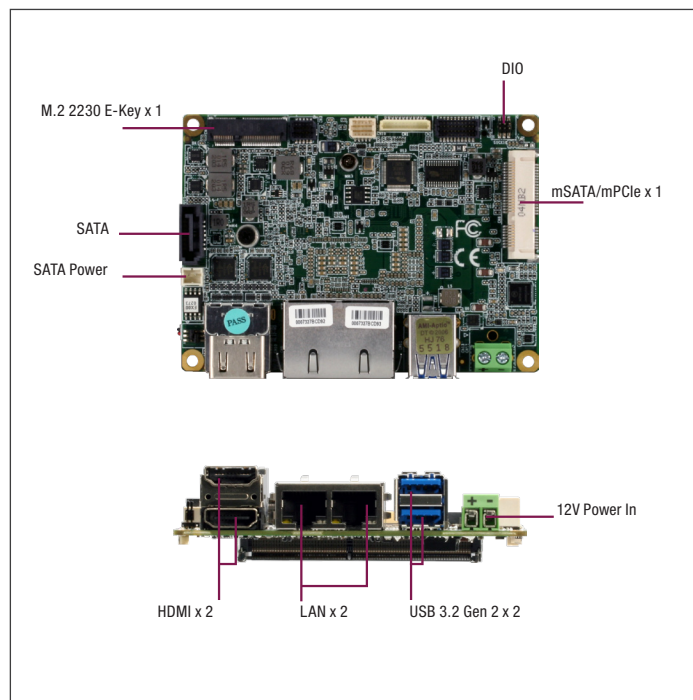


Pico-ITX Board with 8th Generation Intel® Core™ i7/i5/i3/Celeron® U-Series Processor SoC



Specifications

SYSTEM	
FORM FACTOR	PICO-ITX
CPU	Intel® 8th Generation Core™ i7/i5/i3/Celeron SoC i7-8665UE (4C/8T, 1.7GHz, up to 4.4GHz, TDP 15W) i5-8365UE (4C/8T, 1.6GHz, up to 4.1GHz, TDP 15W) i3-8145UE (2C/4T, 2.2GHz, up to 3.9GHz, TDP 15W) Celeron® 4305UE (2C/2T, 2GHz, TDP 15W)
CHIPSET	Intel® 8th Generation Core™ i7/i5/i3/Celeron SoC
MEMORY TYPE	DDR4 up to 2400MHz SODIMM x 1, up to 32GB, Non-ECC
BIOS	UEFI
WAKE ON LAN	Yes
WATCHDOG TIMER	255 Levels
SECURITY	TPM2.0 (Optional by accessory card)
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 18.04.3/Kernel 5.0
POWER	
POWER REQUIREMENT	+12V
POWER SUPPLY TYPE	AT/ATX
CONNECTOR	Phoenix 2-pin Connector (Default) Lockable DC Jack Connector (colay)
POWER CONSUMPTION	Intel® i7-8665UE @ DDR4 16GB, 2.23A@ +12V(TYPICAL)
DISPLAY	
CONTROLLER	Intel® UHD Graphics 610/620
LVDS/eDP	—
Display Interface	HDMI 1.4b x 2 (up to 3840 x 2160)
Multiple Display	Up to 2 Simultaneous Displays
AUDIO	
CODEC	—
AUDIO INTERFACE	—
Speaker	—
EXTERNAL I/O	
ETHERNET	Realtek 8111 Gigabit Ethernet 10/100/1000Base, RJ-45 x 2
USB	USB 3.2 Gen 2 x 2
SERIAL PORT	—
VIDEO	HDMI 1.4b x 2 (up to 3840 x 2160)

Features

- 8th Gen Intel® Core™ i7/i5/i3/Celeron Processor SoC
- Non-ECC DDR4 SODIMM Slot x 1, up to 32GB
- Dual HDMI ports (HDMI 1.4b)
- GbE x 2, SATA 6.0 Gb/s x 1, GPIO x 4
- USB 3.2 Gen 2 x 2 (Rear), USB 2.0 x 2 Pin header, RS-232/422/485 x 2
- Full size mSATA/mPCIe x 1 (Select by BIOS), M.2 2230 (E key) x 1
- 12V Only (Terminal block and DC barrel co-design)



INTERNAL I/O	
USB	USB2.0 x 2
SERIAL PORT	COM1, COM2 (RS232/422/485, supports 5V/12V/RI)
VIDEO	—
SATA	SATA III x 1 +5V SATA Power Connector x 1
AUDIO	—
DIO/GPIO	4-bit
SMBus/I2C	I2C/SMBus x1 (SMBUS as default)
Touch	—
FAN	4pins Smart Fan x1
SIM	—
Front Panel	HDD LED, PWR LED, Power Button, Buzzer, Reset
Others	—
EXPANSION	
Mini PCI-E/mSATA	Full size mSATA/mPCIe or USB2.0 x 1 (PCIe as default, mSATA selected by BIOS)
M.2	M.2 E-Key 2230 x 1 (for WIFI/BT, PCIe/USB signal only)
Others	SMBUS/I2C/LPC/eSPI x 1
ENVIRONMENT & CERTIFICATION	
OPERATING TEMP	32°F ~ 140°F (0°C ~ 60°C) WITAS 2 -40°F ~ 185°F (-40°C ~ 85°C)
STORAGE TEMP	-40°F ~ 185°F (-40°C ~ 85°C)
OPERATING HUMIDITY	0% ~ 90% relative humidity, non-condensing
MTBF (HOURS)	298,762
EMC	CE/FCC Class A

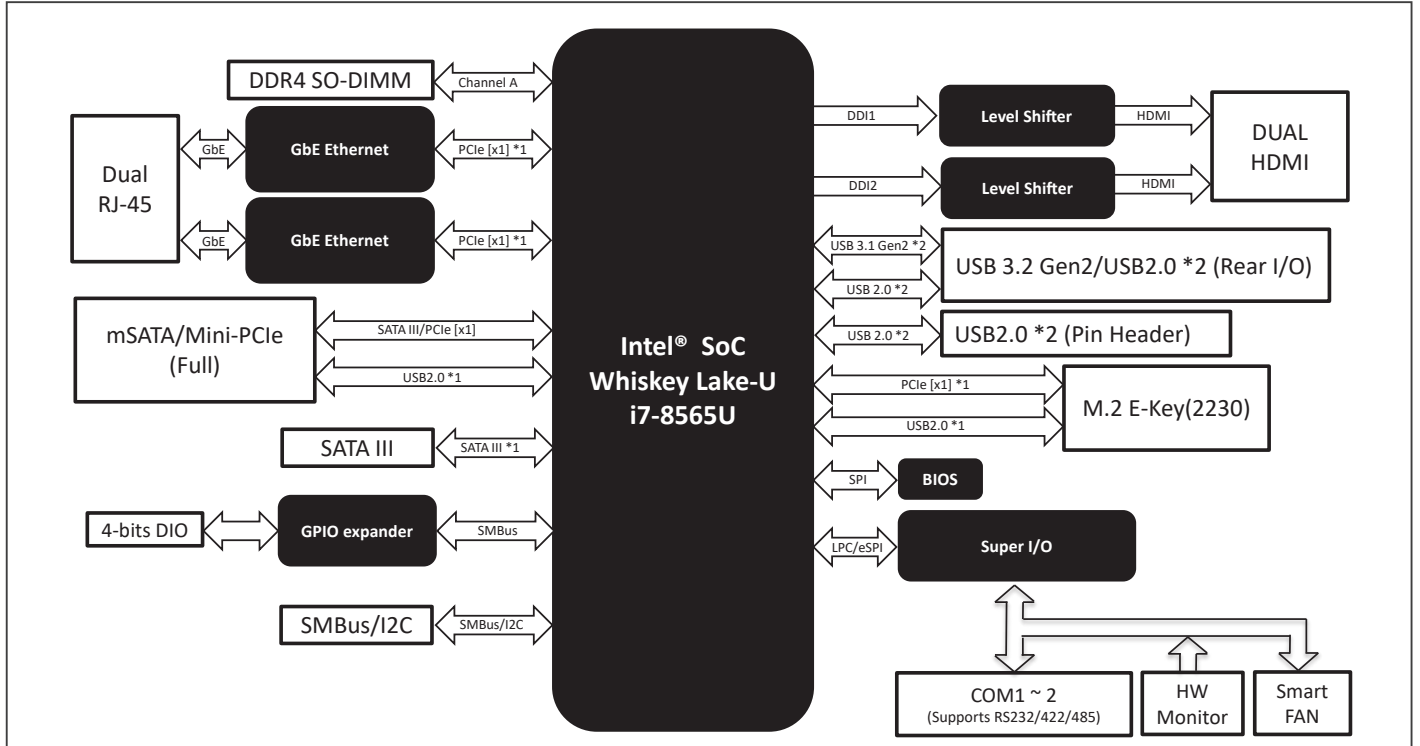
Packing List

- PICO-WHU4

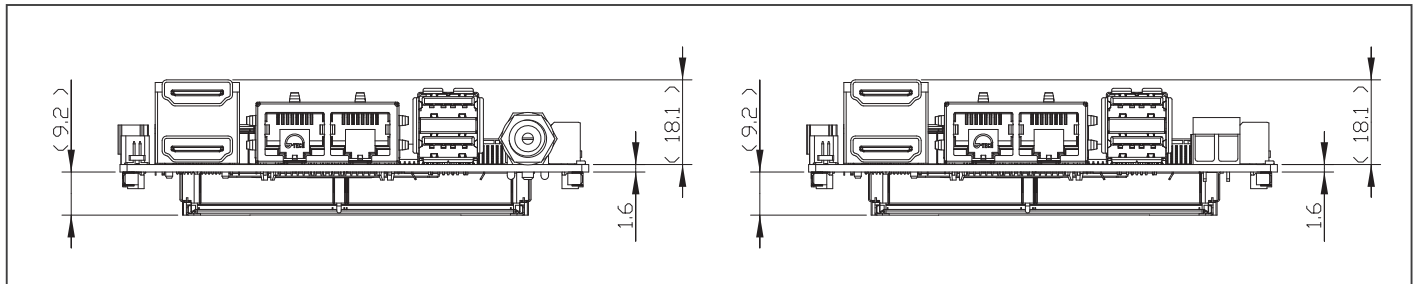
Optional Accessories

Part Number	Description	Qty.
1702150155	(TF)Power Cable.15P SATA(F).2P 2.0mm Housing(PH).15cm	1
1709070500	(TF)SATA CABLE.7P Pitch 1.27mm.50cm	1
1701200102	(TF)SERIAL Cable.WL1010H-2*10P 1.0mm Housing.Dual DB9(M).10cm	1
170010010D	USB cable (2 Port), 10cm	1
1702030176	(TF)Power Cable.3P DC jack.TERMINAL*2.17cm.TKS-G21-LN05	1
PICO-WHU4-FAN01	Integrated Cooler for PICO-WHU4, assemble with PICO-WHU4 directly	1
PICO-WHU4-HSP01	Heat Spreader for PICO-WHU4	1
PER-T457-A01-0002	TPM Board.TPM 2.0.w/LPC cable	1

Block Diagram



Dimension Unit: mm



Ordering Information

Part number	CPU	Display	Storage	LAN	USB	RS-232/422/485	Expansion slot	Power	Operating Temp	Others
PICO-WHU4-A11-0001	Celeron 4305UE	HDMI x 2	SATAIII x 1 mSATA (Full size) x 1	GbE x 2	USB 3.2 Gen 2 x 2 USB 2.0 x 2	2	M.2 2230 E-key x 1	+12V (Terminal block)	0°C ~ 60°C	—
PICO-WHU4-A11-0002	i3-8145UE	HDMI x 2	SATAIII x 1 mSATA (Full size) x 1	GbE x 2	USB 3.2 Gen 2 x 2 USB 2.0 x 2	2	M.2 2230 E-key x 1	+12V (Terminal block)	0°C ~ 60°C	—
PICO-WHU4-A11-0003	i5-8365UE	HDMI x 2	SATAIII x 1 mSATA (Full size) x 1	GbE x 2	USB 3.2 Gen 2 x 2 USB 2.0 x 2	2	M.2 2230 E-key x 1	+12V (Terminal block)	0°C ~ 60°C	—
PICO-WHU4-A11-0004	i7-8665UE	HDMI x 2	SATAIII x 1 mSATA (Full size) x 1	GbE x 2	USB 3.2 Gen 2 x 2 USB 2.0 x 2	2	M.2 2230 E-key x 1	+12V (Terminal block)	0°C ~ 60°C	—
PICO-WHU4-A11-DC02	i3-8145UE	HDMI x 2	SATAIII x 1 mSATA (Full size) x 1	GbE x 2	USB 3.2 Gen 2 x 2 USB 2.0 x 2	2	M.2 2230 E-key x 1	+12V (DC Jack)	0°C ~ 60°C	—
PICO-WHU4W2-A11-0004	i7-8665UE	HDMI x 2	SATAIII x 1 mSATA (Full size) x 1	GbE x 2	USB 3.2 Gen 2 x 2 USB 2.0 x 2	2	M.2 2230 E-key x 1	+12V (Terminal block)	-40°C ~ 85°C	—