



EPS-CFS

Intel® 8th/9th Coffee Lake Rugged Fanless Embedded System

- > 8th/9th Generation Intel® Processors (6-Core/8-Core)
- > Intel® Q370/H310 Express Chipset
- > Intel® UHD Graphics 630/610
- > Intel® Gigabit LAN Controller
- > Memory Max. Up to 32GB DDR4 2666
- > mPCIe Expansion Slot (Max. Up to 2)
- > -10~60C Operating Temperature
- > Support RAID 0/1 (Q370 only)
- > Support Firmware TPM 2.0

+ Spec

System Information	
Processor	Intel® Core™ i7-8700T Processor (12M Cache, up to 4.00 GHz) Intel® Core™ i5-8500T Processor (9M Cache, up to 3.50 GHz) Intel® Core™ i3-8100T Processor (6M Cache, 3.10 GHz) Intel® Pentium® Gold G5400T Processor (4M Cache, 3.10 GHz) Intel® Celeron® G4900T Processor (2M Cache, 2.90 GHz) Intel® Core™ i7-9700TE Processor (12M Cache, up to 3.80 GHz) Intel® Core™ i5-9500TE Processor (9M Cache, up to 3.60 GHz) Intel® Core™ i3-9100TE Processor (6M Cache, up to 3.20 GHz)
Platform Controller Hub	Intel® Q370 Express Chipset Intel® H310 Express Chipset
System Memory	1 x 260-Pin SO-DIMM Socket, Max. Up to 32GB DDR4 2400/2666MHz
BIOS Information	AMI UEFI BIOS, 256 Mbit SPI Flash ROM
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 (Firmware)
SBC	ECM-CFS
Expansion	
Expansion	1 x mPCIe Socket (Q370 w/PCIe/SATA/USB 2.0) (H310 w/SATA/USB2.0) 1 x mPCIe Socket (USB, Factory Option)
Storage	
Storage	1 x mSATA 2 x 2.5" Drive Bay (Internal)
I/O	
USB Port	2 x USB 2.0 4 x USB 3.2 (w/Q370 Gen. 2, w/H310 Gen. 1)
COM Port	2 x RS-232
GPIO	1 x 8-Bit GPIO
Antenna	2 x Antenna Mounting Hole
System Control	
LED Indicator	1 x Power on/off LED on Rear side 1 x Storage Access LED on Front/Rear side
Display	
Graphic Chipset	Intel® UHD Graphics 630 (i7-8700T,i7-9700TE, i5-8500T,i5-9500TE, i3-8100T,i3-9100TE) Intel® UHD Graphics 610 (Pentium G5400T, Celeron G4900T)
Spec. & Resolution	2 x HDMI 1.4: Max. Resolution 4096x2304@24Hz
Multiple Display	Dual Display
Audio	
Audio Codec	Realtek ALC888S
Audio Interface	1 x Mic-In 1 x Line-Out
Certifications	
Certification Information	CE FCC Class B
Ethernet	
LAN Chipset	1 x Intel® I211AT 1 x Intel® I219LM
Ethernet Interface	10/100/1000 Base-Tx GbE compatible



LAN Port	2 x RJ-45
Power Requirement	
DC Input	+12V
DC Input Connector	Lockable DC Jack
ACPI	Single Power ATX Support S0,S3, S4, S5 ACPI5.0 Compliant
Power Mode	AT/ATX (ATX is default setting)
Adapter	Input: 100 ~ 240Vdc/ 50 ~ 60Hz Output: AC-DC 120W Adapter
Mechanical & Environmental	
Operating Temperature	With extended temperature peripherals:-10°C ~ 60°C (14°F ~ 140°F), with 0.5m/s air flow(i5/i7 CPU) With extended temperature peripherals:-10°C ~ 50°C (14°F ~ 122°F), with 0.2m/s air flow(i5/i7 CPU) With extended temperature peripherals:-10°C ~ 45°C (14°F ~ 113°F), with 0.5m/s air flow(i3-8100T)
Storage Temperature	-40°C ~ 75°C (-40°F ~ 167°F)
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing
Dimension (W x L x H)	212mm x 240mm x 85mm
Weight	5.4kg (w/Packing) 3.1kg (System)
Vibration Test	With SSD: 5Grms, IEC 60068-2-64, Random, 5 ~ 500Hz, 30min/axis
Shock Test	With SSD: 50Grms, IEC 60068-2-27, Half Sine, 11ms
Mounting Kit	Wall Mount kit (Standard)
Power Requirement	+12V
ACPI	Single Power ATX Support S0,S3, S4, S5 ACPI5.0 Compliant
Power Mode	AT/ATX (ATX is default setting)
Drop	ISTA 2A, IEC-60068-2-32 Test : Ed
Construction	Aluminum + Metal
Software Support	
OS Information	Win10 Linux
Ordering Information	
Ordering Information	With Intel® Q370 Chipset EPS-CFS-Q37-B1-1R (i7-8700T) EPS-CFS-Q37-B1-2R (i5-8500T) EPS-CFS-Q37-B1-3R (i3-8100T) EPS-CFS-Q37-B1-4R (Pentium Gold G5400T) EPS-CFS-Q37-B1-5R (Celeron G4900T) EPS-CFS-Q37-B1-6R (i7-9700TE) EPS-CFS-Q37-B1-7R (i5-9500TE) EPS-CFS-Q37-B1-8R (i3-9100TE) With Intel® H310 Chipset EPS-CFS-H31-B1-1R (i7-8700T) EPS-CFS-H31-B1-2R (i5-8500T) EPS-CFS-H31-B1-3R (i3-8100T) EPS-CFS-H31-B1-4R (Pentium Gold G5400T) EPS-CFS-H31-B1-5R (Celeron G4900T) EPS-CFS-H31-B1-6R (i7-9700TE) EPS-CFS-H31-B1-7R (i5-9500TE) EPS-CFS-H31-B1-8R (i3-9100TE)