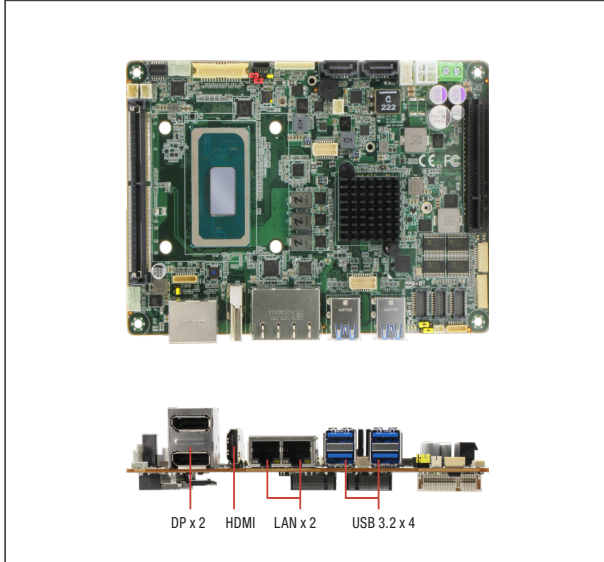


# EPIC-TGH7

EPIC Board with 11th Generation Intel® Core™/Xeon® Processors



## Features

- Onboard 11th Generation Intel® Core™/Xeon® Processors
- DDR4 3200 SODIMM x 2, up to 64GB
- HDMI 2.0b x 1, DP++ 1.2a x 2, LVDS (Dual Channel) or eDP x 1, VGA x 1
- SATA 6Gb/s x 2
- 2.5GbE RJ-45 x 1, GbE RJ-45 x 1
- 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, Mini Card x 1
- PCIe Gen 4 [x8] slot x 1, FPC (PCIe [x4]) x 1
- COM Port x 6, GPIO 16-bit x 1
- Supports +9V to +24Vin (Wide Voltage Input)

## Specifications

| System            |  |
|-------------------|--|
| Form Factor       | 4" EPIC Board  |
| CPU               | Onboard 11th Generation Intel® Core™/Xeon® Processors:<br>Intel® Xeon® W-11865MRE (8C/16T, 2.60 GHz, 45W)<br>Intel® Core™ i7-11850HE (8C/16T, 2.60 GHz, 45W)<br>Intel® Core™ i5-11500HE (6C/12T, 2.60 GHz, 45W)<br>Intel® Core™ i3-11100HE (4C/8T, 2.40 GHz, 45W)<br>Intel® Celeron® 6600HE (2C/2T, 2.60 GHz, 35W) |
| Chipset           | Intel® 500 Series Mobile Chipset (RM590E/HM570E)   |
| Memory Type       | DDR4 3200, Dual Channel SODIMM x 2, Max 64GB (ECC supported by Xeon only)  |
| 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 (64bit)<br>Ubuntu 20.04.3/Kernel 5.11.0-27-generic x86_64 or above  |
| Power             |  |
| Power Requirement | +9V to +24V (Optional: +12V)   |
| Power Supply Type | AT/ATX   |
| Connector         | ATX 4-Pin connector + Phoenix 2-Pin Connector  |
| Power Consumption | Xeon® W-11865MRE, DDR4 32GB x 2, 8.32A@12V, 99.84W (TYPICAL)<br>Xeon® W-11865MRE, DDR4 32GB x 2, 12.52A@12V, 150.24W (MAX)   |
| Display           |  |
| Controller        | Intel® UHD Graphics for 11th Gen Intel® Processors   |
| LVDS/eDP          | LVDS x 1, Dual Channel 24/48bit, up to 1920 x 1080<br>eDP 1.4 x 1, up to 1920 x 1089   |
| Display Interface | VGA x 1, up to 1920 x 1080<br>DP++ 1.2 x 2, up to 3840 x 2160 @60Hz<br>HDMI 2.0 x 1, 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           | 2W Amp.  |
| External I/O      |  |
| Ethernet          | Intel® I225, 2.5GbE RJ-45 x 1<br>Intel® I219, 1GbE RJ-45 x 1   |
| USB               | USB 3.2 Gen 2 x 4  |
| Serial Port       | —  |
| Video             | VGA x 1<br>DP 1.2 x 2<br>HDMI 2.0 x 1  |

| Internal I/O                |  |
|-----------------------------|--|
| USB                         | USB 2.0 x 4  |
| Serial Port                 | COM 1, COM 2 (RS-232/422/485, supports 5V/12V/Ri)<br>COM 3, COM 4, COM 5, COM 6 (RS-232 only, supports RI only)                            |
| Video                       | LVDS or eDP x 1 (Default: LVDS)<br>LVDS Inverter 5V/12V @2A<br>VGA x 1   |
| SATA                        | SATA 6Gb/s x 2<br>+5V SATA Power Connector x 1 (Total up to 5V@2A)<br>(Up to 5V@1A, shared with 2 x 2.5"SSD as limitation with 170X000592) |
| Audio                       | Audio Header x 1   |
| DIO/GPIO                    | GPIO-16 bits   |
| SMBus/I2C                   | SMBus/I2C (Default : SMBus)  |
| Touch                       | 4/5/8-wire Touch Controller x 1  |
| Fan                         | 4 Pin Smart Fan  |
| SIM                         | Nano SIM x 1   |
| Front Panel                 | Power Button, Reset Button, Power LED, SATA LED, Buzzer  |
| Others                      | —  |
| Expansion                   |  |
| Mini PCI-E/mSATA            | Half Size mSATA/mPCIe x 1 (Default: mPCIe, selected by BIOS)   |
| M.2                         | M.2 2280 M-Key x 1 (PCIe 4.0 [x4] x 1)<br>M.2 3052 B-Key x 1 (PCIe 3.0 [x2]) + USB 3.2 + USB 2.0   |
| Others                      | PCIe 4.0 [x8] Slot x 1 (Supply maximum 25W to the PCIe peripheral)<br>FPC Connector x 1 (PCIe3.0 [x4] 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)                | 274,169  |
| EMC                         | CE/FCC Class A   |

## Packing List

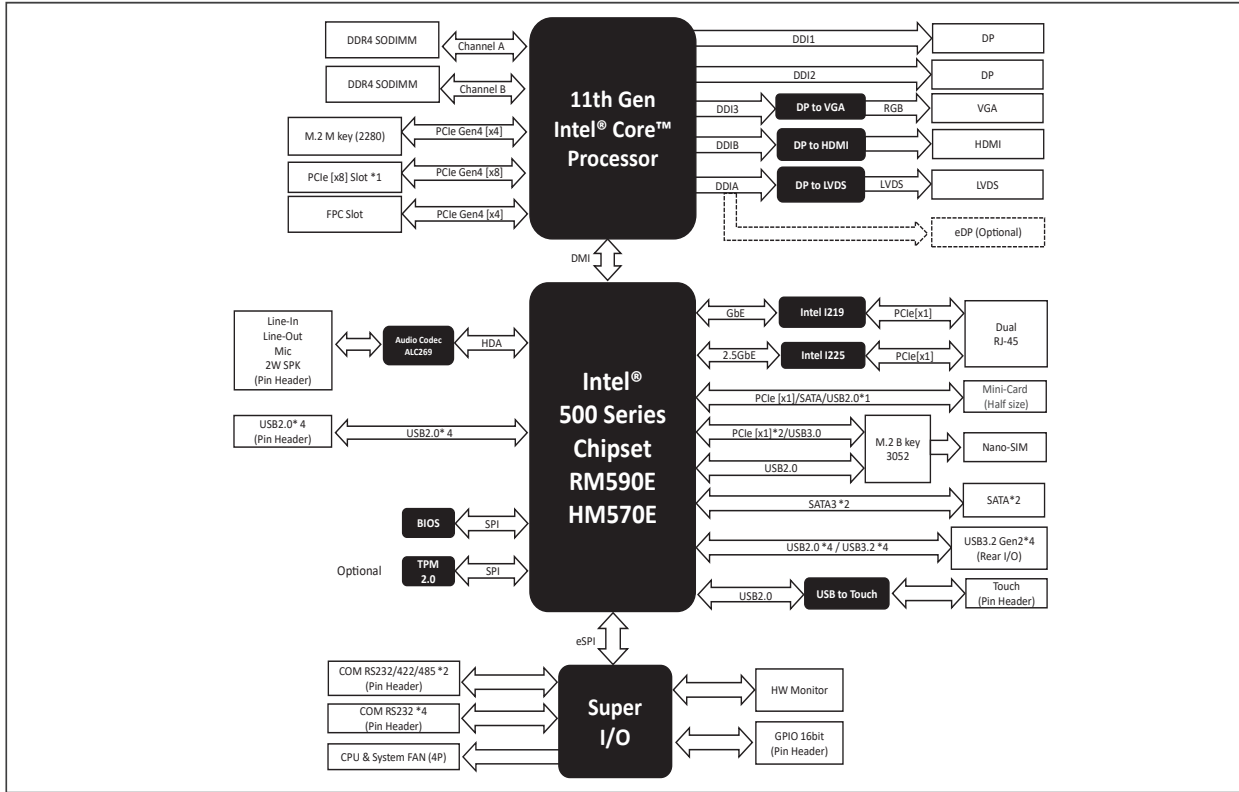
- EPIC-TGH7 x 1
- Screw kit x 1

## Optional Accessories

| Part Number     | Description                         | QTY |
|-----------------|-------------------------------------|-----|
| 170X000390      | USB2.0 x 4, Length 12 cm            | 1   |
| 1709150151      | VGA cable, Length 15 cm             | 1   |
| 1702150155      | SATA power cable, Length 15cm       | 1   |
| 170X000593      | SATA cable 15 cm                    | 1   |
| 170X000592      | SATA Power Y cable, Length 20 cm    | 1   |
| 170X000231      | Dual COM Port, Length 30 cm         | 1   |
| 170204010R      | Double 4P power cable, Length 10 cm | 1   |
| 170X000287      | Front Panel Cable, Length 10 cm     | 1   |
| 170X000156      | Audio Cable, Length 25 cm           | 1   |
| 170X000594      | Power Cable to DC Jack, 28cm        | 1   |
| EPIC-TGH7-FAN01 | 4 pin CPU Cooler for EPIC-TGH7      | 1   |

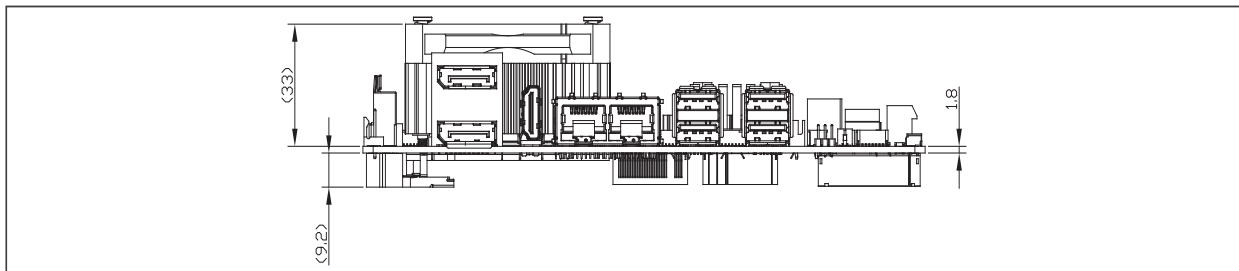
# EPIC-TGH7

## Block Diagram



## Dimension

Unit: mm



## Ordering Information

| Part Number        | CPU                      | Memory          | Display                             | Storage        | LAN                 | USB                            | COM Port                     | Expansion  | TPM      | Power   | Operating Temperature | Others                                |
|--------------------|--------------------------|-----------------|-------------------------------------|----------------|---------------------|--------------------------------|------------------------------|--|----------|---|-----------------------|---------------------------------------|
| EPIC-TGH7-A10-0001 | W-11865MRE (with RM590E) | DDR4 SODIMM x 2 | LVDS x 1, DP x 2, HDMI x 1, VGA x 1 | SATA 6Gb/s x 2 | 2.5GbE x 1, GbE x 1 | USB 3.2 Gen 2 x 4, USB 2.0 x 4 | RS232/422/485 x 2, RS232 x 4 | M.2 3052 B-key x 1, M.2 2280 M-key x 1, Mini Card (Half Size) x 1, FPC Connector x 1 | Optional | +9V to +24Vin (2 Pin Phoenix Connector + 4 Pin ATX Connector) | 0°C ~ 60°C            | GPIO 16 bits, Nano SIM x 1, Touch x 1 |
| EPIC-TGH7-A10-0002 | i7-11850HE (with HM570E) | DDR4 SODIMM x 2 | LVDS x 1, DP x 2, HDMI x 1, VGA x 1 | SATA 6Gb/s x 2 | 2.5GbE x 1, GbE x 1 | USB 3.2 Gen 2 x 4, USB 2.0 x 4 | RS232/422/485 x 2, RS232 x 4 | M.2 3052 B-key x 1, M.2 2280 M-key x 1, Mini Card (Half Size) x 1, FPC Connector x 1 | Optional | +9V to +24Vin (2 Pin Phoenix Connector + 4 Pin ATX Connector) | 0°C ~ 60°C            | GPIO 16 bits, Nano SIM x 1, Touch x 1 |
| EPIC-TGH7-A10-0003 | i5-11500HE (with HM570E) | DDR4 SODIMM x 2 | LVDS x 1, DP x 2, HDMI x 1, VGA x 1 | SATA 6Gb/s x 2 | 2.5GbE x 1, GbE x 1 | USB 3.2 Gen 2 x 4, USB 2.0 x 4 | RS232/422/485 x 2, RS232 x 4 | M.2 3052 B-key x 1, M.2 2280 M-key x 1, Mini Card (Half Size) x 1, FPC Connector x 1 | Optional | +9V to +24Vin (2 Pin Phoenix Connector + 4 Pin ATX Connector) | 0°C ~ 60°C            | GPIO 16 bits, Nano SIM x 1, Touch x 1 |
| EPIC-TGH7-A10-0004 | i3-11100HE (with HM570E) | DDR4 SODIMM x 2 | LVDS x 1, DP x 2, HDMI x 1, VGA x 1 | SATA 6Gb/s x 2 | 2.5GbE x 1, GbE x 1 | USB 3.2 Gen 2 x 4, USB 2.0 x 4 | RS232/422/485 x 2, RS232 x 4 | M.2 3052 B-key x 1, M.2 2280 M-key x 1, Mini Card (Half Size) x 1, FPC Connector x 1 | Optional | +9V to +24Vin (2 Pin Phoenix Connector + 4 Pin ATX Connector) | 0°C ~ 60°C            | GPIO 16 bits, Nano SIM x 1, Touch x 1 |

## 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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