

EMS-TGL-Marine

1th Generation Intel® Core™ i7/i5/i3 Marine Fanless Rugged Embedded System



Product Features

- Intel® 11th Tiger Lake-U Processor
- 2-Memory Socket, Max. Up to 64GB DDR4 3200
- Wide Operating Temp. -40°C ~ 60°C, Wide Voltage 9~36Vdc
- CE, FCC Class A, IEC 60945 Certified
- Intel® Iris® Xe/UHD Graphics, Max. Up to 96EU
- Rich I/O, 4-USB3.2, 2-USB2.0, 1-DP, 1-HDMI, 6-COM (4COM w/2.5KV isolation), 2-LAN, 1-8bit GPIO
- dTPM 2.0, vPro, iAMT 15.0

Specification

System Information

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

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

TPM TPM 2.0

iAMT iAMT 15.0 (Above i5 CPU)

SBC EBM-TGLS, EPM-1722, AUX-M07

Expansion

M.2 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(CNV1)

Storage

M.2	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)
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Front I/O

Power Button	1 x Push Button for Power on/off
Reset Button	1 x Push Button for Reset
COM Port	2 x COM RS232/422/485 (select via BIOS, auto flow control via HW)
LED Indicator	1 x Power LED (Blue) 1 x Storage LED (Yellow)- M.2 B-key SATA 1 x LTE LED (Green)- M.2 B-key PCIe 1 x Wifi LED (Green)- M.2 E key
Wire-Control Power On/Off	1 x 2-Pin Terminal Block
Digital I/O	1 x 8-bit GPIO (DB9)
Antenna	2 x Antenna with dust cover

Rear I/O

USB	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	4 x COM RS232/422/485 w/ 2.5KV Isolation
LAN Port	2 x RJ-45
DP	1 x DP++ 1.4
SIM Slot	1 x Internal SIM slot
Audio	1 x Mic-In 1 x Line-Out
HDMI	1 x HDMI 2.0b
Antenna	2 x Antenna with dust cover
AC/DC Input	1 x 3-Pin Terminal Block (V+, V-, GND)

Right I/O

Antenna	2 x Antenna with dust cover
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Left I/O

Antenna	2 x Antenna with dust cover
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Display

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

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

Audio

Audio Codec Realtek ALC888S HD codec

Ethernet

LAN Chipset 1 x Intel® I225-LM
1 x Intel® I219-LM

Specification 1 x 10/100/1000/2.5G Base-Tx GbE compatible
1 x 10/100/1000Base-Tx GbE compatible.

Power Requirement

ACPI Single power ATX Support S0,S3, S4, S5
ACPI 5.0 Compliant

Power Mode AT/ATX (ATX is default setting)

Voltage Input Spec. 9Vdc~36Vdc w/1.5KV Isolation
TVS component for surge protection
Reverse current/voltage protection

Software Support

OS Win 10 / Win11 / Linux

Certification

Certification Information CE, FCC Class A, IEC 60945 Certified

Mechanical & Environmental

Operating Temp. -40°C ~ 60°C (w/SSD) ambient w/ air flow,

Storage Temp. -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

Weight 2.4 kg (System)
3.4 kg (w_Package)

Vibration Test With SSD : 5Grms, IEC 60068-2-64, Random, 5 ~ 500Hz, 0.5hr/axis

Shock Test With SSD : 10G, IEC 60068-2-27, Half Sine, 11ms

IP Rating

IP 50

Mounting Kit

Wall mount kit (standard)
DIN RAIL (optional)

Ordering Information

Ordering Information

Intel® 11th Tiger Lake Core™ Processor i7/i5/i3 Marine Fanless Rugged Embedded System

EMS-TGL-W85-A1-9R (i7-1185GRE)

EMS-TGL-W45-A1-9R (i5-1145GRE)

EMS-TGL-W15-A1-9R (i3-1115GRE)
