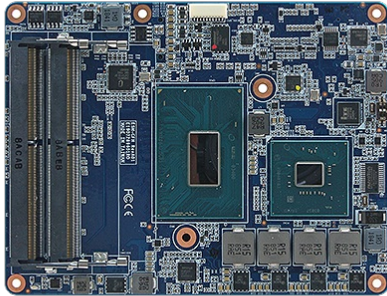




## ESM-CFH

**PICMG COM R3.0 Type 6 module with Intel® 9th/8th Generation Xeon®/Core™ i7 / i5 / i3 Processors with CM246/QM370 Chipset**



- > PICMG COM R3.0 Type 6 module with Intel® 9th/8th Generation Xeon®/Core™ i7 / i5 / i3 Processors
- > Up to 3x 260-pin DDR4 non-ECC/ECC 2400/2133 SO-DIMM with up to 96 GByte
- > Dual-channel 18/24-bit LVDS, VGA, DP/HDMI/DVI, (eDP Option)
- > Flexible I/O support with 4 USB3.2 Gen.2, 8 USB 2.0, Gen3 PEGx16, 8 PCIe1 & 4 SATAIII
- > Intel® I219LM Gigabit Ethernet PHY
- > 9V~19V Wide Range Voltage Input
- > TPM 2.0
- > AMT 12.0 support

### + Spec

-System Information-	
<b>Processor</b>	Mobile 9th Generation Intel® Xeon®, Core™, Pentium® and Celeron® Processors - 14nm processor Xeon® E-2276ME 45W (35W cTDP), 6C/GT2 (ECC/non-ECC) Xeon® E-2276ML* 25W, 6C/GT2 (ECC/non-ECC) Xeon® E-2254ME* 45W (35W cTDP), 4C/GT2 (ECC/non-ECC) Xeon® E-2254ML* 25W, 4C/GT2 (ECC/non-ECC) Core™ i7-9850HE 45W (35W cTDP), 6C/GT2 (non-ECC) Core™ i7-9850HL* 25W, 6C/GT2 (non-ECC) Core™ i3-9100HL 25W, 4C/GT2 (ECC/non-ECC) Celeron® G4930E* 35W, 2C/GT1 (ECC/non-ECC) Celeron® G4932E* 25W, 2C/GT1 (ECC/non-ECC) Mobile 8th Generation Intel Xeon® and Core™ Processors - 14nm process Xeon® E-2176M* 45W (35W cTDP), 6C/GT2 (ECC/non-ECC) Core™ i7-8850H* 45W (35W cTDP), 6C/GT2 (non-ECC) Core™ i5-8400H 45W (35W cTDP), 4C/GT2 (non-ECC) Core™ i3-8100H* 45W (35W cTDP), 4C/GT2 (ECC/non-ECC) *SKU is project based support. Please contact sales for details
<b>Platform Controller Hub</b>	CM246 (supports ECC memory, Intel® AMT and PEG configuration) QM370 (supports Intel® AMT and PEG configuration)
<b>System Memory</b>	Up to 3x 260-pin DDR4-2400/2133 SO-DIMM with up to 96 GByte Note:ECC supported only on specific models with Xeon & i3 CPU paired with CM246 supports both ECC and non-ECC memory)
<b>I/O Chipset</b>	EC(IT8528E)
<b>BIOS Information</b>	AMI uEFI BIOS, 128 Mbit SPI Flash ROM iAMT 12.0 supported (only on specific models with Xeon/i7/i5 SKU)
<b>Watchdog Timer</b>	H/W Reset, 1sec. ~ 65535sec. and 1sec./step
<b>H/W Status Monitor</b>	Monitoring System Temperature, Voltage and FAN Status with Auto Throttling Control
Expansion	
<b>Expansion</b>	1xPCIe x16 Gen3 (configurable to 1 PCIe x16, 2 PCIe x8, or 1 PCIe x8 + 2 PCIe x4) 8xPCIe x1, configurable to x4 or x2 *6 x PCIe1 (PCIe0~3 w/RST , PCIe4,5) *2 x PCIe1 (PCIe6, PCIe7)
I/O	
<b>USB Port</b>	4 x USB 3.2 Gen.2 (10 Gbps)/ USB 3.2 Gen.1 8 x USB 2.0 (EHCI)
<b>GPIO</b>	8bit GPIO (Share with SDIO, Optional), WDG/HW monitor/FAN
<b>MIO</b>	4 x SATAIII 6.0Gb/s (Support RAID0,1,5,10) LPC, I2C, SPI, SMBus, 2 x UART(2-wire), SDIO (optional)
<b>HDMI</b>	HDMI 1.4
Display	
<b>Graphic Chipset</b>	Intel® Coffee Lake Processor integrated Graphics
<b>Spec. &amp; Resolution</b>	eDP 1.4(optional): 4096x2304 @60Hz optional (only one display output) HDMI 1.4: 4096x2160 @30Hz (only one display output) DP 1.2: 4096x2304 @60Hz (only one display output) LVDS(via eDP-to-LVDS IC): 1920x1080 @60Hz VGA(via DP-to-VGA IC): 1920x1080 @60Hz
<b>Multiple Display Interface</b>	supporting 3 independent and simultaneous display LVDS(eDP)+ VGA(HDMI)+DDI(HDMI or DP) Dual-channel 18/24-bit LVDS (LVDS via CH7511B)
Audio	
<b>Audio Codec</b>	Intel HD audio I/F
Ethernet	
<b>LAN Chipset</b>	Intel I219LM
<b>Ethernet Interface</b>	10/100/1000 GbE connection
Mechanical & Environmental	
<b>Operating Temperature</b>	0 ~ 60 °C (32 ~ 140 °F)



<b>Storage Temperature</b>	-40°C ~ 75°C (-40°F ~ 167°F)
<b>Operating Humidity</b>	40°C @ 95% Relative Humidity, Non-condensing
<b>Weight</b>	0.44lbs(0.2kg)
<b>Power Requirement</b>	+9~ +19V
<b>ACPI</b>	Single power ATX Support S0, S3, S4, S5 ACPI 4.0 Compliant
<b>Power Mode</b>	AT/ATX
<b>Dimension (L x W)</b>	125*95 mm (3.74" x 4.92")
<b>Software Support</b>	
<b>OS Information</b>	Microsoft® Windows 10 64-bit Linux
<b>Ordering Information</b>	
<b>Ordering Information</b>	<p>ESM-CFH-2276ME-A1R Intel® Xeon® 2276ME with CM246 chipset Type6 COMe Basic Module</p> <p>ESM-CFH-9850HE-A1R Intel® Core™ i7-9850HE with QM370 chipset Type6 COMe Basic Module</p> <p>ESM-CFH-8400H-A1R Intel® Core™ i5-8400H with QM370 chipset Type6 COMe Basic Module</p> <p>ESM-CFH-9100HL-A1R Intel® Core™ i3-9100HL with QM370 chipset Type6 COMe Basic Module</p> <p>EEV-EX14-B1R mATX Ev. Board for COMe Type 6 A2</p> <p>ACC-ESMCFH-CL-1R Cooler for ESM-CFH W/FAN H=44.6m</p> <p>ACC-ESMCFH-SD-1R Heatspreader for ESM-CFH H=8.0m</p>