

SIMATIC IPC647E (Rack PC, 19", 2U); 3x Gbit Ethernet (IE/PN), RJ45; 1x DVI-D, 2x displayport, 1x COM1, audio, 4x USB 3.1, 2x USB 3.1 (Typ C) rear side; 2x USB 3.0 front, 1x USB3.1 internally; 1x M.2 Slot internally; temperature and fan monitoring, watchdog; card retainer; Xeon E-2176G (6C/12T, 3.7 (4.7) GHz, 12 MB cache, TB, VT-D, AMT); Board 2 slots: 1x PCIe x16 (16 L), 1x PCIe x16 (4 L); 1 TB HDD 3.5" SATA; Enclosure with drive support Type B (for internal installation/ 0.5 g vibration, 5 g shock); 100/240 V AC industrial power supply unit; 4 GB DDR4 SDRAM (1x 4 GB), Single Channel; Without expansion (HW); Without operating system; Without expansions; Power supply cable USA

| Installation type/mounting   |  |
|--|--|
| Mounting   | For horizontal installation; prepared for telescopic rails; 19" mounting bracket can be removed externally   |
| Design   | Rack PC, 19", 2U   |
| Supply voltage   |  |
| Type of supply voltage   | 100/240 V AC (autorange) 50 / 60 Hz; optional redundant 100/240 V AC   |
| Line frequency   |  |
| <ul style="list-style-type: none"> <li>Rated value 50 Hz</li> <li>Rated value 60 Hz</li> </ul> | Yes<br>Yes   |
| Mains buffering  |  |
| <ul style="list-style-type: none"> <li>Mains/voltage failure stored energy time</li> </ul>     | 20 ms  |
| Processor  |  |
| Processor type   | Intel Xeon E-2278GE (8C/16T, 3.3 (4.7) GHz, 16 MB Cache, Turbo Boost 2.0, VT-x/-d-Technology, iAMT); Intel Xeon E-2176G (6C/12T, 3.7 (4.7) GHz, 12 MB Cache, Turbo Boost 2.0, VT-x/-d-Technology, iAMT); Intel Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB Cache, Turbo Boost 2.0, VT-x/-d-Technology, iAMT); Intel Core i5-8500 (6C/6T, 3.0 (4.1) GHz, 9 MB Cache, Turbo Boost 2.0, VT-x/-d-Technology, iAMT); Intel Core i3-8100 (4C/4T, 3.6 GHz, 6 MB Cache, VT-x/-d-Technology) |
| Chipset  | Intel C246   |
| Graphic  |  |
| Graphics controller  | Onboard Intel UHD graphics P630/630 integrated in processor; graphics card NVIDIA Quadro P400 PCIe (x16) triple head (optional)  |
| Drives   |  |
| Hard disk  | 1x 1 TB 3.5" SATA HDD, 2x 1 TB 3.5" SATA HDD, RAID1 2x 1 TB 3.5" SATA HDD, RAID1 2x 1 TB 3.5" SATA HDD (Enterprise), RAID1 2x 2 TB 3.5" SATA HDD (Enterprise), RAID1 2x 2 TB 3.5" SAS HDD (Enterprise) with PCIe x8 RAID controller incl. ZMCP module  |
| SSD  | Yes; 1x 480 GB 2.5" SATA SSD, 1x 960 GB 2.5" SATA SSD, 2x 480 GB 2.5" SATA SSD, RAID1 2x 480 GB 2.5" SATA SSD; 1x 512 GB M.2 NVMe SSD, 1x 1 024 GB M.2 NVMe SSD  |
| Slot for drives  | Mounting internally in vibration/shock-absorbing drive cage Type B or mounting on the front in removable trays (hot swap in RAID configurations) in drive cage Type A; mounting internally on the fixed drive cage optional  |
| Memory   |  |
| Main memory  | 4 GB to 128 GB DDR4 2666 SDRAM DIMM, ECC optional  |
| Capacity of main memory, max.  | 128 Gbyte  |
| Hardware configuration   |  |
| Slots  |  |
| <ul style="list-style-type: none"> <li>free slots</li> </ul>                                   | 2 slots: 1x PCI Express (x16) (16 lanes), 1x PCI Express (x16) (4 lanes) or 4 slots: 2x PCI, 2x PCI Express (x16) (8 lanes) or 4 slots: 2x PCI Express (x16) (8 lanes), 1x PCI Express (x16) (4 lanes), 1x PCI Express (x16) (1 lane); expansion modules up to 312 mm in length can be used  |
| Interfaces   |  |
| Interfaces/bus type  | 1x COM1, 1x COM2 (optional), 2x DisplayPort, 1x DVI-D, audio (microphone in, line in, line out), 9x USB, 3x Gigabit Ethernet   |
| PROFIBUS/MPI   | can be implemented with plug-in card   |
| USB port   | 4x USB 3.1 Gen. 2 Type A, 2x USB 3.1 Gen. 2 Type C on the rear; 1x USB 3.1 Gen. 2 Type A internally, e.g. for software dongle with optional interlock, 2x USB 3.1 Gen. 1 Type A on the front, can be used with door closed   |

|   |   |
|---|---|
| Connection for keyboard/mouse   | USB   |
| Multimedia  |   |
| • Audio In/Out  | Yes   |
| • Microphone In   | Yes   |
| Video interfaces  |   |
| • Graphics interface  | 2x DisplayPort and 1x DVI-D onboard; 1x VGA via DP-VGA adapter cable (optional); graphics card PCIe (x16), Triple Head (3x mini DisplayPort, 2 GB graphics memory, 3x mini DisplayPort to DisplayPort adapter cable) (optional) |
| Industrial Ethernet   |   |
| • Industrial Ethernet interface   | 3x Gigabit Ethernet (IE/PN), RJ45   |
| — 100 Mbps  | Yes   |
| — 1000 Mbps   | Yes   |
| <b>Integrated Functions</b>   |   |
| Monitoring functions  |   |
| • Temperature monitoring  | Yes   |
| • Watchdog  | Yes   |
| • Fan   | Yes   |
| • Monitoring function via network   | Optional  |
| <b>EMC</b>  |   |
| Interference immunity against discharge of static electricity                   |   |
| • Interference immunity against discharge of static electricity                 | ±6 kV contact discharge acc. to IEC 61000-4-2; ±8 kV air discharge acc. to IEC 61000-4-2  |
| Interference immunity against high-frequency electromagnetic fields             |   |
| • Interference immunity against high frequency radiation                        | 10 V/m for 80 ... 2 700 MHz, 80% AM acc. to IEC 61000-4-3; 3 V/m for 2.7 to 6 GHz, 80% AM acc. to IEC 61000-4-3; 10 V for 10 kHz to 80 MHz, 80% AM acc. to IEC 61000-4-6  |
| Interference immunity to cable-borne interference                               |   |
| • Interference immunity on supply cables  | ±2 kV acc. to IEC 61000-4-4, burst; ±1 kV acc. to IEC 61000-4-5, surge symmetric; ±2 kV acc. to IEC 61000-4-5, surge asymmetric   |
| • Interference immunity on signal cables >30m                                   | ±2 kV acc. to IEC 61000-4-5, surge, length > 30 m   |
| • Interference immunity on signal cables < 30m                                  | ±1 kV acc. to IEC 61000-4-4; burst, length < 3 m  |
| Interference immunity against voltage surge                                     |   |
| • asymmetric interference   | ±2 kV acc. to IEC 61000-4-5, surge asymmetric   |
| • symmetric interference  | ±1 kV acc. to IEC 61000-4-5, surge symmetric  |
| Interference immunity to magnetic fields  |   |
| • Interference immunity to magnetic fields at 50 Hz                             | 100 A/m; to IEC 61000-4-8   |
| Emission of conducted and non-conducted interference                            |   |
| • Interference emission via line/AC current cables                              | EN 61000-6-3; EN 61000-6-4, CAN/CSA CISPR 22 Class B, EN 55032 Class B; FCC Class A; KN32 Class B, EN 61000-3-2 Class D; EN 61000-3-3   |
| Compliance with line harmonic distortion limits                                 |   |
| • Compliance with line harmonic distortion acc. to IEC 61000-3-2, IEC 61000-3-3 | Yes; EN 61000-3-2 Class D; EN 61000-3-3   |
| <b>Degree and class of protection</b>   |   |
| IP (at the front)   | IP41  |
| IP (rear)   | IP20  |
| <b>Standards, approvals, certificates</b>                                       |   |
| CE mark   | Yes; For use in industrial areas as well as domestic, business and commercial environments (emitted interference: EN 61000-6-3:2007 +A1:2011, noise immunity: EN 61000-6-2:2005)  |
| CSA approval  | Yes; CAN/CSA-C22.2 No. 61010-2-201 Second Edition   |
| UL approval   | Yes; UL 61010-2-201 Second Edition, File E85972   |
| cULus   | Yes; UL 61010-2-201 Second Edition; CAN/CSA-C22.2 No. 61010-2-201 Second Edition  |
| RCM (formerly C-TICK)   | Yes   |
| KC approval   | Yes   |
| EAC (formerly Gost-R)   | Yes   |
| EMC   | EN 61000-6-3; EN 61000-6-4, CAN/CSA CISPR 22 Class B, EN 55032 Class B; FCC Class A; KN32 Class B, EN 61000-3-2 Class D; EN 61000-3-3   |
| Dust protection   | With front door closed: G2 EN 779, 99% of particles > 0.5 mm are filtered   |
| Marine approval   |   |
| • Germanischer Lloyd (GL)   | Yes; Only with SSD  |
| • American Bureau of Shipping (ABS)   | Yes; Only with SSD  |

| Ambient conditions  |   |
|---|---|
| Ambient temperature during operation                          |   |
| • min.  | 0 °C; Max. 10 °C/h (no condensation)  |
| • max.  | 50 °C   |
| Ambient temperature during storage/transportation             |   |
| • min.  | -20 °C; Max. 20 °C/h (no condensation)  |
| • max.  | 60 °C   |
| Relative humidity   |   |
| • Relative humidity   | Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation) |
| Vibrations  |   |
| • Vibration resistance during operation acc. to IEC 60068-2-6 | Tested according to IEC 60068-2-6: 10 cycles, 10 Hz to 58 Hz: 0.0375 mm, 58 Hz to 500 Hz: 4.9 m/s <sup>2</sup> (0.5 g)  |
| Shock testing   |   |
| • Shock load during operation                                 | Tested according to DIN IEC 60068-2-7: 50 m/s <sup>2</sup> (5 g), 30 ms, 100 shocks   |

| Operating systems                   |  |
|-------------------------------------|--|
| pre-installed operating system      | Windows 10 Enterprise 2016 LTSC, multi-language (64-bit); Windows 10 IoT Enterprise 2019 LTSC, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 multi-language clients (64-bit); Windows Server 2019 Standard Edition incl. 5 multi-language clients (64-bit) |
| Additional info on operating system | Multi-Language User Interface (MUI): 5 languages (English, German, French, Spanish, Italian)   |
| without operating system            | Yes  |

| Software         |                                     |
|------------------|-------------------------------------|
| SIMATIC Software | Optional package with SIMATIC WinCC |

| Dimensions |           |
|------------|-----------|
| Width      | 430 mm    |
| Height     | 88 mm; 2U |
| Depth      | 444 mm    |

### Approvals / Certificates

#### General Product Approval



[Manufacturer Declaration](#)



[Miscellaneous](#)

#### General Product Approval



[BIS CRS](#)



#### EMV Maritime application



[NK / Nippon Kaiji Kyokai](#)

#### Dangerous goods Environment

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