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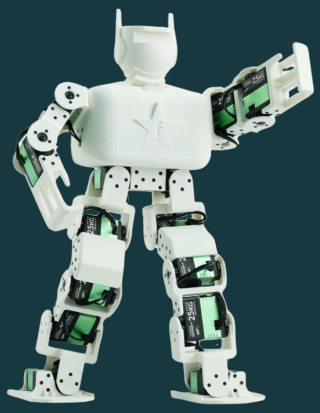
INDUSTRIAL PRODUCT DATASHEET

Fashionstar Atom X 17-DOF Open Source Robot Kit

The Fashionstar Atom X is a fully open-source, 17-degree-of-freedom (DOF) humanoid robot platform designed for robotics education and algorithm development.

SKU	UPDATED	PRICE
100092737	2026-11-16 02:24:46	$399.00(Excl. VAT)



Overview



The Fashionstar Atom X is a fully open-source, 17-degree-of-freedom (DOF) humanoid robot platform designed for robotics education and algorithm development. Driven by 17 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.

Key Features

01

High-DOF Kinematic Structure

The robot utilizes 17 serial bus servos (Head x1, Arms 2x3, Legs 2x5) to achieve complex kinematic motions. The bus servo topology reduces wiring complexity and allows for individual servo status feedback and protection.

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, and exports motion data in standard JSON format for parsing by external microcontrollers.

03

Modular Control Interface (RUC-01)

The RUC-01 adapter board serves as the central hub, integrating power management (5V/3.3V), 4-channel servo bus interfaces, and a USB-C debug port. It also features Grove connectors for expanding sensors and peripherals.

04

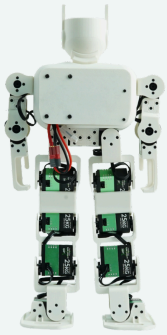
Multi-Platform Interoperability

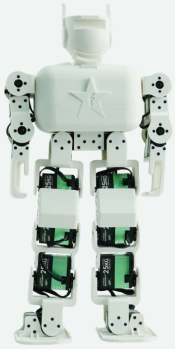
The system is designed for broad compatibility via standard UART communication. It can interface with Raspberry Pi for Python-based AI processing, ESP32 for IoT applications, or STM32/Arduino for low-level embedded control.

Product Gallery



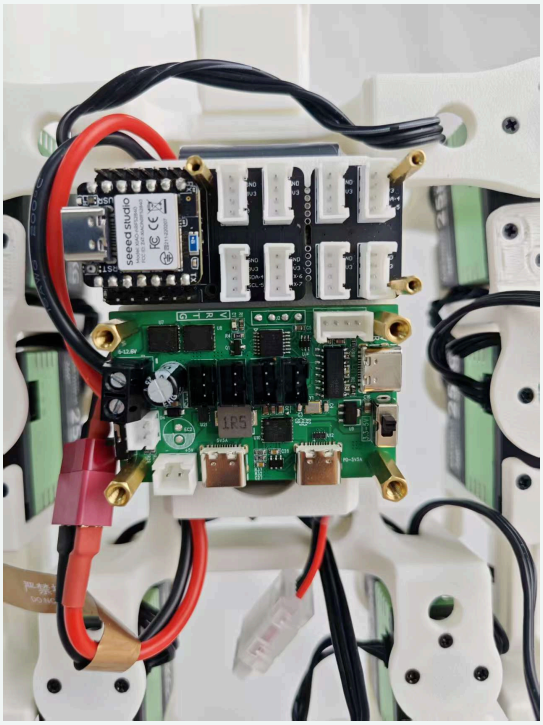


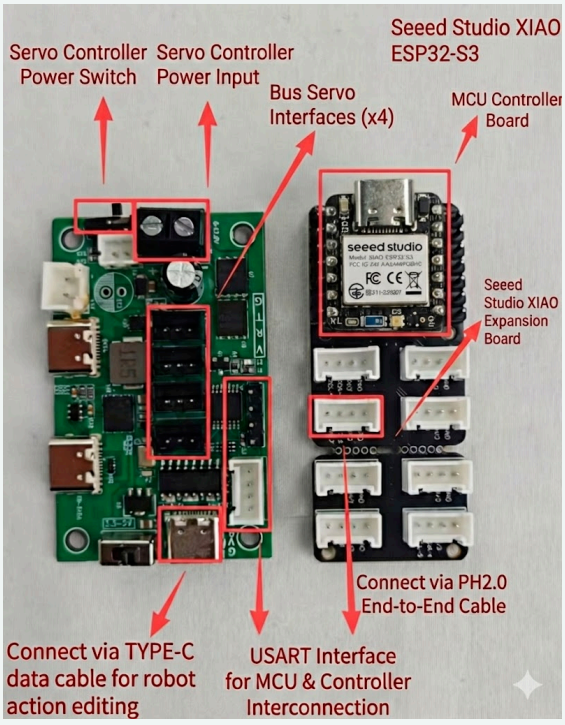






Hardware Overview





Applications

- **Robotics Algorithm Research:** The open kinematic chain and Python compatibility make it a suitable platform for verifying inverse kinematics (IK), gait generation, and balance control algorithms.Artificial Intelligence Education
- **By integrating with edge computing devices like Raspberry Pi, the platform supports computer vision (OpenCV) and machine learning applications, such as object tracking and gesture recognition.IoT & Remote Control Systems**
- **Utilizing the wireless capabilities of the ESP32 controller, the robot can function as a node in an IoT network, supporting remote telemetry and control via Bluetooth or WiFi.Secondary Development**
- **The standard UART interface and JSON action format allow developers to implement custom control logic using C++, Python, or ROS (Robot Operating System).**

Resource Links

- https://www.seeedstudio.com/Fashionstar-Atom-X-17-DOF-Open-Source-Robot-Kit-p-6712.html
- Fashionstar Atom X17开发指南中文

Seeed Technology Co.,Ltd.
9F, Building G3, International E City,
Zhongshanyuan Road, Nanshan, Shenzhen, China

Tel: +86 0755-80695676
Web: www.seeed.cc
Shop: www.seeedstudio.com