Relay Module 6 Channel 5V – Compact Multi-Device Switching Board

The **Relay Module 6 Channel 5V** is a reliable and versatile switching board designed for controlling multiple electrical devices safely and efficiently. With six independent relays on a single board, it enables users to switch AC and DC loads using low-voltage signals from popular microcontrollers such as **Arduino, Raspberry Pi, ESP8266, ESP32, STM32, and PIC**.

Whether you're working on **home automation, robotics, or IoT projects**, this module provides the flexibility and safety needed to manage multiple devices at once. Built with durable components and optocoupler isolation, it ensures stable operation and protects your microcontroller from voltage spikes or electrical interference.

🔧 Key Features of the 6-Channel Relay Module

- **Six Independent Relays** – Each relay can control an AC or DC load separately.
- **5V Operating Voltage** – Fully compatible with most 5V microcontrollers.

- **High Load Capacity** – Supports up to **10A at 250VAC** or **10A at 30VDC** per channel.
- **Optocoupler Isolation** – Provides safety by electrically isolating the control circuit from the high-voltage side.
- **LED Indicators** – Each channel has a built-in LED to show its ON/OFF status.
- **Durable PCB Design** – Strong construction with screw terminals for secure wiring.
- **Flexible Trigger Options** – Can be configured as low-level or high-level triggered depending on your system needs.

⚡ Technical Specifications

- **Number of Channels:** 6
- **Input Voltage:** 5V DC
- **Trigger Voltage:** 3.3V – 5V (compatible with Arduino, Raspberry Pi, ESP boards, etc.)
- **Relay Type:** SPDT (Single Pole Double Throw)
- **Load Capacity:**
    - AC: 250V @ 10A

    - DC: 30V @ 10A
- **Isolation:** Optocoupler design for enhanced protection
- **Indicators:** 6 status LEDs for relay activity
- **Connections:** Screw terminals for outputs, header pins for inputs
- **Board Dimensions:** Compact, suitable for integration into automation boxes

🌍 Applications of the 6-Channel 5V Relay Board

The **6-channel relay board** is perfect for projects that require the control of multiple devices simultaneously. Common applications include:

1. **Home Automation** – Switching lights, fans, ACs, or other appliances.
2. **IoT Smart Systems** – Remote device control via Wi-Fi, Bluetooth, or the internet.

3. **Robotics Projects** – Controlling motors, pumps, or actuators.
4. **Industrial Control** – Managing machinery, production lines, or lab equipment.
5. **Smart Farming** – Automating irrigation systems, water pumps, and greenhouse devices.
6. **Educational Use** – Ideal for students learning automation, electronics, and control systems.

Its ability to handle both AC and DC loads makes it a **versatile relay module** for DIY hobbyists, students, and professionals.

🔒 Safety and Reliability

This relay board is designed with **opto-isolated inputs**, ensuring your sensitive microcontroller boards are not directly exposed to high-voltage circuits. This makes it extremely safe for applications where both low-voltage logic signals and high-power devices interact.

Additionally, the PCB uses **high-quality components** and **secure screw terminals** to prevent accidental loose connections. The onboard indicator LEDs also provide a quick way to monitor the switching status of each relay channel.

✅ Why Choose the 6 Channel Relay Module?

- Controls up to six devices with one board.
- Fully compatible with **Arduino, ESP8266, ESP32, Raspberry Pi, STM32, and more**.
- Optocoupler isolation for safe operation.
- Compact size, making it ideal for both DIY and industrial setups.
- Affordable and reliable solution for automation projects.

Conclusion

The **Relay Module 6 Channel 5V** is a must-have tool for electronics enthusiasts, IoT developers, students, and industrial engineers. Its balance of **performance, safety, and affordability** makes it one of the most popular choices for automation and control projects.

With its **six independent relays, optocoupler protection, and wide compatibility**, this board ensures that your projects run smoothly and securely. Whether you're automating your home, controlling industrial devices, or working on a smart farming system, this **6-channel relay board** will give you the flexibility and reliability you need.