

ELECFREAKS Introduces micro:bit Jacdac Smart Exploration Kit, Simplifying Smart Device Creation

ELECFREAKS micro:bit Jacdac Kit simplifies STEM/coding. Uses easy Jacdac plug-andplay modules. Supports MakeCode/Python for hands-on projects. Ages 7+.

HONG KONG, June 12, 2025 /EINPresswire.com/ -- ELECFREAKS recently introduced the launch of its new micro:bit Jacdac Smart Exploration Kit. Designed to make learning STEM concepts, coding, and electronics more accessible and enjoyable for students,



educators, and hobbyists, the kit leverages the popular micro:bit platform and the innovative Jacdac technology for simple, plug-and-play connectivity. It provides a comprehensive collection of modules and resources to empower users to build creative smart projects without the hassle

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"We believe that hands-on learning is the most effective way to grasp complex STEM concepts," said Song, product manager of ELECFREAKS. "However, traditional electronics often involve intricate wiring and connections that can be intimidating and frustrating for beginners. With the micro:bit Jacdac Smart Exploration Kit, we've eliminated that barrier. Jacdac's simple, standardized connector system allows users to focus on the fun part – coding and building – without getting bogged down in technical setup. Our goal is to lower the entry threshold for exploring

physical computing and inspire the next generation of innovators and problem-solvers."

Jacdac Integration: The Key to Simplified Connections The Smart Exploration Kit is built around the versatile micro:bit V2 (a micro:bit V2 board is required and sold separately or included in some bundles), a widelyused and robust microcontroller platform in education globally. Its key innovation lies in the seamless integration of Jacdac, a standardized, plug-and-play bus developed by Microsoft for connecting modules. Departing from traditional electronics setups involving intricate pin assignments, breadboards, and confusing wiring diagrams, this Jacdac kit utilizes a vastly simplified



connection system. Key to its simplicity are the reversible connectors, meaning cables connect correctly regardless of orientation, eliminating a common source of frustration. Furthermore, the system offers connection flexibility: modules can be easily linked sequentially in a chain (series), or arranged in parallel configurations for different project structures. This allows learners to focus their time on exploring ideas and coding, rather than debugging complex physical wiring.

Kit Contents: A Versatile Module Collection

The kit includes a diverse range of Jacdac modules, each opening up new possibilities for interactive and functional projects. These include various sensors (such as human infrared, magnetic, light) to allow projects to react to their surroundings, input devices (like buttons and knob encoder) for user interaction, and output components (including an RGB LED) for visual feedback. This variety ensures that users have the tools to build a wide array of creative smart devices.

Learning Support: Resources for All Skill Levels

To support learners of all levels, the micro:bit Jacdac Smart Exploration Kit comes with a extensive User Guide featuring detailed tutorials and step-by-step case studies. These resources are carefully designed to guide users through fundamental programming concepts using both Microsoft MakeCode, a block-based visual programming editor that is ideal for beginners, and Python, offering a text-based coding option for more advanced users. The tutorials demonstrate how to integrate the different modules into exciting, real-world projects.

Hands-On Learning: Building Skills Through Projects

The kit is designed to foster a hands-on, project-based learning approach that encourages exploration and creativity. Beginners can start with simple tasks like lighting up an LED or reading a sensor value using the intuitive MakeCode block editor. As they progress, they can combine multiple modules and programming logic to build more complex and imaginative creations, also exploring text-based coding with Python. The included User Guide and detailed case studies provide excellent starting points and inspiration. For example, the kit's resources include a detailed guide on building a Human motion detection alarm (as detailed in Case Study

06 on the <u>ELECFREAKS wiki</u>), demonstrating how to use the PIR (Passive Infrared) sensor to detect human movement and trigger responses like activating sound alerts through the speaker and visual notifications via the RGB LED. This practical security project teaches users how to integrate multiple sensor inputs with programmed responses. Beyond this specific example, the diverse range of modules in the kit enables users to explore building various types of smart devices that interact with their environment, create interactive gadgets, or build simple robotic elements, cultivating computational thinking, design skills, and problem-solving abilities in a fun and engaging way.

Target Audience and Use Cases

The <u>ELECFREAKS micro:bit Jacdac Smart Exploration Kit</u> is ideal for students aged 7 and up, educators looking for effective and easy-to-implement STEM teaching tools, parents seeking engaging educational activities for their children at home, and hobbyists or makers interested in exploring electronics and coding in a simplified and modular way. It is perfectly suited for use in classroom environments, after-school clubs, home learning settings, and maker spaces.

About ELECFREAKS

ELECFREAKS is a technology company dedicated to providing innovative and high-quality electronic modules, expansion boards, and STEM education solutions. With a strong focus on open-source hardware and fostering a global community of makers and learners, ELECFREAKS aims to make STEM education accessible and engaging for everyone.

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