

# ECS-9000-6F

Quad Core Intel® Xeon®/Core™ i7/i5/i3 (Kaby Lake) Fanless Embedded System with Intel® C236 Chipset, 6 GigE LAN with 2 SFP, 3 SIM, 6 USB 3.0, High Performance, Rugged, -40°C to 75°C Extended Temperature



## Features

- LGA 1151 Socket supports workstation-grade Intel® Xeon®/Core™ i7/i5/i3 Processor with Intel® C236 Chipset
- Fanless, -40°C to 75°C Operating Temperature
- 6 Independent GigE LAN with 2 SFP, iAMT 11.0 supported
- DVI-I, DVI-D and DisplayPort display interface, up to 4K display
- Front-access : 3 SIM Socket, 1 CFast, 4 USB 3.0
- 3 Mini PCIe for WiFi/4G/3G/LTE/GPRS/UMTS
- 4 COM, 6 USB 3.0, 16 GPIO
- 6V to 36V DC Power Input with 80V Surge Protection
- Configurable Ignition Power Control



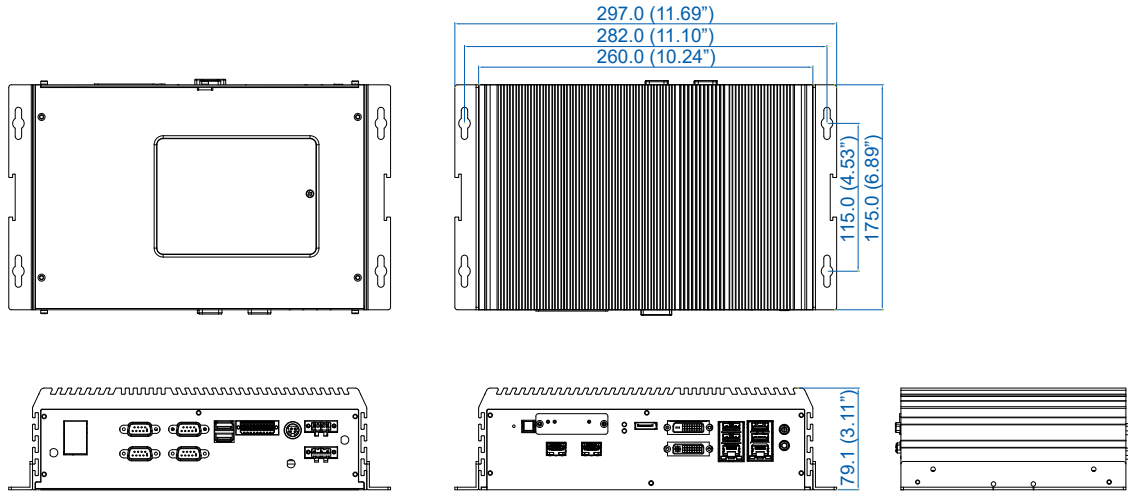
## Specifications

System	
<b>Processor</b>	Intel® Xeon®/Core™ i7/i5/i3 Processor (Kaby Lake-S/Skylake-S)
<b>Chipset</b>	Intel® C236
<b>BIOS</b>	AMI
<b>SIO</b>	IT8786E
<b>Memory</b>	2 DDR4 2400/2133 MHz SO-DIMM, up to 64GB
I/O Interface	
<b>Serial</b>	4 COM RS-232/422/485
<b>USB</b>	<ul style="list-style-type: none"> <li>▪ 6 USB 3.0 (External)</li> <li>▪ 1 USB 2.0 (Internal)</li> </ul>
<b>GPIO</b>	16 GPIO
<b>LED</b>	Power, HDD, Wireless
<b>SIM Card</b>	3 SIM Card Socket (External)
Expansion	
<b>Mini PCIe</b>	3 Mini PCIe Socket : <ul style="list-style-type: none"> <li>▪ 2 Full-size for PCIe/USB/External SIM Card/mSATA</li> <li>▪ 1 Half-size for PCIe/USB 3.0/External SIM Card</li> </ul>
Graphics	
<b>Graphics Processor</b>	Intel® HD Graphics P630/630/P530/530
<b>Display Memory</b>	Shared Memory, up to 1.7GB
<b>Interface</b>	<ul style="list-style-type: none"> <li>▪ DVI-I : Up to 1920 x 1200 @ 60Hz</li> <li>▪ DVI-D : Up to 1920 x 1200 @ 60Hz</li> <li>▪ DisplayPort : Up to 4096 x 2304 @ 60Hz</li> </ul>
Storage	
<b>SATA</b>	2 SATA III (6Gbps)
<b>mSATA</b>	2 SATA III (Mini PCIe Type, 6Gbps)
<b>SATA DOM</b>	1 SATA II (3Gbps)
<b>Storage Device</b>	<ul style="list-style-type: none"> <li>▪ 1 CFast Socket, Push-in/Push-out Ejector</li> <li>▪ 2 2.5" SSD/HDD Bracket (Internal)</li> </ul>
Audio	
<b>Audio Codec</b>	Realtek ALC888S-VD, 7.1 Channel HD Audio
<b>Audio Interface</b>	1 Mic-in, 1 Line-out
Ethernet	
<b>LAN 1</b>	Intel® I219LM GigE LAN supports iAMT 11.0
<b>LAN 2</b>	Intel® I210 GigE LAN
<b>LAN 3</b>	Intel® I210 GigE LAN
<b>LAN 4</b>	Intel® I210 GigE LAN

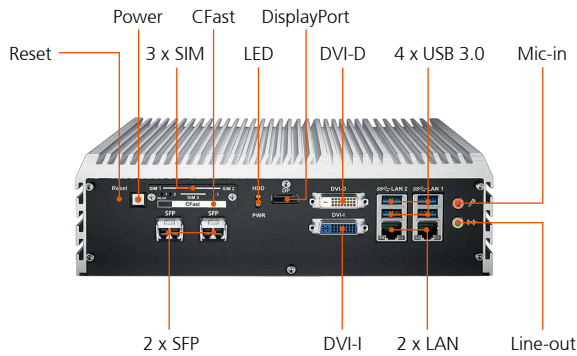
SFP	
<b>LAN 5</b>	Intel® I350 GigE LAN supports SFP
<b>LAN 6</b>	Intel® I350 GigE LAN supports SFP
Power	
<b>Power Input</b>	6V to 36V, DC-in
<b>Power Interface</b>	<ul style="list-style-type: none"> <li>▪ 3-pin Terminal Block : V+, V-, Frame Ground</li> <li>▪ Mini-DIN 4-pin</li> </ul>
<b>Ignition Control</b>	16 Mode (Internal)
<b>Remote Switch</b>	3-pin Terminal Block : On, Off, IGN
<b>Surge Protection</b>	Up to 80V/1ms Transient Power
Others	
<b>TPM</b>	Optional Infineon SLB9665 supports TPM 2.0, LPC Interface
<b>Watchdog Timer</b>	Reset : 1 to 255 sec./min. per step
<b>Smart Management</b>	Wake on LAN, PXE supported
<b>HW Monitor</b>	Monitoring temperature, voltages. Auto throttling control when CPU overheats.
Software Support	
<b>OS</b>	Windows 10, Windows 8.1, Windows 7, Linux
Mechanical	
<b>Dimensions</b>	260mm x 175mm x 79mm (10.24" x 6.89" x 3.11")
<b>Weight</b>	3.8 kg (8.38 lb)
<b>Mounting</b>	<ul style="list-style-type: none"> <li>▪ Wallmount by mounting bracket</li> <li>▪ DIN Rail Mount (Optional)</li> <li>▪ 2U Rackmount (Optional)</li> </ul>
Environment	
<b>Operating Temperature</b>	<b>35W TDP CPU :</b> <ul style="list-style-type: none"> <li>▪ Core™ i7, i5, i3 : -40°C to 75°C (-40°F to 167°F)</li> <li>▪ Xeon® E3-1268L v5 : -40°C to 70°C (-40°F to 158°F)</li> </ul> <b>65W TDP CPU :</b> <ul style="list-style-type: none"> <li>▪ Core™ i7, i5, i3 : -40°C to 55°C (-40°F to 131°F)</li> </ul> <b>80W TDP CPU :</b> <ul style="list-style-type: none"> <li>▪ Xeon® E3-1275 v6, E3-1275 v5, E3-1225 v5 : -40°C to 45°C (-40°F to 113°F)</li> </ul>
<b>Storage Temperature</b>	-40°C to 85°C (-40°F to 185°F)
<b>Humidity</b>	5% to 95% Humidity, non-condensing
<b>Relative Humidity</b>	95% @ 75°C
<b>Shock</b>	<ul style="list-style-type: none"> <li>▪ IEC 60068-2-27</li> <li>▪ SSD : 50G @ wallmount, Half-sine, 11ms</li> </ul>
<b>Vibration</b>	<ul style="list-style-type: none"> <li>▪ IEC 60068-2-64</li> <li>▪ SSD : 5Grms, 5Hz to 500Hz, 3 Axis</li> </ul>
<b>Certification</b>	E13, CE, FCC, EN50155, EN50121-3-2

## Dimensions

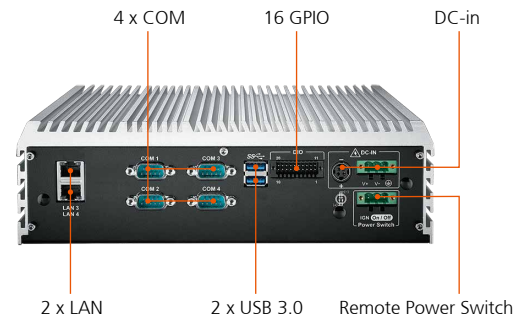
Unit : mm/ inch



## Front I/O



## Rear I/O



## Order Information

ECS-9000-6F	ECS-9000, 6 GigE LAN with 2 SFP, 6 USB 3.0, 4 COM, 3 SIM, 16 GPIO
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### Accessories

<b>DDR4 32G</b>	Certified DDR4 32GB 2666MHz RAM
<b>DDR4 16G</b>	Certified DDR4 16GB 2400/2133 MHz RAM
<b>DDR4 8G</b>	Certified DDR4 8GB 2400/2133 MHz RAM
<b>DDR4 4G</b>	Certified DDR4 4GB 2400/2133 MHz RAM
<b>PWA-280W-WT</b>	280W, 24V, 85V AC to 264V AC Power Adapter with 3-pin Terminal Block, Wide Temperature -30°C to +70°C
<b>PWA-180W</b>	180W, 24V, 90V AC to 132V AC/ 180V AC to 264V AC Power Adapter with 3-pin Terminal Block, Wide Temperature -30°C to +70°C
<b>PWA-160W-WT</b>	160W, 24V, 85V AC to 264V AC Power Adapter with 3-pin Terminal Block, Wide Temperature -30°C to +70°C
<b>PWA-120W</b>	120W, 24V, 90V AC to 264V AC Power Adapter with 3-pin Terminal Block
<b>PWA-120WM4P</b>	120W, 24V, 90V AC to 264V AC Power Adapter with 4-pin Mini-DIN Connector
<b>VESA Mount</b>	VESA Mounting Kit
<b>DIN-RAIL Kit</b>	DIN Rail and VESA Mounting Kit
<b>Rack Mount</b>	2U Rackmount Kit
<b>TMK2-20P-100</b>	Terminal Block 20-pin to Terminal Block 20-pin Cable, 100cm
<b>TMK2-20P-500</b>	Terminal Block 20-pin to Terminal Block 20-pin Cable, 500cm
<b>TMB-TMBK-20P</b>	Terminal Board with One 20-pin Terminal Block Connector and DIN-Rail Mounting
<b>4G Module</b>	Mini PCIe 4G/GPS Module with Antenna
<b>WiFi &amp; Bluetooth</b>	WiFi & Bluetooth Module with Antenna

### CPU List

Series	CPU	Cache (MB)	Turbo Freq. (GHz)	TDP (W)	ECC Memory
Intel® Xeon®	E3-1275 v6	8	4.2	80	Yes
	E3-1275 v5		4	80	
	E3-1225 v5		3.7	80	
	E3-1268L v5		3.4	35	
Intel® Core™	i7-7700	8	4.2	65	NA
	i7-7700T		3.8	35	
	i7-6700		4	65	
	i7-6700TE		3.4	35	
	i5-7500	6	3.8	65	NA
	i5-7500T		3.3	35	
	i5-6500		3.6	65	
	i5-6500TE	3.3	35		
	i3-7101E	3	3.9	65	Yes
	i3-7101TE		3.4	35	
i3-6100	4	3.7	65		
i3-6100TE		2.7	35		