

# ECS-9160

Quad Core Intel® Xeon®/Core™ i7/i5/i3 (Kaby Lake) Fanless LAN Switch System with Intel® C236 Chipset, 2 GigE LAN, 4 GigE LAN Switch with PoE+, 2 Front-access SSD Tray, 8 USB 3.0, M.2 Socket, 3 SIM, 16 GPIO, High Performance, Rugged, -40°C to 75°C Extended Temperature



## Features

- 2 GigE LAN, 4 GigE LAN Switch support IEEE 802.3at PoE+
- Expansion : 3 Mini PCIe/mSATA, 1 Key-M M.2
- Storage : 2 2.5" SSD Tray, 1 CFast, 2 SATA III
- 6V to 36V DC Power Input with 80V Surge Protection
- Configurable Ignition Power Control
- Fanless, -40°C to 75°C Operating Temperature
- 16 GPIO, 8 USB 3.0
- LGA 1151 Socket supports workstation-grade Intel® Xeon®/Core™ i7/i5/i3 Processor with Intel® C236 Chipset
- DVI-I, DVI-D & DisplayPort interfaces, up to 4K display
- 3 External SIM Socket for WiFi/4G/3G/LTE/GPRS/UMTS



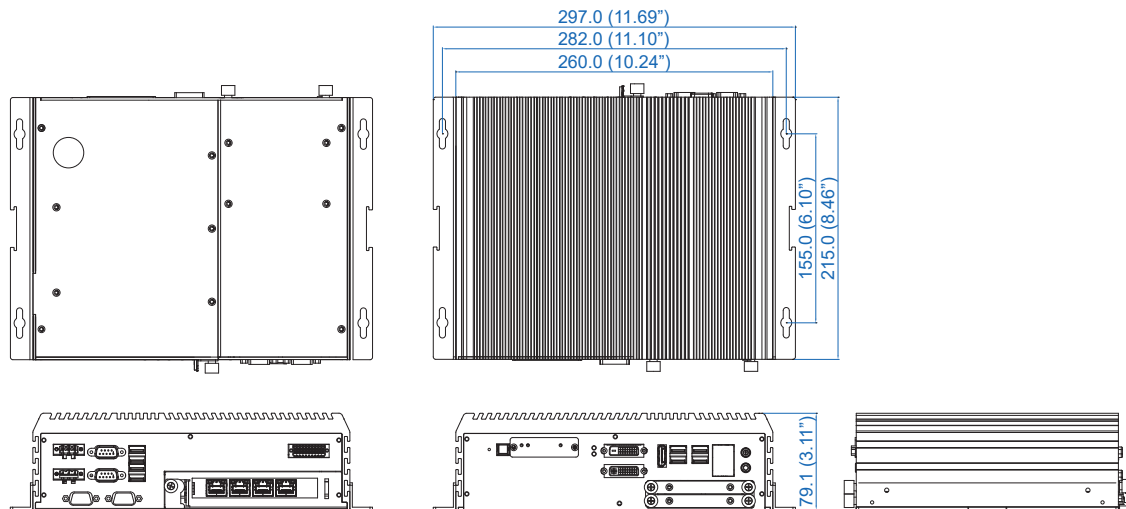
## Specifications

| System             |  |
|--------------------|--|
| Processor          | Intel® Xeon®/Core™ i7/i5/i3 Processor (Kaby Lake-S/Skylake-S)  |
| Chipset            | Intel® C236  |
| BIOS               | AMI  |
| SIO                | IT8786E  |
| Memory             | 2 DDR4 2400/2133 MHz SO-DIMM, up to 64GB   |
| I/O Interface      |  |
| Serial             | 4 COM RS-232/422/485 (ESD 8KV)   |
| USB                | <ul style="list-style-type: none"> <li>▪ 8 USB 3.0 (4 Front, 4 Rear)</li> <li>▪ 1 USB 2.0 (Internal)</li> </ul>  |
| GPIO               | 16 GPIO  |
| LED                | Power, HDD, PoE, Wireless  |
| SIM Card           | 3 External SIM Card Socket   |
| Expansion          |  |
| Mini PCIe          | 3 Full-size for PCIe/USB/External SIM Card/mSATA   |
| Graphics           |  |
| Graphics Processor | Intel® HD Graphics P630/630/P530/530   |
| Interface          | <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            |  |
| SATA               | 2 SATA III (6Gbps) support S/W RAID 0, 1   |
| mSATA              | 3 SATA III (Mini PCIe Type, 6Gbps)   |
| Storage Device     | <ul style="list-style-type: none"> <li>▪ 1 CFast Socket, Push-in/Push-out Ejector</li> <li>▪ 2 Front-access 2.5" SSD/HDD Tray</li> <li>▪ 1 M.2 Key M Socket</li> </ul>             |
| Audio              |  |
| Audio Codec        | Realtek ALC892, 5.1 Channel HD Audio   |
| Audio Interface    | 1 Mic-in, 1 Line-out   |
| Ethernet           |  |
| LAN 1              | Intel® I219LM GigE LAN supports iAMT 11.0  |
| LAN 2              | Intel® I210 GigE LAN   |
| LAN Switch         |  |
| LAN 3 to 6         | GigE IEEE 802.3at (25.5W/48V) PoE+ by Intel® I210  |

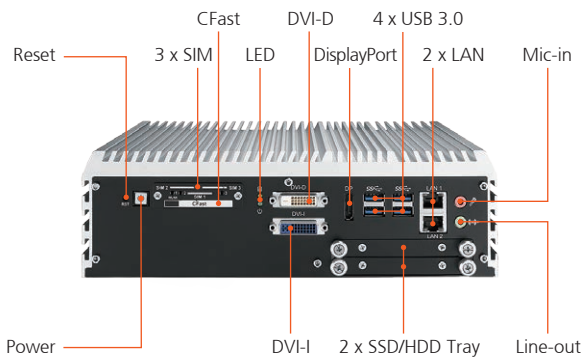
| Power                 |   |
|-----------------------|---|
| Power Input           | 6V to 36V, DC-in  |
| Power Interface       | 3-pin Terminal Block : V+, V-, Frame Ground   |
| Ignition Control      | 16 Mode (Internal)  |
| Remote Switch         | 3-pin Terminal Block : On, Off, IGN   |
| Surge Protection      | Up to 80V/1ms Transient Power   |
| Others                |   |
| TPM                   | Optional Infineon SLB9665 supports TPM 2.0, LPC Interface   |
| Watchdog Timer        | Reset : 1 to 255 sec./min. per step   |
| Smart Management      | Wake on LAN, PXE supported  |
| HW Monitor            | Monitoring temperature, voltages. Auto throttling control when CPU overheats.   |
| Software Support      |   |
| OS                    | Windows 10, Windows 8.1, Windows 7, Linux   |
| Mechanical            |   |
| Dimensions            | 260mm x 215mm x 79mm (10.2" x 8.5" x 3.1")  |
| Weight                | 4.2 kg (9.26 lb)  |
| Mounting              | <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           |   |
| Operating Temperature | <b>35W TDP CPU</b> : -40°C to 75°C (-40°F to 167°F)<br><b>65W TDP CPU</b> : -40°C to 55°C (-40°F to 131°F)<br><b>80W TDP CPU</b> : -40°C to 45°C (-40°F to 113°F) |
| Storage Temperature   | -40°C to 85°C (-40°F to 185°F)  |
| Humidity              | 5% to 95% Humidity, non-condensing  |
| Relative Humidity     | 95% @ 75°C  |
| Shock                 | <ul style="list-style-type: none"> <li>▪ IEC 60068-2-27</li> <li>▪ SSD : 50G @ wallmount, Half-sine, 11ms</li> </ul>  |
| Vibration             | <ul style="list-style-type: none"> <li>▪ IEC 60068-2-64</li> <li>▪ SSD : 5Grms, 5Hz to 500Hz, 3 Axis</li> </ul>   |
| EMC                   | E13, CE, FCC, EN50155, EN50121-3-2  |

## Dimensions

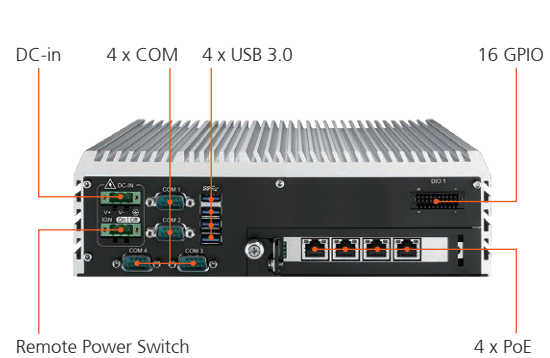
Unit : mm/ inch



## Front I/O



## Rear I/O



## Order Information

|                 |  |
|-----------------|--|
| <b>ECS-9160</b> | ECS-9100, 2 GigE LAN, 4 GigE LAN Switch w/PoE+, 2 SSD Tray, 8 USB 3.0, 4 COM, 3 SIM, 16 GPIO |
|-----------------|--|

### 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-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-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-120W</b>             | 120W, 24V, 90V AC to 264V AC Power Adapter with 3-pin Terminal Block                                  |
| <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         |     |