YJiNNO

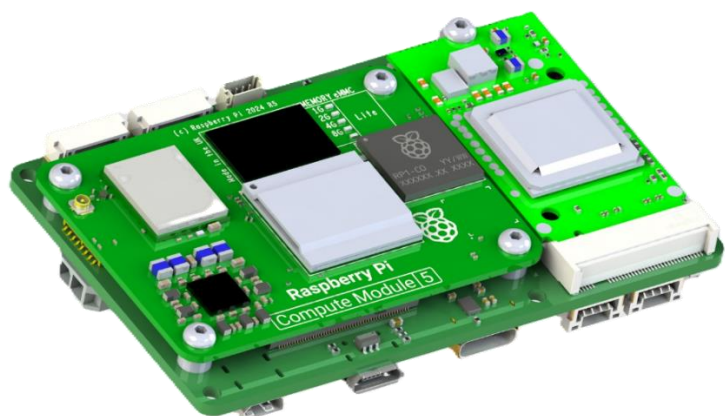# Synapse Pilot

Intelligent flight control solution

▶ Highly integrated AI & flight control system

▶ Compatible with Pixhawk protocols

▶ High performance with low power consumption

▶ Built-in Hailo-8 / 8L AI accelerator, up to 26 TOPS

▶ Embedded inertial measurement unit (IMU)

▶ Rich I/O interfaces for versatile applications

Synapse Pilot is a fully integrated solution designed for high-performance drone applications and edge AI computing.Powered by the Raspberry Pi Compute Module 5 and the Hailo-8 AI accelerator, and seamlessly integrated with the Pixhawk flight control ecosystem, it effortlessly handles autonomous flight control, real-time image analysis, and other compute-intensive tasks.

With support for a wide range of communication protocols and I/O interfaces, it allows flexible expansion for external sensors and peripheral devices.Synapse Pilot is the ideal platform for edge intelligence and high-precision flight control.

Applications

Autonomous navigation in GPS-denied environments.

Real-time detection of people, vehicles, and objects.

Real-time analytics for fast tracking and recognition.

Reliable AI-assisted flight control for challenging scenarios.

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Category	Specification/Description
Core Processor	Raspberry Pi Compute Module 5 ・64-bit ARM Quad-Core 2.4GHz Processor
AI Accelerator	Hailo-8 or Hailo-8L ・Up to 26 TOPs, enabling high-performance edge inference
Flight Control System	STM32H753 480Mhz ・Compatible with Pixhawk communication protocol
Sensors	・Gyroscope/Accelerometer：ICM-45686 ・Magnetometer：IST8310 ・Barometer：MS5611
Camera Interface	・2x CSI 4-lane MIPI ・1x Micro-HDMI
Main Connectivity	・2x USB 3.0 ・1x Micro USB 2.0
Communication	・5x UART ・4x Analog input ・1x I²C
PWM Interfaces	・8x PWM Output ・4x AUX Output
Other Interfaces	・Cooling Fan Speed Control ・2.4/5Ghz WIFI ・Bluetooth 5.0, BLE ・LED / Buzzer / Safety Switch ・Flight data logging via micro-SD card ・SWD debugging interface
Power	・2s~6s（8V~27V）
Dimensions	・80 × 50 × 20 mm