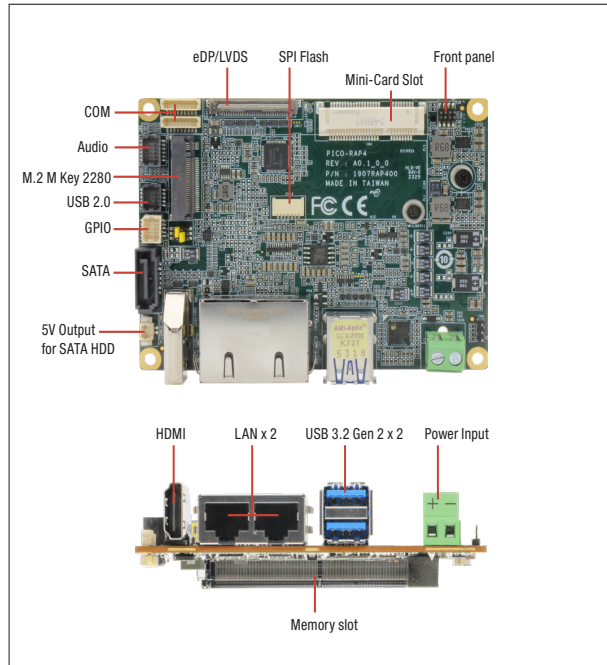


PICO-RAP4

Pico-ITX Board with 13th Gen Intel® Core™ i7/i5/i3 Processor



Specifications

System	
Form Factor	PICO-ITX
CPU	13th Generation Intel® Core™/U series Processors: Intel® Core™ i7 1370PE (6P+8E/20T, 1.90 GHz, 28W) Intel® Core™ i7 1370PRE (6P+8E/20T, 1.90 GHz, 28W) Intel® Core™ i5 1340PE (4P+8E/16T, 1.80 GHz, 28W) Intel® Core™ i3 1320PE (4P+4E/12T, 1.70 GHz, 28W) Intel® Processor U300E (1P+4E/6T, 1.10 GHz, 15W)
Chipset	Integrated with Intel® SoC
Memory Type	DDR5 5200, SODIMM x 1, Non-ECC (Max. 32GB)
BIOS	UEFI
Wake on LAN	Yes
Watchdog Timer	255 Levels
Security	TPM2.0
RTC Battery	Lithium Battery 3V/240mAh
Dimension	3.94" x 2.84" (100mm x 72mm)
Gross Weight	0.18 lbs (0.08 kg)
OS Support	Windows 10 (64 bit) Ubuntu 22.04.2 (eDP is verified on Ubuntu 23.10.1)
Power	
Power Requirement	12V only
Power Supply Type	AT/ATX
Connector	Phoenix 2-pin Connector (Default) Lockable DC Jack Connector (colay)
Power Consumption	Intel® Core™ i7-1370PE, DDR5 32GB, 4.51A@ +12V (TYPICAL) Intel® Core™ i7-1370PE, DDR5 32GB, 7.46A@ +12V (MAX)
Display	
Controller	Intel® UHD Graphics
LVDS/eDP	LVDS x 1 (18/24bit 2CH) 1920 x 1200 @60Hz eDP 1.4 x 1, up to 3840 x 2160 (Optional)
Display Interface	HDMI 1.4 x 1, 3840 x 2160 @30Hz
Multiple Display	Up to 2 Simultaneous Displays
Audio	
Codec	Realtek ALC256
Audio Interface	Line-in/Line-out/Mic (Optional, Audio function not available for WITAS SKU)
Speaker	—
External I/O	
Ethernet	Intel® i226 2.5GbE, RJ-45 x 1 Intel® i219, 1GbE, RJ-45 x 1
USB	USB 3.2 Gen2 x 2
Serial Port	—

Features

- 13th Gen Intel® Core™ i7/i5/i3 Processor SoC
- DDR5 SODIMM, Max. 32 GB
- 2.5GbE Intel i226 + 1GbE Intel i219
- HDMI1.4 + eDP1.4/LVDS dual channel 18~24bit
- Half Size mPCIe/mSATA x 1, M.2 2280 M key x 1
- USB 3.2 Gen 2 x 2, USB 2.0 x 2, RS-232/422/485 x 2
- TPM2.0, SATA 6.0Gbps x 1, SMBUS/I2C x 1, GPIO 8-bit
- Mipi-CSI 4 lane x 2
- Line-in/Line-out/MIC (Optional)



Video	HDMI 1.4 x 1
Internal I/O	
USB	USB 2.0 x 2
Serial Port	COM1~2 (RS232/422/485, supports 5V/12V/RI)
Video	LVDS/eDP x 1 (Default: LVDS) Inverter x 1 (12V/2A)
SATA	SATA 6.0 Gb/s x 1 +5V SATA Power Connector x 1
Audio	Audio Header x 1 (Optional, Audio function not available for WITAS SKU)
DIO/GPIO	GPIO 8-bit
SMBus/I2C	SMBus/I2C x 1 (Default: SMBus)
Fan	4pins Smart Fan x1
Front Panel	HDD LED, PWR LED, Power Button, Buzzer, Reset
Others	—
Expansion	
Mini PCIe/mSATA	Half Size mSATA/mPCIe x 1 (default: mSATA, select with BIOS)
M.2	M.2 2280 M-Key x 1 (PCIe 4.0 [x4])
Others	MIPI-CSI via 61-Pin FPC Connector
Environment & Certification	
Operating Temp	32°F ~ 140°F (0°C ~ 60°C)
Storage Temp	-40°F ~ 185°F (-40°C ~ 85°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	1,087,053
EMC	CE/FCC Class A

Packing List

- PICO-RAP4

Optional Accessories

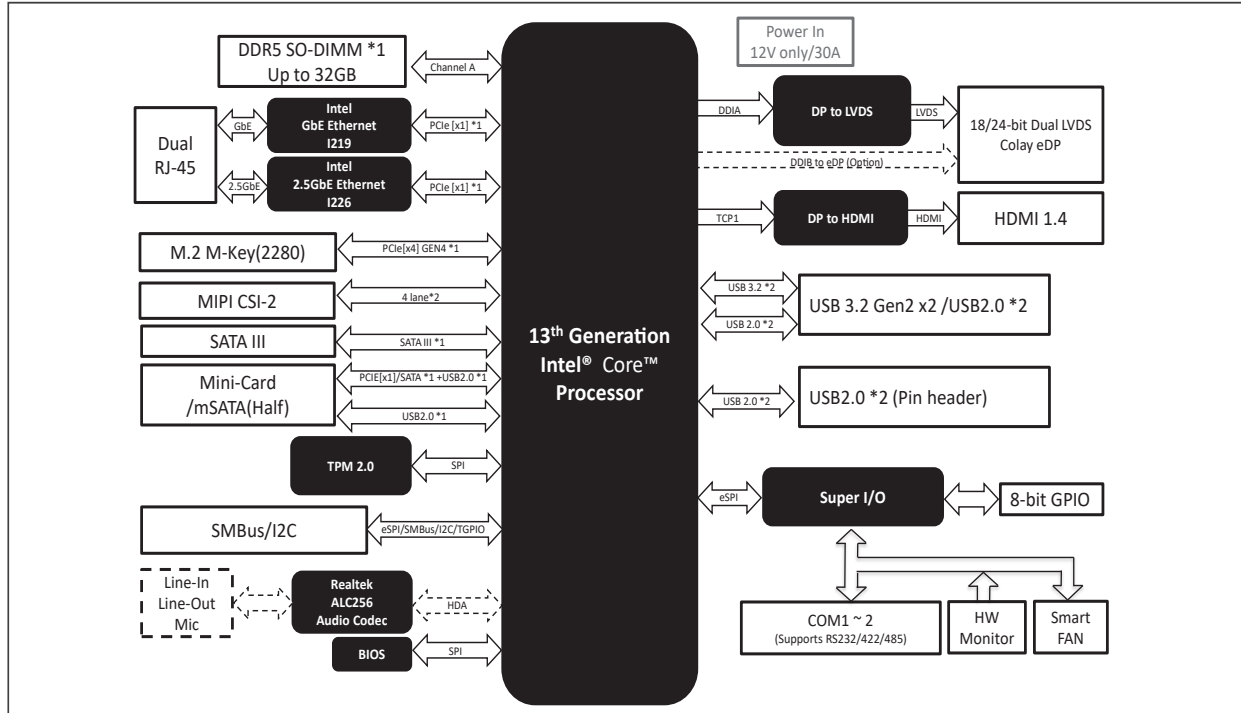
Part Number	Description	Qty.
1709100108	Front Panel cable.10cm	1
1701090122	COM cable.1 port .12cm	2
170010010D	USB2.0 cable.2 ports .10cm	1
1709070500	SATA cable.50cm	1
1700X00322	SATA power cable.6cm	1
170X000156	Audio cable.Line in /Line out/ Mic.25cm	1
1702030200	Power cable (Phoenix type to DC Jack).20cm	1
PICO-RAP4-HSP01	Heat Spreader.AL.100*72*10.8mm	1
PICO-RAP4-FAN01	Cooler.100*72*24.3mm.for PICO-RAP4	1
PER-P30D-A10-0001	120W, DC-DC Converter, 9~36V input, 12V output, Rev A1.0, 30 x 72mm	1

PICO-RAP4

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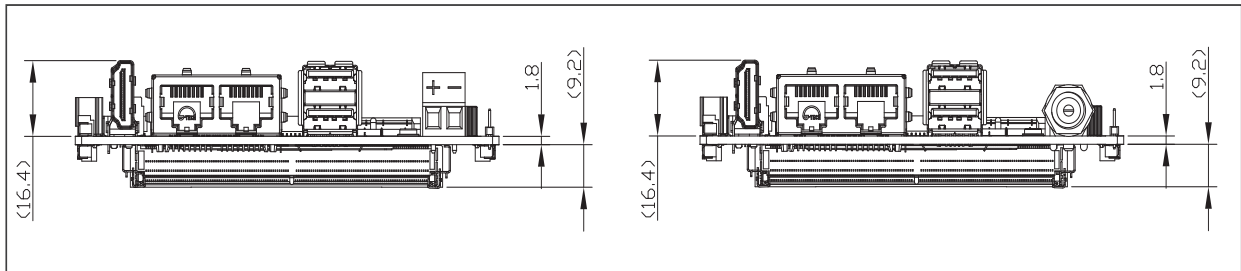
Pico-ITX Boards

Block Diagram



Dimension

Unit: mm



Ordering Information

Part number	CPU	Memory	Display	Storage	LAN	USB	COM	Expansion slot	Power	Operating Temp	Audio	Others
PICO-RAP4-A10-0001	U300E	SO-DIMM	HDMI x1 LVDS x1	SATA 6Gb/s x1	GbE x1 2.5GbE x1	USB 2.0 x2 USB3.2 Gen2 x2	2	M.2 2280 M-Key x1 miniCard (Half) x1	+12V (Terminal block)	0°C ~ 60°C	—	GPIO, SMBUS, TPM, MIPI-CSI
PICO-RAP4-A10-0002	i3-1320PE	SO-DIMM	HDMI x1 LVDS x1	SATA 6Gb/s x1	GbE x1 2.5GbE x1	USB 2.0 x2 USB3.2 Gen2 x2	2	M.2 2280 M-Key x1 miniCard (Half) x1	+12V (Terminal block)	0°C ~ 60°C	—	GPIO, SMBUS, TPM, MIPI-CSI
PICO-RAP4-A10-0003	i5-1340PE	SO-DIMM	HDMI x1 LVDS x1	SATA 6Gb/s x1	GbE x1 2.5GbE x1	USB 2.0 x2 USB3.2 Gen2 x2	2	M.2 2280 M-Key x1 miniCard (Half) x1	+12V (Terminal block)	0°C ~ 60°C	—	GPIO, SMBUS, TPM, MIPI-CSI
PICO-RAP4-A10-0004	i7-1370PE	SO-DIMM	HDMI x1 LVDS x1	SATA 6Gb/s x1	GbE x1 2.5GbE x1	USB 2.0 x2 USB3.2 Gen2 x2	2	M.2 2280 M-Key x1 miniCard (Half) x1	+12V (Terminal block)	0°C ~ 60°C	—	GPIO, SMBUS, TPM, MIPI-CSI

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Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

US

sales@assured-systems.com

Sales: +1 347 719 4508

Support: +1 347 719 4508

1309 Coffeen Ave
Ste 1200
Sheridan
WY 82801
USA

EMEA

sales@assured-systems.com

Sales: +44 (0)1785 879 050

Support: +44 (0)1785 879 050

Unit A5 Douglas Park
Stone Business Park
Stone
ST15 0YJ
United Kingdom

VAT Number: 120 9546 28

Business Registration Number: 07699660