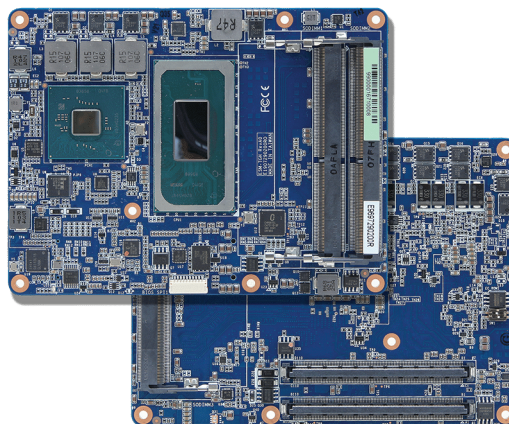


\* This is an OEM Only Product

## Features

- PICMG COM R3.0 Type 6 module with 10nm 11th Generation Intel® Xeon™ W-11865MRE/W-11155MRE (ECC), Core™ i7/i5/i3 BGA Processors
- 3 x SODIMM sockets support DDR4 3200 up to 96GB
- Gen 12 Intel® UHD Graphics (Xe Architecture), media, and display up to 32EU
- Flexible I/O support: 4 x SATA III (6.0Gb/s), 4 x USB 3.2 Gen 2x1 (10Gbp/s), 8 x USB 2.0, 8-bit GPIO
- 1 Gen4 PEG x16, 8 x PCIe x1
- Intel® Ethernet Controller I225-LM (2.5GbE)
- 9V~19V Wide Range Voltage Input
- TPM 2.0



## Specifications

System	
CPU	Mobile 11th Gen 10nm Intel® Xeon® and Core™ Processors Intel® Xeon™ W-11865MRE 45W (35W cTDP), 8-Cores/16Threads (ECC) Intel® Xeon™ W-11155MRE 45W (35W cTDP), 4-Cores/8T (ECC) Intel® Core™ i7-11850HE 45W (35W cTDP), 8-Cores/16T (non-ECC) Intel® Core™ i5-11500HE 45W (35W cTDP), 6-Cores/12T (non-ECC) Intel® Core™ i3-11100HE 45W (35W cTDP), 4-Cores/8T (non-ECC)
PCH	Intel® Xeon™ W-11865MRE/W-11155MRE: Intel® RM590E PCH Intel® Core™ i7-11850HE/i5-11500HE/i3-11100HE: Intel® HM570E PCH
System Memory	3 x 260-pin SODIMM sockets support DDR4 3200 up to 96GB
BIOS	AMI uEFI BIOS, 256Mbit SPI Flash ROM
I/O Chip	EC (ITE IT5571)
Watchdog Timer	H/W Reset, 1sec. ~ 65535sec. and 1sec./step
H/W Status Monitor	Monitoring System Temperature, Voltage and FAN Status with Auto Throttling Control
TPM	TPM 2.0
OS Support	Windows 10 64-bit Linux (Kernel > 5.8)

Display	
Chipset	Gen 12 Intel® UHD Graphics (Xe Architecture)
Resolution	HDMI 2.0b: 4096 x 2304 @ 60Hz DP 1.4: 4096x2304 @ 60Hz LVDS: 1920x1080 @ 60Hz, Dual-channel 18/24-bit LVDS (via eDP-to-LVDS) VGA: 1920x1200 @ 60Hz (via DP to VGA) Optional eDP 1.4b: 4096x2304 @ 60Hz  Note 1: Per Intel design guide, Redriver in carrier board is needed for fine-tuning the DP 1.4 signal. Note 2: Only support 4Lanes 2560x1440 & 2Lanes 1920x1080
Multi-Display	Supports 4 Independent Displays up to 2K (3 x DDI + eDP)

Ethernet	
Chipset	Intel® I225-LM/IT Ethernet Controller (2.5GbE)
Interface	10/100/1000/2500 Base-Tx GbE compatible
I/O	
HDMI	HDMI 2.0b
USB	Supports 4 x USB 3.2 Gen 2x1 (10Gbps) 8 x USB 2.0
SATA	Supports 4 x SATA III (6.0Gb/s)
DIO	8-bit GPIO
Other	1 x LPC (via eSPI to LPC bridge), I2C, SMBus, 2 x UART (2-wire)

## Mechanical & Environment

Power Requirement	+9- +19V
ACPI	Single power ATX supports S0, S4, S5 ACPI 5.0a Compliant
Power Type	AT/ATX
Operating Temp	Operating Standard: 0 ~ 60 °C (32 ~ 140 °F) Operating Industrial (select SKUs): -40°C ~ 75°C (-40°F ~ 167°F)
Storage Temp	-40°C ~ 85°C (-40°F ~ 185°F)
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing
Certification	CE, FCC Class B, RoHS Compliant
Form Factor	PICMG COM R3.0 Type 6 COM Express Module
Dimensions	4.92" x 3.74" (125mm x 95mm)
Weight	0.44lbs (0.2kg)

## Ordering Info

ESM-TGH-11865MRE	Intel® RM590E, Xeon® W-11865MRE 2.6GHz 8 Cores, 3 x DDR4 SODIMM, eDP/LVDS, VGA, DP/HDMI, 1 x 2.5Gbps LAN
ESM-TGH-11155MRE	Intel® RM590E, Xeon® W-11155MRE 2.4GHz 4 Cores, 3 x DDR4 SODIMM, eDP/LVDS, VGA, DP/HDMI, 1 x 2.5Gbps LAN
ESM-TGH-11850HE	Intel® HM570E, i7-11850HE 2.6GHz 8 Cores, 3 x DDR4 SO-DIMM, eDP/LVDS, VGA, DP/HDMI, 1 x 2.5Gbps LAN
ESM-TGH-11500HE	Intel® HM570E, i5-11500HE 2.6GHz 6 Cores, 3 x DDR4 SO-DIMM, eDP/LVDS, VGA, DP/HDMI, 1 x 2.5Gbps LAN
ESM-TGH-11100HE	Intel® HM570E, i3-11100HE 2.4GHz 8 Cores, 3 x DDR4 SO-DIMM, eDP/LVDS, VGA, DP/HDMI, 1 x 2.5Gbps LAN
EEV-EX16	Eval Carrier Board for ESM-EHLC/TGH in Micro ATX form factor
ACC-ESMTGH-CL-1R	CPU Cooler for ESM-TGH W/FAN H=56mm
ACC-ESMTGH-CL-2R	CPU Cooler for ESM-TGH W/FAN H=68.5mm
ACC-ESMTGH-SD-1R	CPU Heatspreader for ESM-TGH H=11mm

\* All product specifications and images are subject to change without notice. Last update: 02/02/2023



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