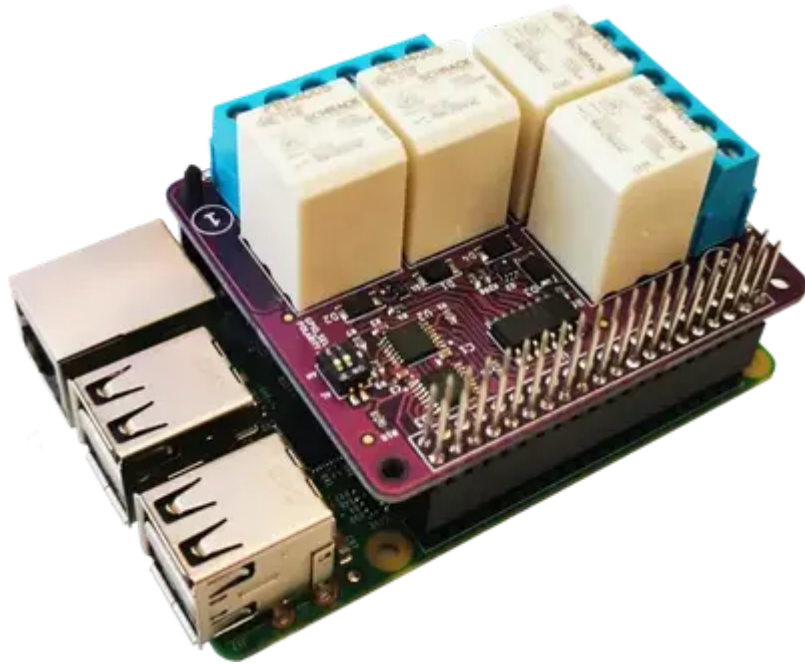


# AQEX qReCon v2.2 — Technical Datasheet

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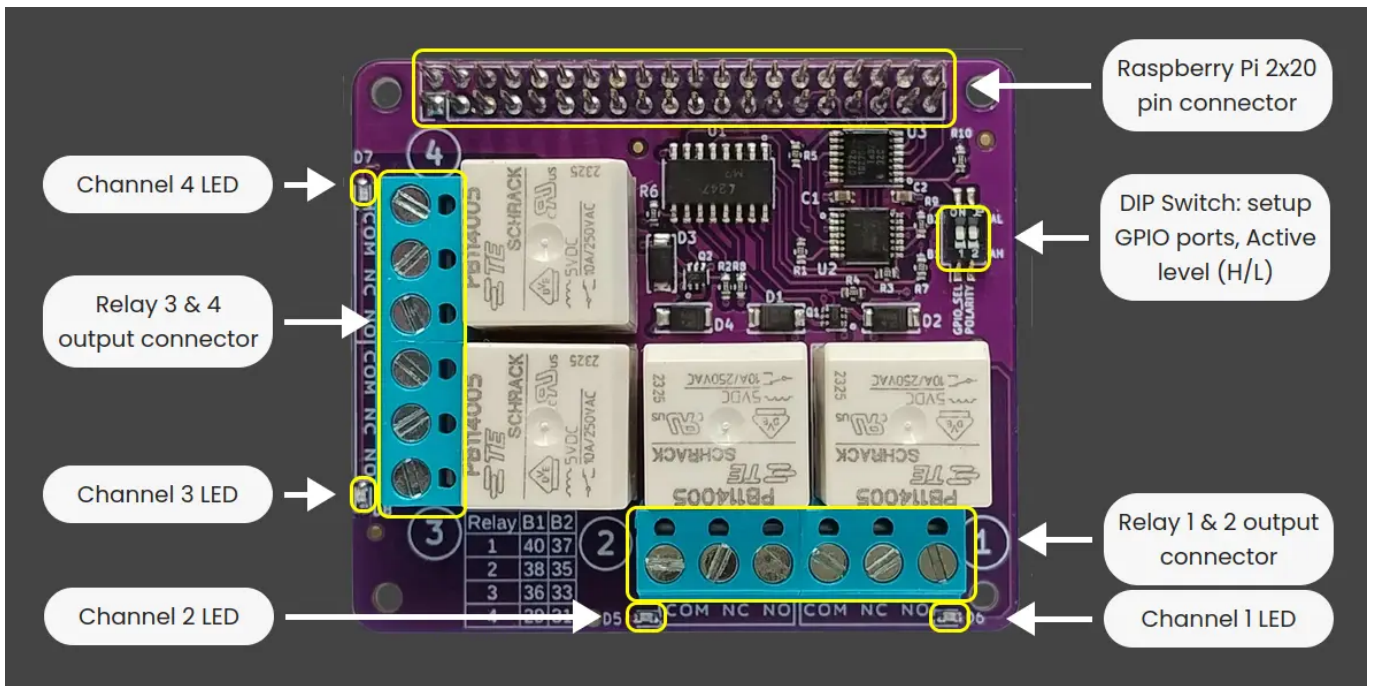
## 1. Overview

The **qReCon** is a high-quality 4-channel relay output module designed specifically for Raspberry Pi and other microcomputers. Featuring **premium Schrack relays**, **optical isolation**, and **configurable GPIOs** and **Active High and Active Low control**, it gives you the confidence and reliability your projects deserve. It allows low-voltage logic devices to control high-voltage and high-current external AC/DC loads with maximum safety.

## 2. Technical Specifications

| Feature            | Specification                             |
|--------------------|---|
| Number of Channels | 4 independent relay circuits              |
| Relay Type         | SPDT (Toggle switch: COM, NC, NO)         |
| Relay Brand        | Schrack (Premium quality)                 |
| Max. AC Voltage    | 250V AC                                   |
| Max. DC Voltage    | 28V DC (10A)                              |
| Max. Current (NO)  | 10A                                       |
| Max. Current (NC)  | 3A  |
| Isolation          | Double isolation (Opto-isolators + Relay) |
| Control Logic      | 3.3V or 5V DC                             |
| Feedback           | 4x Status LEDs (one per channel)          |

### 3. qReCon User Interfaces and Indicators



### 4. Hardware Configuration

The qReCon features a **2-circuit DIP switch (2)** for hardware-level customization:

#### 4.1 GPIO Selection (GPIO\_SEL)

You can choose between two sets of GPIO pins for control to avoid conflicts with other HATs:

| DIP Position    | Relay 1      | Relay 2      | Relay 3      | Relay 4     |
|-----------------|--------------|--------------|--------------|-------------|
| <b>OFF (B1)</b> | GPIO21 (P40) | GPIO20 (P38) | GPIO16 (P36) | GPIO5 (P29) |
| <b>ON (B2)</b>  | GPIO26 (P37) | GPIO19 (P35) | GPIO13 (P33) | GPIO6 (P31) |

#### 4.2 Active Level Setup (POLARITY)

Defines whether the relay activates on a HIGH (1) or LOW (0) signal:

| DIP Position             | GPIO 0 (False) | GPIO 1 (True) |
|--------------------------|----------------|---------------|
| <b>OFF (Active High)</b> | COM-NC         | <b>COM-NO</b> |
| <b>ON (Active Low)</b>   | <b>COM-NO</b>  | COM-NC        |

## 5. Safety and Installation

- **High Voltage Warning:** The relay outputs can carry up to 250V AC. Touching terminals during operation is life-threatening.
- **Isolation Zone:** For safety identification, the high-voltage areas on the PCB are clearly marked with a **thick polygon outline**, including a **High Voltage icon** and **"Danger" / "High Voltage"** labels.
- **Boot Phase Note:** Relay 4 (GPIO5/6) may be active at boot due to Raspberry Pi's internal pull-up resistors. This can be modified in `/boot/firmware/config.txt` using the `gpio=X=mode,state` command.

## 6. Resources and Software

To support your development, the following resources are available on our official [GitHub repository](#):

- **C++ Sample Program:** A ready-to-use example to help you integrate the qReCon into your software environment quickly.
- **Full User Manual:** Detailed documentation including safety instructions.

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**HW Version:** 2.2 | **Released:** 2024

**Manufacturer:** AQEX Electronics | [aqex.eu](http://aqex.eu)