 128GB (64GB per DIMM), supports In-Band ECC
- 2 x USB 3.2 Gen2x2, 1 x USB 3.2 Gen2, 3 x USB 3.2 Gen1, 2 x USB 2.0, 1 x M.2 Key E, 2 x M.2 Key M, 1 x M.2 Key B, 3 x COM, 2 x SATA3
- 1 x Intel 1 Gigabit LAN, 1 x Realtek 2.5 Gigabit LAN
- Supports Quad display, 2 x HDMI 2.1, 2 x DP 1.4a (2 from Type-C), 1 x LVDS or eDP
- OOB Function (Optional)
- Supports VMD RAID 0/1
- 12~28V DC-In

SPECIFICATIONS

Form Factor

Dimensions	Mini-ITX (6.7-in x 6.7-in x 0.97-in, 17.0 cm x 17.0 cm x 2.48 cm)
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Processor System

CPU	Intel® Core™ Ultra Series 3 Processors (Panther Lake-H) IMB-1251P-WV (Ultra X7 358H, 4P+8E+4LPE) IMB-1251E-WV (Ultra 5 325, 4P+4LPE) *All CPU sku can support In-Band ECC
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel DDR5 7200 MHz (Ultra X7 358H) Dual Channel DDR5 6400 MHz (Ultra 5 325)
Capacity	128GB (64GB per DIMM)
Socket	2 x 262-pin SO-DIMM

Graphics

Controller	Intel® Graphics
HDMI	HDMI 2.1 Max resolution up to 7680x4320@60Hz
DisplayPort	DisplayPort 1.4a Max resolution up to 4096x2160@60Hz
LVDS	Dual channel 24 bit up to 1920 x 1200@60Hz (Connector shared with eDP)
eDP	Max resolution up to 1920 x 1080@60Hz (Connector shared with LVDS)
MultiDisplay	Quad display (Included 2 output from Type-C)

Expansion Slot

M.2	1 x M.2 (Key E, 2230) with PCIe Gen4 x1, USB 2.0 and CNVi for Wireless (*PCIe signal shared with OOB) 1 x M.2 (Key B, 3042/3052) with USB 3.2 Gen1, USB 2.0 and SIM for 4G/5G
SIM Socket	1 x SIM socket connected to M.2 key B

Audio

Interface	Realtek ALC897 HD, High Definition Audio.
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Ethernet

Controller/ Speed	LAN1: Intel® I219LM with 10/100/1000 Mbps LAN2: Realtek RTL8125BG with 10/100/1000/2500 Mbps
Connector	2 x RJ-45

Rear I/O

HDMI	2 x HDMI 2.1
Ethernet	1 x 1 Gigabit LAN 1 x 2.5 Gigabit LAN
USB	3 x USB 3.2 Gen1 1 x USB 3.2 Gen2 2 x USB 3.2 Gen2x2 (Type-C, 5V/3A, support DP 1.4a display output)
Audio	2 (Mic-In/Line-Out)
DC Jack	1 DC-in

Internal Connector

USB	2 x USB 2.0 (1 x 2.00mm pitch header)
COM	COM3, COM4, COM5 (RS-232/422/485)
GPIO	4 x GPI, 4 x GPO
LVDS	1 (Connector with LVDS/eDP signal, switch by BIOS)
SATA PWR Output	1
Speaker Header	1
GPIO1 Header	1 (*Recommend using DSC-8DIO001-WT module to support 8DIs/8DOs with sink/source isolation 3.6V for 8DIO SKU)
OOB Header	1 (*Recommend using AI-M2-OOB module to support OOB function) (*PCIe signal shared with M.2 Key E, AI-M2-OOB support Ethernet feature by BOM option)

Storage

M.2	1 x M.2 (Key M, 2242/2280) with PCIe Gen5 x4, USB 2.0 for SSD 1 x M.2 (Key M, 2242/2280/22110) with PCIe Gen4 x4 for SSD
SATA	2 x SATA3 (6Gb/s)
RAID	Intel® VMD RAID 0/1 **supported by identical interface (PCIe) PCIe interface: 2 x M.2 Key M

Security

TPM	TPM Header Intel® PTT
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Watchdog Timer

Output	From Super I/O to drag RESETCON#
Interval	256 Segments, 0, 1, 2, ...255sec

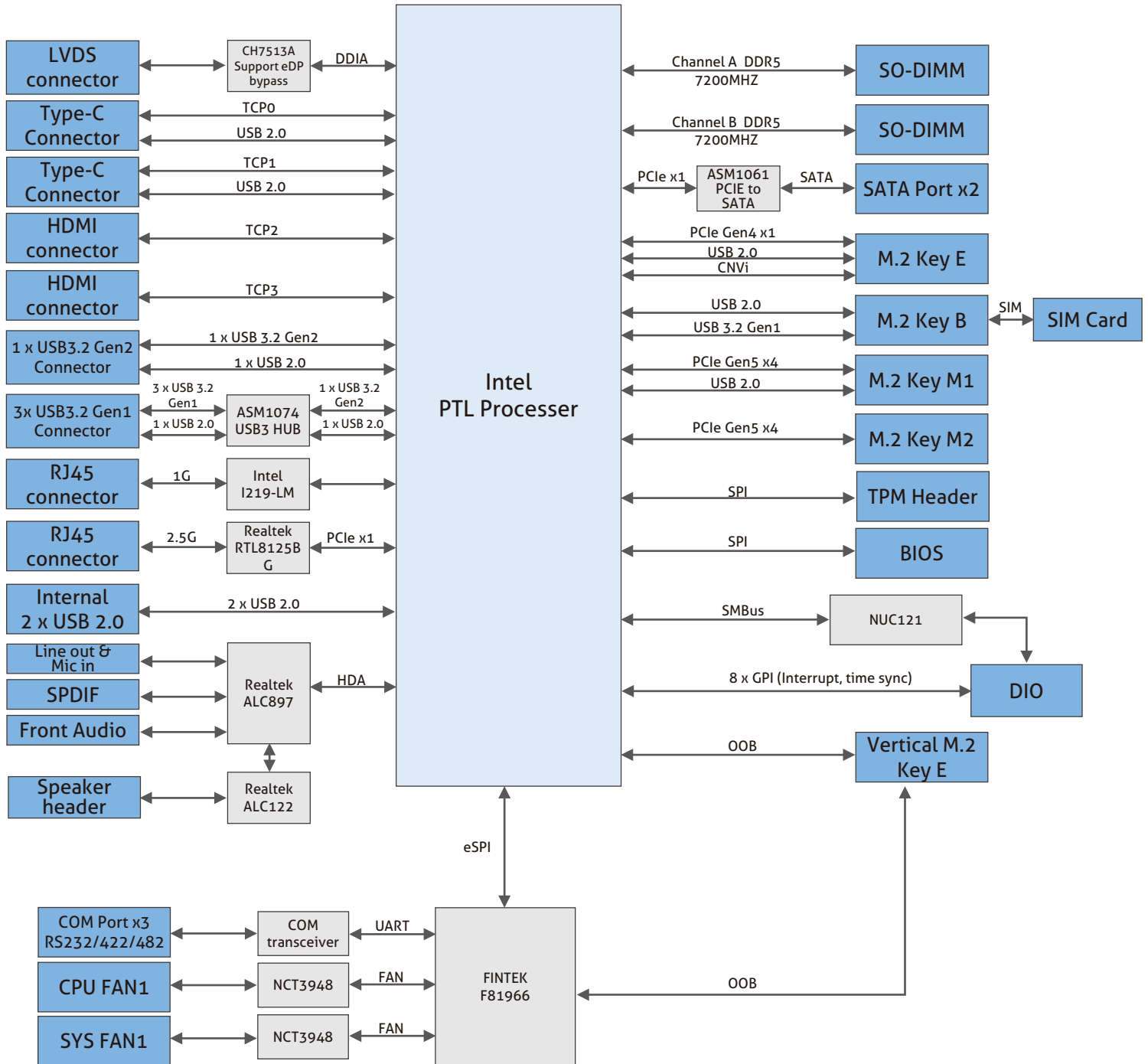
Power Requirements

Input PWR	12~28V DC-In with 4-pin plug PWR cable or DC Jack 12V DC-In only (BOM option)
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready

Environment

Operating Temp	-20°C ~ 70°C
Storage Temp	-40°C ~ 85°C
Operating Humidity	5% ~ 90% (non-condensing)
Storage Humidity	5% ~ 90% (non-condensing)

BLOCK DIAGRAM



IMB-1251-WV

Mini-ITX Motherboard

ORDERING INFORMATION

Ordering Information

Model	IMB-1251P-WV	IMB-1251E-WV
CPU	Ultra X7 358H	Ultra 5 325
HDMI	2	2
LVDS/eDP	1 / (1)	1 / (1)
1 Gbe LAN	1	1
2.5 Gbe LAN	1	1
COM	3	3
USB Type C	2	2
USB 3.2	4	4
USB 2.0	2	2
M.2 E-Key	1	1
M.2 B-Key	1	1
M.2 M-Key	2	2
TPM	FW TPM	FW TPM

Packing List (Bulk)

Description	Quantity
I/O Shield	1
Thin I/O Shield	1
SCREW M3*2.5	4

I/O View



Packing List (Gift)

Description	Quantity
SATA Power Cable	1
COM Cable	2
SATA Data Cable	2
I/O Shield	1
Thin I/O Shield	1
SCREW M3*2.5	4