pixhawk® 4

Product Features

- A new and smaller form factor
- More computing power and 2X the RAM of previous versions
- New sensors with higher temperature stability
- Integrated vibration isolation
- Pre-installed with the most recent PX4 firmware
- Additional ports for better integration and expansion

Pixhawk® 4 is the latest update to the successful family of Pixhawk flight controllers. It was designed and developed in collaboration with Holybro and the PX4 team, optimized to run the full Dronecode stack, and comes pre-installed with the latest PX4 firmware.

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

Pixhawk 4's microcontroller now has 2 MB of Flash memory and 512 KB of 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 isolation enables more accurate readings, allowing vehicles to achieve better overall flight performance.

The two external SPI buses and six associated chip select lines allow for additional sensors and an SPI-interfaced payload. There are a 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.

pixhawk® 4

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

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
  - 1with 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 E
  - Each CANBus has individual silent controls or ESC RX-MUX control
- Analog inputs for voltage / current of 2 batteries
- 2 additional analog inputs

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

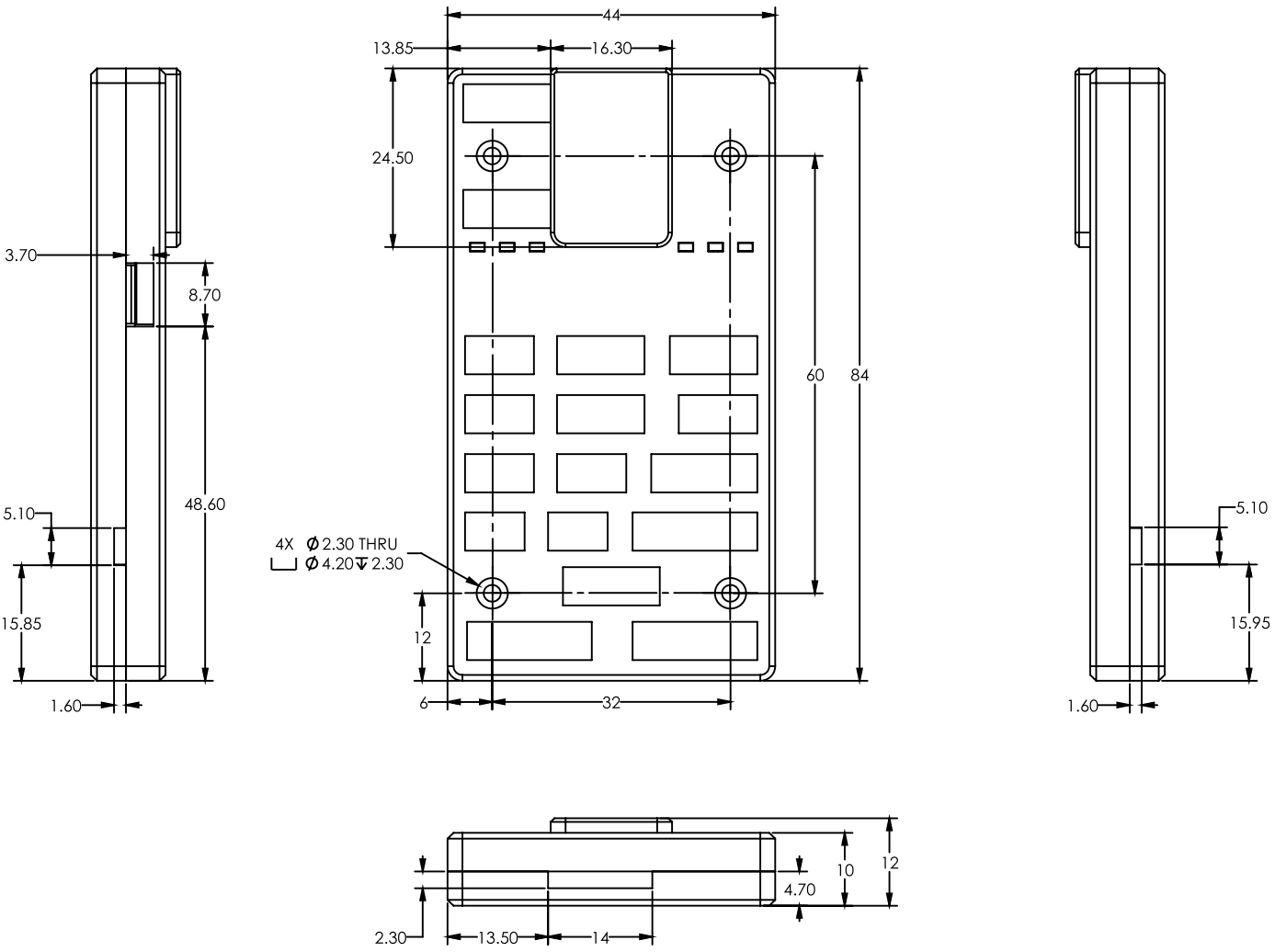
Mechanical Data

- Dimensions: 44x84x12mm
- Weight: 15.8g

Environmental Data, Quality & Reliability

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

Dimensions



DIMENSIONS IN MILLIMETERS

For more information visit:
www.dronecode.org
www.pixhawk.org

The power of Pixhawk® 4 in a compact form

Product Features

- Half the footprint of the *Pixhawk® 4*
- The same FMU processor and memory resources as the *Pixhawk 4*
- Aluminum casing for great thermal performance
- Easy to connect to commercial ESCs
- The latest sensor technology from Bosch® and InvenSense®
- Redundant IMUs for reliable performance
- NuttX real-time operating system
- Pre-installed with the most recent PX4 firmware

The *Pixhawk® 4* Mini autopilot is designed for engineers and hobbyists who are looking to tap into the power of *Pixhawk 4* but are working with smaller drones. *Pixhawk 4 Mini* takes the FMU processor and memory resources from the *Pixhawk 4* while eliminating normally unused interfaces. This allows the *Pixhawk 4 Mini* to be small enough to fit in a 250mm racer drone. The *Pixhawk 4 Mini* is easy to install; the 2.54mm (0.1in) pitch connector makes it easier to connect the 8 PWM outputs to commercially available ESCs.

Pixhawk 4 Mini was designed and developed in collaboration with Holybro® and Auterion®. It is based on the Pixhawk FMUv5 design standard and is optimized to run PX4 flight control software.

pixhawk® 4 mini

Technical Specifications

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

Interfaces

- 8 PWM servo outputs
- 4 dedicated PWM/Capture outputs
- Dedicated R/C input for CPPM
- Dedicated R/C input for Spektrum / DSM and S.Bus with analog / PWM RSSI input
- 3 general purpose serial ports
  - 1 with full flow control
  - 1 with a separate 1A current limit
- 2 I2C ports
- 3 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 FLASH located on sensor module
- 1 CANBuses for CAN ESC
  - CANBus has individual silent controls or ESC RX-MUX control
- Analog inputs for voltage / current of battery
- 1 additional analog inputs

Electrical Data

Voltage Ratings

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

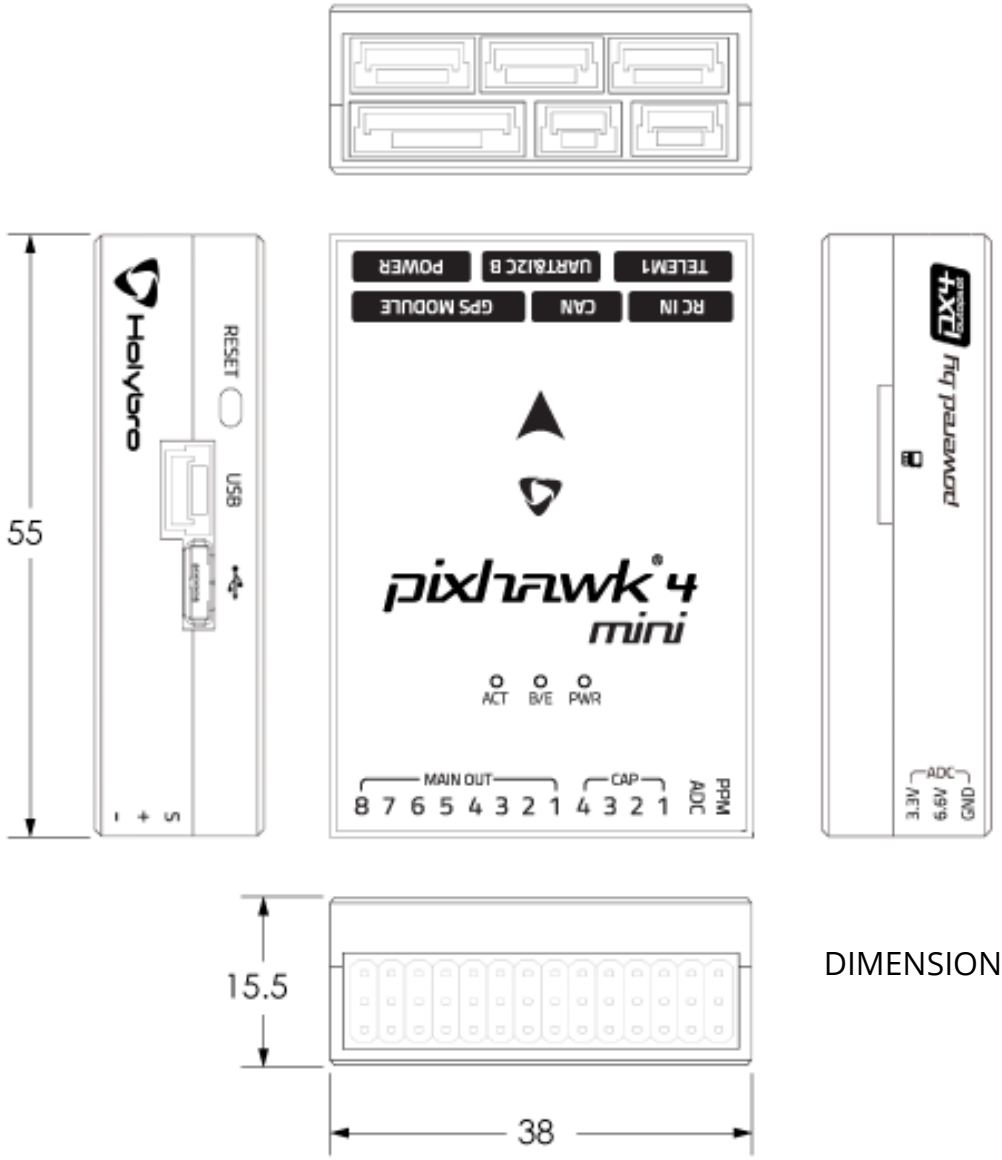
Mechanical Data

- Dimensions: 38x55x15.5mm

Environmental Data, Quality & Reliability

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

Dimensions



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