Solo GoPro

Remote Controller

BLE Model

User Manual

v1.0

08/04/2022

Contents

Overview

The *Solo GoPro Remote Controller* (SGRC) plugs into the 3DR Solo accessory port, allowing you to control your GoPro camera using controller paddle or companion apps like SidePilot or Solex.

The SGRC uses the GoPro Smart Remote protocol to send commands to GoPro via BLE, enabling easy and reliable use. It used the MAVLink protocol to speak to Solo and intercept commands usually intended for the Solo Gimbal.

Compatible with the GoPro HERO10 Black, HERO9 Black, Max, HERO8 Black, HERO7 Black, Fusion, HERO6 Black and HERO5 Black. Note that GoPro HERO8 and above requires the use of a the GoPro MediaMod accessory to output the video signal to Solo.

Installation Instructions

Installing the SGRC is easy, just follow these steps:

1. Turn on Solo and using either Solex, SidePilot or other GCS, set the following parameters:

Parameter	Value
SERIAL5_PROTOCOL	1
SERIAL5_BAUD	57

2. Turn off Solo and plug the *Solo GoPro Remote Controller* into the Solo Accessory port. Secure with the two M2 screws provided, being careful to not overtighten.
3. Turn on Solo and GoPro.
4. On your GoPro go to Preferences -> Connections -> WiFi Band and ensure it is set to 2.4GHz.
5. On your GoPro go to Preferences -> Connections -> Connect Device and select GoPro App'.
6. Pairing will begin and it will pick up the SGRC automatically. When pairing, the red LED will flash fast (If not flashing fast/paired within 20 seconds, press the SGRC reset button).
7. You are done! The red blinking light will turn solid when it has successfully connected to the camera. Use the controller paddle, SidePilot or Solex app to begin recording/take photos. SidePilot or Solex can be used to change camera modes between video and photo.

Instructions for use

Simply turn on your Solo with the SGRC installed! It will automatically reconnect, indicated by the solid red led on the SGRC. If it does not go solid after a minute or two, you may need to restart GoPro or restart the WiFi connection.

Software

The SGRC software is updatable via a web upload. Only update packages provided by us can be installed, and will be available via the https://store.sidepilot.net website.

Current Firmware version - v1.0a

Web Interface Information

The SGRC provides a web interface where you can check the MAVLink status, as well as GoPro information such as its current mode and battery status. This interface can be seen by connecting to the 'SOLO-GOPRO-RC-BLE' WiFi network and navigating to http://10.71.79.1/info

Firmware Update

First download the firmware update file from the store, and follow the below instructions:

1. Connect your phone/computer to the 'SOLO-GOPRO-RC-BLE' WiFi network.
2. Navigate to http://10.71.79.1/update
   - Username: Solo
   - Password: GoProRC
3. Tap on 'Browse' and select the .bin firmware file.
4. Tap 'Update' and wait. The Green and Red LED's will flash while updating. The update process usually takes 20-30 seconds and the SGRC will automatically reboot when completed. The Web interface may not update upon reboot.
5. Verify the installation was successful by navigating to http://10.71.79.1/info and check the revision number.

Specify Single GoPro

Some users may have multiple GoPro's, which may cause the SGRC to not reliably connect to the desired GoPro, due to how SGRC will search and connect to the first available GoPro. It is possibly to specify the only GoPro to connect to by connecting to the 'SOLO-GOPRO-RC-BLE' WiFi network and navigating to http://10.71.79.1/pair and entering 'GoPro XXXX' where XXXX is the last four digits of your GoPro serial. This can be found easily by pairing the SGRC to the GoPro and going to http://10.71.79.1/info and seeing the GoPro Name section. If unchanged, it is also the last four digits of the GoPro WiFi network.

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Troubleshooting

'I am unable to control my GoPro! Please Help!'

- If the RED LED is flashing slowly, it is not connected to GoPro. Steps to resolve in order are:
    1. Restart GoPro
    2. Turn off GoPro, remove battery and wait 10 seconds. Reinsert and turn on.
    3. Re-pair GoPro and SGRC. Follow the installation instructions for pairing.
    4. Reset GoPro Connections in Preferences -> Connections -> Reset Connections.
    5. Contact tom@sidepilot.net
- If the RED LED flashes quickly but never turns solid, ensure the GoPro WiFi is set to 2.4GHz and re-pair the GoPro and SGRC.
- If the RED LED is bright and steady (not flashing), but the GREEN (ACT) LED is not flashing at all, then there is no communication between Solo and SGRC. Check Solo's parameters using a GCS such as Solex or SidePilot. SERIAL5_ parameters must be set as per the installation instructions. Solo must be restarted after changing parameters.
- RED LED is stable, GREEN LED is flashing, but I still cannot control my GoPro at all! In this case, please contact tom@sidepilot.net with you GoPro model including its firmware version, Solo's firmware version (both controller and copter), your mobile device model and ideally a video showing the behaviour.

FAQ

Just some of the most common questions asked:

Q: What is the blinking green LED underneath?

A: This is the Solo connection indicator of the SGRC. If it is not blinking, and you are unable to control your GoPro, you should double check Solo's parameter settings.

Q: I want X feature/Why doesn't this do X??

A: All feedback and improvement suggestions are welcome! Please contact tom@sidepilot.net, we are happy to hear from you!

Advanced

Serial 2

The SGRC breaks out the Solo SERIAL2 port, allowing easy installation of other accessories eg: MAVLink gimbal, ADSB receiver, RFD900 tranceivers & anything else! Simply solder directly to the serial 2 port on the SGRC or solder a 4 pin servo header and plug in your accessory.

MAVLink Connection

Baud Rate = 57600

Protocol = 1

Output:

MAVLINK_MSG_HEARTBEAT – 1HZ

MAVLINK_MSG_GOPRO_HEARTBEAT – 1HZ

Input:

MAV_CMD_DO_DIGICAM_CONTROL

     TRIGGER SHUTTER

MAVLINK_MSG_ID_GOPRO_SET_REQUEST

     CMD_ID == GOPRO_COMMAND_CAPTURE_MODE

          VALUE[0] == GOPRO_CAPTURE_MODE_XXXXX

     CMD_ID == GOPRO_COMMAND_SHUTTER

          VALUE[0] == TRIGGER SHUTTER (1 = START, 0 = STOP)
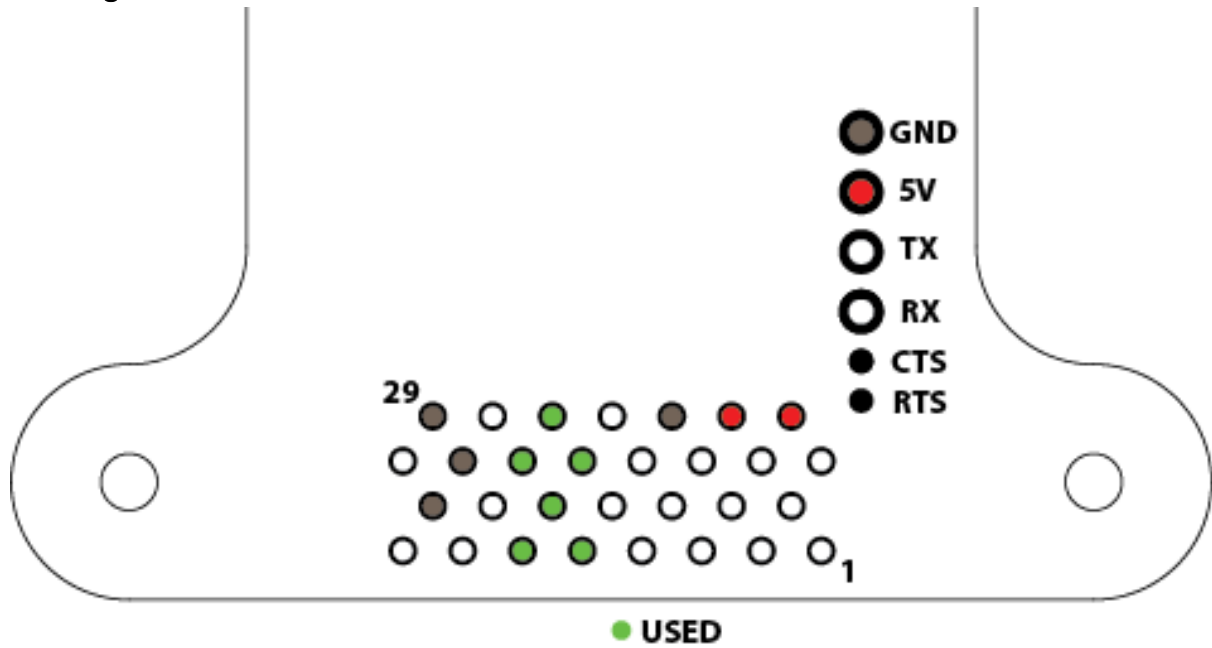
GoPro Connection

Output

GET MODE

GET SHUTTER

Input

SET MODE

SET SHUTTER

Pin diagram:

Any other questions, please ask on the SidePilot Facebook page, or send via email to

tom@sidepilot.net