

pixhawk® 4

The most advanced development kit for the PX4® autopilot

Product features

- A new and small form factor
- More computing power and 2X the RAM than previous versions
- New sensors with higher temperature stability
- Integrated vibrations isolation
- Increased ease-of-use: pre-installed with most recent PX4 (v1.8)
- Additional ports for better integration and expansion



Product description

Pixhawk® 4 is the latest update to the successful family of Pixhawk flight controllers. It is designed and developed in collaboration with Holybro and the PX4 team, optimized to run the full Dronecode stack and comes preinstalled with the latest PX4 firmware (v1.8).

It features the currently most advanced processor technology from STMicroelectronics®, sensor technology from Bosch®, InvenSense®, and a NuttX real-time operating system, delivering incredible performance, flexibility, and reliability for controlling any autonomous vehicle.

The Pixhawk 4's microcontroller now has a 2MB flash memory and 512KB RAM. With the increased power and RAM resources, developers can be more productive and efficient with their development work. More complex algorithms and models can be implemented on the autopilot.

High-performance, low-noise IMUs on board are designed for stabilization applications. Data-ready signals from all sensors are routed to separate interrupt and timer capture pins on the autopilot, permitting precise time-stamping of sensor data. Newly designed vibration isolations enables more accurate readings, allowing vehicles to reach better overall flight performances.

The two external SPI buses and six associated chip select lines allow to add additional sensors and SPI-interfaced payload. There are total of four I2C buses, two dedicated for external use and two grouped with serial ports for GPS/compass modules.

The Pixhawk 4 autopilot development kit is perfect for developers at corporate research labs, startups, and for academics (research, professors, students).

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Technical specifications

- Main FMU Processor: STM32F765
 - 32 Bit Arm[®] Cortex[®]-M7, 216MHz, 2MB memory, 512KB RAM
- IO Processor: STM32F100
 - 32 Bit Arm[®] Cortex[®]-M3, 24MHz, 8KB SRAM
- On-board sensors
 - Accel/Gyro: ICM-20689
 - Accel/Gyro: BMI055
 - Mag: IST8310
 - Barometer: MS5611
- GPS: ublox Neo-M8N GPS/GLONASS receiver; integrated magnetometer IST8310

Electrical data

Voltage Ratings:

- Power module output: 4.9~5.5V
- Max input voltage: 6V
- Max current sensing: 120A
- USB Power Input: 4.75~5.25V
- Servo Rail Input: 0~36V

Mechanical data

- Dimensions: 44x84x12mm
- Weight: 15.8g

Interfaces

- 8-16 PWM servo outputs (8 from IO, 8 from FMU)
- 3 dedicated PWM/Capture inputs on FMU
- Dedicated R/C input for CPPM
- Dedicated R/C input for Spektrum / DSM and S.Bus with analog / PWM RSSI input
- Dedicated S.Bus servo output
- 5 general purpose serial ports
 - 2 with full flow control
 - 1 with separate 1.5A current limit
- 3 I2C ports
- 4 SPI buses
 - 1 internal high speed SPI sensor bus with 4 chip selects and 6 DRDYS
 - 1 internal low noise SPI bus dedicated for Barometer with 2 chip selects, no DRDYS
 - 1 internal SPI bus dedicated for FRAM
 - Supports dedicated SPI calibration EEPROM located on sensor module
 - 1 external SPI buses
- Up to 2 CANBuses for dual CAN with serial ESC
 - Each CANBus has individual silent controls or ESC RX-MUX control
- Analog inputs for voltage / current of 2 batteries
- 2 additional analog inputs

Environmental data, quality & reliability

- Operating temp. ~40~85C
- Storage temp. -40~85C
- CE
- FCC
- RoHS compliant (lead-free)

For more information visit:

www.dronecode.org
www.pixhawk.org

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