

# DRPC-240-TGL-U

Fanless DIN-Rail Embedded System with Tiger Lake 11 th Gen Intel® Core™ Solution (up to 4 cores)



## Features

» Supported CPUs:

Intel® Celeron® 6305 1.8 GHz (dual-core, 15W TDP)

Intel® Core™ i5-1145G7E 1.5 GHz (up to 4.1 GHz, quad-core, 15W TDP)

Intel® Core™ i7-1185G7E 1.8 GHz (up to 4.4 GHz, quad-core, 15W TDP)

» 4 x 2.5GbE ports, supporting PoE (optional)

» 2 x RS-232 & 2 x RS-422/485 (with 2.5kV isolation)

» CE/FCC compliant

## Specifications

| Form factor     |   |
|-----------------|---|
| SBC Form Factor | CPU:  |
|                 | Intel® Celeron® 6305 1.8 GHz (dual-core, TDP 15W)                   |
|                 | Intel® Core™ i5-1145G7E 1.5 GHz (up to 4.1 GHz, quad-core, TDP 15W) |
|                 | Intel® Core™ i7-1185G7E 1.8 GHz (up to 4.4 GHz, quad-core, TDP 15W) |
|                 | Chipset:  |
|                 | SoC   |
|                 | System Memory:  |
|                 | 2 x SO-DIMM DDR4 3200 MHz (8 GB pre-installed) (up to 64GB)         |
|                 | Power:  |
|                 | Input: Terminal block: 12 ~ 28V DC                                  |
|                 | Consumption: 12V @ 6.98A (Intel® Core™ i5-1145G7E with 8GB memory)  |
| I/O Interface   |   |
| I/O Ports       | USB:  |
|                 | 2 x USB 3.2 Gen 2   |
|                 | 2 x USB 2.0   |
|                 | Ethernet: 4 x RJ-45 (* Support optional PoE af module)              |
|                 | 1 x 2.5 GbE by Intel® I225LM  |
|                 | 3 x 2.5 GbE by Intel® I225V (colay I225LM)                          |
|                 | COM Port:   |
|                 | 2 x RS-422/485 with AFC (DB-9, with 2.5kV isolation)                |
|                 | 2 x RS-232 (DB-9, with 2.5kV isolation)                             |
|                 | Digital I/O:  |
|                 | 12-bit Digital I/O (6-in/ 6-out)                                    |
|                 | Display:  |
|                 | 1 x HDMI (up to 3840 x 2160@30Hz)                                   |
|                 | 1 x DP++ (up to 4096 x 2304@60Hz)                                   |
|                 | TPM:  |
|                 | Support Intel PTT   |

|                                 |  |
|---------------------------------|--|
|                                 | Watchdog Timer:  |
|                                 | Programmable 1 ~ 255 sec/min                             |
| <b>Expansion Slots</b>          |  |
| Expansion Slots                 | M.2:   |
|                                 | 1 x 2230 A-key (PCIe x1/USB 2.0)                         |
|                                 | 1 x 3042/52/80 B-key (PCIe x2/USB 3.0/USB 2.0)           |
|                                 | Backplane:   |
|                                 | 1 x PCIe x4  |
|                                 | (Expansion SKU only)                                     |
| <b>System</b>                   |  |
| Cooling method / System Fan     | Fanless  |
|                                 | 4-pin external system fan connector                      |
| Drive Bays                      | 1 x 2.5" SATA 6Gb/s HDD/SSD bay                          |
| <b>Indicator&amp;Buttons</b>    |  |
| Buttons                         | 1 x Power button   |
|                                 | 1 x Reset button   |
|                                 | 1 x AT/ATX switch  |
| Indicators                      | 1 x Power LED (green)                                    |
|                                 | 1 x HDD LED (yellow)                                     |
| <b>Physical Characteristics</b> |  |
| Construction                    | Extruded aluminum alloy                                  |
| <b>Color</b>                    |  |
| Color                           | Black  |
| <b>Dimensions</b>               |  |
| Dimensions                      | 81 x 150 x 190   |
| <b>Weight</b>                   |  |
| Weight                          | 2.15/ 2.5 kg   |
| <b>Environment</b>              |  |
| Operating Temperature           | -20°C ~ 60°C with air flow (SSD)                         |
| Humidity                        | 10% ~ 95% non-condensing                                 |
| Operating Vibration             | Half-sine wave shock 5G, 11ms, 100 shocks per axis (SSD) |
| Operating Shock                 | MIL-STD-810G 514.6C-1 (SSD)                              |
| Safety & EMC                    | CE/FCC compliant   |
| <b>OS Support</b>               |  |
| OS Support                      | Microsoft Windows 10 / Windows 11, Linux                 |

## Ordering Information

|                         |   |
|-------------------------|---|
| DRPC-240-TGL-U-i7CS-R10 | Fanless embedded system, Intel®Tiger Lake-U i7-1185G7E 1.8GHz (quad core, TDP 15W), 8GB DDR4 pre-installed memory, HDMI/DP++, 4 x 2.5GbE LAN, 4 x COM, DIO, 12~28V DC and RoHS    |
| DRPC-240-TGL-U-i5CS-R10 | Fanless embedded system, Intel®Tiger Lake-U i5-1145G7E 1.5GHz (quad core, TDP 15W), 8GB DDR4 pre-installed memory, HDMI/DP++, 4 x 2.5GbE LAN, 4 x COM, DIO, 12~28V DC and RoHS    |
| DRPC-240-TGL-U-CCS-R10  | Fanless embedded system, Intel®Tiger Lake-U Celeron™ 6305 1.8GHz (dual core, TDP 15W), 8GB DDR4 pre-installed memory, HDMI/DP++, 4 x 2.5GbE LAN, 4 x COM, DIO, 12~28V DC and RoHS |

## Packing List

|                           |                |
|---------------------------|----------------|
| 1 x DIN-Rail mounting kit | 1 x Screw pack |
| 1 x Terminal block        |                |

## Powerful yet Compact

### High Performance Fanless Modular DIN-Rail PC

The DRPC-240 is a modular embedded computer for flexible configuration according to specific usage requirements and designed for performance-intensive and space-critical applications. Moreover, the fanless DIN-rail PC mounted 11th Gen Intel® Core mobile processor with 8GB of pre-installed memory and Intel iRIS® Xe graphics delivers great performance.

This device's modular configuration enables users to insert an AI accelerator card or add-on card via a PCIe x4 slot, thus improving edge computation results. In addition, the DRPC-240 can operate in a wide range of temperatures, from -20 to 60 degrees Celsius (-4 to 140 degrees Fahrenheit), and meet IEEE802.3af standard with quad 2.5GbE ports and 15W power output per port at the distance of 100 meters. This makes it ideal for use in factory automation, warehouse management, transportation, and other robust operational environments.



# 11th Gen. Intel® Core™ Processors Optimize AI Inference and Machine Vision Application

The DRPC-240 is powered by 11th Gen Intel® Core™ i7/i5 and Intel® Celeron® processors for blazing fast performance. The 11th Gen Intel® Core™ processor is up to 23% faster single-thread performance and up to 19% faster multi-thread performance than its prior generation for smoother handling of intensive computing tasks. Intel® iRIS® Xe graphics is integrated to offer great GPU computing capability with up to 96EUs and 2.95 times faster graphics performance. IEI's DRPC-240 delivers high computing performance to machine vision, and AI applications.



Up to **23%** overall performance improvement

|           |   |
|-----------|---|
| <b>i7</b> | <b>4693</b> > Intel Core i7-8665UE @1.70GHz/4.4GHz (4C/8T)    |
|           | <b>11114</b> > Intel Core i7-1185G7E @2.80GHz/4.4GHz (4C/8T)  |
| <b>i5</b> | <b>5555</b> > Intel Core i5-8365UE @1.60GHz/4.1GHz (4C/8T)    |
|           | <b>10293</b> > Intel Core i5-1145G7UE @2.60GHz/4.4GHz (4C/8T) |

\* Average CPU Mark

## Stackable, Modular PCIe x4 Design for Added Functionality

Adding an optional second stack expansion kit, TXC-DRPC-240-1S-R10, enables the DRPC-240 to have flexible functionality for installing a variety of PCIe x4 add-on cards, such as high density I/O cards, vision cards, motion cards and AI accelerators, according to specific application requirements via simple and reliable board-to-board connections.



Optimized  
DRPC-240

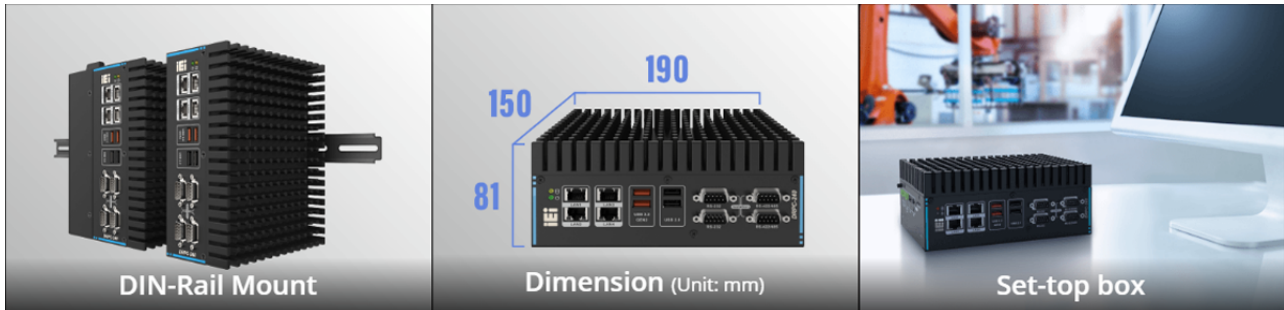


Universal  
DRPC-240



## Versatile, Space-Saving Design for Installation Flexibility

IEI DRPC-240 measures just 19 x 15 x 8 cm, so it takes up very little room to help you maintain a clutter-free workspace. Its DIN-rail mounting support enables the system to be used across a space-critical industries and workplace environments. With compact size and rubber foot pads provided, the DRPC-240 is also perfect for set-top box use.



## Industrial-grade Hardened Hardware Design with 12V~28V DC Wide-range Power Input

Ruggedized hardware architecture safeguards the small factor computer in harsh, remote and dynamic environments.

- » Fanless cooling eliminates failure points
- » -20°C to 60°C wide operating temperature
- » Intel® Platform Trust Technology (Intel® PTT) to enable password protection, device authentication and future-ready cybersecurity
- » Wide 12V to 28V DC voltage input
- » 15G non-operation and 5G operation shock



## Fanless System with Reliable Thermal Design

The DRPC-240's thermal design is optimized for better heat conduction using a pin-fin heatsink concept. This enhances two dimensional heat conduction and reduces flow impedance for better heat dissipation in this fan-less system. The overall weight is thus reduced by 35%, significantly enhancing system reliability in vibration-sensitive applications, such as AGV. Moreover, this innovative thermal design allows the DRPC-240 to maximize superior performance compared to those with traditional plate heatsink consisting of parallel fins.

# 100% CPU performance, no throttling @60°C



## Lightweight & Thin Cooling Solution

**35% Lighter**

Suitable for vibration-sensitive environments



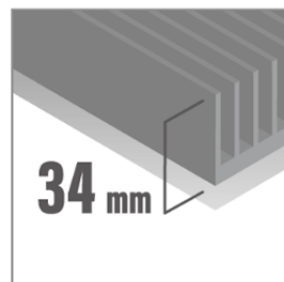
Traditional Heatsink



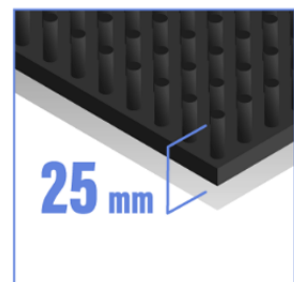
Heatsink of DRPC-240

**36% Thinner**

Fit space-limited environments



Traditional Heatsink



Heatsink of DRPC-240

## Advanced High-efficiency Fan Kit Releases Extreme Computing Power

For computing-intensive applications, users could opt to add an external fan for an active cooling solution maintaining high system performance in high temperature environment and high CPU loading situation. This design also brings high reliability by preventing dust or particles from getting into the hardware, and it is easy to disassemble and clean.

- » TDP 15W -20°C ~ 60°C w/o external fan
- » TDP 28W -20°C ~ 60°C with external fan



100% CPU Power



Easy Assembly



Silent Operation



Fan Kit P/N :  
SF-DRPC-240-R10

## Wireless Connectivity and AI Accelerating for Edge Telemetry

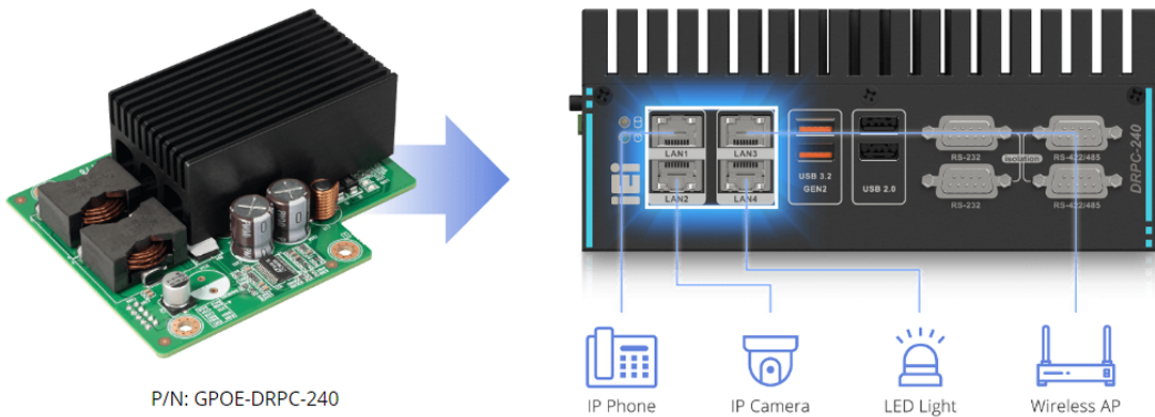
The DRPC-240 enables seamless wireless connectivity and AI accelerating for remote and mobile edge deployments.

- » 4G/LTE by M.2 3042 B key slot with SIM socket on board (USB 3.2 Gen 1/USB 2.0 mode) or AI accelerator by M.2 3080 B key slot (PCIe x2 mode)
- » Wi-Fi & Bluetooth by M.2 2230 A key slot (PCIe x1 and USB 2.0 mode)



## Quad Port 2.5 Gigabit Ethernet with PoE Power

The DRPC-240 equips four 2.5GbE RJ-45 ports to meet requirements of bandwidth-demanding applications. In addition, the DRPC-240 compliant with the IEEE 802.3af PoE standard offers 4-port 15.4-watt PoE capabilities by the optional PoE power module (GPOE-DRPC-240), which helps to transform all of the four 2.5GbE ports to PoE capable. The DRPC-240 can supply a total power budget of 60 watts to meet the demands of many power devices (PDs) (such as IP cameras, wireless APs, IP phones and LED lights).



## Dual 4K Displays with Immersive Graphics and Media Performance

The DRPC-240 is equipped with one HDMI 1.4 port and one DP++ port, both support pixel-accurate 4K resolutions and empower manufacturers to access clearer analysis and management via panel displays or interactive displays. The DP++ connector allows the use of a simple, inexpensive passive adapter to convert to HDMI. It is completely plug and play, handles both video and audio, and does not need any driver to work.

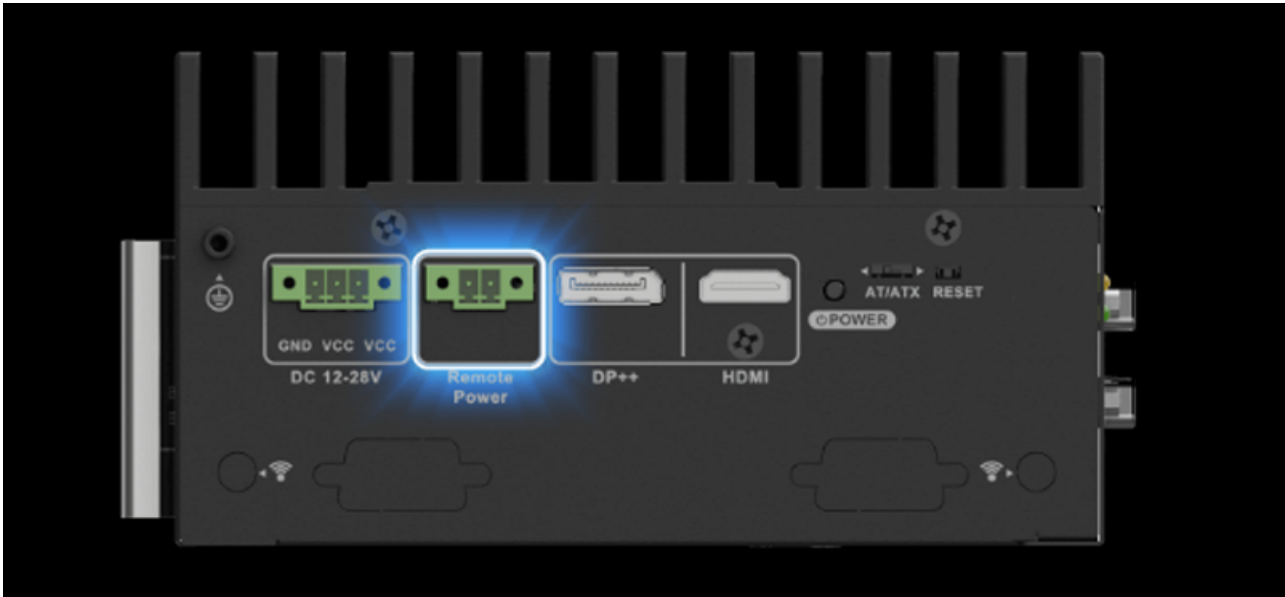


## Industrial I/O Connectivity

The DRPC-240 offers a rich array of expansion possibilities, including COM, LAN, PoE, USB and much more. It also offers HDMI and DP ++ outputs, so you'll never be stuck for display options. In addition, the isolated COM ports enable the DRPC-240 to be protected against voltage spikes and common-mode transient event. The DRPC-240 embedded system even has M.2 slots for Wi-Fi, Bluetooth and LTE add-on modules for exceptional wireless speed and connectivity.

## Remote Power Control

Remote power on/off allowing technicians to power up the system from a distance can help save maintenance effort and cost.



### 2.5kV Isolated COM Ports Ensure Reliable Connectivity

All of the four serial ports on the DRPC-240 are protected against 2.5kV isolation to prevent accidental high voltage shorts, lightning surges and ground loops, so that the DRPC-240 will not be damaged while connected.

### RS-422/485 Runs with Automatic Flow Control (AFC)

The two RS-422/485 ports support Automatic Flow Control (AFC), which can ensure UART buffers are never overrun so data transmission between devices can be complete without the risk of losing data.

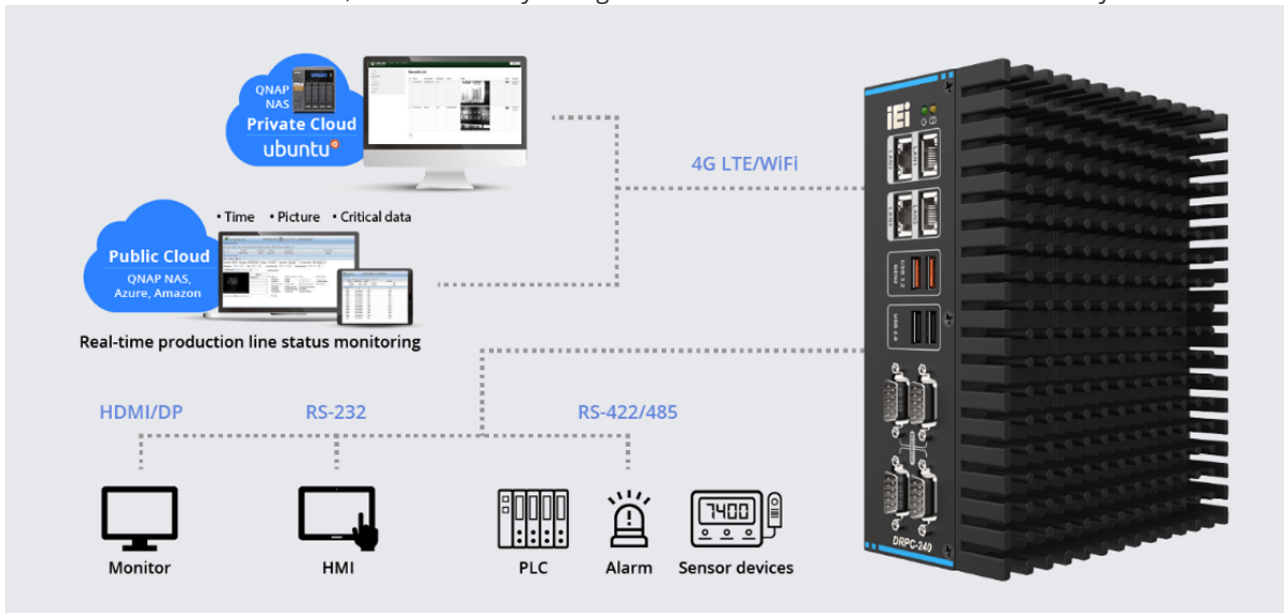


|   |  |  |  |
|---|--|--|--|
| <p><b>Remote Controllable</b><br/>remote power on/off</p> | <p><b>Up to 4K Display</b><br/>via DP++ &amp; HDMI</p> | <p><b>Four 2.5GbE Ports</b><br/>with optional PoE</p>                | <p><b>Isolated Serial Ports</b><br/>with 2.5kV isolation</p> |
|   |  |  |  |
| <p><b>Wide Power Input</b><br/>12 V ~ 28 V DC</p>         | <p><b>Two Knockouts</b><br/>for I/O Expansion</p>      | <p><b>Up to 10Gb/s USB</b><br/>2 x USB 3.2 Gen 2<br/>2 x USB 2.0</p> |  |

## Application

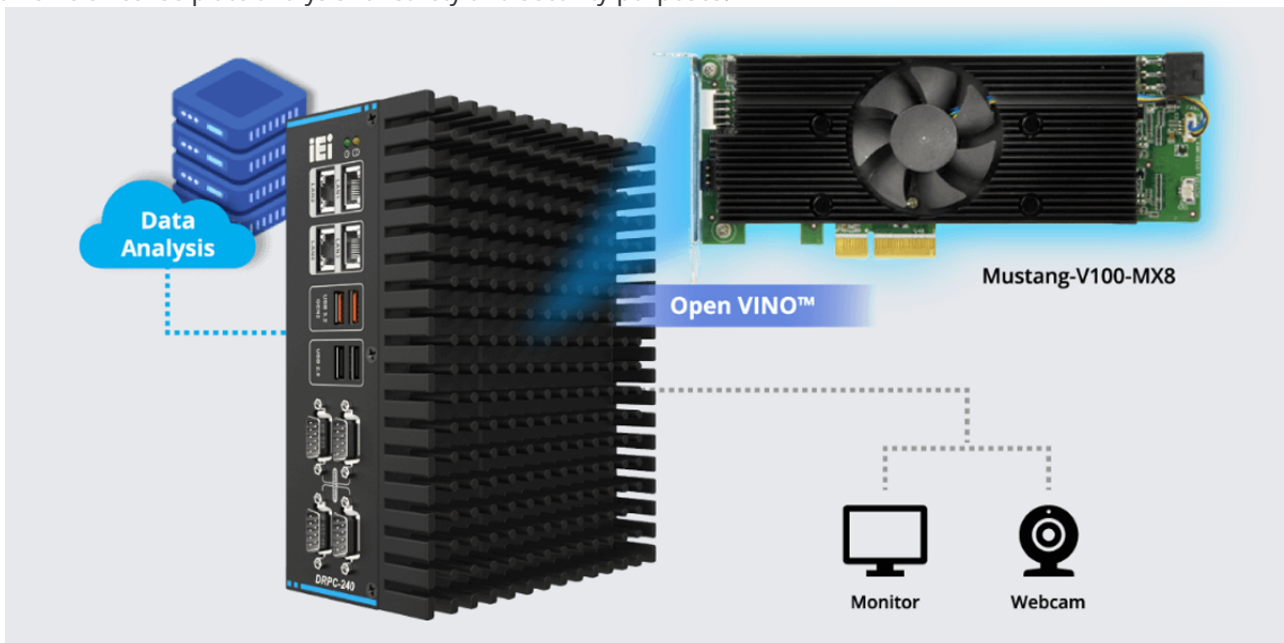
### Production Line

The DRPC-240 has sufficient serial ports for connecting with devices that require low-speed signal such as alarms or sensors. For connecting devices needing high-speed signals, use the two USB 3.2 Gen 2 ports which transmission speed could reach up to 10Gb/s. Equipping multiple LAN ports is also a key feature of the DRPC-240. Advantages of LAN include inexpensive, highly reliable and easy to install and maintain. Multi-LAN not only supports high speed communication between devices, but is also easy to segment into intranet and extranet for security.



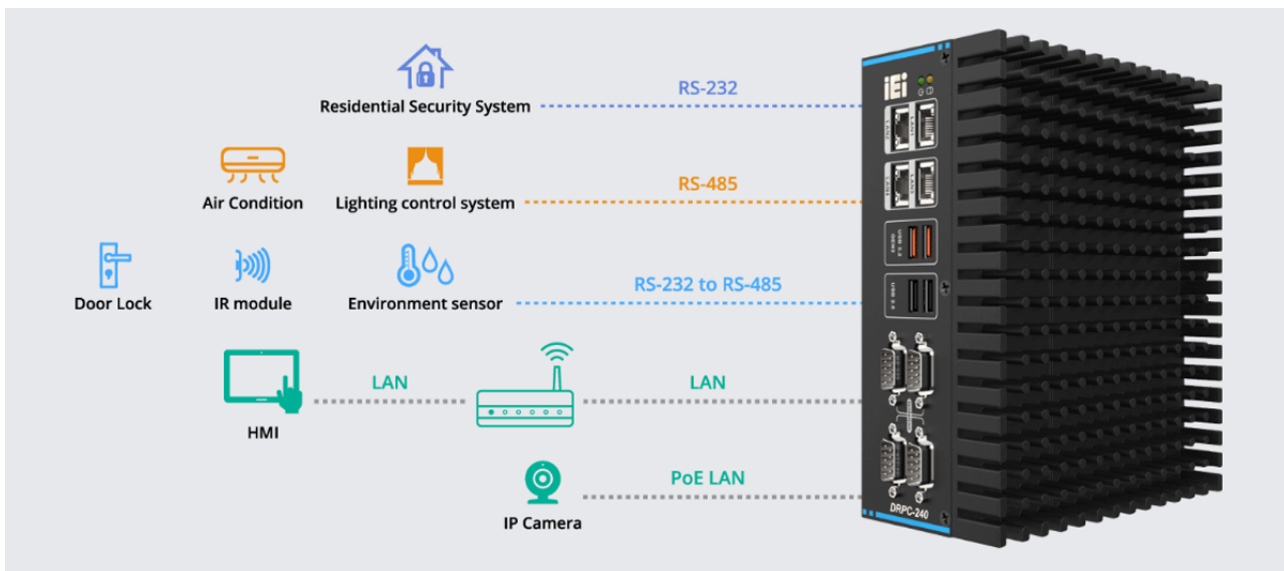
### AI Inference System

The DRPC-240 with expansion layer features rich I/O and PCIe x4 signal to support add-ons like the IEI acceleration cards (Mustang-V100-MX8 or Mustang-V100-MX4), opening the door to faster deployments of AI inference systems with the combination. It enables machine learning by using a variety of training models to simulate and infer the status or appearance of objects. For example, the inference system with the video analysis model can perform face and vehicle license plate analysis for safety and security purposes.



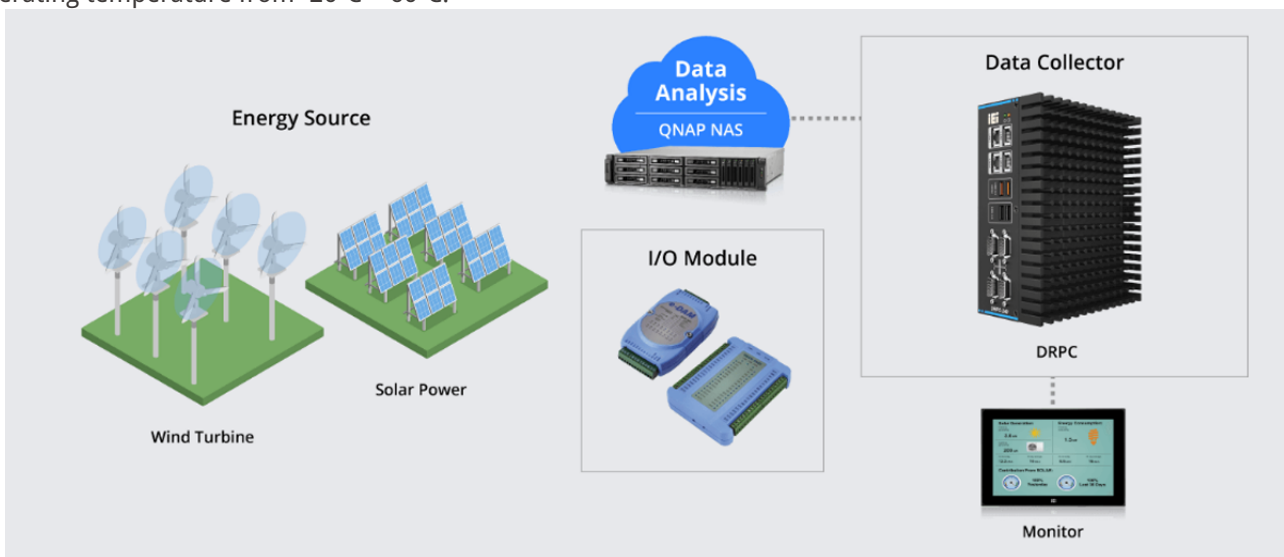
### Smart Building

The demands on the intelligence of buildings have increased constantly in recent years, such that the energy efficiency as well as a good "return on investment" is the priority. The idea of a "green building" based on sustainable, energy-efficient construction and building use can be realized with intelligent, integral building automation. DRPC-240 provides six set of serial ports which can fulfill user's demands to connect a large number of devices through serial ports. Utilizing Ethernet connections to communicate with other control system, users could monitor building status and control devices, achieving easy remote management.



## Energy Management

Information technology adds intelligence to factories from design to the end of the process. Today's technologies automate the collection, storage and retrieval of data from across multiple factories and factory sub-systems to make that data available for decision makers, from facility managers to supervisors. DRPC-240 plays a role as the data collector gateway, connecting end devices with the data base. It could also connect with data dashboards to display information like load profile analysis, energy usage benchmarking, utility rate benchmarking, and energy budget tracking. Considering the needs of the applications in harsh outdoor environments, the DRPC-240 can support wide operating temperature from -20°C ~ 60°C.



## Optional Item Selection

With flexibility and convenience – various options await! Build your iconic DRPC-240 by choosing functional expansions!



Mustang-V100-MX8

8 x Intel® Movidius™ Myriad™ X  
MA2485 VPU Accelerator



Mustang-V100-MX4

4 x Intel® Movidius™ Myriad™ X  
MA2485 VPU Accelerator



GPOE-2P

2-port 802.3at PoE Card

# Dimensions

