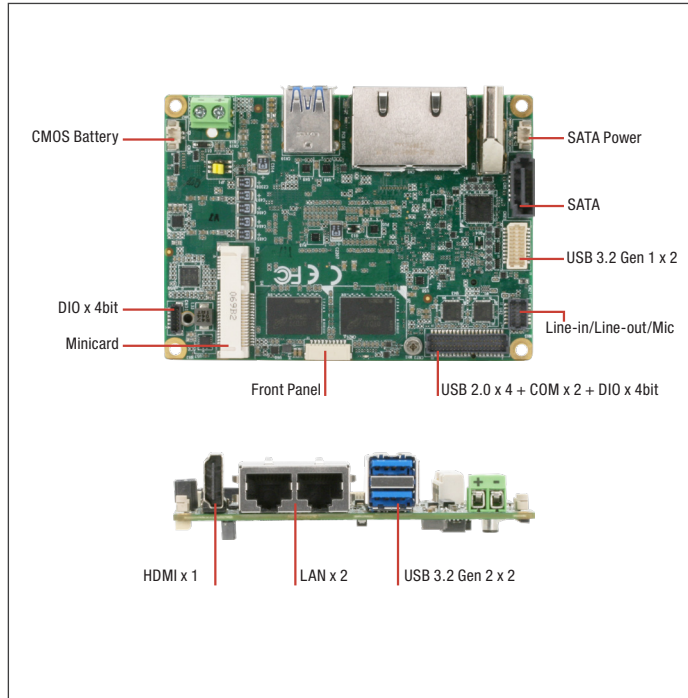


# PICO-TGU4

Pico-ITX Board with 11th Generation Intel® Core™ i7/i5/i3/Celeron® U-Series Processor SoC



## Features

- 11th Gen Intel® Core™ i7/i5/i3/Celeron Processor SoC
- LPDDR4x Onboard memory, Max. 32 GB
- 2.5GbE Intel i225 + 1GbE Intel i219
- HDMI2.0b x 1, 4Kx2K + eDP, up to HBR3 8K
- M.2 2280 M key(PCIE by4 GEN4/SATA) x 1
- SATA 6.0 Gb/s x 1
- Full size mPCIe/mSATA x 1
- USB 3.2 Gen 2 x 2, USB 3.2 Gen 1 x 2, USB 2.0 x 4
- RS-232/422/485 x 2
- Line-in/Line-out/MIC (Optional)
- DIO 8 bit



VIDEO	HDMI2.0b x 1 (4K x 2K 60Hz)
<b>INTERNAL I/O</b>	
USB	USB3.2 Gen 1 x 2 USB2.0 x 4
SERIAL PORT	COM1, COM2 (RS232/422/485, supports 5V/12V/RI)
VIDEO	eDP x 1 (up to HBR3, 8Kx4K 30Hz)
SATA	SATA III x 1 +5V SATA Power Connector x 1
AUDIO	Audio Header x 1 (Optional)
DIO/GPIO	8-bit
SMBus/I2C	I2C/SMBus x1 (SMBUS as default, I2C select by BOM)
Touch	—
FAN	4pins Smart Fan x1
SIM	—
Front Panel	HDD LED, PWR LED, Power Button, Buzzer, Reset
Others	—
<b>EXPANSION</b>	
Mini PCI-E/mSATA	Full-size mSATA/mPCIe or USB2.0 x 1 (PCIe as default, select by BIOS option)
M.2	M.2 M Key 2280 x 1 (PCIe Gen 4 [x4] as default, SATA select by HW BOM)
Others	SMBUS/I2C/eSPI x 1
<b>ENVIRONMENT &amp; CERTIFICATION</b>	
OPERATING TEMP	32°F ~ 140°F (0°C ~ 60°C) WITAS1 -4°F ~ 158°F (-20°C ~ 70°C)
STORAGE TEMP	-40°F ~ 185°F (-40°C ~ 85°C)
OPERATING HUMIDITY	0% ~ 90% relative humidity, non-condensing
MTBF (HOURS)	424,208
EMC	CE/FCC Class A

## Specifications

<b>SYSTEM</b>	
FORM FACTOR	PICO-ITX
CPU	Intel® Core™/Celeron® Processor: i7-1185G7E (4C/8T, 1.8GHz, up to 4.4GHz, TDP up to 28W) i5-1145G7E (4C/8T, 1.5GHz, up to 4.1GHz, TDP up to 28W) i3-1115G4E (2C/4T, 2.2GHz, up to 3.9GHz, TDP up to 28W) Celeron® 6305E (2C/2T, 1.8GHz, TDP 15W)
CHIPSET	11th Generation Intel® Core™ i7/i5/i3/Celeron SoC
MEMORY TYPE	Onboard LPDDR4x 3200MHz, up to 32GB, In-Band ECC (select SKUs)
BIOS	UEFI
WAKE ON LAN	Yes
WATCHDOG TIMER	255 Levels
SECURITY	TPM2.0 (Optional)
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 (64bit) Linux Ubuntu 20.04.2/Kernel 5.8
<b>POWER</b>	
POWER REQUIREMENT	+12V
POWER SUPPLY TYPE	AT/ATX
CONNECTOR	Phoenix 2-pin Connector (Default) Lockable DC Jack Connector (colay)
POWER CONSUMPTION	Intel® i7-1185G7E, LPDDR4x onboard 32GB, 2.89A@ +12V (TYPICAL)
<b>DISPLAY</b>	
CONTROLLER	Intel® Iris® Xe (i5/i7 support) Intel® UHD Graphics (i3/Celeron support)
LVDS/eDP	eDP x 1 (up to HBR3, 8K x 4K 30Hz)
Display Interface	HDMI2.0b x 1 (4K x 2K 60Hz)
Multiple Display	Up to 2 Simultaneous Displays
<b>AUDIO</b>	
CODEC	Realtek ALC269 (Optional)
AUDIO INTERFACE	Line-in/Line-out/MIC (Optional)
Speaker	—
<b>EXTERNAL I/O</b>	
ETHERNET	Intel® i225, 10/100/1000/2500Base, RJ45 x 1 Intel® i219, 10/100/1000Base, RJ45 x 1
USB	USB3.2 Gen 2 x 2
SERIAL PORT	—

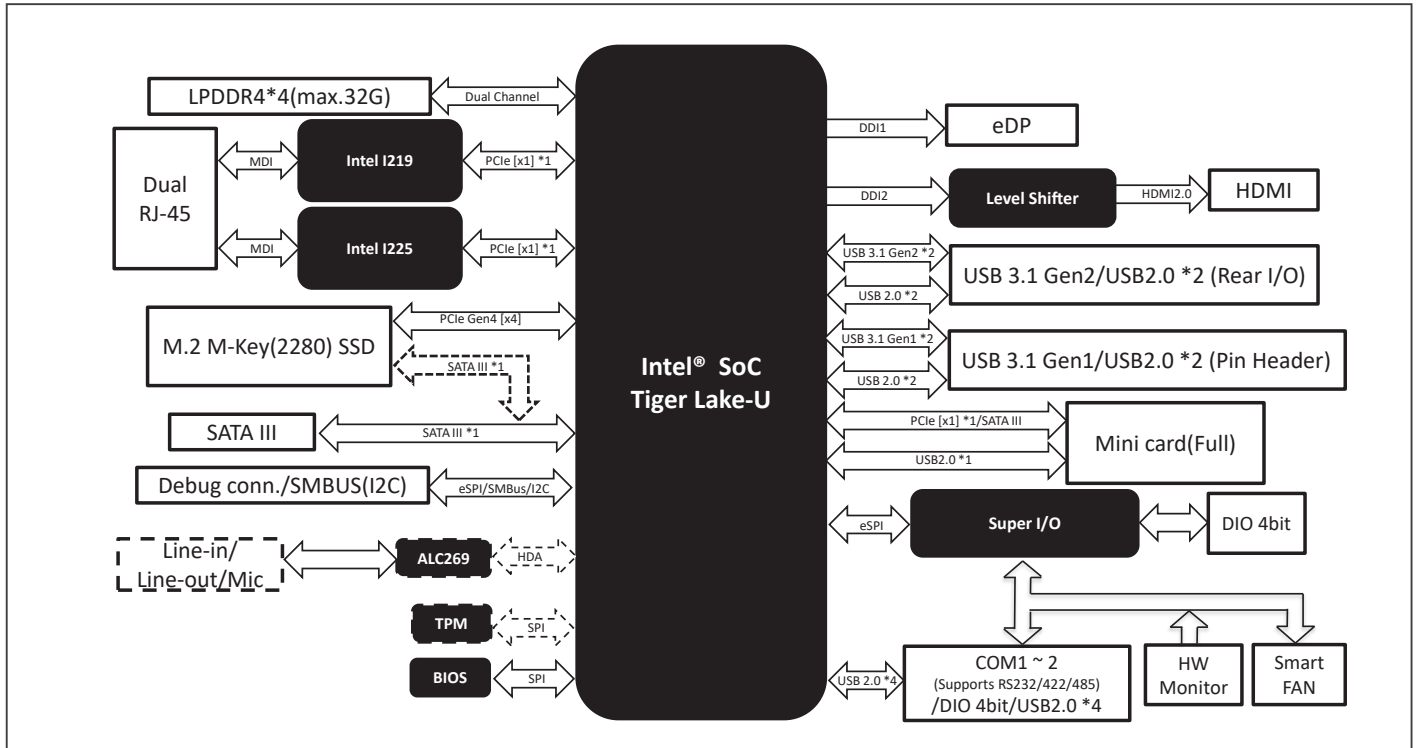
## Packing List

- PICO-TGU4

## Optional Accessories

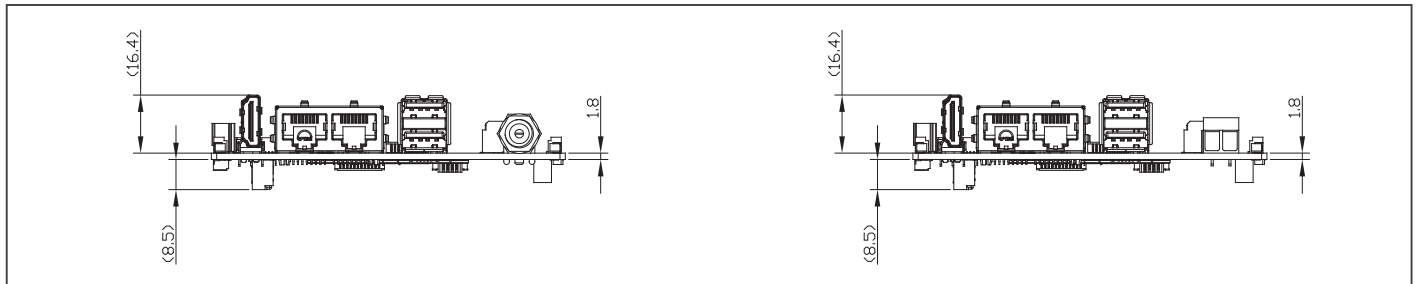
Part Number	Description	Qty.
170X000285	USB3.2 GEN 1 cable	1
170X000284	USB2.0 x 4 + COM x 2 +DIO 4bit x 1 cable	1
170X000287	Front panel cable	1
170X000156	250mm Audio cable	1
1709070500	(TF)SATA CABLE.7P Pitch 1.27mm.50cm	1
170X000322	SATA power cable	1
PICO-TGU4-FAN01	Integrated Cooler for PICO-TGU4, assemble with PICO-TGU4 directly	1
PICO-TGU4-HSP01	Integrated Heat spreader for PICO-TGU4, assemble with PICO-TGU4 directly	1

## Block Diagram



## Dimension

Unit: mm



## Ordering Information

Part Number	CPU	Memory	Display	Storage	LAN	USB	RS-232/422/485	Expansion Slot	Power	Power Temp	Audio	Others
PICO-TGU4-A10-0001	Celeron® 6305E	4G	HDMI x 1 eDP x 1	SATAIII x 1	2.5GbE x 1 GbE x 1	USB3.2 GEN2 x 2 (Rear) USB3.2 GEN1 x 2 (header) USB2.0 x 4 (header)	2	M.2 2280 M-key x 1 mini-PCIe(Full) x 1	+12V (Terminal block)	0°C ~ 60°C	—	DIO, SMBUS/eSPI x 1 (I2C optional)
PICO-TGU4-A10-0002	i3-1115G4E	4G	HDMI x 1 eDP x 1	SATAIII x 1	2.5GbE x 1 GbE x 1	USB3.2 GEN2 x 2 (Rear) USB3.2 GEN1 x 2 (header) USB2.0 x 4 (header)	2	M.2 2280 M-key x 1 mini-PCIe(Full) x 1	+12V (Terminal block)	0°C ~ 60°C	—	DIO, SMBUS/eSPI x 1 (I2C optional)
PICO-TGU4-A10-0003	i3-1115G4E	8G	HDMI x 1 eDP x 1	SATAIII x 1	2.5GbE x 1 GbE x 1	USB3.2 GEN2 x 2 (Rear) USB3.2 GEN1 x 2 (header) USB2.0 x 4 (header)	2	M.2 2280 M-key x 1 mini-PCIe(Full) x 1	+12V (Terminal block)	0°C ~ 60°C	—	DIO, SMBUS/eSPI x 1 (I2C optional)
PICO-TGU4-A10-0004	i5-1145G7E	8G	HDMI x 1 eDP x 1	SATAIII x 1	2.5GbE x 1 GbE x 1	USB3.2 GEN2 x 2 (Rear) USB3.2 GEN1 x 2 (header) USB2.0 x 4 (header)	2	M.2 2280 M-key x 1 mini-PCIe(Full) x 1	+12V (Terminal block)	0°C ~ 60°C	—	DIO, SMBUS/eSPI x 1 (I2C optional)
PICO-TGU4-A10-0005	i7-1185G7E	8G	HDMI x 1 eDP x 1	SATAIII x 1	2.5GbE x 1 GbE x 1	USB3.2 GEN2 x 2 (Rear) USB3.2 GEN1 x 2 (header) USB2.0 x 4 (header)	2	M.2 2280 M-key x 1 mini-PCIe(Full) x 1	+12V (Terminal block)	0°C ~ 60°C	—	DIO, SMBUS/eSPI x 1 (I2C optional)
PICO-TGU4-A10-0006	i7-1185G7E	32G	HDMI x 1 eDP x 1	SATAIII x 1	2.5GbE x 1 GbE x 1	USB3.2 GEN2 x 2 (Rear) USB3.2 GEN1 x 2 (header) USB2.0 x 4 (header)	2	M.2 2280 M-key x 1 mini-PCIe(Full) x 1	+12V (Terminal block)	0°C ~ 60°C	—	DIO, SMBUS/eSPI x 1 (I2C optional)
PICO-TGU4-A10-0007	i7-1185G7E	16G	HDMI x 1 eDP x 1	SATAIII x 1	2.5GbE x 1 GbE x 1	USB3.2 GEN2 x 2 (Rear) USB3.2 GEN1 x 2 (header) USB2.0 x 4 (header)	2	M.2 2280 M-key x 1 mini-PCIe(Full) x 1	+12V (Terminal block)	0°C ~ 60°C	—	DIO, SMBUS/eSPI x 1 (I2C optional)
PICO-TGU4-A10-0008	i5-1145G7E	16G	HDMI x 1 eDP x 1	SATAIII x 1	2.5GbE x 1 GbE x 1	USB3.2 GEN2 x 2 (Rear) USB3.2 GEN1 x 2 (header) USB2.0 x 4 (header)	2	M.2 2280 M-key x 1 mini-PCIe(Full) x 1	+12V (Terminal block)	0°C ~ 60°C	—	DIO, SMBUS/eSPI x 1 (I2C optional)
PICO-TGU4W1-A10-0005	i7-1185G7E	8G	HDMI x 1 eDP x 1	SATAIII x 1	2.5GbE x 1 GbE x 1	USB3.2 GEN2 x 2 (Rear) USB3.2 GEN1 x 2 (header) USB2.0 x 4 (header)	2	M.2 2280 M-key x 1 mini-PCIe(Full) x 1	+12V (Terminal block)	-20°C~70°C	—	DIO, SMBUS/eSPI x 1 (I2C optional)