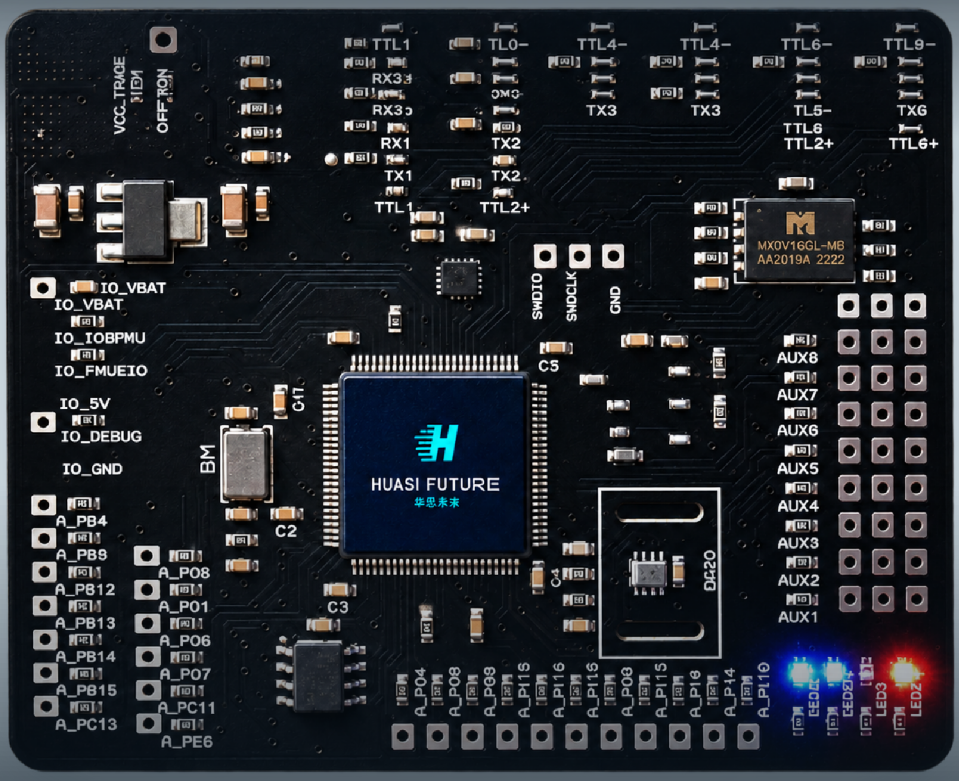

PX4H743PILOT

H743 高性能自动驾驶仪

H743 High-Performance Autopilot

基于 STM32H7 的高端开源自动驾驶仪板，姿态感知更稳定可靠

A high-end open-source autopilot board on STM32H7, with steadier, more reliable attitude perception

主频与浮点运算能力远高于传统 M4 飞控，姿态解算延迟更低，EKF2 收敛更快、滤波精度更高，尤其适合对控制响应极其敏感的机型。

Far higher clock rate and floating-point performance than an M4 flight controller mean lower attitude-estimation latency, faster EKF2 convergence and better filtering — ideal for airframes that are highly sensitive to control response.

STM32H7
主控平台
Controller platform

EKF2
状态估计
State estimation

PX4
飞控固件
Flight control firmware

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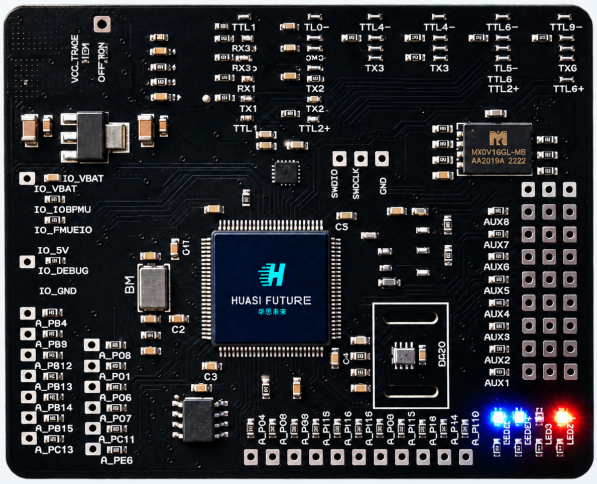
01 产品简述 Product brief



本产品是一款基于 STM32H7 高性能微控制器的高端开源自动驾驶仪板。相比传统基于 STM32F4（M4 架构）的载人级飞控，H7 系列主频更高、运算能力更强，能够以更低的延迟处理复杂的姿态解算，使得 EKF2（扩展卡尔曼滤波）算法收敛更快、滤波精度更高，为飞行器提供更稳定、更可靠的姿态感知，尤其适用于对控制延迟 / 响应时间极其敏感的机型和安全性要求苛刻的应用场景。

This is a high-end open-source autopilot board built on the STM32H7 high-performance microcontroller. Compared with crewed-grade flight controllers on the STM32F4 (M4 architecture), the H7 series runs at a higher clock rate with far more compute capacity, so complex attitude estimation is processed with lower latency. That makes the EKF2 extended Kalman filter converge faster and filter more accurately, giving the aircraft steadier and more reliable attitude perception — especially valuable on airframes that are highly sensitive to control latency and on applications with demanding safety requirements.

02 核心亮点 Key highlights

超强算力，精准控制
Superior compute, precise control

- 采用 STM32H7 系列芯片，主频较传统 M4 飞控大幅提升，浮点运算能力更强。
  Uses STM32H7 series chips whose clock rate is far above traditional M4 flight controllers, with much stronger floating-point performance.
- 运行 EKF2（扩展卡尔曼滤波）算法时，能够在高振动环境下更快速地区分噪声与真实姿态，为大型无人机及载人 eVTOL 提供顺滑、精准的飞行数据支撑。
  Running EKF2, it separates noise from true attitude faster in high-vibration environments, giving large UAVs and crewed eVTOL smooth, accurate flight data.

极广的适配范围
Broad platform coverage

- 从穿越机（需要高响应速度）到起飞重量 500 kg 的工业级无人机、垂直起降固定翼，再到对可靠性和冗余要求严苛的轻型载人飞机，均可适配。
  From FPV racers that demand fast response to 500 kg-class industrial UAVs, VTOL fixed-wing aircraft, and light crewed aircraft with demanding reliability and redundancy requirements.

卓越的软件兼容性
Excellent software compatibility

- 兼容稳定版 PX4-Autopilot 固件（支持 V1.12.3、V1.15.3 及最新主干版本）。
  Compatible with released PX4-Autopilot firmware (v1.12.3, v1.15.3 and the latest main branch).

03 适用场景 Applications

01

科研与教育
Research and education

基于 V1.12.3 进行算法验证，利用 H7 的算力跑更复杂的模型。

Algorithm validation on v1.12.3, using the H7 compute to run more complex models.

02

工业应用
Industrial applications

500 kg 级重载植保、物流无人机，需要极高的 EKF 滤波稳定性。

500 kg-class heavy-lift agricultural and logistics UAVs that need very stable EKF filtering.

03

先进空中交通（AAM）
Advanced air mobility (AAM)

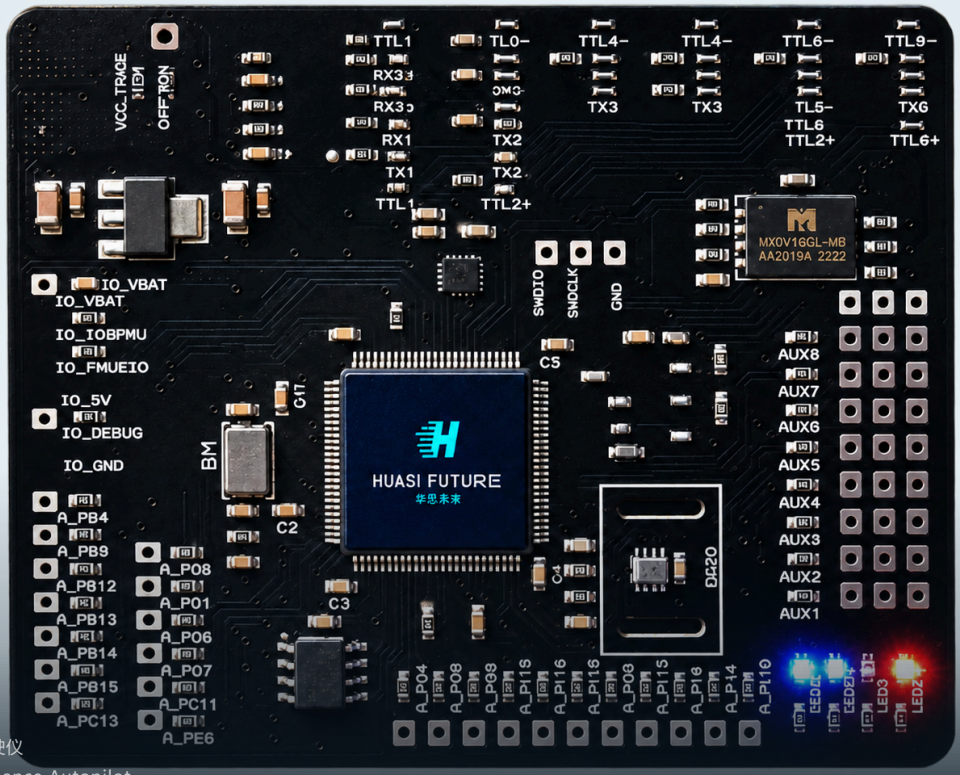
轻型载人飞行器的原型机开发与测试。

Prototype development and testing for light crewed aircraft.

04 技术参数 Specifications

参数 Parameter	规格 Specification
主控平台 Controller platform	**STM32H7**
状态估计算法 State estimation algorithm	**EKF2 扩展卡尔曼滤波** EKF2 extended Kalman filter
飞控固件 Flight control firmware	**PX4-Autopilot**
资料所列固件版本 Documented firmware versions	**v1.12.3、v1.15.3** v1.12.3 and v1.15.3
开发主干 Development main branch	**按具体构建验证** Validate the specific build

05 产品图版 Product view



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H743 High-Performance Autopilot
PX4H743Pilot

开源 · 高算力 · 低延迟姿态解算 · EKF2 · PX4-Autopilot
Open source · High compute · Low-latency attitude estimation · EKF2 · PX4-Autopilot