

# Industrial IoT Gateway

## IOT-GATE-RPI4

Datasheet v.1



**IOT-GATE-RPi4 is a powerful Industrial IoT Gateway PC based on the Raspberry Pi 4 Compute Module designed for industrial control and monitoring.**

Designed for reliability and with 24/7 operation in mind, IOT-GATE-RPi4 features extensive wireless and wired connectivity including LTE/4G, WiFi ac, BT 5.0, 2x Ethernet and 3x USB.

This impressive Gateway PC has an extended temperature range of -40°C to 80°C and a wide input voltage range of 8V to 36V. It also features a fanless design in aluminum with shock, vibration, dust and humidity resistance.

### Key Features:

- Powered by Raspberry Pi 4 Compute Module
- Up to 8GB RAM, 128GB eMMC, NVME
- LTE/4G, WiFi ac, BT 5.0, 2x Ethernet, 3x USB
- Up-to 4x RS485 | RS232 | CAN-FD ports
- Custom I/O expansions with add-on boards
- Input voltage range of 8V to 36V, PoE client support
- Industrial temperature range of -40C to 80C
- Fully compatible with Raspberry Pi OS and eco-system

# IOT-GATE- RPI4

## CPU Core, Memory and Network

Note:

- "Option" column specifies the configuration code required to have the particular feature.
- "+" means that the feature is always available

| Feature          | Specification  | Option |
|------------------|--|--------|
| <b>CPU</b>       | Broadcom BCM2711, quad-core ARM Cortex-A72, 1.5GHz                               | +      |
| <b>RAM</b>       | 1GB – 8GB, LPDDR4  | D      |
| <b>Storage</b>   | 16GB - 128GB eMMC flash, soldered on-board                                       | NA     |
|                  | 64GB - 256GB NVME flash, optional module   | NB     |
| <b>Ethernet</b>  | 1000Mbps Ethernet port, RJ45 connector   | +      |
|                  | 100Mbps Ethernet port, RJ45 connector  | +      |
| <b>WiFi</b>      | 802.11ac WiFi interface  | WB     |
| <b>Bluetooth</b> | Bluetooth 5.0 BLE  |        |
| <b>Cellular</b>  | 4G/LTE CAT4 cellular module, Quectel EC25-E (EU bands)<br>* via mini-PCIe socket | JEC25E |
|                  | 4G/LTE CAT4 cellular module, Quectel EC25-A (US bands)<br>* via mini-PCIe socket | JEC25A |
|                  | SIM card socket  | +      |

## Graphics and Display

|                |   |   |
|----------------|---|---|
| <b>GPU</b>     | Broadcom VideoCore VI<br>H.265 (4Kp60 decode), H.264 (1080p60 decode, 1080p30 encode) | + |
| <b>Display</b> | DVI-D, up to 4Kp60  | + |

## I/O

|                                    |   |       |
|------------------------------------|---|-------|
| <b>USB</b>                         | 3x USB2.0 ports, type-A connectors  | +     |
|                                    | 2x USB3.0 ports, type-A connectors<br>Implemented with expansion add-on board<br>* cannot be combined with NVME storage | FUSB3 |
| <b>RS485<br/>CAN bus<br/>RS232</b> | Up-to 4x RS485 (half-duplex)   RS232   CAN-FD ports<br>Isolated, terminal-block connector                               | Fx    |

## IOT-GATE- RPI4

| Feature                    | Specification  | Option |
|----------------------------|--|--------|
| <b>Digital I/O</b>         | Up-to 2x I/O modules each supporting 4x digital outputs + 4x digital inputs<br>Isolated, terminal-block connector, compliant with EN 61131-2 | Fx     |
| <b>Debug</b>               | 1x serial console via UART-to-USB bridge, micro-USB connector  | +      |
| <b>Expansion Connector</b> | Expansion connector for add-on boards<br>PCIe, USB, SPI, GPIOs   | +      |

## System

|                 |   |     |
|-----------------|---|-----|
| <b>RTC</b>      | Real time clock powered by on-board coin-cell battery | +   |
| <b>Watchdog</b> | Hardware watchdog                                     | +   |
| <b>Security</b> | TPM 2.0, implemented with Infineon SLB9670            | TPM |
| <b>PoE</b>      | Support for PoE (powered device)                      | POE |

## Electrical, Mechanical and Environmental Specifications

|                              |   |
|------------------------------|---|
| <b>Supply Voltage</b>        | Unregulated 8V to 36V   |
| <b>Power Consumption</b>     | 3W - 10W, depending on system load and configuration                            |
| <b>Dimensions</b>            | 132 x 84 x 25 mm  |
| <b>Enclosure Material</b>    | Aluminum housing  |
| <b>Cooling</b>               | Passive cooling, fanless design   |
| <b>Weight</b>                | 550 gram  |
| <b>MTTF</b>                  | > 200,000 hours   |
| <b>Operating temperature</b> | Commercial: 0° to 60° C<br>Extended: -20° to 60° C<br>Industrial: -40° to 80° C |
| <b>Storage temperature</b>   | -40° to 85° C   |
| <b>Relative humidity</b>     | 10% to 90% (operating)<br>05% to 95% (storage)                                  |

## Software

|                   |  |
|-------------------|--|
| <b>BSP</b>        | Full Board Support Package and ready-to-run images                           |
| <b>OS Support</b> | Raspbian Linux and Ubuntu<br>Supports Microsoft Azure IoT and AWS Greengrass |

# IOT-GATE- RPi4

## Mounting Options

| Option  | Description  |
|---|--|
|    | <p><b>Wall / VESA mounting bracket</b><br/>A highly versatile bracket for mounting IOT-GATE-RPi4 on a surface</p>                      |
|   | <p><b>DIN-rail mounting kit</b><br/>Snap-on DIN-rail mounting bracket for installing IOT-GATE-RPi4 in equipment racks and cabinets</p> |
|  | <p><b>Side DIN-rail mounting kit</b><br/>Snap-on DIN-rail bracket for side mounting the gateway in equipment racks and cabinets</p>    |

# IOT-GATE- RPI4

## IOT-GATE-RPi4 Evaluation Kit

### Hardware

- IOTG-RPI4-D4-NA32-WB-JEC25x-FARS4-FBCAN-POE-PS-XL-TIC
- WiFi and cellular antennas
- Extra RS485 I/O module
- Extra CAN I/O module
- Extra two RS232 I/O modules
- DIN-rail mounting bracket
- Wall mounting bracket
- DC terminal block adapter
- DC Y-cable
- USB cable

NOTE: select eval-kit modem type according to cellular bands required for your region.

### Technical Support

- Technical support for 12 months.
- 45-day trial period. Evaluation Kit will be accepted for refund if the user finds the product not suitable for their needs.