CGO3 calibration tool (CGO3oldCali)

Abstract

This tool provides UART (serial) connection to the CGO3 camera (from Q500 4K or Blade Chroma 4K).

This tool provides a possibility to fully calibrate the gimbal of the CGO3. This functionality is experimental. Use it on your own risk.

The calibrtion process is described in this training video from 13:45min on:
https://youtu.be/4yf5J8F-uzo?t=820

To do a temperature calibration process start the tool with parameter -tc. This process is very complex and dangerous.
https://www.youtube.com/watch?v=koyNU0gMdNo

Calibrate a GB203 gimbal only with camera attached and balanced.

Download this tool at download page: http://h-elsner.mooo.com/html/downl.htm
Binaries for Windows (.zip) and LINUX (.tar.gz) are available.

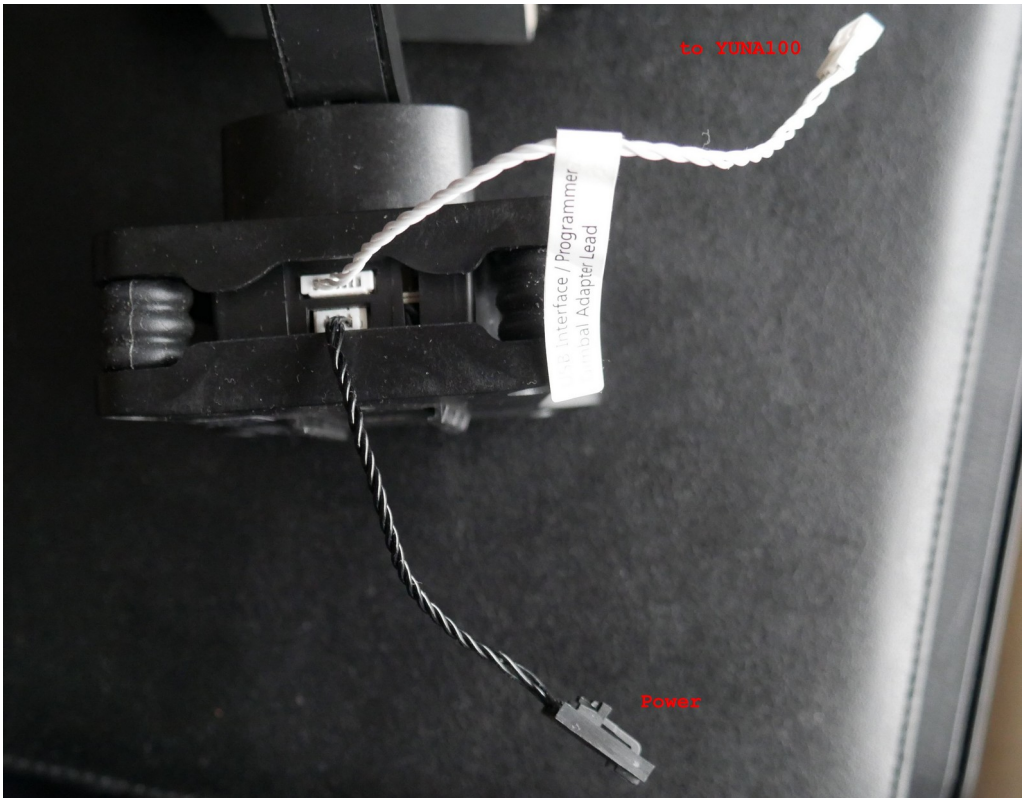
Installation: No installation, simply unzip the file. It is a portable application. You need only the executable for your OS. Copy it somewhere in the home file system or to an USB stick.

CGO3 gimbal calibration

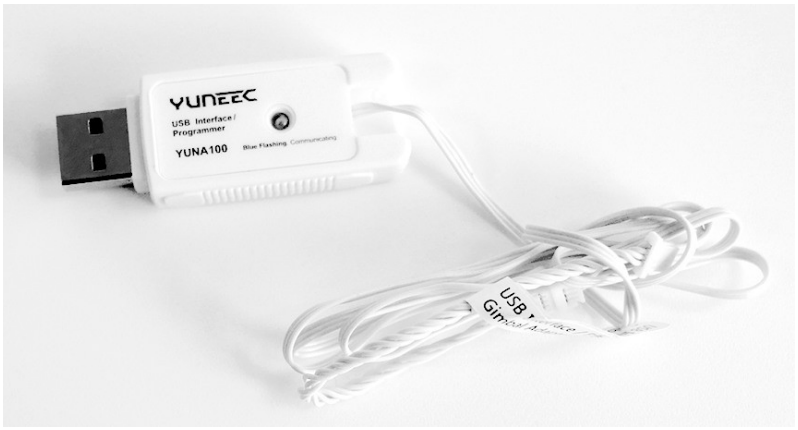
NOTE: This is an experimental process, not an official tool. This may work or not, no warranty. You use it on your own risk.

Preparation

You don't need a mount for the camera. Use the drone to supply the gimbal with power (black cable). The connector for the serial interface is above the Power/PWM connector.

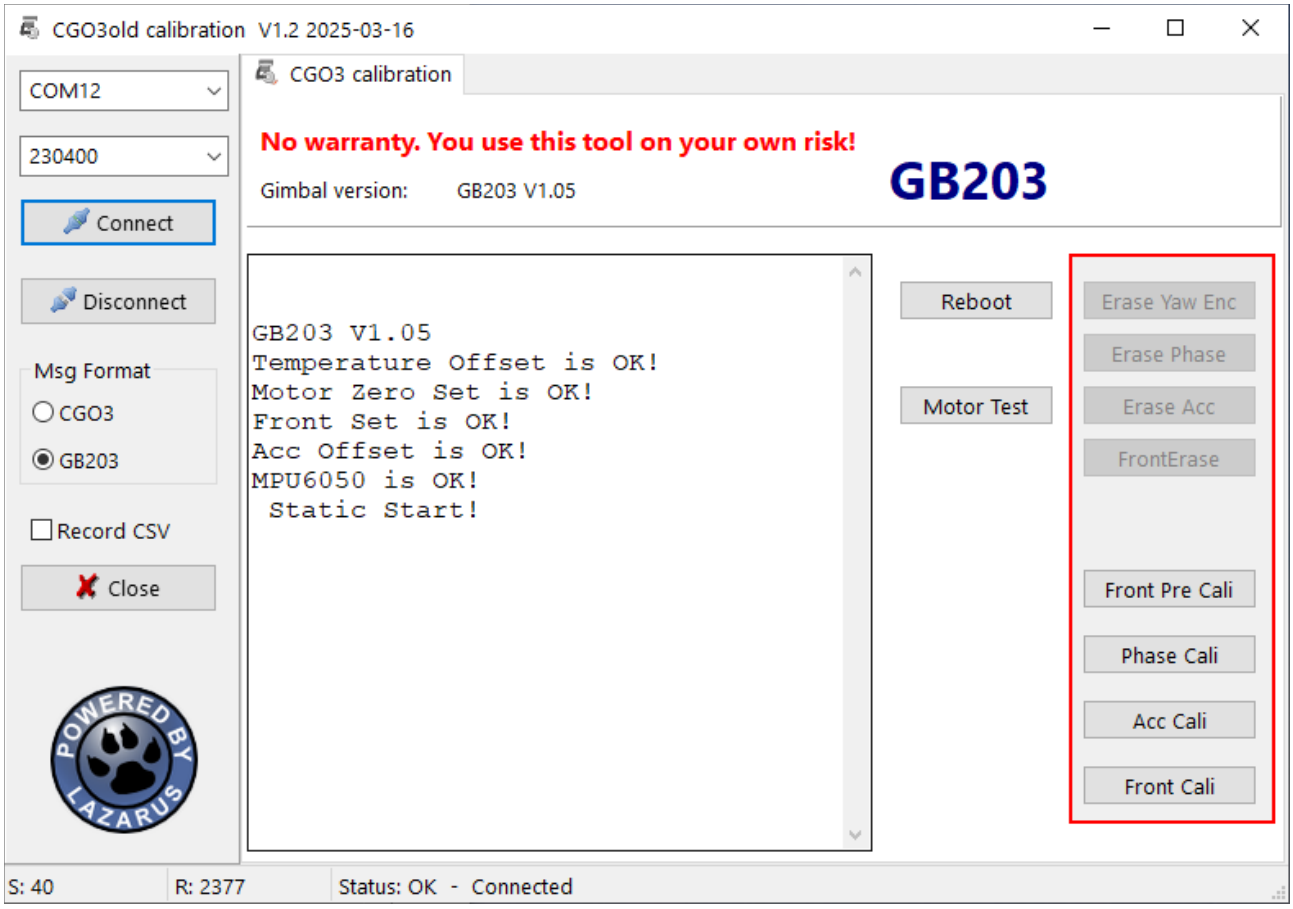


The adapter cable (white) came with the YUNA100 USB-Serial converter.



Calibration - brief description

- Connect Serial to USB converter to camera UART;
- Start CGO3oldCali, select message format (use GB203 also for older CGO3 firmware);



- Select the proper serial port. For Windows OS this is usually the last one in the list.
  It will be selected by default. If the COM port is missing double click on the port selection to refresh the list.
  For LINUX select '/dev/ttyUSB0'.
- Baud rate for GB203 and older CGO3 FW is 230400, for CGO3 with newer FW 115200.
- Power on camera;
- Click on 'Connect';
- Hold the camera faced forward and leveled and start Front pre calibration;
- Then Phase calibration, wait until it is finished;
- Start Accelerometer calibration. This takes a long time, wait until it is finished;
- Power cycle the camera;
- If the camera didn't look straight forward do a Front Calibration.

Note: Simply buttons from up to down, always wait on success message.

Troubleshooting

UART connection problems

- If you start the app before you you connect the camera double click on the port selection field to update port list.
  For Windows usually the last (highest) COM port number is the one you need. It will be selected automatically.
  For LINUX the port `/dev/ttyUSB0` is for the gimbal. If more then ACM ports are in use again the highest port number is probably the one you need.
- For other connection problems unplug und plug again of the USB cable may help.
- Also a reboot of the connected device may help. Do reboot always when USB is disconnected.
- Disconnect the UART in the app if you power off drone or the camera. It takes 2s before the app recognizes that the connection was cut.
- Check baud rate for the serial connection. Below a list of known baud rates.

No reaction on buttons

- Power cycle camera with and without connected calibration tool.
- Disconnect and connect again the serial connection with the buttons in the calibration tool.
- Combine the two points above in different variation until it works.

Baud rates for serial connection from/to different Yuneec cameras:

CGO-ET (H480 version), CGO3+, CGO3 with new FW:	115200
GB203, CGO3 with old FW:	230400
CGO-ET (H520 version), C23, E90 and probably all other newer cameras:	500000