04 case study



Expansion Kits

The Smart Farm Expansion transforms the sheenbot into an environmental control hub. Students connect soil - moisture probes, temperature sensors and humidity sensors directly to the driver board to automate water pumps, fans or heating elements.

Through sheen.bot IoT Cloud, learners set thresholds, log real-time data and visualize trends, enabling hands-on experiments in precision agriculture, climate control and sustainability studies, and encourages hypothesis-driven inquiry, data analysis and system optimization in STEM project.

The Motor Drive add-on empowers learners to build dynamic, motorized systems.

Supporting both DC and stepper motors, the module includes high-current drivers, fault protection and speed/torque control via PWM or step/dir signals.

Sensors

Students wire up wheel bots, robotic arms or conveyor prototypes and write control routines to explore motion profiles, feedback loops and power management. Our expansive sensor lineup includes but not limited to temperature & humidity, soil & moisture probes, gas detectors, flame sensors, ambient-light & traffic-light modules. Distance measurement is handled by the ultrasonic unit, while PIR motion and IR proximity sensors support presence-detection and remote-control experiments.

Each module connects via analog, digital or PC ports and comes with built-in calibration routines and sample code for threshold alerts, data smoothing, and logging.



Modules

With this diverse array, students can prototype environmental monitoring, safety systems, object-avoidance robotics, and smart-home IoT projects—all on one uniform platform





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Actuators

The actuators suite includes a range of plug-and-play modules—fans for airflow control, Piranha LEDs for bright visual alerts, high-torque single-axis servos and micro 9 g servos for precise positioning, plus RGB LEDs for full-color lighting effects.

Each actuator is driven via PWM or digital outputs and integrates with our unified software libraries for speed, angle, brightness and color programming. Students can rapidly prototype cooling systems, interactive light displays or robot appendages.

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Mobile Programming & Remote Control

Support block-based programming on mobile phone or tablet, without relying heavily on PC, and is suitable for scenarios including: 1) School classes which requires faster onboarding experiences. 2) Environment without power and PC debugging process.

Highly Integrated Sensors On-the-board

Multiple internal sensors and actuators, such as a microphone. RGB lights, and a three-axis accelerometer.

It also supports Text-to-Speech to allow interaction more easily.

With RFID technology, it allows kids even at pre-school stage to experience unplugged coding.



02 Full Type-C **Interface Design** Built-in 18 Type-C interface to connect multiple sensors and actuators. need for purchasing expansion board. Simplified interface design brings plug and play experience. Al Integration & 04

Interaction Built-in Al Offline module for voice

External AI Camera module for vision

Integrated with sheen.bot platform enables the potentials to build AI applications on industry trend use

02 infinite creations

One board with infinite creations - based on various project requirements, sheenbot[®] prioritize the fast prototype so anyone can build their own applications with more than 30 different sensors and actuators. Perfect for smart home, robots, IoT, farm and many more projects.



03 code it, make it

sheenbot∞ support programming with Mind+ With block-based coding on Mind+, vou can easily connect with all kinds of external modules.





AI Programming Platform A mobile-based platform that allows programming with only a few variables. Program compilation is done via a built-in compiler, offering a simple sensors for display. operation process and comprehensive features.

IoT Platform

The self-developed IoT platform enables sending . commands to the main board for control purposes and receiving real-time

Scan the QR code to view the user manual online or visit: www.sheen.bot/sheenbotInfinity/manua www.sheen.bot/sheenbotInfinity/manual

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