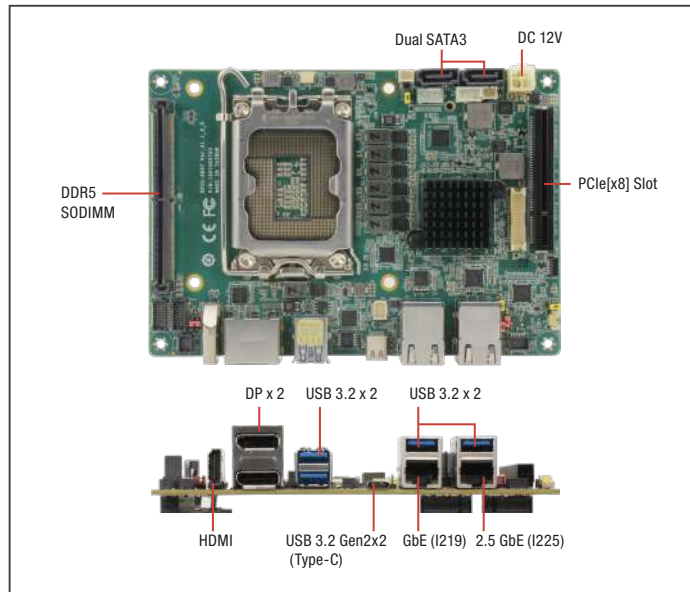


EPIC Board with 12th Generation Intel® Core™ S series Processor (Socket Type)



Features

- 12th Generation Intel® Core™ Processors (Socket Type)
- DDR5 4800, SODIMM x 2, up to 32GB
- DP 1.4a x 2, HDMI 2.0b x 1, LVDS/eDP (Optional) x 1
- SATA 6Gb/s x 2
- 2.5GbE RJ-45 x 1, GbE RJ-45 x 1
- USB Type-C x 1, USB 3.2 Gen2x2 (20Gbps), USB 3.2 Gen 2 x 4, USB 2.0 x 4
- M.2 3052 B-Key x 1, M.2 2280 M-Key x 1, M.2 2230 E-Key x 1
- PCIe Gen 5 [x8] x 1, FPC x 1 (PCIe [x2])
- COM Port x 4, GPIO x 8
- DC 12V in

Specifications

| System | |
|-------------------|---|
| Form Factor | 4" EPIC Board |
| CPU | 12th Generation Intel® Core™/Celeron® Processors (up to 35W/65W): Intel® Core™ i7-12700E (8PC+4EC/20T, 1.6 GHz-2.1 GHz, 65W) Intel® Core™ i7-12700TE (8PC+4EC/20T, 1.4 GHz, 35W) Intel® Core™ i5-12500E (6C/12T, 2.9 GHz, 65W) Intel® Core™ i5-12500TE (6C/12T, 1.9 GHz, 35W) Intel® Core™ i3-12100E (4C/8T, 3.2 GHz, 60W) Intel® Core™ i3-12100TE (4C/8T, 2.1 GHz, 35W) Intel® Celeron® Processor G6900TE (2C/2T, 2.4 GHz, 35W) |
| Chipset | Intel® 600 Series Chipset (R680E/Q670E/H610E) |
| Memory Type | DDR5 4800, Dual Channel SODIMM x 2, Max 32GB (up to 16GB per SODIMM, ECC support for Intel® R680E & Q670E chipsets) |
| BIOS | UEFI |
| Wake On Lan | Yes |
| Watchdog Timer | 255 Levels |
| Security | TPM 2.0 (Optional) |
| RTC Battery | Lithium Battery 3V/240mAh |
| Dimension | 4.53" x 6.50" (115mm x 165mm) |
| OS Support | Windows® 10 (64-bit) Ubuntu 20.04.1/Kernel 5.11.0-27-generic x86_64 or above |
| Power | |
| Power Requirement | +12V |
| Power Supply Type | AT/ATX |
| Connector | ATX 4-Pin connector |
| Power Consumption | Intel® Core™ i7-12700E, DDR5 16GB x 2, 11.15A @12V, 133.8W (Typical) Intel® Core™ i7-12700E, DDR5 16GB x 2, 18.15A @12V, 217.8W (Max) |
| Display | |
| Controller | Intel® UHD Graphics 770 (i5 SKU and above) Intel® UHD Graphics 730 (i3 SKU) Intel® UHD Graphics 710 (Celeron® G6900TE SKU) |
| LVDS/eDP | LVDS x 1, Dual Channel 24/48-bit, up to 1920 x 1080 eDP 1.4 x 1, up to 1920 x 1080 (optional) |
| Display Interface | HDMI 2.0 x 1, up to 3840 x 2160 @60Hz DP 1.4 x 2, up to 3840 x 2160 @60Hz |
| Multiple Display | Up to 4 Simultaneous Displays |
| Audio | |
| CODEC | Realtek ALC269 |
| Audio Interface | Line In/Line Out/Mic |
| Speaker | — |
| External I/O | |
| Ethernet | Intel® I225-LM, 2.5GbE RJ-45 x 1 Intel® I219-LM, 1GbE RJ-45 x 1 |
| USB | USB 3.2 Gen 2/Gen 1 x 4 (Gen 2 Support for Intel® R680E & Q670E chipsets) USB Type-C x 1 (USB 3.2 Gen2x2, 20Gbps) |
| Serial Port | — |
| Video | HDMI 2.0 x 1, up to 3840 x 2160 @60Hz DP 1.4 x 2, up to 3840 x 2160 @60Hz |

| Internal I/O | |
|-----------------------------|---|
| USB | USB 2.0 x 4 |
| Serial Port | COM 1, COM 3, COM 4 (RS-232/422/485, supports RI only) COM 2 (RS-232/422/485, supports 5V/12V, RI) |
| Video | LVDS (Default) or eDP x 1 LVDS Inverter 5V/12V @2A |
| SATA | SATA 6Gb/s x 2 +5V SATA Power Connector x 2 |
| Audio | Realtek ALC269 |
| DIO/GPIO | GPIO 8-bit |
| SMBus/I2C | SMBus/I2C (Default: SMBus) |
| Touch | — |
| Fan | 4 Pin Smart Fan |
| SIM | Nano SIM x 1 |
| Front Panel | Power Button, Reset Button, Power LED, SATA LED, Buzzer |
| Others | TCC x 1 (Intel® R680E SKU only) |
| Expansion | |
| Mini PCI-E/mSATA | — |
| M.2 | M.2 2280 M-Key x 1 (PCIe 4.0 [x4] x 1, support by SKU) M.2 3052 B-Key x 1 (PCIe 3.0 [x2] + USB 3.0 or PCIe [x2] + USB 2.0 by SKU) M.2 2230 E-Key x 1 (PCIe 3.0 [x1] + USB 2.0) *Please check HSIO function list for more details |
| Others | PCIe 5.0 [x8] Slot x 1 (Supply maximum 25W to the PCIe peripheral) Board-to-Board FPC Connector x 1 (PCIe 3.0 [x2] x 1) |
| ENVIRONMENT & CERTIFICATION | |
| Operating Temperature | 32°F ~ 140°F (0°C ~ 60°C) |
| Storage Temperature | -40°F ~ 185°F (-40°C ~ 85°C) |
| Operating Humidity | 0% ~ 90% relative humidity, non-condensing |
| MTBF (Hours) | 308,264 |
| EMC | CE/FCC Class A |

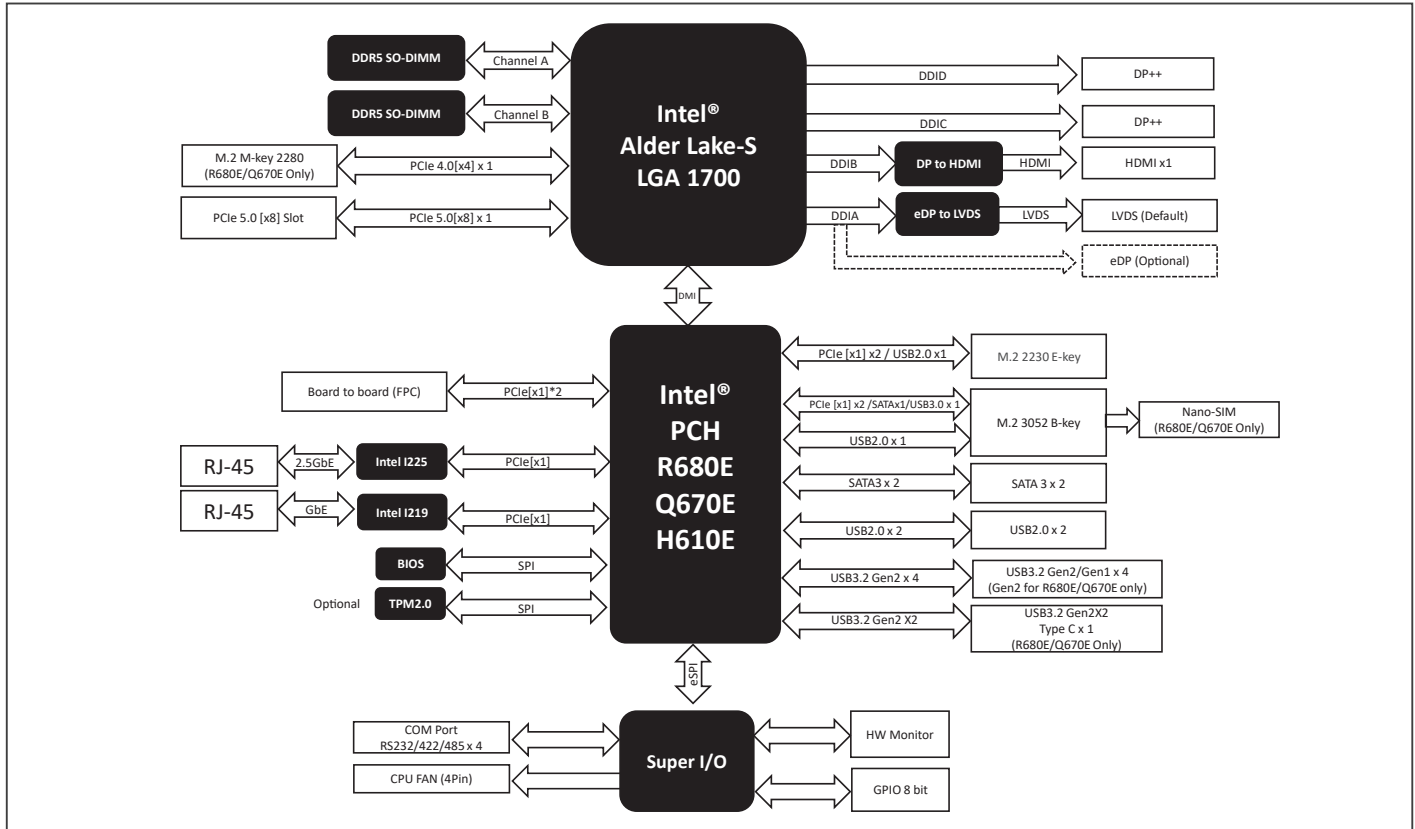
Packing List

- EPIC-ADS7 x 1
- CPU Cooler Back plate x 2
- Screw kit x 1

Optional Accessories

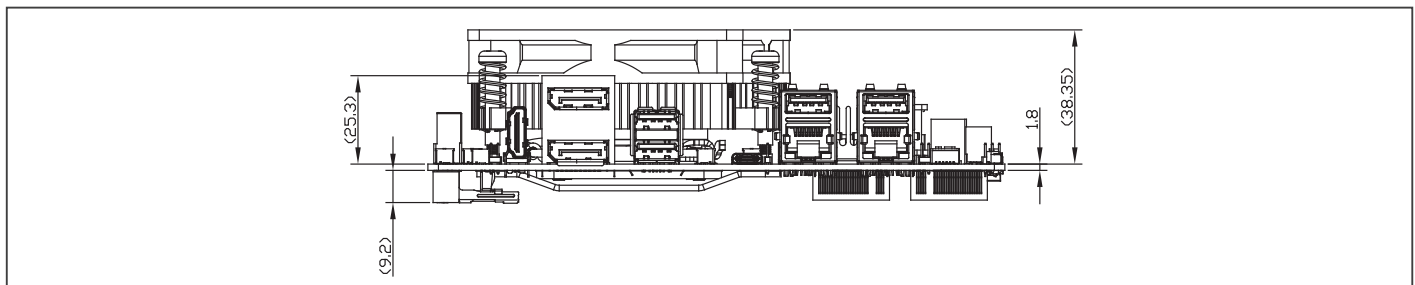
| Part Number | Description | QTY |
|-----------------|--|-----|
| 170X000593 | SATA Cable 15 cm | 1 |
| 1702150155 | SATA Power Cable , 15cm | 1 |
| 170X000594 | ATX 4pin to DC Jack Power Cable , 28 cm | 1 |
| 170220020B | External ATX 3 Pin Power Cable , 20 cm | 1 |
| 170X000346 | Dual USB2.0 Cable, 20 cm | 1 |
| 170X000508 | Dual COM Port Cable , 25 cm | 1 |
| 170X000156 | Audio Cable , 25 cm | 1 |
| 1709100108 | Front Panel Cable . 10 cm | 1 |
| 1255X00063 | AC/DC Adapter:150W/12V/12.5A.DC JACK W/Lock , Delta DPS-150AB-15 J | 1 |
| EPIC-ADS7-FAN01 | CPU Cooler for EPIC-ADS7 | 1 |

Block Diagram



Dimension

Unit: mm



Ordering Information

| Part Number | CPU | Memory | Display | Storage | LAN | USB | COM Port | Expansion | TPM | Power | Operating Temperature | Others |
|--------------------|----------------------------------|---------------------------|----------------------------|-------------------|---------------------|---|--------------------------------|--|----------|-------------------------------|-----------------------|----------------------------|
| EPIC-ADS7-A11-0002 | LGA1700 Socket Type (with Q670E) | DDR5 SODIMM x 2 | LVDS x 1, DP x 2, HDMI x 1 | SATA 6.0 Gbps x 2 | 2.5GbE x 1, GbE x 1 | USB3.2 Type C x 1 USB3.2 Gen 2 x 4 USB2.0 x 4 | RS232/422/485 x 2 RS232 x 2 | M.2 3052 B-key x 1 (PCIe[x2]+USB3), M.2 2280 M-key x 1, M.2 2230 E-key x 1 | Optional | +12V in (4 Pin ATX Connector) | 0°C ~ 60°C | GPIO 8 bits NanoSIM x 1 |
| EPIC-ADS7-A11-0003 | LGA1700 Socket Type (with H610E) | DDR5 SODIMM x 2 (Non-ECC) | LVDS x 1, DP x 2, HDMI x 1 | SATA 6.0 Gbps x 2 | 2.5GbE x 1, GbE x 1 | USB3.2 Gen 1 x 4 USB2.0 x 4 | RS232/422/485 x 2 RS232 x 2 | M.2 3052 B-key x 1 (USB2.0 x 2 only), M.2 2230 E-key x 1 | Optional | +12V in (4 Pin ATX Connector) | 0°C ~ 60°C | GPIO 8 bits |

HSIO Function Table Matrix

| PCH SKU | DDR | SATAIII | USB3.2 Gen2x2 (Type C) | USB3.2 (Type-A) | M.2 3052 B-key | M.2 2280 M-key | M.2 2230 E-key | Ethernet (RJ45) | TCC |
|----------------------|-----------------------------------|---------------|------------------------|----------------------------------|---------------------------------------|----------------|----------------|---|-----|
| R680E SKU (Optional) | DDR5 SODIMM x 2 (ECC Support) | Yes (2 Ports) | Yes | Yes (4 ports, up to USB3.2 Gen2) | Yes (with Nano SIM) (PCIe[x1]+USB3.0) | Yes | Yes | I225LM x 1 (2.5GbE) I219LM x 1 (GbE) | Yes |
| Q670E SKU | DDR5 SODIMM x 2 (ECC Support) | Yes (2 Ports) | Yes | Yes (4 ports, up to USB3.2 Gen2) | Yes (with Nano SIM) (PCIe[x1]+USB3.0) | Yes | Yes | I225LM x 1 (2.5GbE) I219LM x 1 (GbE) | No |
| H610E SKU | DDR5 SODIMM x 2 (Non-ECC Support) | Yes (2 Ports) | No | Yes (4 ports, up to USB3.2 Gen1) | Yes (w/o Nano SIM) (PCIe[x2]) | No | Yes | I225LM x 1 (2.5GbE) I219LM x 1 (GbE) | No |

Note: All specifications are subject to change without notice.