



AAEON PICO-EHL4-A11-0002 Intel Atom x6000E/Intel Pentium/Celeron Pico-ITX Board

Key Features:

- Intel Atom x6000E series, Intel Pentium, and Celeron N and J series processors (formerly Elkhart Lake)
- HDMI2.0b x 2 + LVDS/eDP1.3 x 1
- GbE x 2
- 2 x USB 3.2 Gen 2, 2 x USB2.0
- LPDDR4x onboard memory, In-Band ECC
- eMMC x 1, SATA x 1
- COM x 2 Full, CANBUS x 2(optional), mSATA x 1, M.2 E-Key 2230 x 1

Description

The PICO-EHL4 Series brings the latest Intel Atom, Celeron and Pentium processors (formerly Elkhart Lake) to the compact PICO-ITX form factor. The Intel Atom x6000E series processors, Intel Pentium and Celeron N and J series processors (formerly Elkhart Lake) deliver greater computing performance over previous generations along with key technologies like in-band ECC to ensure data accuracy and integrity. The PICO-EHL4 takes advantage of the support for faster memory speeds and higher capacities by providing up to 16GB of LPDDR4x 4267MHz memory on-board.

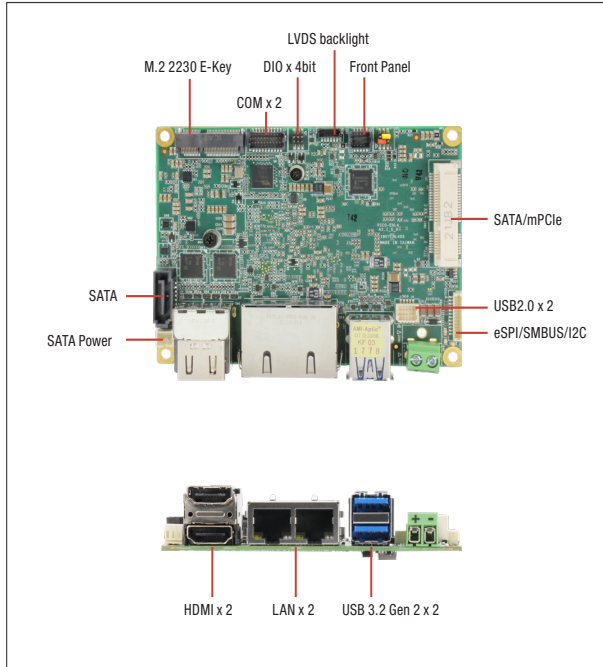
The PICO-EHL4-A11-0002 provides a host of features allowing for flexibility to meet the needs of individual applications. Expansion slots include both M.2 2230, perfect for adding Wi-Fi or Bluetooth functionality; and full sized Mini-Card for expanded storage, AI accelerators, and more.

The PICO-EHL4-A11-0002 can connect with a range of devices thanks to 4-bit GPIO as well as dual Gigabit Ethernet LAN ports, two USB3.2 and two USB2.0 ports, and two serial port headers (RS232/422/485). The PICO-EHL4 also features two HDMI 2.0 ports supporting 4K graphics at 60Hz, as well as on-board co-lay LVDS/eDP allowing the board to output up to three independent displays.

PICO-EHL4

Pico-ITX Board with Intel® Atom™ x6000E Series, Intel® Pentium®, and Celeron® N and J series processors

Pico-ITX Boards



Features

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- HDMI2.0b x 2 + LVDS/eDP1.3 x 1
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- COM x 2 Full, CANBUS x 2(optional), mSATA x 1, M.2 E-Key 2230 x 1



| AUDIO | |
|-----------------------------|---|
| CODEC | — |
| AUDIO INTERFACE | — |
| Speaker | — |
| EXTERNAL I/O | |
| ETHERNET | Realtek RTL8111H-CG , 10/100/1000Base-TX, RJ-45 x 2 |
| USB | USB 3.2 Gen 2 x 2 |
| SERIAL PORT | COM1, COM2 (RS232/422/485, supports 5V/12V/RI) |
| VIDEO | HDMI 2.0b x 2 (4K x 2K 60Hz) |
| INTERNAL I/O | |
| USB | USB 2.0 x 2 |
| SERIAL PORT | COM1, COM2 (RS232/422/485, supports 5V/12V/RI) |
| VIDEO | eDP (up to HBR3, 8K x 4K 30Hz) LVDS (18/24bit 2CH) |
| SATA | SATA III x 1 +5V SATA Power Connector x 1 Onboard eMMC 5.1, up to 128GB |
| AUDIO | — |
| DIO/GPIO | 4-bit |
| SMBus/I2C | SMBus/I2C and eSPI x 1 (SMBus as default, I2C select by HW BOM) |
| 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 mPCIe/mSATA x 1 (SATA as default, PCIe selected by BIOS) |
| M.2 | M.2 E key 2230 x 1 (PCIe x 1/USB2.0) |
| Others | CANBUS x 2 (optional, N6210/J6412 not support, support up to 5Mbit/s) |
| 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) | 489,989 |
| EMC | CE/FCC Class A |

Specifications

| SYSTEM | |
|-------------------|---|
| FORM FACTOR | PICO-ITX |
| CPU | Intel® Atom™ x6000E series, Intel® Pentium®, and Celeron® N and J series processors: Intel® Atom™ x6425RE (4C, 1.9GHz, TDP 12W) Intel® Atom™ x6414RE (4C, 1.5GHz, TDP 9W) Intel® Atom™ x6212RE (2C, 1.2GHz, TDP 6W) Intel® Atom™ x6425E (4C, 2.0GHz, up to 3GHz, TDP 12W) Intel® Atom™ x6413E (4C, 1.5GHz, up to 3GHz, TDP 9W) Intel® Atom™ x6211E (2C, 1.3GHz, up to 3GHz, TDP 6W) Intel® Pentium® J6426 (4C, 2.0GHz, up to 3GHz, TDP-up 10W) Intel® Pentium® N6415 (4C, 1.2GHz, up to 3GHz, TDP 6.5W) Intel® Celeron® J6412 (4C, 2.0GHz, up to 2.6GHz, TDP-up 10W) Intel® Celeron® N6210 (2C, 1.2GHz, up to 2.6GHz, TDP-up 6.5W) (Intel® Atom™ x6414RE/x6413E/x6427FE/x6200FE/N6415 by customer's request) |
| CHIPSET | Intel® Elkhart Lake SoC Processor |
| MEMORY TYPE | LPDDR4x up to 3200MHz, up to 16GB |
| BIOS | UEFI |
| WAKE ON LAN | Yes |
| WATCHDOG TIMER | 255 Levels |
| SECURITY | Intel® PTT (Integrated TPM) |
| 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 20.04.3(IOT)/Kernel 5.13 |
| POWER | |
| POWER REQUIREMENT | +12V |
| POWER SUPPLY TYPE | AT/ATX |
| CONNECTOR | Phoenix 2-pin Connector (Default) Lockable DC Jack Connector (colay) |
| POWER CONSUMPTION | Intel® Atom™ x6425E, LPDDR4x onboard 16GB, 2.48A@ +12V(TYPICAL) Intel® Atom™ x6425E, LPDDR4x onboard 16GB, 2.62A@ +12V(MAX) |
| DISPLAY | |
| CONTROLLER | Intel® UHD Graphics for 10th Gen Intel® Processors |
| LVDS/eDP | eDP (up to HBR3, 8K x 4K 30Hz) LVDS (18/24bit 2CH) |
| Display Interface | HDMI 2.0b x 2 (4K x 2K 60Hz) |
| Multiple Display | Up to 3 Simultaneous Displays |

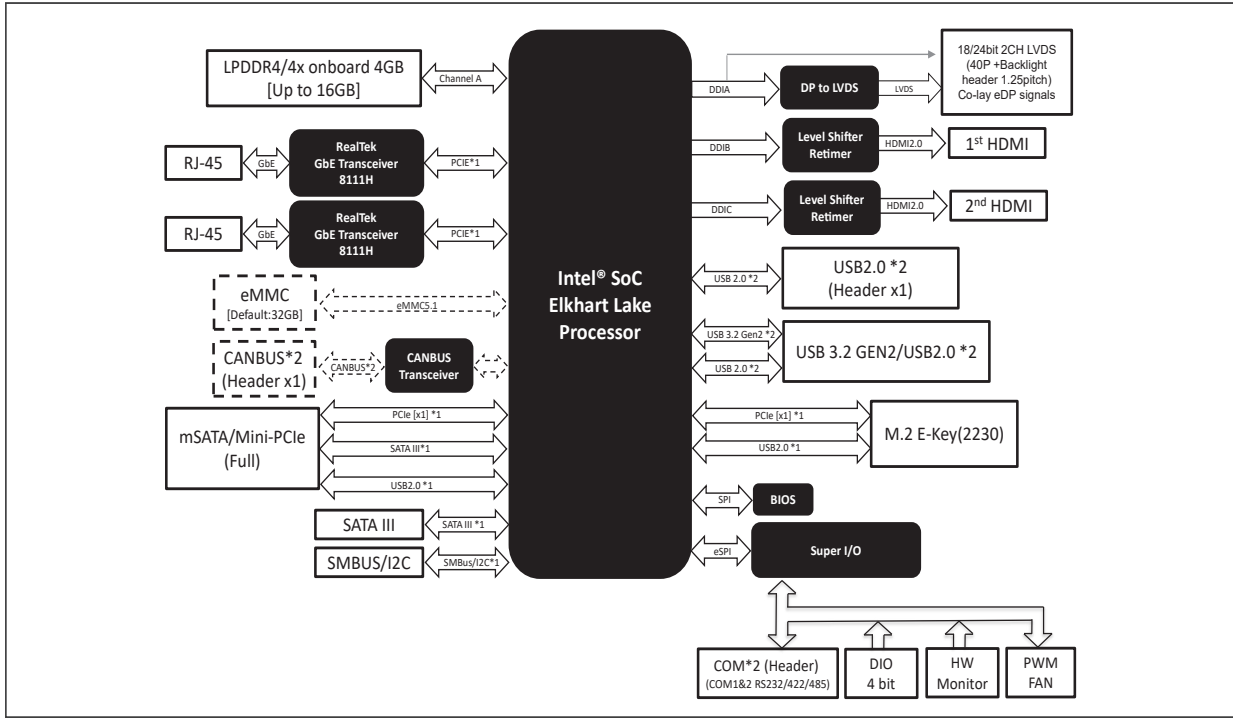
Optional Accessories

| Part Number | Description | Qty. |
|-----------------|--|------|
| 170X000231 | COM cable | 1 |
| 170010010D | USB2.0 cable | 1 |
| 1709070500 | SATA cable | 1 |
| 1702150155 | SATA power cable | 1 |
| 1703120130 | eSPI/SMBUS/I2C cable | 1 |
| 1709100108 | Front panel cable | 1 |
| PICO-EHL4-HSP01 | Heat Spreader.AL.100*72*6.8mm.for Pentium/Celeron of PICO-EHL4 | 1 |
| PICO-EHL4-HSP02 | Heat Spreader.AL.100*72*5.8mm.for Atom series of PICO-EHL4 | 1 |
| PICO-EHL4-HSK01 | Heat Sink.100*72*15.5mm.Silver.To be used with HSP | 1 |
| PICO-EHL4-FAN01 | Cooler.100*72*20.3mm.for Pentium/Celeron of PICO-EHL4 | 1 |
| PICO-EHL4-FAN02 | Cooler.100*72*19.3mm.for Atom series of PICO-EHL4 | 1 |

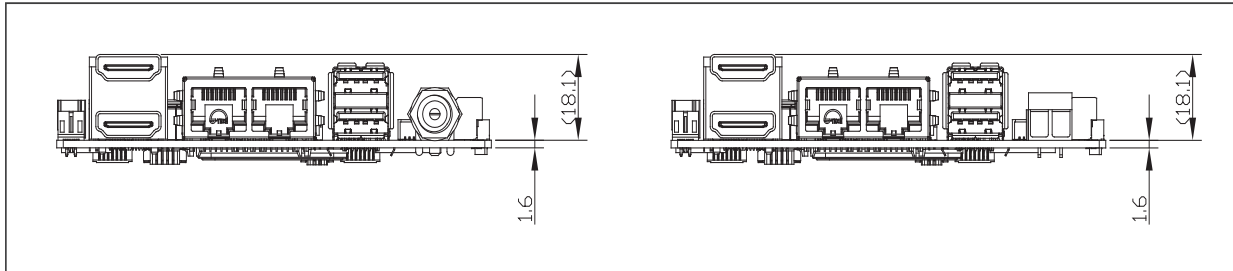
Note:
eDP Panel : B173ZAN01.0-AUO LVDS Panel : G121XN01 V0-AUO

Note: All specifications are subject to change without notice.

Block Diagram



Dimension Unit: mm



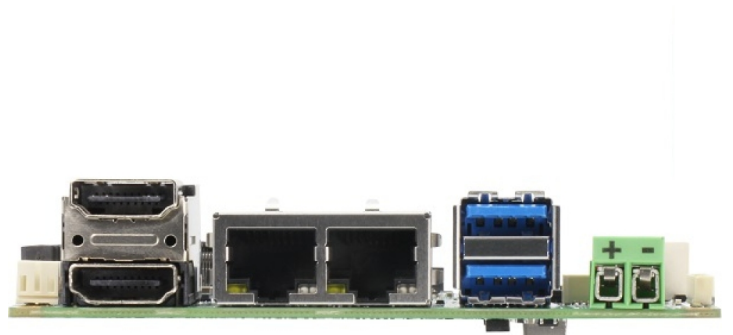
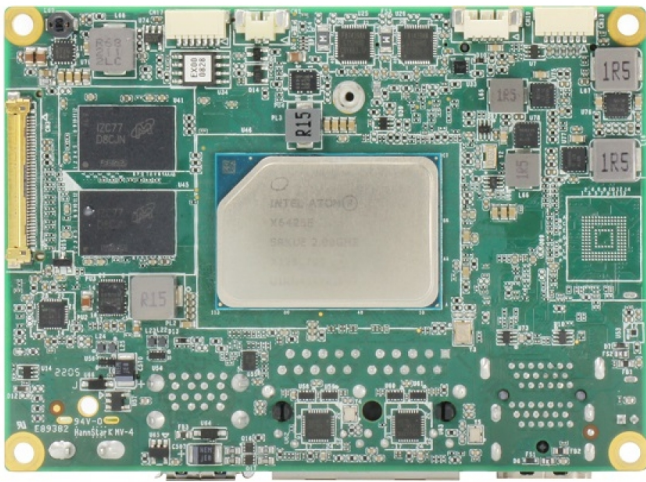
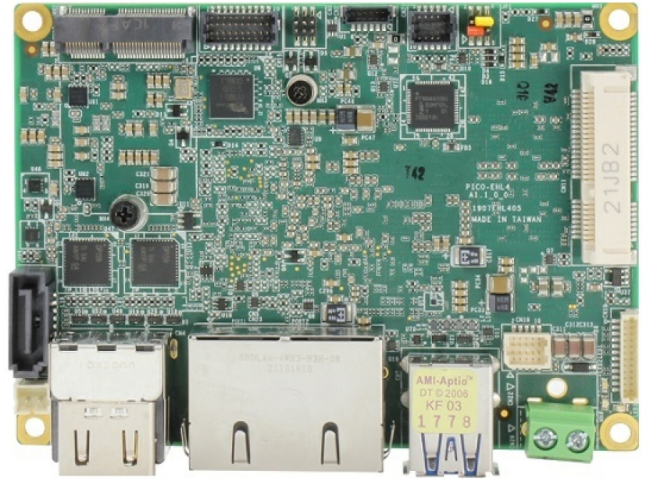
Packing List

- PICO-EHL4

Ordering Information

| Part number | CPU | Memory | Display | Storage | LAN | USB | RS-232/422/485 | Expansion slot | Power | Operating Temp | Others |
|--------------------|-------|--------|----------------------|--------------------------|---------|--------------------------------|----------------|--|-------|----------------|-----------------------------|
| PICO-EHL4-A11-0001 | N6210 | 4GB | HDMI x 2 LVDS x 1 | SATAIII x 1 eMMC 32GB | GbE x 2 | USB3.2 Gen 2 x 2 USB2.0 x 2 | 2 | M.2 2230 E-key x 1 mSATA(Full-size) x 1 | +12V | 0°C ~ 60°C | DIO 4 bit SMBUS/eSPI x 1 |
| PICO-EHL4-A11-0002 | J6412 | 4GB | HDMI x 2 LVDS x 1 | SATAIII x 1 eMMC 32GB | GbE x 2 | USB3.2 Gen 2 x 2 USB2.0 x 2 | 2 | M.2 2230 E-key x 1 mSATA(Full-size) x 1 | +12V | 0°C ~ 60°C | DIO 4 bit SMBUS/eSPI x 1 |
| PICO-EHL4-A11-0003 | J6412 | 4GB | HDMI x 2 eDP x 1 | SATAIII x 1 eMMC 64GB | GbE x 2 | USB3.2 Gen 2 x 2 USB2.0 x 2 | 2 | M.2 2230 E-key x 1 mSATA(Full-size) x 1 | +12V | 0°C ~ 60°C | DIO 4 bit SMBUS/eSPI x 1 |
| PICO-EHL4-A11-0004 | J6412 | 8GB | HDMI x 2 LVDS x 1 | SATAIII x 1 | GbE x 2 | USB3.2 Gen 2 x 2 USB2.0 x 2 | 2 | M.2 2230 E-key x 1 mSATA(Full-size) x 1 | +12V | 0°C ~ 60°C | DIO 4 bit SMBUS/eSPI x 1 |

Images



Assured Systems

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.

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