

# ECS-4500 Series

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, Slim, Rugged, Extended Temp



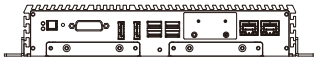
- 6th Gen Intel® Core™ i7/ i5/ i3 U-series SoC (Skylake-U)
- Slim design, Fanless, -25°C to 70°C Operating Temp
- 2 Independent GigE LAN support IEEE 802.3at Powered Device (PD) and iAMT 11.0
- 16 Isolated DIO, 16 GPIO
- 4 Independent GigE LAN with IEEE 802.3at PoE+, Power on/off enabled
- DDR4 2133MHz memory, up to 32GB
- Front-access : 2 2.5" SSD Tray, 2 SIM Socket, 5 USB 3.0, 1 CFast Socket
- 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



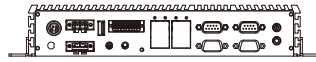
# Dimensions & Drawing

Unit: mm (inch)

ECS-4500-PoER/ PDR/ 2R



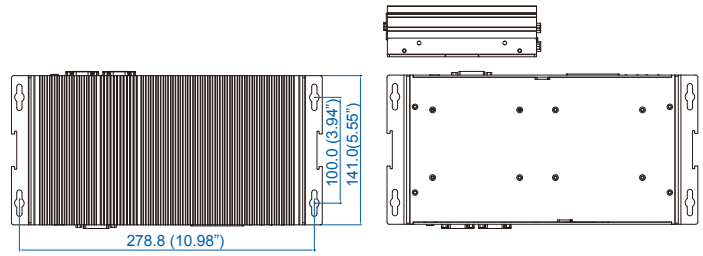
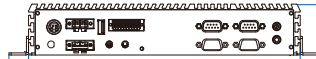
ECS-4500-PoER/ PoE



ECS-4500-PoE/ PD/ 2G



ECS-4500-PDR/ PD/ 2R/ 2G



## Specifications

| System    |   |
|-----------|---|
| Processor | Intel® Core™ i7-6600U/ i5-6300U/ Celeron® 3955U Processor |
| Chipset   | Intel® SoC (Skylake)                                      |
| BIOS      | AMI   |
| SIO       | IT8786E   |
| Memory    | 2 DDR4 2133MHz SO-DIMM, up to 32GB                        |

| I/O Interface |  |
|---------------|--|
| Serial        | 4 COM RS-232/ 422/ 485                           |
| USB           | • 5 USB 3.0 (External)<br>• 3 USB 2.0 (Internal) |
| Isolated DIO  | 16 Isolated DIO : 8 DI, 8 DO (Optional)          |
| GPIO          | 16 GPIO (Internal)                               |
| LED           | Power, HDD, Wireless, PoE, PD                    |
| SIM Card      | 2 External SIM Card Socket                       |

| Expansion |   |
|-----------|---|
| Mini PCIe | 2 Mini PCIe Socket :<br>• 1 Full-size for PCIe/ USB/ External SIM Card<br>• 1 Full-size for PCIe/ USB/ External SIM Card/ mSATA |

| Graphics            |  |
|---------------------|--|
| Processor Interface | Intel® HD Graphics 520<br>• DVI-D : Up to 1920 x 1200 @ 60Hz<br>• DisplayPort 1 : Up to 4096 x 2304 @ 60Hz<br>• DisplayPort 2 : Up to 4096 x 2304 @ 60Hz |

| Storage        |  |
|----------------|--|
| SATA           | 2 SATA III (6Gbps) support S/W RAID 0, 1   |
| mSATA          | 1 SATA III (Mini PCIe Type, 6Gbps)   |
| Storage Device | • 1 CFast Socket, Push-in/ Push-out Ejector<br>• 2 Front-access 2.5" SSD/ HDD Tray |

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

| PoE   |   |
|-------|---|
| LAN 3 | GigE IEEE 802.3at (25.5W/48V) PoE+ by Intel® I210 |
| LAN 4 | GigE IEEE 802.3at (25.5W/48V) PoE+ by Intel® I210 |
| LAN 5 | GigE IEEE 802.3at (25.5W/48V) PoE+ by Intel® I210 |
| LAN 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<br>• Mini-DIN 4-pin |
| 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 |  |
|------------|--|
| Dimension  | 257mmx 141mmx 48mm (10.1" x 5.6" x 1.9") (W x L x H)           |
| Weight     | 2.1 kg (4.6 lb)  |
| Mounting   | • Wallmount by mounting bracket<br>• DIN Rail Mount (Optional) |

| Environment       |  |
|-------------------|--|
| Operating Temp.   | -25°C to 70°C (-13°F to 158°F)   |
| Storage Temp.     | -40°C to 85°C (-40°F to 185°F)   |
| Humidity          | 5% to 95% Humidity, non-condensing   |
| Relative Humidity | 95% @ 70°C   |
| Shock             | • IEC 60068-2-27<br>• SSD : 50G @ wallmount, Half-sine, 11ms<br>• IEC 60068-2-64 |
| Vibration         | • SSD : 5Grms, 5Hz to 500Hz, 3 Axis  |
| EMC               | CE, FCC, EN50155, EN50121-3-2  |

## Order Information

|                         |  |
|-------------------------|--|
| ECS-4500-PoER600U       | • ECS-4500, Intel® Core™ i7-6600U Processor (Skylake-U), 6 GigE LAN with 4 PoE+, 2 Front-access SSD Tray, Isolated DIO |
| ECS-4500-PoER300U       | • ECS-4500, Intel® Core™ i5-6300U Processor (Skylake-U), 6 GigE LAN with 4 PoE+, 2 Front-access SSD Tray, Isolated DIO |
| ECS-4500-PoER955U       | • ECS-4500, Intel® Celeron® 3955U Processor (Skylake-U), 6 GigE LAN with 4 PoE+, 2 Front-access SSD Tray, Isolated DIO |
| ECS-4500-PoE600U        | • ECS-4500, Intel® Core™ i7-6600U Processor (Skylake-U), 6 GigE LAN with 4 PoE+, Isolated DIO                          |
| ECS-4500-PoE300U        | • ECS-4500, Intel® Core™ i5-6300U Processor (Skylake-U), 6 GigE LAN with 4 PoE+, Isolated DIO                          |
| ECS-4500-PoE955U        | • ECS-4500, Intel® Celeron® 3955U Processor (Skylake-U), 6 GigE LAN with 4 PoE+, Isolated DIO                          |
| ECS-4500-PDR600U        | • ECS-4500, Intel® Core™ i7-6600U Processor (Skylake-U), 2 PD LAN, 2 Front-access SSD Tray, 32 GPIO                    |
| ECS-4500-PDR300U        | • ECS-4500, Intel® Core™ i5-6300U Processor (Skylake-U), 2 PD LAN, 2 Front-access SSD Tray, 32 GPIO                    |
| ECS-4500-PDR955U        | • ECS-4500, Intel® Celeron® 3955U Processor (Skylake-U), 2 PD LAN, 2 Front-access SSD Tray, 32 GPIO                    |
| ECS-4500-PD600U         | • ECS-4500, Intel® Core™ i7-6600U Processor (Skylake-U), 2 PD LAN, 32 GPIO   |
| ECS-4500-PD300U         | • ECS-4500, Intel® Core™ i5-6300U Processor (Skylake-U), 2 PD LAN, 32 GPIO   |
| ECS-4500-PD955U         | • ECS-4500, Intel® Celeron® 3955U Processor (Skylake-U), 2 PD LAN, 32 GPIO   |
| ECS-4500-2R600U         | • ECS-4500, Intel® Core™ i7-6600U Processor (Skylake-U), 2 GigE LAN, 2 Front-access SSD Tray, 32 GPIO                  |
| ECS-4500-2R300U         | • ECS-4500, Intel® Core™ i5-6300U Processor (Skylake-U), 2 GigE LAN, 2 Front-access SSD Tray, 32 GPIO                  |
| ECS-4500-2R955U         | • ECS-4500, Intel® Celeron® 3955U Processor (Skylake-U), 2 GigE LAN, 2 Front-access SSD Tray, 32 GPIO                  |
| ECS-4500-2G600U         | • ECS-4500, Intel® Core™ i7-6600U Processor (Skylake-U), 2 GigE LAN, 32 GPIO   |
| ECS-4500-2G300U         | • ECS-4500, Intel® Core™ i5-6300U Processor (Skylake-U), 2 GigE LAN, 32 GPIO   |
| ECS-4500-2G955U         | • ECS-4500, Intel® Celeron® 3955U Processor (Skylake-U), 2 GigE LAN, 32 GPIO   |
| DDR4 16G                | • Certified DDR4 16GB 2133MHz RAM  |
| DDR4 8G                 | • Certified DDR4 8GB 2133MHz RAM   |
| DDR4 4G                 | • Certified DDR4 4GB 2133MHz RAM   |
| PWA-160W-WT             | • 160W, 24V, 85V AC to 264V AC Power Adapter with 3-pin Terminal Block, Wide Temperature -30°C to +70°C                |
| PWA-120WM4P             | • 120W, 24V, 90V AC to 264V AC Power Adapter with 4-pin Mini-DIN Connector   |
| PWA-120W                | • 120W, 24V, 90V AC to 264V AC Power Adapter with 3-pin Terminal Block   |
| 3G Module               | • Mini PCIe 3G/GPS Module with Antenna   |
| 4G Module               | • Mini PCIe 4G/GPS Module with Antenna   |
| WiFi & Bluetooth Module | • Intel® Mini PCIe WiFi & Bluetooth Module with Antenna  |

ECS-4500-20161228