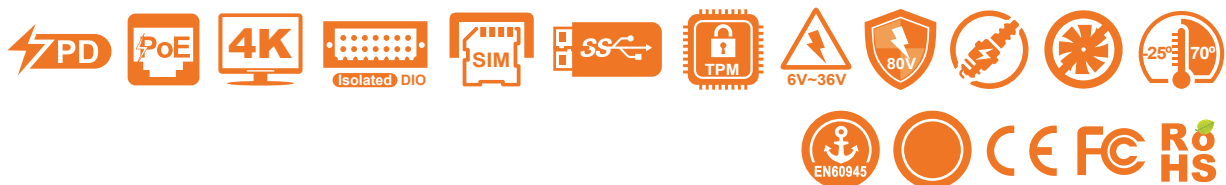


## ECS-4500-PDR RUGGED EMBEDDED COMPUTER

6th Generation Intel® Core™ i7/i5/i3 U-series Processor (Skylake-U) Slim Fanless Embedded System, 6 GigE LAN with 4 PoE+, 2 Independent Powered Device (PD) LAN, 2 Front-access SSD/HDD Tray, 2 External SIM Socket, 5 USB 3.0, 16 Isolated DIO, High Performance, Rugged, Extended Temperature

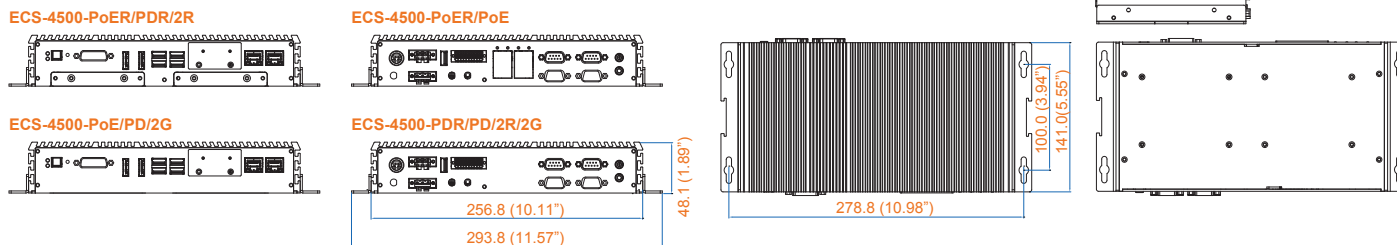


- Intel® Core™ i7/i5/i3 U-series SoC (Skylake-U)
- 2 Independent GigE LAN support IEEE 802.3at Powered Device (PD) and iAMT 11.0
- 4 Independent GigE LAN with IEEE 802.3at PoE+, Power on/off enabled
- Front-access : 2 2.5" SSD Tray, 2 SIM Socket, 5 USB 3.0, 1 CFAST Socket
- Slim design, Fanless, -25°C to 70°C Operating Temp
- 16 Isolated DIO, 16 GPIO
- DDR4 2133MHz memory, up to 32GB
- DVI-D and Dual DisplayPort interfaces, up to 4K display
- 2 Mini PCIe for 3G/4G/LTE/WiFi/GPRS/UMTS
- 6V to 36V DC-in with 80V Surge Protection
- Configurable Ignition Power Control



# Dimensions & Drawing

Unit: mm (inch)



## Specifications

### System

|                  |  |
|------------------|--|
| <b>Processor</b> | Intel® Core™ i7/i5/i3 U-series Processor (Skylake-U) |
| <b>Chipset</b>   | Intel® SoC (Skylake)                                 |
| <b>BIOS</b>      | AMI  |
| <b>SIO</b>       | IT8786E  |
| <b>Memory</b>    | 2 DDR4 2133MHz SO-DIMM, up to 32GB                   |

### I/O Interface

|                     |  |
|---------------------|--|
| <b>Serial</b>       | 4 COM RS-232/422/485   |
| <b>USB</b>          | <ul style="list-style-type: none"> <li>5 USB 3.0 (External)</li> <li>3 USB 2.0 (Internal)</li> </ul> |
| <b>Isolated DIO</b> | 16 Isolated DIO : 8 DI, 8 DO (Optional)  |
| <b>GPIO</b>         | 16 GPIO (Internal)   |
| <b>LED</b>          | Power, HDD, Wireless, PoE, PD  |
| <b>SIM Card</b>     | 2 External SIM Card Socket   |

### Expansion

|                  |   |
|------------------|---|
| <b>Mini PCIe</b> | 2 Mini PCIe Socket : <ul style="list-style-type: none"> <li>1 Full-size for PCIe/USB/External SIM Card</li> <li>1 Full-size for PCIe/USB/External SIM Card/mSATA</li> </ul> |
|------------------|---|

### Graphics

|                            |   |
|----------------------------|---|
| <b>Processor Interface</b> | Intel® HD Graphics 520 <ul style="list-style-type: none"> <li>DVI-D : Up to 1920 x 1200 @ 60Hz</li> <li>DisplayPort 1 : Up to 4096 x 2304 @ 60Hz</li> <li>DisplayPort 2 : Up to 4096 x 2304 @ 60Hz</li> </ul> |
|----------------------------|---|

### Storage

|                       |  |
|-----------------------|--|
| <b>SATA</b>           | 2 SATA III (6Gbps) support S/W RAID 0, 1   |
| <b>mSATA</b>          | 1 SATA III (Mini PCIe Type, 6Gbps)   |
| <b>Storage Device</b> | <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> </ul> |

### Audio

|                        |                                      |
|------------------------|--------------------------------------|
| <b>Audio Codec</b>     | Realtek ALC892, 5.1 Channel HD Audio |
| <b>Audio Interface</b> | 1 Mic-in, 1 Line-out                 |

### Ethernet

|              |  |
|--------------|--|
| <b>LAN 1</b> | Intel® I219LM GigE LAN supports IEEE 802.3at (25.5W/48V) Powered Device (PD) and iAMT 11.0 |
| <b>LAN 2</b> | Intel® I210 GigE LAN supports IEEE 802.3at (25.5W/48V) Powered Device (PD)                 |

### PoE

|              |   |
|--------------|---|
| <b>LAN 3</b> | GigE IEEE 802.3at (25.5W/48V) PoE+ by Intel® I210 |
| <b>LAN 4</b> | GigE IEEE 802.3at (25.5W/48V) PoE+ by Intel® I210 |
| <b>LAN 5</b> | GigE IEEE 802.3at (25.5W/48V) PoE+ by Intel® I210 |
| <b>LAN 6</b> | GigE IEEE 802.3at (25.5W/48V) PoE+ by Intel® I210 |

### 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>Dimension</b> | 257mmx 141mmx 48mm (10.1" x 5.6" x 1.9") (W x L x H)   |
| <b>Weight</b>    | 2.1 kg (4.6 lb)  |
| <b>Mounting</b>  | <ul style="list-style-type: none"> <li>Wallmount by mounting bracket</li> <li>DIN Rail Mount (Optional)</li> </ul> |

### Environment

|                          |  |
|--------------------------|--|
| <b>Operating Temp.</b>   | -25°C to 70°C (-13°F to 158°F)   |
| <b>Storage Temp.</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% @ 70°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>EMC</b>               | CE, FCC, EN50155, EN50121-3-2, EN60945   |

## Order Information

| Part No.                     | CPU   | LAN | PoE+ | PD  | SSD Tray | COM | USB 3.0 | Isolated DIO | GPIO |
|------------------------------|---|-----|------|-----|----------|-----|---------|--------------|------|
| ECS-4500-PoER-600U/300U/955U | Intel® Core™ i7-6600U/i5-6300U/Celeron® 3955U | 6   | 4    | N/A | 2        | 4   | 5       | 16           | 16   |
| ECS-4500-PoE-600U/300U/955U  | Intel® Core™ i7-6600U/i5-6300U/Celeron® 3955U | 6   | 4    | N/A | Internal | 4   | 5       | 16           | 16   |
| ECS-4500-PDR-600U/300U/955U  | Intel® Core™ i7-6600U/i5-6300U/Celeron® 3955U | 2   | N/A  | 2   | 2        | 4   | 5       | N/A          | 32   |
| ECS-4500-PD-600U/300U/955U   | Intel® Core™ i7-6600U/i5-6300U/Celeron® 3955U | 2   | N/A  | 2   | Internal | 4   | 5       | N/A          | 32   |
| ECS-4500-2R-600U/300U/955U   | Intel® Core™ i7-6600U/i5-6300U/Celeron® 3955U | 2   | N/A  | N/A | 2        | 4   | 5       | N/A          | 32   |
| ECS-4500-2G-600U/300U/955U   | Intel® Core™ i7-6600U/i5-6300U/Celeron® 3955U | 2   | N/A  | N/A | Internal | 4   | 5       | N/A          | 32   |

ECS-4500-20180214

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