

# 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



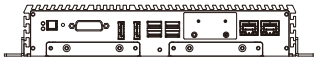
- 6th Gen Intel® Core™ i7/ i5/ i3 U-series SoC (Skylake-U)
- Slim design, Fanless, -25°C to 70°C Operating Temp
- 2 Independent GigE LAN support IEEE 802.3at Powered Device (PD) and iAMT 11.0
- 16 Isolated DIO, 16 GPIO
- 4 Independent GigE LAN with IEEE 802.3at PoE+, Power on/off enabled
- DDR4 2133MHz 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



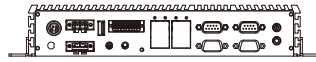
# Dimensions & Drawing

Unit: mm (inch)

ECS-4500-PoER/ PDR/ 2R



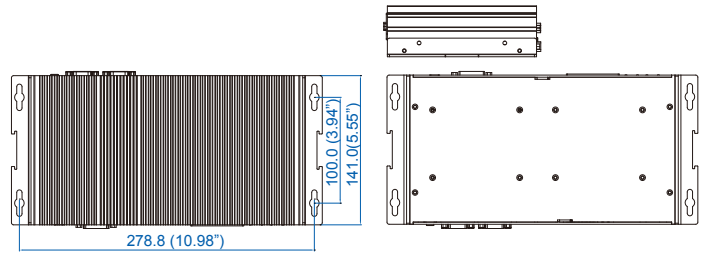
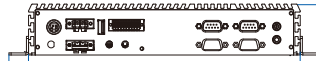
ECS-4500-PoER/ PoE



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) • 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 : • 1 Full-size for PCIe/ USB/ External SIM Card • 1 Full-size for PCIe/ USB/ External SIM Card/ mSATA

Graphics	
Processor Interface	Intel® HD Graphics 520 • DVI-D : Up to 1920 x 1200 @ 60Hz • DisplayPort 1 : Up to 4096 x 2304 @ 60Hz • 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 • 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 • 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 • 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 • SSD : 50G @ wallmount, Half-sine, 11ms • 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