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Fashionstar Atom S 10-DOF Open Source Robot Kit

The Fashionstar Atom S is a fully open-source, 10-degree-of-freedom (DOF) humanoid robot platform designed for robotics education and algorithm development.

SKU	UPDATED	PRICE
100064698	2026-11-11 09:22:26	$269.00(Excl. VAT)



Overview



The Fashionstar Atom S is a fully open-source, 10-degree-of-freedom (DOF) humanoid robot platform designed for robotics education and algorithm development. Driven by 10 Fashionstar RA8-U25H-M serial bus servos and equipped with the Seeed Studio XIAO ESP32S3 controller, it natively supports Wi-Fi and BLE wireless development while remaining compatible with the entire Seeed Studio XIAO series. The system features a web-based visual motion editor for real-time debugging and supports cross-platform integration via UART, compatible with Raspberry Pi, ESP32, and STM32 environments, making it an ideal platform for learning servo control, gait planning, and embedded systems.

Key Features

01

Compact 10-DOF Architecture

The robot is constructed with a 3D-printed skeleton and 10 serial bus servos, providing a cost-effective yet highly capable hardware platform. Its compact size (28.3 cm height) makes it perfect for desktop operation and portable demonstrations.

02

Web-Based Visual Motion Editor

The control software is browser-based, eliminating the need for local installation. It enables real-time servo angle adjustment, “Teaching Mode” for physical motion recording (drag-and-record), and exports motion data in standard JSON format for parsing by external microcontrollers.

03

Modular Control System (RUC-01 + XIAO)

The system utilizes the RUC-01 adapter board as a power and communication hub (5V/3.3V power management, 4-channel servo bus, USB-C). It pairs with the Seeed Studio XIAO ESP32S3 and a Grove expansion shield, facilitating easy connection to sensors and Bluetooth remote control implementation.

04

Bluetooth Teaching & Control

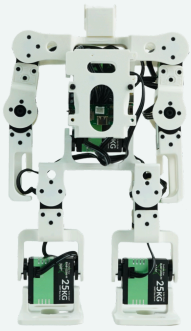
Optimized for the XIAO ESP32S3, the robot supports Bluetooth remote control features including real-time motion execution, reset, damping mode activation, and speed adjustment during teaching playback.

Product Gallery

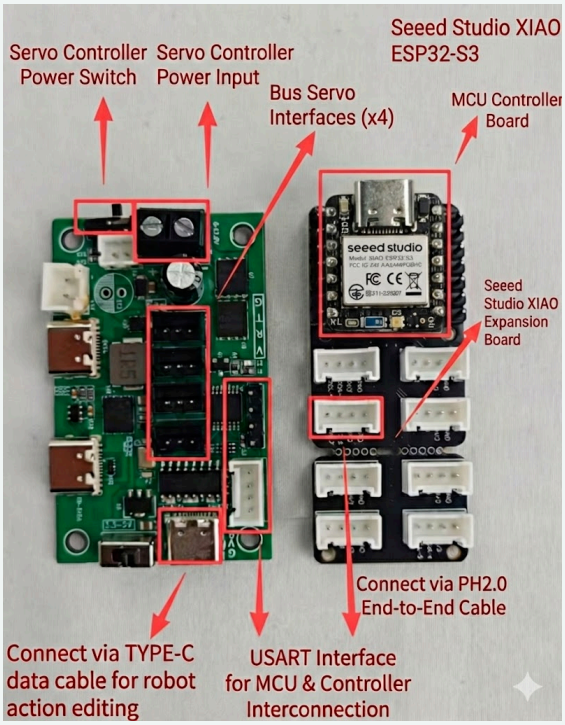








Hardware Overview



Applications

- **Motion Algorithm Verification:** A simplified 10-DOF structure allows beginners to focus on fundamental gait algorithms and balance control without the complexity of a full-sized humanoid.
- **Embedded System Education:** Using the Seeed Studio XIAO ESP32S3, students can learn Bluetooth Low Energy (BLE) communication, sensor integration using the Grove ecosystem, and bus servo protocols.
- **Remote Control & Interaction:** The integrated Bluetooth capabilities allow for the development of interactive remote control applications, including damping mode teaching (physically posing the robot) and remote motion triggering.
- **Desktop Robotics Development:** The compact form factor makes it an excellent desktop companion for developers testing logic for larger robots or IoT interactions via ESP32/nRF52840.

Resource Links

- https://www.seeedstudio.com/Atom-S-p-6711.html
- Fashionstar Atom S Development Guide (Chinese)

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