

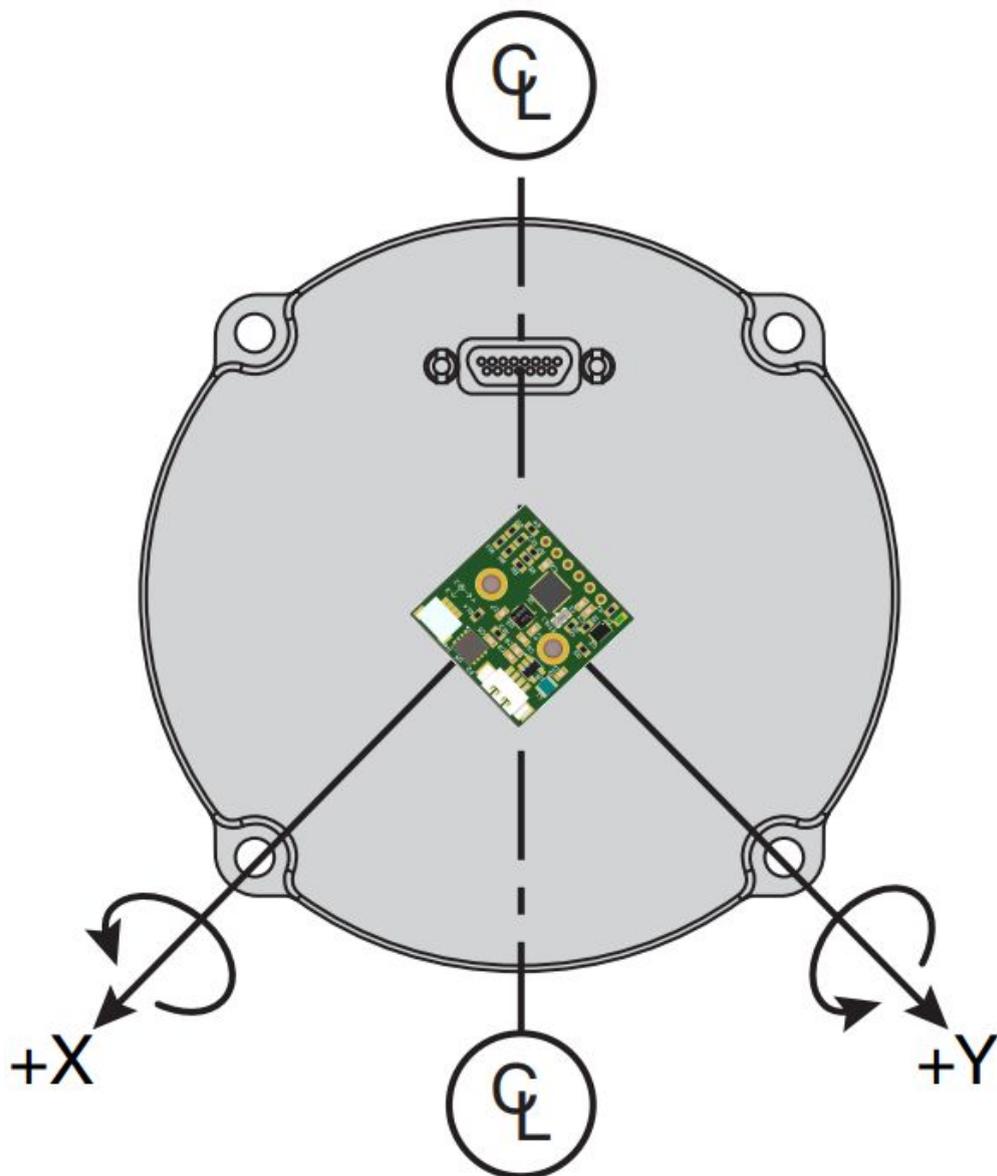
Connecting KVH17xx gyroscope to SimpleBGC32 controller

KVH FOG gyroscope is connected to the Basecam CAN_IMU module by the UART interface. Module reads data, makes necessary filtering and sends it to the main controller unit over the CAN bus interface. This connection is compatible with all gimbal controllers equipped with the CAN port.

Mounting

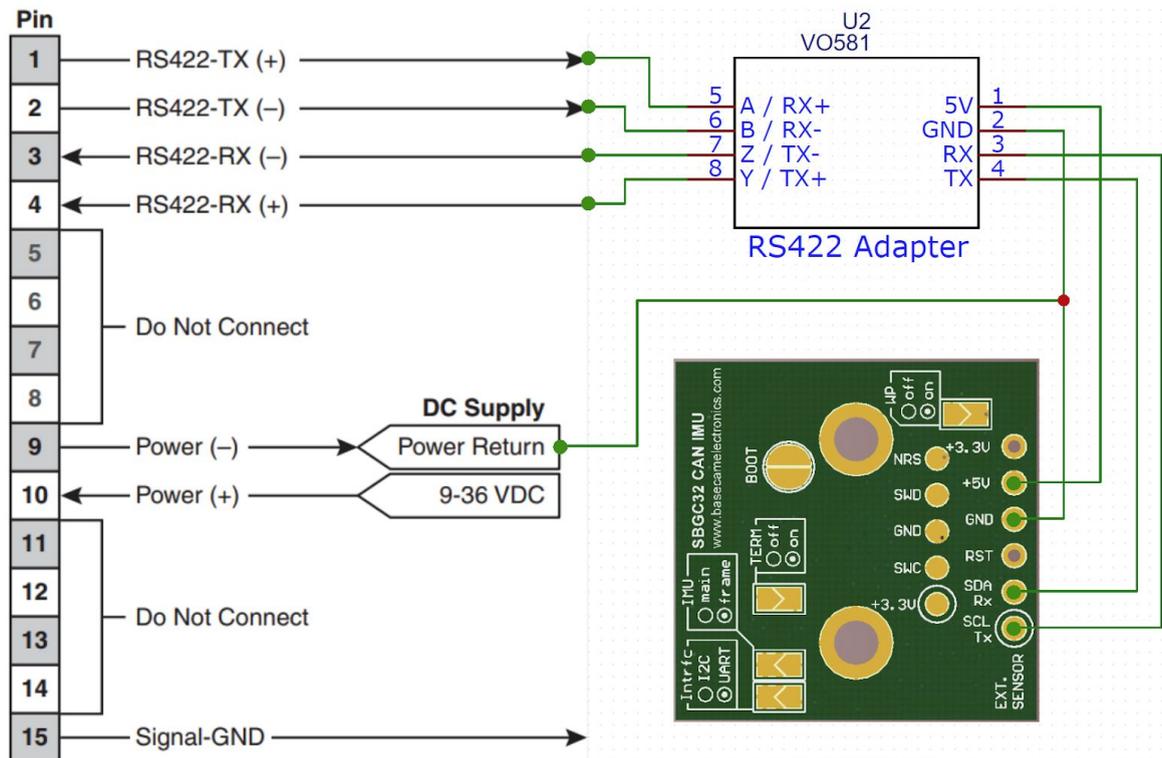
You can mount KVH IMU on a gimbal in any orientation but having all axes parallel to the main axes of a gimbal. The CAN_IMU module should be mounted relative to the KVH IMU in a certain position because the internal gyroscope will be used if the readings from FOG go outside of the measurement limits ($490^\circ/\text{sec.}$). So, it must be accurately aligned: axes of CAN_IMU should match axes of FOG as shown in the picture:

Top View



Electrical connections

You need RS422-to-TTL converter (for example, *MikroElektronika MIKROE-2821*)



Compatible hardware versions

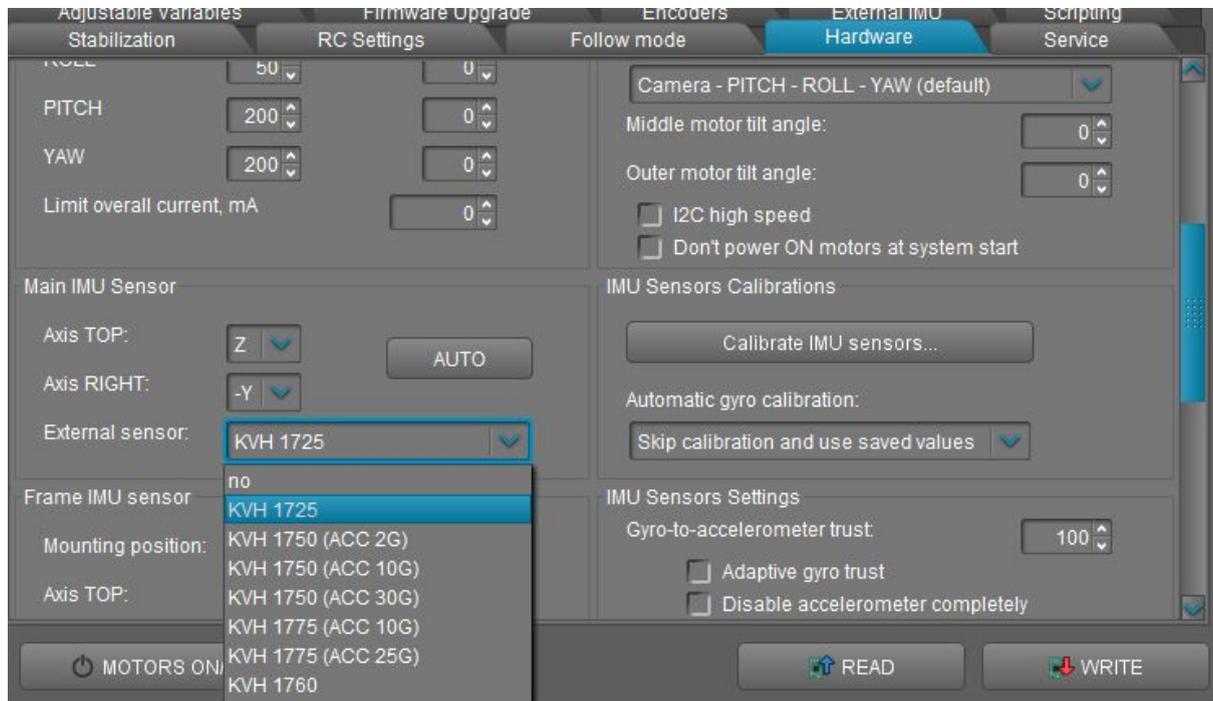
Any version of the CAN_IMU module with the proper firmware. Though we advise choosing revision B, which has a quartz resonator and thus provides more reliable UART communication at high speeds in a wide temperature range.

Compatible firmware versions

- GUI and main controller: ver. 2.69b1 or later.
Firmware is updated from the GUI - "Firmware Upgrade" tab, enabling "Check for beta versions" flag.
- CAN_IMU: ver. 1.25 or later.
Download link and flashing instructions are here:
<https://www.basecamelectronics.com/imu/#downloads-tab>

GUI Preferences

Select "KVH xxxx" in the "Hardware" - "Main IMU sensor" - "External sensor" dropdown list:



Configure sensor orientation the same way as for a regular IMU, using auto-detection.

Testing

The data from FOG will be displayed in the "Monitoring" tab, "GYRO_xx" charts. Also, the gauge panels in the GUI will show precise angles of rotations. To ensure it's really data from the FOG and not from the CAN_IMU, temporarily detach them and rotate separately.

The debug information related to FOG can be found in the "Debug" - "Request system state".

After installing on a gimbal tuned with the CAN_IMU, you may need to adjust PID values, because FOG has a bit lower frequency response.