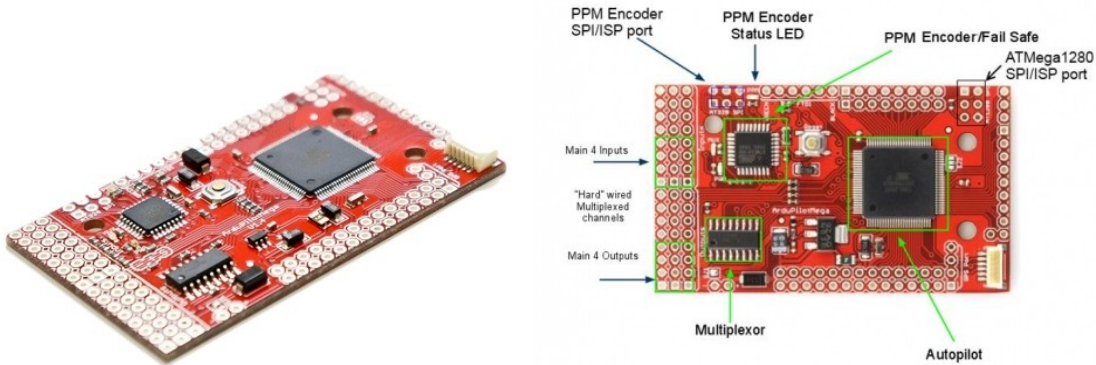


# SparkFun

## ArduPilot Mega - Arduino Mega compatible UAV Controller sku: GPS-10294



**Description:** The ArduPilot Mega is the newest version of autopilot board designed by Chris Anderson and Jordi Muñoz of DIY Drones. This latest revision uses the ATmega2560 in place of the ATmega1280.

ArduPilot Mega is a fully programmable autopilot that requires a GPS module and sensors to create a functioning Unmanned Aerial Vehicle (UAV). The autopilot handles both stabilization and navigation, eliminating the need for a separate stabilization system. It also supports a "fly-by-wire" mode that can stabilize an aircraft when flying manually under RC control, making it easier and safer to fly. The hardware and software are all open source. The board comes with all the surface-mount parts already soldered, but requires the user to solder on connectors. RC processing firmware is already loaded, but the autopilot software must be downloaded and loaded onto the board by the user. It can be programmed with the [Arduino IDE](#).

We recommend the following items to accompany this product:

- [uBlox 5 GPS module](#) and [adapter](#)
- [FTDI Basic](#) or [FTDI cable](#) for programming

Other necessary elements, including aircraft recommendations, can be found at the project's home page.

### Features:

- Controller designed to be used with autonomous aircraft, car or boat.
- Based on a 16MHz Atmega2560 processor.
- Built-in hardware failsafe that uses a separate circuit (multiplexer chip and ATmega328 processor) to transfer control from the RC system to the autopilot and back again. Includes ability to reboot the main processor in mid-flight
- Dual-processor design with 32 MIPS of onboard power
- Supports of 3D waypoints and mission commands (limited only by memory)
- Comes with a 6-pin GPS connector (EM406 style).
- Has 16 spare analog inputs (with ADC on each) and 40 spare digital input/outputs to add additional sensors
- Four dedicated serial ports for two-way telemetry (using optional [XBee modules](#)) and expansion
- Can be powered by either the RC receiver or a separate battery
- Hardware-driven servo control, which means less processor overhead, tighter response and no jitters

- Eight RC channels (including the autopilot on/off channel) can be processed by the autopilot.
- LEDs for power, failsafe status, autopilot status and GPS lock
- Full autopilot software, including IMU and groundstation/mission planning code, are available at [DIY Drones](#). Code supports autonomous takeoff and landing.

**Dimensions:** 40mm x 69mm

**Documents:**

- [Schematic](#)
- [Eagle Files](#)
- [Example Firmware](#) - reads in 8 channels and outputs 8 channels
- [Example Dancing Firmware](#) - [Video](#)
- [ArduPilot Project Homepage](#)
- Software and instructions: [DIY Drones Community](#)