

V7 Pro

High Precision Autopilot Open Source Unmanned System Controller

Advanced Autopilot For Autonomous Unmanned Vehicles

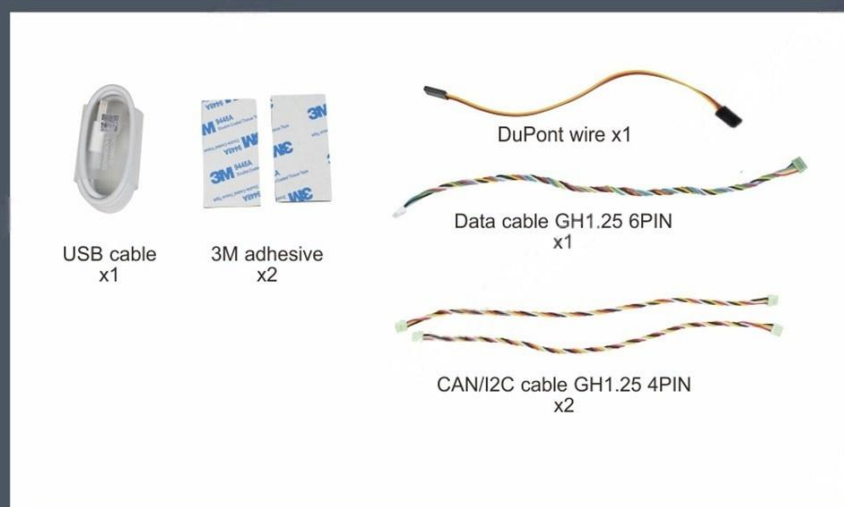


Multiple Redundant IMU Design for System Safety

The independent bus features a triple-redundant IMU and dual-redundant barometers. When one set of IMUs fails, the system seamlessly switches to another reliable IMU, making the unmanned system safer.



Accessories



Dual GPS Design

Dual GPS redundancy and fusion provide enhanced safety, stronger anti-interference capability, and higher precision.



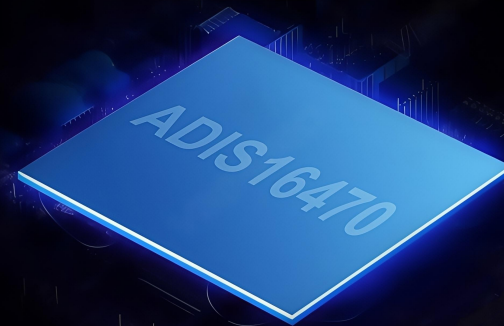
Adapt To Complex Magnetic Field Environments

An automotive-grade RM3100 magnetometer is used, supporting GPS heading functionality, completely solving the issue of magnetometer interference.

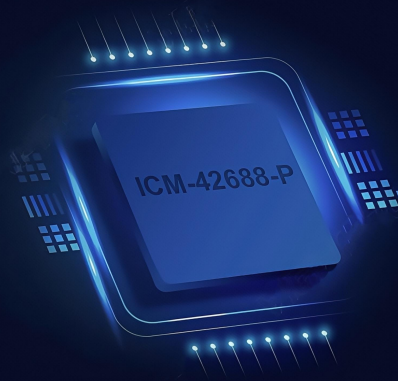


Sensor Upgrade

The main sensor used is the ADIS16470, which represents a perfect combination of industry-leading iMEMS® technology and signal conditioning. Each sensor has its own dynamic compensation formula, providing precise sensor measurements.



The other two backup sets use the ICM-42688-P sensors, which have a 40% reduction in noise density compared to traditional consumer-grade IMUs. And the temperature stability has improved by 2 times. This ensures the highest measurement accuracy under varying temperature conditions.



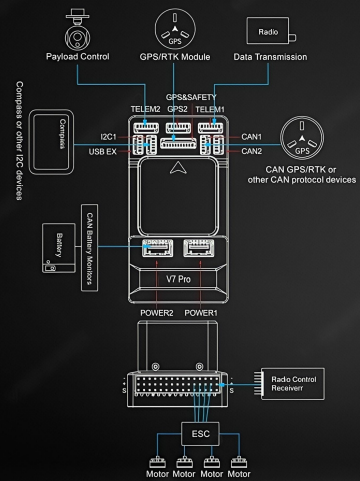
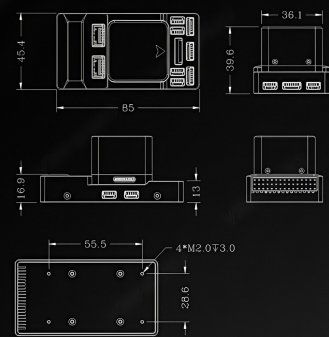
Noise density

-40%

Temperature stability increased

2x

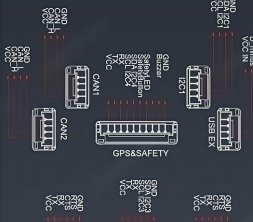
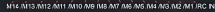
Interface definition diagram



Rich interfaces:

CAN port connection: Magnetic compass, galvanometer, GPS, airspeed meter





Adapt To Harsh Environments



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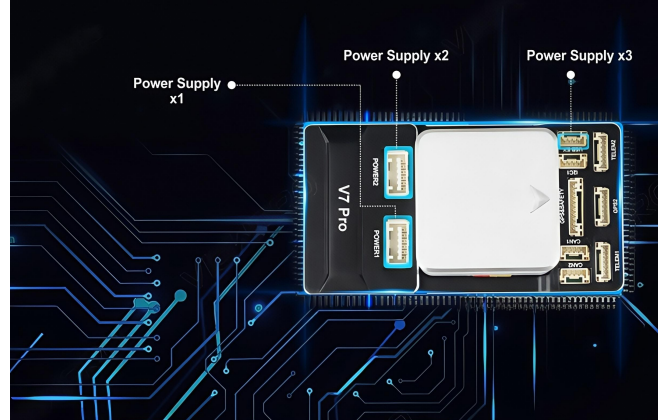
The V7 Pro is equipped with a high-precision intelligent temperature compensation system (IMU), allowing the sensor to operate in a constant temperature state.

02

This effectively reduces sensor drift and ensures reliable performance in low-temperature environments.

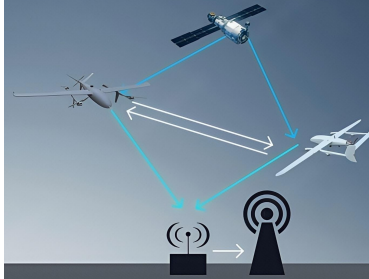
Multiple Redundant Power Supply Design

The V7 Pro features three power supply inputs, allowing for seamless switching to the next power source in case of a failure.



ADS-B

Situational Awareness by Integrated ADS-B
UAVs equipped with the new carrier board can receive altitude of commercial manned aircraft within the range of ADS-B out. This effectively informs the UAV operator to enable them to assess the risks on their current operation.



Supports Various Vehicle Types

It supports helicopters, multi-rotors, fixed-wing aircraft, vertical takeoff and landing vehicles (VTOL), rovers, boats, submarines, etc.

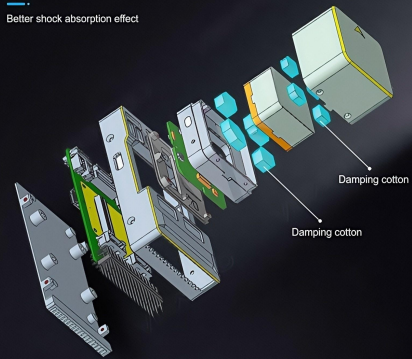


Optional GPS and RTK Module

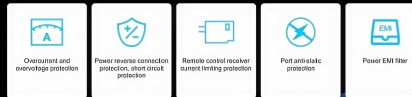


Built-in sponge shock absorption

Better shock absorption effect



Detailed design and comprehensive protection



Supported Software



H7 Processor with Powerful Performance

Equipped with the STM32H743 processor, Cortex-M7 core (with double-precision floating-point unit), running at a frequency of up to 480MHz, 2MB Flash, 1MB RAM, it easily handles the computational demands of unmanned systems.



CORE Modular Design

The V7 Pro controller integrates the MCU and IMU within the CORE module, which can be sold separately. Users can design their own baseboards according to the structure of their unmanned systems to meet personalized requirements.



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