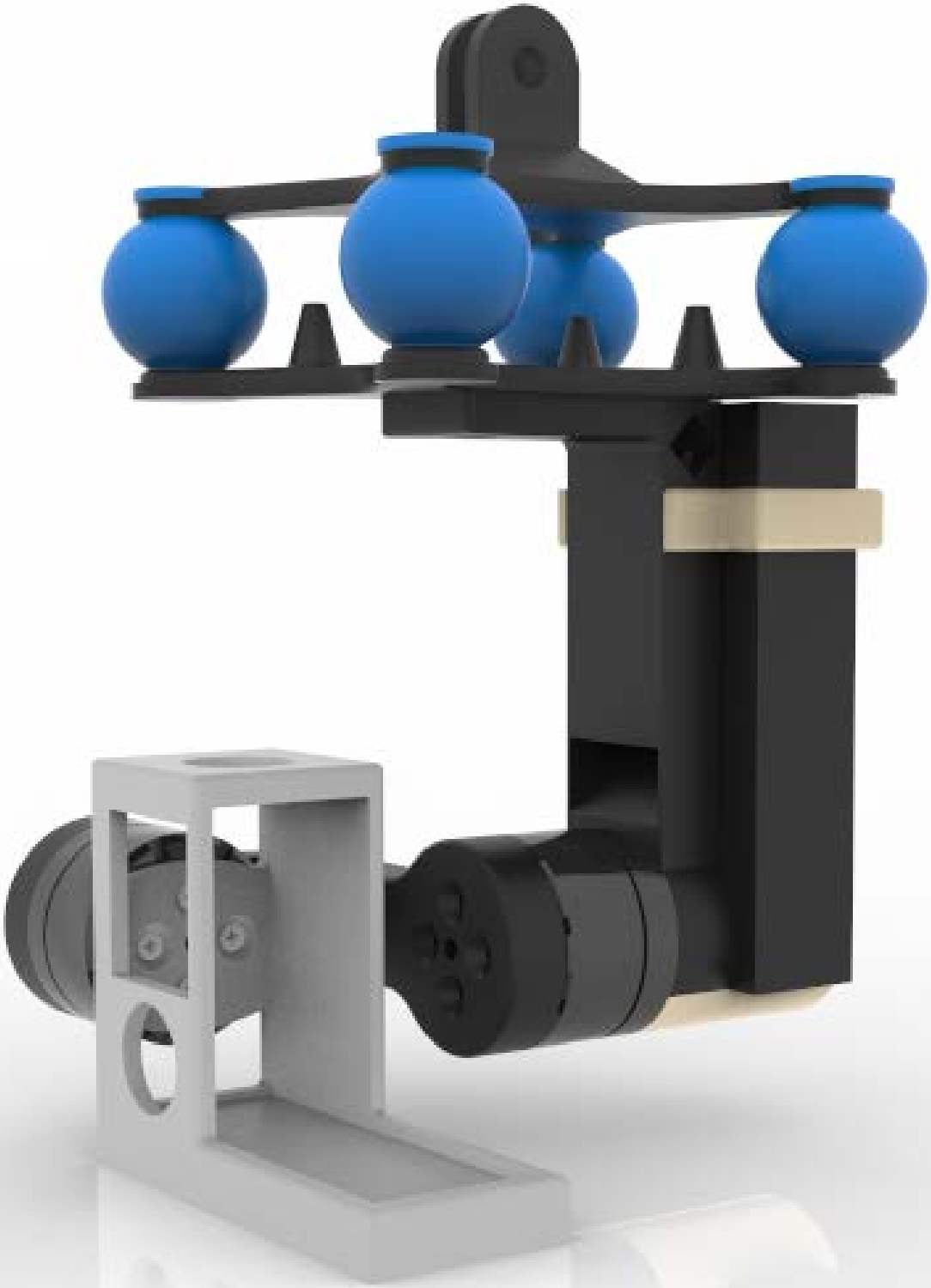
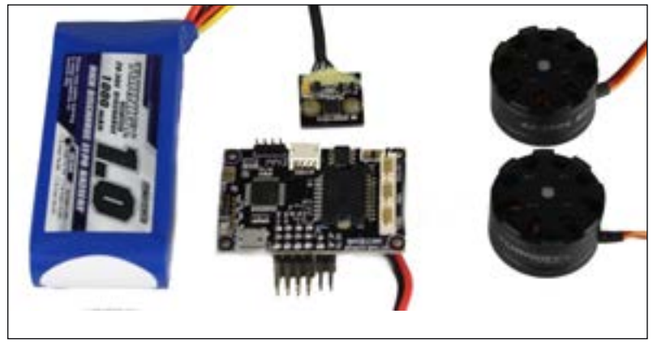
GO PRO BRUSHLESS GIMBAL



Tutorial : GoPro Brushless Gimbal

What Do You Need ?



- A brushless Gimball Controller with IMU
- 2 Brushless Motors
- A Lipo 2S or 3S battery
- A Lipo Charger
- A 3D Printer
- Glue
- M3 (8 and 5 mm) and M2(5 & 8mm) screws
- 2 M3 nuts

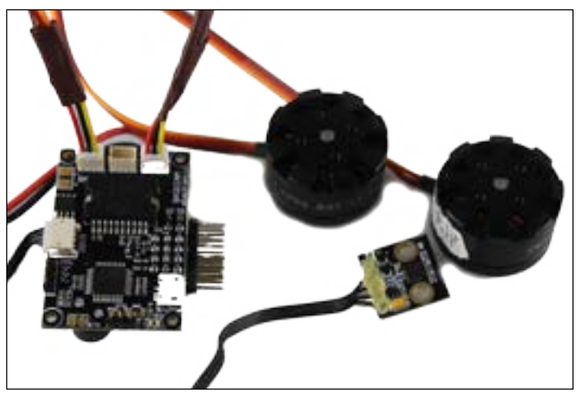
What I used :

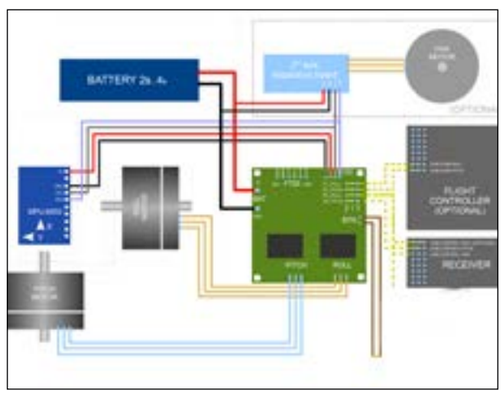
- An 8 bit Mini 3 axis Alexmos Brushless Controller (2 axis + 1)
- 2 Brushless Motors 2206-140Kv Diameter : 28 mm
- Lipo Battery 3S 1000mah 25~50C

NOTE : You Can find all these components on HobbyKing, The Design of my Brushless gimball match with the specific dimensions of these components, Take care cheking that the connectors between your controller and Motors are matching, and the same between your battery and Lipo Charger.

STEP 1 : Calibrate the IMU

- Charge your Lipo Battery with a Lipo Charger.
- Connect your electronic components (IMU & Motors)
- Connect your controller to your computer (USB mini USB cable)
- Calibrate the IMU with a software (ex : Alexmos Controller > Simple BCG)
- Now that's the IMU is calibrated you can dissamble the battery and the electronics components in order to simplify the assembly of all the gimbal.





STEP 2 : Printing

- You will find on the Website My Mini Factory all the STL files You need
- You can choose between different combination with battery Support, for Drone or with GoPro Mount,
- Download the components you need

STEP 3 : Assembly

- When you have printed all the parts you wanted, assembly them together
- The Arm 1 and 2, glue them for more security, then assembly the Arm 3 with the lower suspension
- Assembly the first motor (PITCH Motor) with the Arm 1 and the GoPro support (M2 and M3 screws)
- Assembly the 2nd Motor(ROLL Motor) with the Arm3 and the Arm 2 (M2 and M3 screws)
- Put the 4 dampers on the lower suspension
- Screw the controller on the lower suspension (M2 screws)
- Connect the Motors to the controller and connect the IMU to the controller and put it on the GoPro Support

STEP 4 : Ready to use

- Assembly the Battery Supports with the arm 3, glue the parts between them for more security
- Assembly the dampers and the upper suspension
- Put the battery behind the Arm 3 and connect the battery To the controller
- Your gimbal is ready to use

Above you will find a picture of the gimbal assembled, and a picture of the settings i have for this gimbal, the settings can be improved and depends on the use of your gimbal.

HERO4

Connect
Profile1
Rename
Board: not connected
Firmware: -
Load...
Save...
basecamelectronics.com
Basic
Advanced
RC Settings
Service
Follow mode
Realtime Data
Firmware upgrade
PID Controller
P
I
D
ROLL 3 0.02 7
PITCH 5 0.02 6
YAW 0 0 0
Limit accelerations 500 dg/sec²
Motor Configuration
POWER
+
INVERT
NUM POLES
ROLL 130 0 12
PITCH 90 0 12
YAW 0 0 0
External PC Gain
ROLL 0
PITCH 0
Sensor
Axis TOP Z
RIGHT Y
Skip Gyro calibration at startup
Cycle time:
I2C errors:
Motor settings should be configured once and not changed after the tuning process. Except POWER setting, which may be adjusted for different gimbal applications or different cameras.
ROLL
PITCH