



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

|                                       |  |
|---------------------------------------|--|
| <b>LAN Port</b>                       | 2 x RJ-45  |
| <b>Power Requirement</b>              |  |
| <b>DC Input</b>                       | +12V   |
| <b>DC Input Connector</b>             | Lockable DC Jack   |
| <b>ACPI</b>                           | Single Power ATX Support S0,S3, S4, S5<br>ACPI 5.0 Compliant   |
| <b>Power Mode</b>                     | AT/ATX (ATX is default setting)  |
| <b>Adapter</b>                        | Input: 100 ~ 240Vdc/ 50 ~ 60Hz<br>Output: AC-DC 120W Adapter   |
| <b>Mechanical &amp; Environmental</b> |  |
| <b>Operating Temperature</b>          | With extended temperature peripherals:-10°C ~ 60°C (14°F ~ 140°F), with 0.5m/s air flow(i5/i7 CPU)<br>With extended temperature peripherals:-10°C ~ 50°C (14°F ~ 122°F), with 0.2m/s air flow(i5/i7 CPU)<br>With extended temperature peripherals:-10°C ~ 45°C (14°F ~ 113°F), with 0.5m/s air flow(i3-8100T)  |
| <b>Storage Temperature</b>            | -40°C ~ 75°C (-40°F ~ 167°F)   |
| <b>Operating Humidity</b>             | 40°C @ 95% Relative Humidity, Non-condensing   |
| <b>Dimension (W x L x H)</b>          | 212mm x 240mm x 85mm   |
| <b>Weight</b>                         | 5.4kg (w/Packing)<br>3.1kg (System)  |
| <b>Vibration Test</b>                 | With SSD: 5Grms, IEC 60068-2-64, Random, 5 ~ 500Hz, 30min/axis   |
| <b>Shock Test</b>                     | With SSD: 50Grms, IEC 60068-2-27, Half Sine, 11ms  |
| <b>Mounting Kit</b>                   | Wall Mount kit (Standard)  |
| <b>Power Requirement</b>              | +12V   |
| <b>ACPI</b>                           | Single Power ATX Support S0,S3, S4, S5<br>ACPI 5.0 Compliant   |
| <b>Power Mode</b>                     | AT/ATX (ATX is default setting)  |
| <b>Drop</b>                           | ISTA 2A, IEC-60068-2-32 Test : Ed  |
| <b>Construction</b>                   | Aluminum + Metal   |
| <b>Software Support</b>               |  |
| <b>OS Information</b>                 | Win10<br>Linux   |
| <b>Ordering Information</b>           |  |
| <b>Ordering Information</b>           | <p>With Intel® Q370 Chipset EPS-CFS-Q37-B1-1R (i7-8700T)<br/> EPS-CFS-Q37-B1-2R (i5-8500T)<br/> EPS-CFS-Q37-B1-3R (i3-8100T)<br/> EPS-CFS-Q37-B1-4R (Pentium Gold G5400T)<br/> EPS-CFS-Q37-B1-5R (Celeron G4900T)<br/> EPS-CFS-Q37-B1-6R (i7-9700TE)<br/> EPS-CFS-Q37-B1-7R (i5-9500TE)<br/> EPS-CFS-Q37-B1-8R (i3-9100TE)</p> <p>With Intel® H310 Chipset<br/> EPS-CFS-H31-B1-1R (i7-8700T)<br/> EPS-CFS-H31-B1-2R (i5-8500T)<br/> EPS-CFS-H31-B1-3R (i3-8100T)<br/> EPS-CFS-H31-B1-4R (Pentium Gold G5400T)<br/> EPS-CFS-H31-B1-5R (Celeron G4900T)<br/> EPS-CFS-H31-B1-6R (i7-9700TE)<br/> EPS-CFS-H31-B1-7R (i5-9500TE)<br/> EPS-CFS-H31-B1-8R (i3-9100TE)</p> |