PDRL

Ag++

A Plug and Play Flight Controller
for Agriculture Drones



Ag++ Flight Controller

Ag++ revolutionizes agriculture drone spraying with a faster processor, higher memory, and superior drone performance. It offers precision spraying algorithms for greater efficiency. Upgrade to Ag++ for smarter and more reliable agriculture operations.



Key Specifications:

Superior Processing Power

Ag++ is powered by the STM32H743VIT main processor, featuring a 32-bit Arm® Cortex®-M7 core running at up to 480 MHz and providing 1027 DMIPS for real-time computations. Coupled with the STM32F103 IO processor operating at 72 MHz, Ag++.

Enhanced Sensors for Precision

Ag++ features a highly advanced sensor suite, including ICM-20649, BMI088, and ICM-42688 accelerometers/gyroscopes for precision motion detection. The aerospace-grade MMC5983 magnetometer and dual MS5611 barometers ensure high accuracy in altitude and orientation measurements.

Advanced External Sensor Support

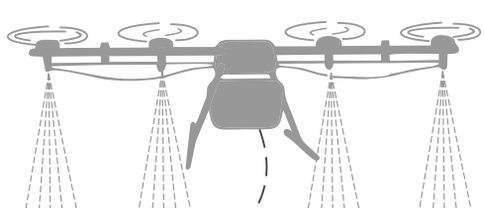
Ag++ supports CAN-based front and back obstacle avoidance radars, allowing your drone to navigate complex environments with ease. Additionally, the CAN altimeter provides precise terrain-following capabilities, ensuring stable and accurate flights even in rugged or varied landscapes.

Broader Connectivity for Flexibility

Ag++ offers 8 PWM outputs for motors, 4 auxiliary PWM/GPIO outputs, and 2 CAN buses for complex configurations and seamless connectivity. The dedicated R/C inputs for PPM and S. Bus signals ensure compatibility with a wide range of external systems, giving you ultimate flexibility in customizing your drone setup.

Future-Ready Design

Ag++ is built to handle the growing needs of precision agriculture and advanced drone operations. Its compact design and weight, makes it lightweight and easy to integrate into a variety of drone systems. The aerospace-grade metal body not only adds durability but also provides enhanced shielding against electromagnetic interference, ensuring reliable performance in diverse environments.



Flight Control Software

Advanced agricultural flight control software engineered for autonomous drone missions. It features precise obstacle detection, robust security, and intuitive control, ensuring efficient, secure, and seamless spraying operations tailored to agricultural needs.

Flight Control Software Feature:

Auto Obstacle Avoidance:

Automatically detects and avoids obstacles during missions. Switches to loiter mode for manual control, ensuring smooth mission resumption.

Spray Resume Functionality:

Resumes spraying immediately after mission restart, ensuring consistent and efficient field coverage.

Flow Meter Pulse and Level Calculation:

Displays liquid consumption accurately using pulse data from the flow meter.

Integrated Level Sensor:

Monitors tank levels and triggers actions like RTL, landing, or hovering when empty.

Rangefinder Sensor Support:

Compatible with sensors like H30, new H30, R21 front, and R21 rear, commonly used as altimeters and radar sensors for enhanced accuracy.

Semi-Auto Mode:

Enables manual altitude adjustments during missions for obstacle clearance.

Toggle Avoidance Algorithm:

Allows activation or deactivation of obstacle avoidance to modify flight paths.

Simple Compass Calibration:

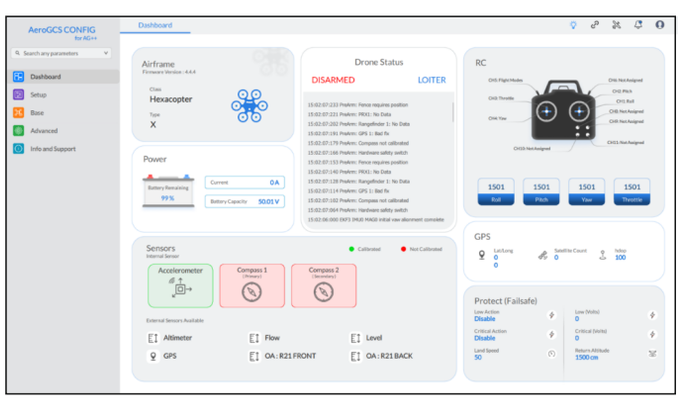
Reduces required rotations, simplifying the calibration process.

AeroGCS Config

AeroGCS Config is specialized software in the AeroGCS suite, designed for manufacturers. It offers settings to customize drone operations, allowing manufacturers to configure parameters for specific operational and performance requirements.

Configurations Include

- Calibration Sensors and Payloads: Integrates and calibrates sensors (GPS, IMUs, RC, ESC, Power) and payloads (cameras, spraying systems).
- **Safety Settings:** Configures geofences, return-to-home (RTL), and fail-safe mechanisms.



AeroGCS GREEN Software

AeroGCS GREEN, India’s first IV&V-certified precision spraying software, ensures uniform spraying, simplifies mission planning, and boosts efficiency with features like obstacle avoidance, spray flow monitoring, and detailed reporting.

Key Features

- Precision mapping and exclusion zones
- Real-time spray flow monitoring
- Obstacle avoidance and auto-exclusion areas
- Detailed field reports with actionable insights
- Integrated with AeroGCS Enterprise for smart
- insights.

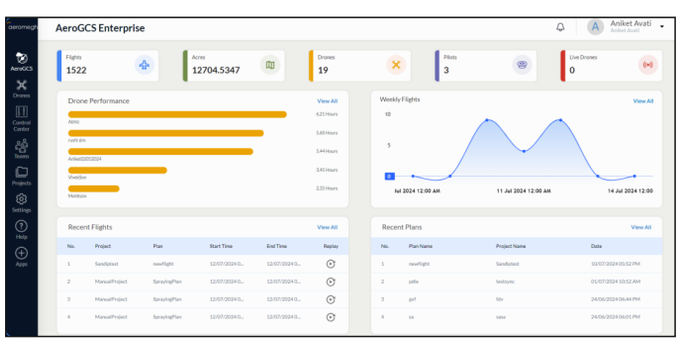


AeroGCS Enterprise

AeroGCS Enterprise enables real-time drone tracking, detailed logging, and seamless fleet management. It can be seamlessly integrated with AeroGCS GREEN for efficient data synchronization.

Key Features

- Operational insights: locations, acreage, and revenue tracking
- Real-time drone and fleet management
- Comprehensive performance reports for accurate billing



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