



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-	
Processor	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
Platform Controller Hub	CM246 (supports ECC memory, Intel® AMT and PEG configuration) QM370 (supports Intel® AMT and PEG configuration)
System Memory	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)
I/O Chipset	EC(IT8528E)
BIOS Information	AMI uEFI BIOS, 128 Mbit SPI Flash ROM iAMT 12.0 supported (only on specific models with Xeon/i7/i5 SKU)
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
Expansion	
Expansion	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 PCIe x1 (PCIe0~3 w/RST, PCIe4,5) *2 x PCIe x1 (PCIe6, PCIe7)
I/O	
USB Port	4 x USB 3.2 Gen.2 (10 Gbps)/ USB 3.2 Gen.1 8 x USB 2.0 (EHCI)
GPIO	8bit GPIO (Share with SDIO, Optional), WDG/HW monitor/FAN
MIO	4 x SATAIII 6.0Gb/s (Support RAID0,1,5,10) LPC, I2C, SPI, SMBus, 2 x UART(2-wire), SDIO (optional)
HDMI	HDMI 1.4
Display	
Graphic Chipset	Intel® Coffee Lake Processor integrated Graphics
Spec. & Resolution	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
Multiple Display Interface	supporting 3 independent and simultaneous display LVDS(eDP)+ VGA(HDMI)+DDI(HDMI or DP) Dual-channel 18/24-bit LVDS (LVDS via CH7511B)
Audio	
Audio Codec	Intel HD audio I/F
Ethernet	
LAN Chipset	Intel I219LM
Ethernet Interface	10/100/1000 GbE connection
Mechanical & Environmental	
Operating Temperature	0 ~ 60 °C (32 ~ 140 °F)



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