



# PX4FMU - Flight Management Unit

## QUICK START - HARDWARE VERSION 1.6

### Description

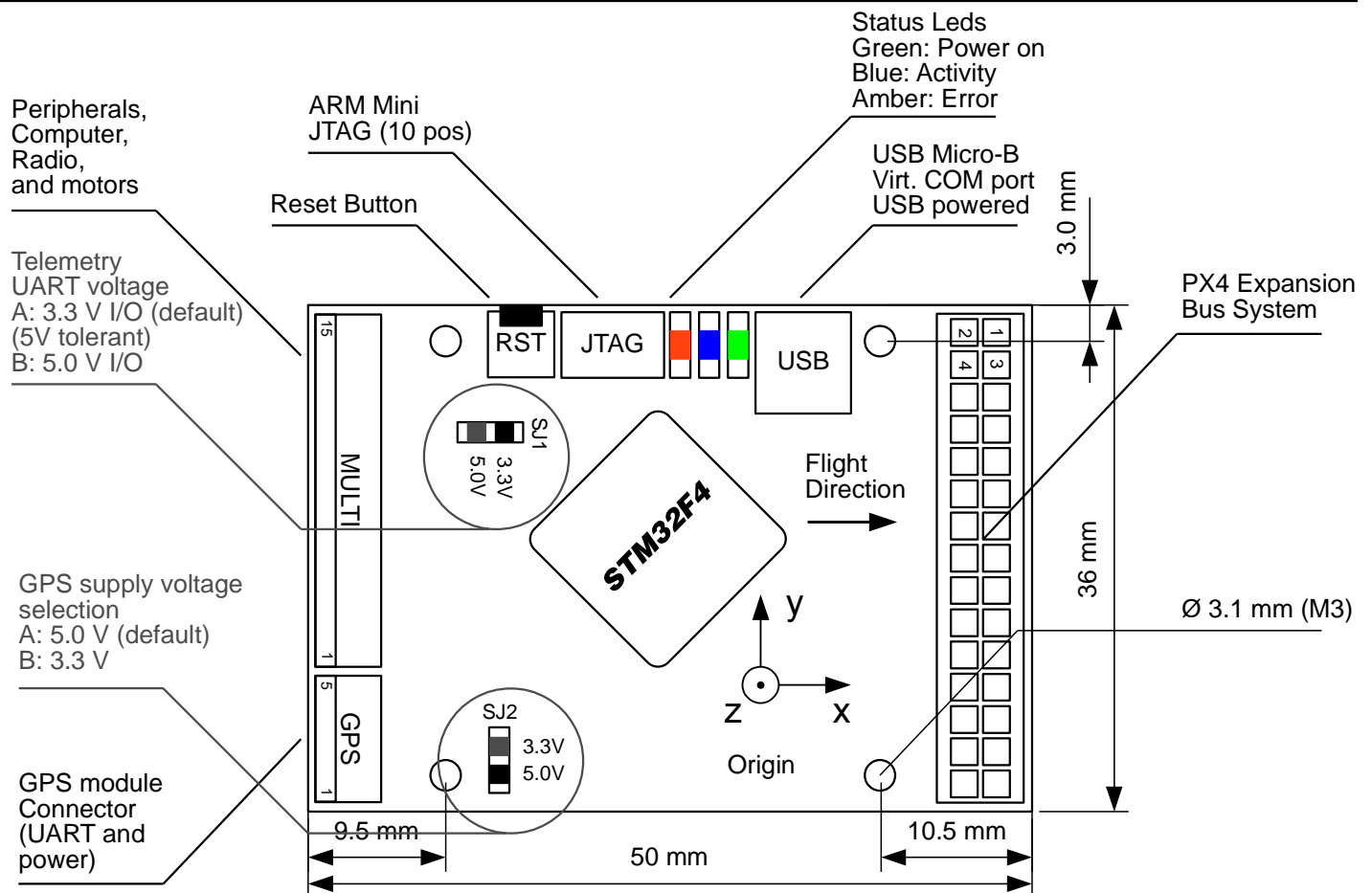
PX4FMU is an onboard management unit for micro air vehicles. It combines an autopilot and inertial measurement unit and enables the control of an aircraft using a single-board solution. Additional I/O can be easily connected via the 30-pin expansion bus.

<http://pixhawk.ethz.ch/px4/>

### Features

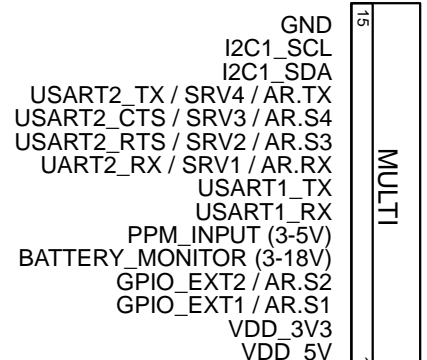
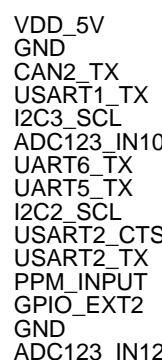
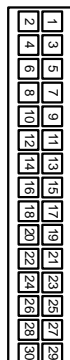
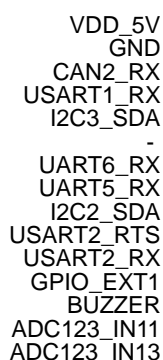
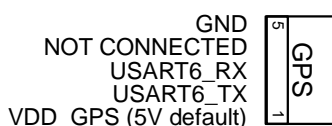
- 168 Mhz Cortex-M4 CPU (196 KB RAM, 1 MB Flash)
- 250 mW typical power consumption
- Reverse polarity protection on all power inputs
- 3D gyro, accelerometer and magnetometer, pressure sensors
- I2C, 3x UART, PPM, analog, GPS, 2x 5V GPIO, 4x PWM / Servo
- MicroSD card slot
- Expansion bus: CAN, 2x I2C, SPI, 4x analog, 2x UART, GPIOs
- USB Serial Port (Virtual COM Port / VCP) and bootloader
- 50 x 36 x 6 mm (1.38x1.97x0.24"), 8g, 30x30 mm mounting holes
- 4.5-6 V wide supply input range (incl. USB power)
- Selectable 3.3 V or 5 V IO for UART2 and GPS ports

### Connectors, Jumpers and Dimensions



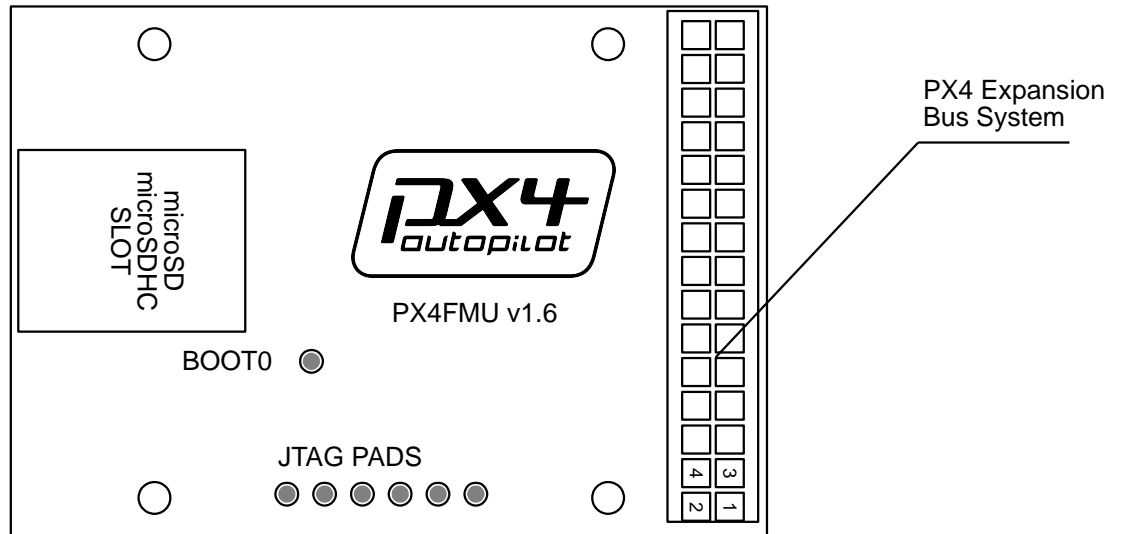
### Pinout and absolute maximum Ratings

- Input: 4.3-6 V (VDD\_5V), 20 mA onboard use, max. 800 mA for max peripheral load. Reverse-polarity protected.
- Output: 3.3 V (VDD\_3V3), fuse-limited 500 mA EXT, 3.3 V, fuse-limited 200 mA GPS



## Additional connectors (bottom side)

The footprints on the bottom side of the connector can be used by advanced users to interface additional boards or sensors.



## Software Tools / Getting Started

Please follow the steps below to get started with PX4FMU.

- Download the GCS GUI (Windows / Linux / Mac) from <http://www.example.com>
- Install the application
- Connect PX4FMU with an USB-A to Micro USB-B cable to your computer (cellphone usb data cable type)
- Your operating system might display a message indicating that new hardware was found
- Start GCS from your application menu
- Go to Communication > Add new Link
- Leave the default settings, except for these values:  
Baud rate: 115200 baud, data bits: 8 bits, stop bits: 1 bit, no parity, no hardware flow control
- GCS will display the heartbeat of MAV001. The displayed attitude will change if you move PX4FMU.

## Upgrading Firmware / Developing Custom Code

After the steps in the getting started guide have been completed, follow these instructions to upgrade your firmware:

- Start GCS, select from the "Widget" menu the item "PX2 Firmware"
- In the PX4Firmware widget, click on "Check for Updates"
- Select the firmware revision to flash – usually the newest one at the top of the list, but the tool also allows to downgrade to older versions.

To develop custom code, please follow the developer instructions at: [http://www.example.com/developers\\_guide](http://www.example.com/developers_guide)

## Open Hardware License

PX4FMU is an open hardware design, following the OSHW 1.1 definition licensed under the Creative Commons Attribution-ShareAlike 3.0 Unported (CC BY-SA 3.0) license. PX4FMU uses the BSD-licensed NuttX operating system as base for the PX4 software stack (<http://nuttx.sourceforge.net>).

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