

**ECX**

**3000 PEG**



13th/12th Gen Intel® Core™ i9/i7/i5/i3 Processor (Raptor Lake/Alder Lake)  
Flexible AI Inference Workstation



▲ Robotic Control

- Workstation-grade Platform : 13th/12th Gen Intel® Core™ i9/i7/i5/i3 Processor (Raptor Lake-S/Alder Lake-S) running with Intel® R680E PCH supports max 65W TDP CPU
- Supports outstanding AI computing productivity by NVIDIA®/AMD graphics card, up to 200W power budget
- USB 3.2 Gen 2x2 offers a max speed of 20Gbps data transfer
- DC 12V to 50V wide range power input, Software Ignition Control
- 4 Independent 2.5G LAN with IEEE 802.3at PoE+
- 5G/WiFi/BT/4G/LTE/GPRS/UMTS, Supports Intel® vPro, TCC, Time-Sensitive Networking (TSN), and TPM 2.0
- Storage : Max. 4 front-access 2.5" SSD Tray, M.2 Key M

▼ Smart Manufacturing



▲ In-vehicle Computing

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## Specifications

### System

|           |                                                                                                                                               |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Processor | - 24-core 13th Gen Intel® Core™ i9/i7/i5/i3 Processor (Raptor Lake-S)<br>- 16-core 12th Gen Intel® Core™ i9/i7/i5/i3 Processor (Alder Lake-S) |
| Chipset   | Intel® R680E Chipset                                                                                                                          |
| BIOS      | AMI                                                                                                                                           |
| SIO       | IT8786E                                                                                                                                       |
| Memory    | 2 DDR5 4800MHz SO-DIMM, up to 64GB                                                                                                            |
| OS        | Windows 10, Linux                                                                                                                             |

### I/O Interface

|              |                                                                                                                                     |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Serial       | 4 COM RS-232/422/485                                                                                                                |
| USB          | - 6 USB 3.2 Gen 2, USB Type A Connector<br>- 1 USB 3.2 Gen 2x2, USB Type-C Connector supports max 20Gbps data transfer (15W, 5V/3A) |
| Isolated DIO | ECX-3800/3600/3400/3200 PEG : 32 Isolated DIO (16 DI, 16 DO)<br>ECX-3100 PEG : 16 GPIO                                              |
| LED          | Power, HDD, PoE, WLAN                                                                                                               |
| SIM Card     | 3 External Nano SIM Card Socket                                                                                                     |
| RTC Battery  | 1 Front-access RTC Battery                                                                                                          |

### Expansion

|           |                                                                                                                                                                     |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mini PCIe | 1 Mini PCIe sockets for PCIe/USB/SIM Card                                                                                                                           |
| PCIe      | Up to 4 PCIe Slots                                                                                                                                                  |
| M.2       | - 1 M.2 Key B Socket (3042/2280, PCIe/USB 3, default/USB 2)<br>- 1 M.2 Key B Socket (3052/2280, PCIe/USB 3, default/USB 2)<br>- 1 M.2 Key E Socket (2230, PCIe/USB) |

### Graphics

|                    |                                                                                                                                                                          |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Graphics Processor | Intel® UHD Graphics 770/730 driven by Intel® X® Architecture                                                                                                             |
| Interface          | - 1 DVI-I : Up to 1920 x 1080 @60Hz<br>- 1 HDMI : Up to 1920 x 1080 @60Hz<br>- 2 DisplayPort : Up to 7680 x 4320 @60Hz/5120 x 2880 @60Hz<br>- By requested Graphics Card |

### Storage

|                |                                                                                                                                                    |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| SATA           | ECX-3800/3600/3400 PEG : 4 SATA III (6Gbps) support software RAID 0, 1, 5, 10<br>ECX-3200/3100 PEG : 2 SATA III (6Gbps) support software RAID 0, 1 |
| M.2            | 1 M.2 Key M Socket (2280, PCIe x4)                                                                                                                 |
| Storage Device | ECX-3800/3600/3400 PEG : 4 Front-access 2.5" SSD/HDD Tray<br>ECX-3200/3100 PEG : 2 Front-access 2.5" SSD/HDD Tray                                  |

### Audio

|                 |                                          |
|-----------------|------------------------------------------|
| Audio Codec     | Realtek ALC888S-VD, 7.1 Channel HD Audio |
| Audio Interface | 1 Mic-in, 1 Line-out                     |

### Ethernet

|       |                                      |
|-------|--------------------------------------|
| LAN 1 | Intel® I219LM GigE LAN supports iAMT |
| LAN 2 | Intel® I210 GigE LAN                 |

### PoE (ECX-3800/3600/3400/3200 PEG)

|                |                                                                                                                |
|----------------|----------------------------------------------------------------------------------------------------------------|
| LAN 3 to LAN 6 | 2.5GigE IEEE 802.3at (25.5W/48V) PoE* by Intel® I226, RJ45 Connector<br>ECX-3200MX PEG : X-Coded M12 Connector |
|----------------|----------------------------------------------------------------------------------------------------------------|

### Power

|                  |                                             |
|------------------|---------------------------------------------|
| Power Input      | DC 12V to 50V Power Input                   |
| Power Interface  | 3-pin Terminal Block : V+, V-, Frame Ground |
| Ignition Control | 16-mode Software Ignition Control           |
| Remote Switch    | 3-pin Terminal Block                        |

### Others

|                |                                                                               |
|----------------|-------------------------------------------------------------------------------|
| TPM            | Infineon SLB9670 supports TPM 2.0, SPI Interface                              |
| Watchdog Timer | Reset : 1 to 255 sec./min. per step                                           |
| Smart Mgmt.    | Wake on LAN, PXE supported                                                    |
| HW Monitor     | Monitoring temperature, voltages. Auto throttling control when CPU overheats. |

### Mechanical

|            |                                                                                                                                                                                                                                                      |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dimensions | ECX-3800 PEG : 260mm x 240mm x 142mm (10.24"x9.45"x5.59")<br>ECX-3600 PEG : 260mm x 240mm x 120mm (10.24"x9.45"x4.72")<br>ECX-3400 PEG : 260mm x 240mm x 104mm (10.24"x9.45"x4.09")<br>ECX-3200/3100 PEG : 260mm x 240mm x 79mm (10.24"x9.45"x3.11") |
| Weight     | ECX-3800 PEG : 7.5 kg (16.53 lb)<br>ECX-3600 PEG : 6.5 kg (14.33 lb)<br>ECX-3400 PEG : 5.5 kg (12.13 lb)<br>ECX-3200/3100 PEG : 4.5 kg (9.92 lb)                                                                                                     |
| Mounting   | - Wallmount by mounting bracket<br>- VESA Mount (Optional), Rackmount (Optional)                                                                                                                                                                     |

### Environment

|                   |                                                |
|-------------------|------------------------------------------------|
| Operating Temp.   | -20°C to 45°C (-4°F to 113°F), with System Fan |
| Storage Temp.     | -40°C to 85°C (-40°F to 185°F)                 |
| Humidity          | 5% to 95% Humidity, non-condensing             |
| Relative Humidity | 95% @45°C                                      |
| Shock/Vibration   | Operating, MIL-STD-810G, Procedure I           |
| EMC               | CE, FCC, EN50155, EN50121-3-2                  |

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## Order Information

| Model          | PCIe x16 | PCIe x8 | PCIe x4 | GigE LAN | 2.5G PoE* | SSD Tray | USB 3.2 | 20G USB Type-C | Isolated DIO |
|----------------|----------|---------|---------|----------|-----------|----------|---------|----------------|--------------|
| ECX-3800 PEG   | -        | 2       | 2       |          | 4         | 4        |         |                | 32           |
| ECX-3600 PEG   | -        | 2       | 1       |          | 4         | 4        |         |                | 32           |
| ECX-3400 PEG   | 1        | -       | 1       | 2        | 4         | 4        | 6       | 1              | 32           |
| ECX-3200MX PEG | 1        | -       | -       |          | 4 M12     | 2        |         |                | 32           |
| ECX-3200 PEG   | 1        | -       | -       |          | 4         | 2        |         |                | 32           |
| ECX-3100 PEG   | 1        | -       | -       |          | -         | 2        |         |                | 16 GPIO      |

\*Fan sink modules for ECX-3200 Series are optional. Please contact our sales team if needed.

### CPU List

| Series       | CPU        | Cores | GHz | TDP (W) | CPU        | Cores | GHz | TDP (W) | EC |
|--------------|------------|-------|-----|---------|------------|-------|-----|---------|----|
| Intel® Core™ | i9-13900E  | 24    | 5.2 | 65      | i9-12900E  | 16    | 5   | 65      | Y  |
|              | i9-13900TE | 24    | 5   | 35      | i9-12900TE | 16    | 4.8 | 35      |    |
|              | i7-13700E  | 16    | 5.1 | 65      | i7-12700E  | 12    | 4.8 | 65      |    |
|              | i7-13700TE | 16    | 4.8 | 35      | i7-12700TE | 12    | 4.7 | 35      |    |
|              | i5-13500E  | 14    | 4.6 | 65      | i5-12500E  | 6     | 4.5 | 65      |    |
|              | i5-13500TE | 14    | 4.5 | 35      | i5-12500TE | 6     | 4.3 | 35      |    |
|              | i3-13100E  | 4     | 4.4 | 65      | i3-12100E  | 4     | 4.2 | 65      |    |
|              | i3-13100TE | 4     | 4.1 | 35      | i3-12100TE | 4     | 4   | 35      |    |

### Optional Software

|                   |                      |
|-------------------|----------------------|
| VHub AI Developer | AI Development Kit   |
| VHub ROS          | AMR Development Kit  |
| VHub EtherCAT     | I/O Control Platform |

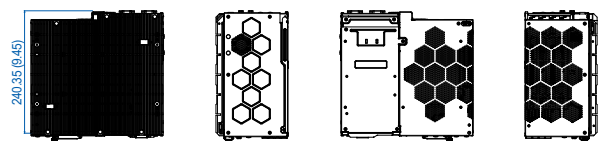
### Accessories

|                    |                                                                                                                      |
|--------------------|----------------------------------------------------------------------------------------------------------------------|
| DDR5 32G           | Certified DDR5 32GB 4800MHz RAM                                                                                      |
| DDR5 16G           | Certified DDR5 16GB 4800MHz RAM                                                                                      |
| DDR5 8G            | Certified DDR5 8GB 4800MHz RAM                                                                                       |
| PWA-160WB-VWT      | 160W, 24V, 85V AC to 264V AC Power Adapter with 3-pin Terminal Block (7.62mm pitch), Wide Temperature -30°C to +70°C |
| PWA-180WB          | 180W, 24V, 90V AC to 264V AC Power Adapter with 3-pin Terminal Block (7.62mm pitch)                                  |
| PWA-280WB-VWT      | 280W, 24V, 85V AC to 264V AC Power Adapter with 3-pin Terminal Block (7.62mm pitch), Wide Temperature -30°C to +70°C |
| PWA-330WB          | 330W, 24V, 90V AC to 264V AC Power Adapter with 3-pin Terminal Block (7.62mm pitch)                                  |
| PWS-480W-VWT       | 480W, 24V, 90V AC to 305V AC Power Supply, Wide-Temp, IP65                                                           |
| TMK2-20P-100       | Terminal Block 20-pin to Terminal Block 20-pin Cable, 100cm                                                          |
| TMK2-20P-500       | Terminal Block 20-pin to Terminal Block 20-pin Cable, 500cm                                                          |
| TMB-TMBK-20P       | Terminal Board with One 20-pin Terminal Block Connector and DIN-Rail Mounting                                        |
| Rackmount          | Rockmount Kit                                                                                                        |
| DIN Rail           | DIN Rail and VESA Mounting Kit                                                                                       |
| VESA Mount         | VESA Mounting Kit                                                                                                    |
| M.2 Storage Module | M.2 Key M Storage Module                                                                                             |
| 5G Module          | 5G Module with Antenna                                                                                               |
| 4G Module          | 4G/GPS Module with Antenna                                                                                           |
| WiFi & Bluetooth   | WiFi & Bluetooth Module with Antenna                                                                                 |

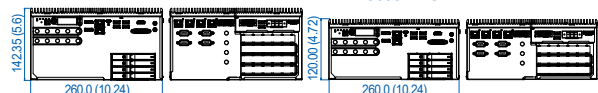
## Dimensions & Drawing

Unit : mm (inch)

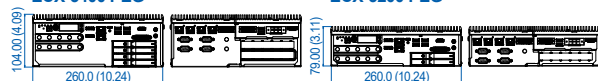
### ECX-3800 PEG



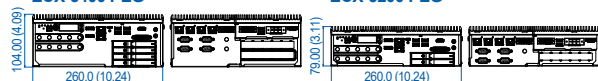
### ECX-3600 PEG



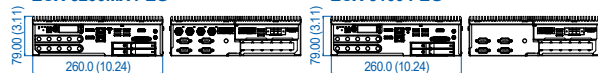
### ECX-3400 PEG



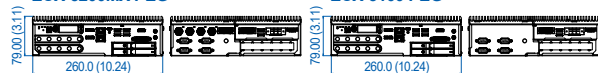
### ECX-3200 PEG



### ECX-3200MX PEG



### ECX-3100 PEG



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### US

[sales@assured-systems.com](mailto:sales@assured-systems.com)

Sales: +1 347 719 4508

Support: +1 347 719 4508

1309 Coffeen Ave  
Ste 1200  
Sheridan  
WY 82801  
USA

### EMEA

[sales@assured-systems.com](mailto:sales@assured-systems.com)

Sales: +44 (0)1785 879 050

Support: +44 (0)1785 879 050

Unit A5 Douglas Park  
Stone Business Park  
Stone  
ST15 0YJ  
United Kingdom

VAT Number: 120 9546 28

Business Registration Number: 07699660