



EMS-TGL-PSE

11th Gen Intel® Core™ Processor i7/i5/i3 Fanless Rugged Embedded System w_PoE IET Mod

On board 11th Gen. Intel® Core™ i7/i5/i3 BGA P
2x 260-pin SODIMM socket Max. up to 64GB DC
3200MT/s

Rich I/O, 4-USB3.1, 2-USB2.0, 1-DP, 1-HDMI, 2-LAN, 4-PoE(af/at), 1-8bit GPIO.

Support 5G (Sub-6G) module, M.2 NVMe SSD C
4, HDMI 2.0b (4K @ 60Hz), LAN 2.5G Base-Tx C

Fanless operation temperature from -40°C ~ 60°
0°C ~ 60°C (ST)

CE, FCC Class A, IP50

Wide range DC power input from +9~36V

Support HW TPM 2.0



System Information-

Processor

Intel® Core™ i7-1185GRE (15W, 12M Cache, up to 2.80 GHz), WT
Intel® Core™ i5-1145GRE (15W, 8M Cache, up to 2.60 GHz), WT
Intel® Core™ i3-1115GRE (15W, 6M Cache, up to 3.00 GHz), WT
Intel® Core™ i7-1185G7E (15W, 12M Cache, up to 2.80 GHz), ST
Intel® Core™ i5-1145G7E (15W, 8M Cache, up to 2.60 GHz), ST
Intel® Core™ i3-1115G4E (15W, 6M Cache, up to 3.00 GHz), ST

System Memory

2 x 260-pin SODIMM socket Max. up to 64GB DDR4 3200 MT/s

I/O Chipset

EC ITE IT8528E

BIOS Information

AMI uEFI BIOS 256 Mbit SPI Flash ROM

Watchdog Timer

H/W Reset, 1sec. ~ 65535sec.

H/W Status Monitor

CPU & system temperature monitoring and Voltages monitoring

SBC

EBM-TGLS + IET-PSEB

Expansion

Expansion

1 x M.2 Key-B 2242/3042/3052 support SATA3/ PCIeIII x1/ USB3.1 and SIM slot1
1 x M.2 Key-E 2230 for Wi-Fi & BT Module(CNVi)

Storage

Storage

1 x M.2 Key-M 2242/2280, support PCIe Gen. III x 4 (NVMe SSD)
1 x M.2 Key-B 2242, support SATA (share with expansion slot)

I/O

USB Port

2 x USB 3.1 Gen.2 (10Gbp/s)
2 x USB 3.1 Gen.1 (5Gbp/s)
2 x USB 2.0

COM Port

2 x COM RS232/422/485 (select via BIOS, auto flow control via HW)

GPIO

1 x 8-bit GPIO (DB9)

SIM Slot

1 x internal SIM slot

Antenna

8 x Antenna with dust cover (6 x LTE+GPS / 2 x Wifi)

Display

Graphic Chipset

Intel® Iris® Xe Graphics (i7-1185GRE/i5-1145GRE/i7-1185G7E/i5-1145G7E)
Intel® UHD Graphics for 11th Gen Intel® Processors (i3-1115GRE/i3-1115G4E)

Spec. & Resolution

DP++ 1.4: Max. resolution 4096x2304 @ 60Hz
HDMI 2.0b: Max. resolution 4096x2304 @ 60Hz

Multiple Display

dual Displays

Audio

Audio Codec

Realtek ALC888S HD codec

Audio Interface

Mic-In, Line-Out

Certifications

Certification Information

CE
FCC Class A

Ethernet

LAN Chipset

EMS-TGL-PSEBF
1 x Intel® I225-LM
1 x Intel® I219-LM
4 x Intel® I210IT

EMS-TGL-PSEBT
1 x Intel® I225-LM

1 x Intel® I219-LM
2 x Intel® I210IT

W



Ethernet Interface	1 x 10/100/1000/2.5G Base-Tx GbE compatible 5 x 10/100/1000Base-Tx GbE compatible
LAN Port	EMS-TGL-PSEBF 6 x RJ45, 4 ports support IEEE 802.3af, total 60W EMS-TGL-PSEBT 4 x RJ45, 2 ports support IEEE 802.3at, total 60W

.Power Requirement

DC Input	DC in 12/24V (+9V ~ +36V), wide voltage single power input TVS component for surge protection Reverse current/voltage protection (Max. Currency: 13A)
DC Input Connector	3-Pin Terminal Block (V+, V-, GND)
ACPI	Single power ATX Support S0, S3, S4, S5 ACPI 5.0 Compliant
Power Mode	AT/ATX (ATX is default setting)

.Mechanical & Environmental

Operating Temperature	-40°C ~ 60°C (w/SSD) ambient w/ air flow, WT sku 0°C ~ 60°C (w/SSD) ambient w/ air flow, ST sku
Storage Temperature	-30°C ~ 70°C (-22°F ~ 158°F)
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing
Dimension (W x L x H)	240mm x 150mm x 69 mm (w/ IET module)
Weight	TBD
Vibration Test	With SSD : 5Grms, IEC 60068-2-64, Random, 5 ~ 500Hz, 1hr/axis
Shock Test	With SSD : 55Grms, IEC 60068-2-27, Half Sine, 11ms
IP Rating	IP 50
Mounting Kit	Wall mount kit (standard) DIN RAIL (optional)

.Software Support

OS Information	Win 10 64bit Linux
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.Ordering Information

Ordering Information	EMS-TGL-PSEBF 11th Gen Intel® Core™ Processor i7/i5/i3 Fanless Rugged Embedded System, w_PoE IET Module, support 4 port IE EMS-TGL-W85-A1-DR (i7-1185GRE) EMS-TGL-W45-A1-DR (i5-1145GRE) EMS-TGL-W15-A1-DR (i3-1115GRE) EMS-TGL-S85-A1-DR (i7-1185G7E) EMS-TGL-S45-A1-DR (i5-1145G7E) EMS-TGL-S15-A1-DR (i3-1115G4E) EMS-TGL-PSEBT 11th Gen Intel® Core™ Processor i7/i5/i3 Fanless Rugged Embedded System, w_PoE IET Module, support 2 port IE EMS-TGL-W85-A1-ER (i7-1185GRE) EMS-TGL-W45-A1-ER (i5-1145GRE) EMS-TGL-W15-A1-ER (i3-1115GRE) EMS-TGL-S85-A1-ER (i7-1185G7E) EMS-TGL-S45-A1-ER (i5-1145G7E) EMS-TGL-S15-A1-ER (i3-1115G4E)
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