



MODULAR AGRICULTURAL MONITORING

FieldScout

Four-wheel mobile platform / ESP32 motor-control architecture



Concept visualization. Appearance, sensors and accessories depend on the supplied configuration.

Mobile sensing

Carry instruments between agricultural observation points.

Modular integration

Configure mounts, computing and sensors for the application.

Documented drive interface

Retain the ESP32 and existing drivers; add navigation through a verified receiver.

Brochure-reported reference figures

Parameter	Reported value
Length × width × height	650 × 480 × 420 mm
Approximate mass	22 kg
Reported maximum speed	1.5 m/s (5.4 km/h)
Reported operating time	Up to 8 hours; terrain, payload and duty cycle dependent
Drive arrangement	Four-wheel drive
Reported operating temperature	−10 °C to +50 °C
Reported enclosure protection	IP54; confirm evidence for the complete supplied assembly

Specification status

These figures come from the supplied brochure, not a new qualification test. The approved delivered-unit specification governs dimensions, mass, speed, payload, endurance and environmental exposure. Battery specifications, payload rating and measured stopping distance are configuration-dependent.

INTERFACES AND CONFIGURATION

A layered route from perception to motion

A navigation-equipped unit combines sensing and higher-level computation with the existing drive controller. Installed firmware and acceptance records determine the modes released for operation.

Layer	Reference architecture / ordering information
Compute	Jetson-based navigation; project material names Orin Nano. Confirm exact board, carrier, OS and software image. Original Jetson Nano and Orin Nano are distinct platforms.
Perception	LiDAR, IMU, GNSS, RGB and environmental payloads are configuration options; sensors and calibration are specified per order.
Low-level control	Existing ESP32 with two addressed dual-channel motor drivers; one master on the RS485 drive bus.
Host control	Expected external interface: newline-terminated <code>CMD</code> , <code>FL</code> , <code>FR</code> , <code>RL</code> , <code>RR</code> in rad/s, logical positive forward. A matching released receiver is required.
Drive bus	Documented example: Modbus RTU over RS485, IDs 1 and 2, 115200 baud / 8N1 as configured in the source.
Browser demonstration	Navigation Studio V9: simulated driving, LiDAR detours, message inspection and original 3D explorer. No physical robot connection.
Power	Specify battery, BMS, charger, supply rails, protection and physical stop circuit for the delivered equipment.

Control-mode distinction

The supplied standalone ESP32 demo repeats a motion sequence after an eight-second startup countdown. It does not parse the external `CMD` stream expected by the Lua example. The second supplied sketch is a heartbeat test. Confirm the delivered firmware before commissioning physical control or relying on autonomous functionality.

Specify these items with the order

Application and environment

Route, surface, operating area, payload, measurements and supervised workflow

Acceptance evidence

Measured geometry, limits, stop behavior, power/thermal checks and navigation tests where fitted

Delivered configuration

Robot SKU/revision, sensors, compute, control profile, operator interface and power equipment

Handover documentation

Signed unit record, as-built wiring, firmware release, component instructions and service terms

Documentation

FS-UM-001: operating manual and technical reference. **FS-QS-001:** quick-start sheet. **FS-DS-001:** this datasheet.

Product enquiries and demonstrations

adaptiveagrotech.com

adaptiveagrotech.com/FieldScout/index.html

Reference edition, revision 1.0. Concept images and simulator outcomes are not acceptance evidence for a physical unit. See the manual's source register and the signed delivery record.