

AUTO QUAD

AUTONOMOUS MULTI ROTOR VEHICLE CONTROLLER



HOW TO START & WHERE TO BUY

AutoQuad is no project for beginners. You need at least some background in building a multicopter and managing the software.

Documentation: We've set up a comprehensive wiki to make a build easy: autoquad.org/wiki

Forum: We maintain a dedicated forum at forum.autoquad.org where you can find a lot of friendly team members and users willing to help.

Hardware for the build can be bought at Viacopter.eu in Denmark or Flyduino.net in Germany.

SAFETY & REDUNDANCY

AutoQuad comes with a set of redundancy and failsafe features.

We recommend using a minimum of 6 motors (Hexa) or 8 (Octo) to still have control over the aircraft if one or more motors fail.

Failsafe kicks in at several stages, i.e. loss of radio connection or battery alarm. The craft will then fly home or land safely.

You will find a huge playlist of YouTube videos, demonstrating the abilities and leading users through the setup process.

Watch them at youtube.com/user/MrKinderkram

3rd PARTY DEVELOPMENTS, PARTS & SERVICES

There's also forming up a group of professional vendors, offering expansion boards, extra hardware or ARF/RTF aircrafts for sale.



Some images on this flyer are courtesy of Tilman Pietzsch (microcopters.de), Laurent Tournier (flying-copter.com) and ThinMan



MAKE YOUR VISIONS FLY

AutoQuad is no mass product but an open international project targeting autonomous aircrafts with no limitations. The hard- & software was designed by Bill Nesbitt, USA and manufactured by Viacopter and Flyduino in Germany. You can see all info at autoquad.org

The powerful hardware with a 32bit MCU and a selection of the best IMU sensors form the base for the AutoQuad flight controller, the possibilities are endless and only limited by the imagination and skills of the coders.

The current code base is targeting multicopters up to 14 motors. However the platform is flexible and can be adapted to other applications as well.

The AutoQuad team has also recognized the need for specially adapted speed controllers or ESCs. During the initial project setup, a 32bit ESC was developed: the ESC32.



ESC32, a 32bit precision motor speed controller with high update rates suitable for 5s up to 50Amp



The AQ 6.1 all-in-one 32 bit flight controller comes with a complete set of precision analog sensors and accurate UBlox LEA GPS module



HARD- & SOFTWARE

Summary of capabilities of the AQ 6.x firmware

- Fly extremely stable yet offer full dynamic control to the pilot
- Limit flying angles
- Mavlink 1.0x compatible protocol
- Very accurate position hold, depending on GPS reception a hold within 15-30 cm is possible
- Altitude override (ascend / descend) during position hold with controlled vertical speed
- Full mission flight, speed, heading and loiter time is adjustable
- Return to home position, altitude is also recorded during home position set
- Radio loss detection and event triggering
- Low battery detection and event triggering
- 2 axis gimbal control with pitch angle override on transmitter
- Gimbal working angle and response time is adjustable
- Gimbal servos can use 50Hz (analog) to 400+ Hz (digital) adjustable
 - Radio options: Spektrum satellite, S-bus receiver. PPM & SUMD input
 - Waypoint recording and playback using transmitter switch
 - External LED / Piezo signaling for status and events
 - MAV2HOTT Telemetry for Graupner radios

UPCOMING FEATURES ALREADY IN DEVELOPMENT

- Heading Free Flight Mode
- Follow me, Click & Go
- Advanced L1 Control Algorithm
- POI through Brushless Camera Gimbal
- Learning Camera via OpenTLD
- Object Tracking & Navigation
- Autonomous Acrobatic Flights

