

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)

Video	DP 1.2 x 2 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) COM 3, COM 4, COM 5, COM 6 (RS-232 only, supports RI only)
Video	LVDS or eDP x 1 (Default: LVDS) LVDS Inverter 5V/12V @2A VGA x 1
SATA	SATA 6Gb/s x 2 +5V SATA Power Connector x 1 (Total up to 5V@2A) (Up to 5V@1A, shared with 2 x 2.5" SSD as limitation with 170X000592)
Audio	Audio Header x 1 (No audio function support for wide temperature sku).
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) 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) FPC Connector x 1 (PCIe3.0 [x4] x 1)
Environment & Certification	
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C) WITAS 2: -40°F ~ 185°F (-40°C ~ 85°C) on selected CPU SKU (Note: To achieve the best performance, installing SODIMM heatsink for EPIC-TGH7 DIMM1 and DIMM2 is recommended.)
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

Specifications

System	
Form Factor	4" EPIC Board
CPU	Onboard 11th Generation Intel® Core™/Xeon® Processors: Intel® Xeon® W-11865MRE (8C/16T, 2.60 GHz, 45W) Intel® Core™ i7-11850HE (8C/16T, 2.60 GHz, 45W) Intel® Core™ i5-11500HE (6C/12T, 2.60 GHz, 45W) Intel® Core™ i3-11100HE (4C/8T, 2.40 GHz, 45W) 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 Intel® Xeon® SKU)
BIOS	UEFI
Wake On Lan	Yes
Watchdog Timer	255 Levels
Security	TPM 2.0 (Optional)
RTC Battery	Lithium Battery 3W/240mAh
Dimension	4.53" x 6.50" (115mm x 165mm)
OS Support	Windows 10 (64bit) 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) 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 eDP 1.4 x 1, up to 1920 x 1080 (Optional)
Display Interface	VGA x 1, up to 1920 x 1080 DP++ 1.2 x 2, up to 3840 x 2160 @60Hz HDMI 2.0 x 1, up to 3840 x 2160 @60Hz
Multiple Display	Up to 4 Simultaneous Displays
Audio	
CODEC	Realtek ALC269 (No audio function support for Wide temperature sku.)
Audio Interface	Line-In/Line-Out/Mic
Speaker	2W Amp.
External I/O	
Ethernet	Intel® I225/I226, 2.5GbE RJ-45 x 1 Intel® I219, 1GbE RJ-45 x 1
USB	USB 3.2 Gen 2 x 4
Serial Port	—

Packing List

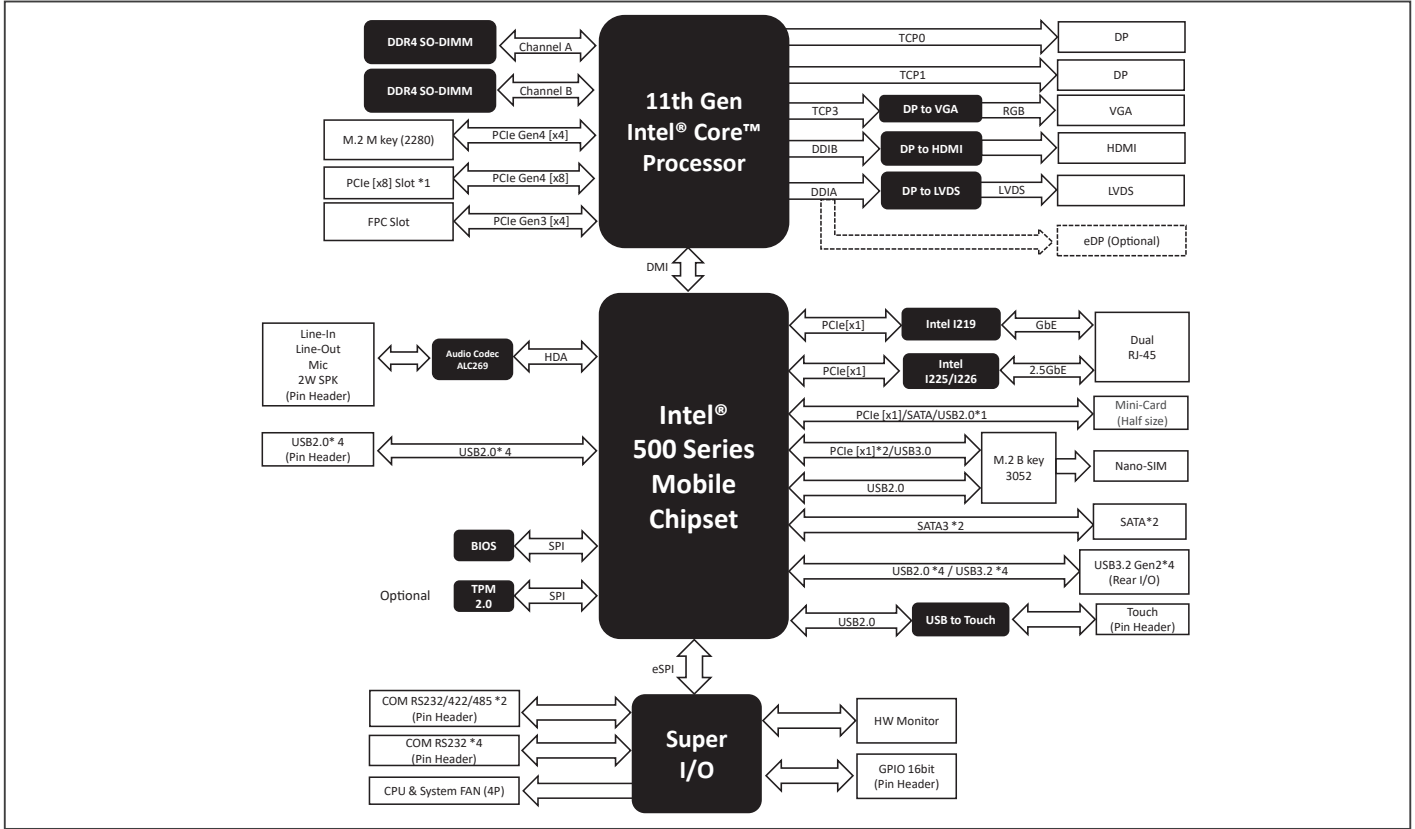
- EPIC-TGH7 x 1
- Screw kit x 1

Optional Accessories

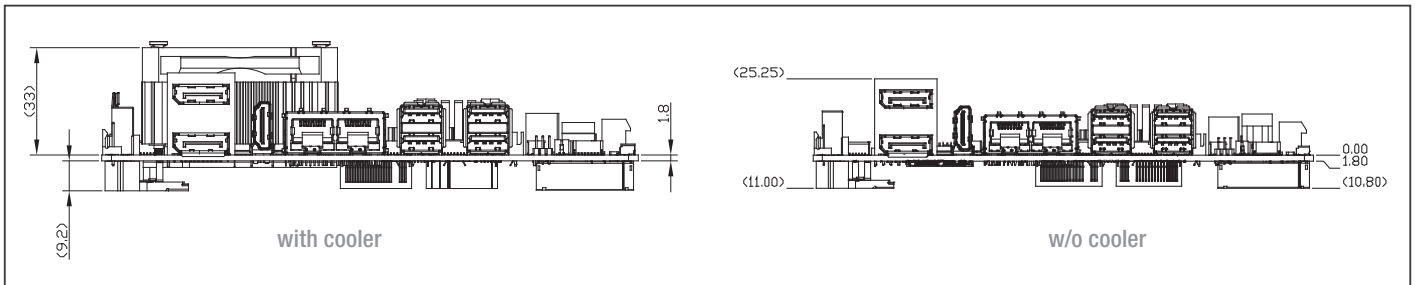
Part Number	Description	QTY
170X000390	USB2.0 x 4, Length 12 cm	1
170X000715	VGA cable, Length 25 cm	1
1702150155	SATA power cable, Length 15cm	1
170X000593	SATA cable 15 cm	1
170X000592	SATA Power Y cable, Length 20 cm	1
170X000231	Dual COM Port , Length 30 cm	1
170X001132	3 Pin ATX Cable	1
170204010R	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
M16SKU6010	DDR4 SODIMM Metal.AL.Heat Sink.72*28*10mm	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-TGH7-A11-0001	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-A11-0002	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-A11-0003	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-TGH7W2-A11-0001	W-11865MRE (with RM590)	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	2.0	+9V to +24Vin (2 Pin Phoenix Connector + 4 Pin ATX Connector)	-40°C ~ 85°C	GPIO 16 bits, Nano SIM x 1, Touch x 1