



UNMANNED SYSTEMS

R10C Instruction Manual

Revision: April, 2018

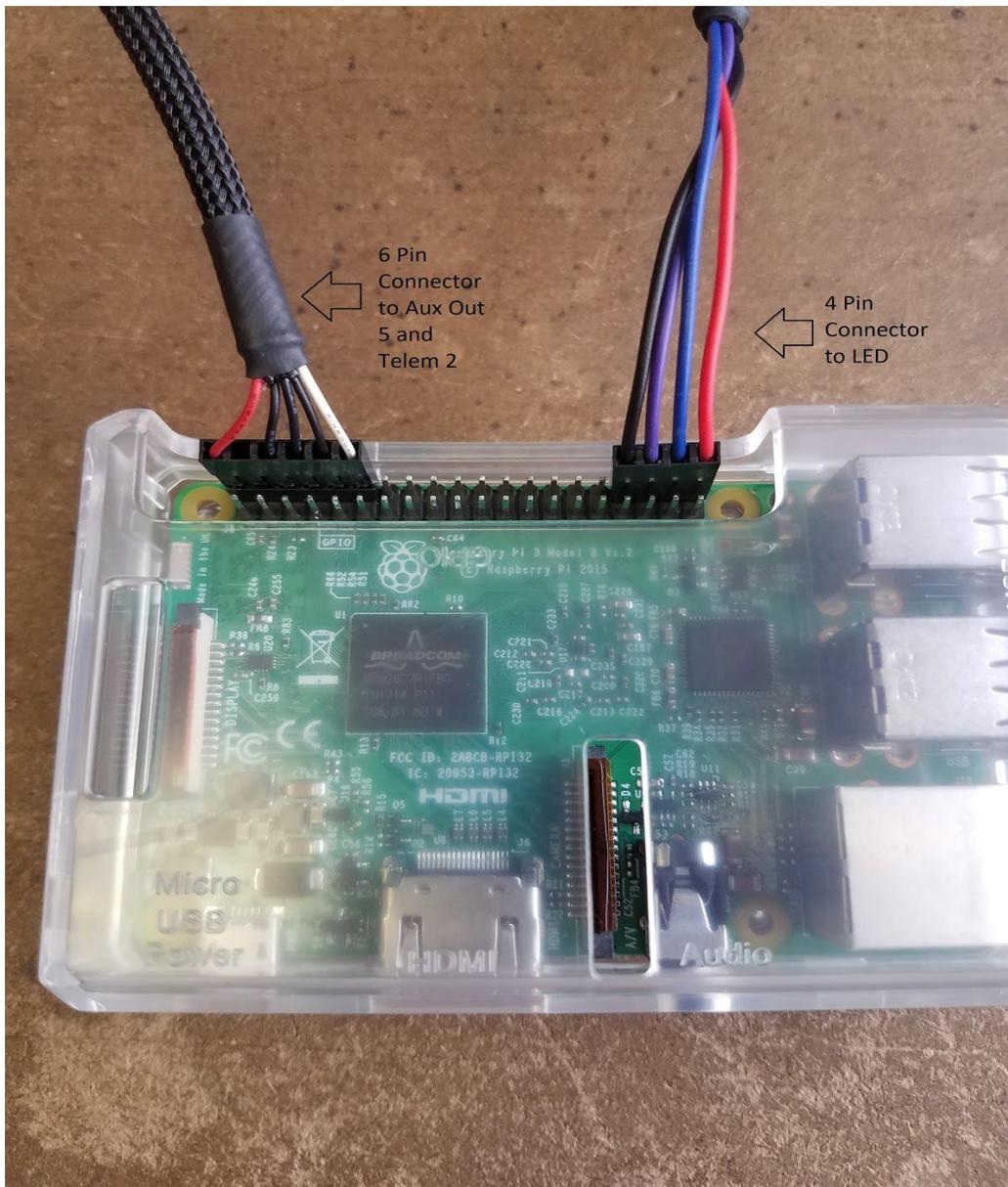
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Companion Computer

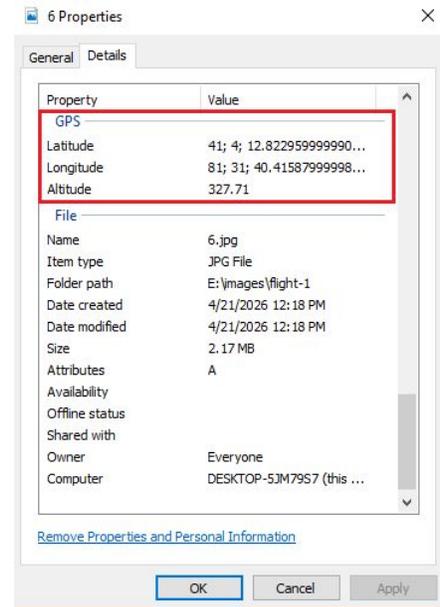
Installation

- ❑ Plug the provided DF13 connector into the Pixhawk's Telem 2 port
- ❑ Plug the servo lead labeled Aux Out 5 into the Pixhawk's Aux Out 5 port



The following parameters will need to be changed:

SR2_EXT_STAT: 10
SR2_EXTRA1: 10
SR2_EXTRA2: 0
SR2_EXTRA3: 0
SR2_PARAMS: 0
SR2_POSITION: 10
SR2_RAW_CTRL: 0
SR2_RAW_SENS: 0
SR2_RC_CHAN: 0
SERIAL2_BAUD: 57
SERIAL2_PROTOCOL: 1
RELAY_DEFAULT: 0
RELAY_PIN3: 53
RELAY_PIN4: -1



Operation

Plug the right angle micro USB cable into the side of the R10C and make sure the USB flash drive is plugged into the dongle attached to the companion computer. No SD card will need to be inserted in the camera itself, the images are all stored on the flash drive. The R10C and companion computer will power on automatically when a battery is connected to the aircraft. The R10C may automatically take a picture upon receiving power. Once a connection is established between the companion computer and camera, the status LED will turn solid green.

To check that everything is in working order, send a trigger command to the flight controller. After about 10 seconds, remove the USB drive from the cPC (the status LED will turn blue to indicate that there is no flash drive attached) and insert it into your computer. Go to the folder created for the corresponding flight (e.g. Flight 1) and view the contents. The number of photos should match the number of trigger commands sent.

The EXIF data and geotags can be viewed by right clicking on a photo and selecting Properties and then clicking on the Details tab as shown in the picture above. Note the autopilot must have a 3D Fix in order to geotag the images.

PPK Feedback

Installation

- ❑ Plug the PPK Trigger Cable into the Aux Out 5 port of the Pixhawk
- ❑ Plug the 45cm male to female servo lead labeled Reach Power into an unused Aux Out port, this is for power only
- ❑ Take the small cable labeled Time Mark and Reach Power and plug the DF13 connector into the Emlid Reach unit in the port opposite of the USB port (Reference picture)



- ❑ Connect the 45cm female servo lead labeled Reach Power and connect it to the appropriately labeled male connector on the Reach unit
- ❑ Take the male connector labeled Time Mark on the trigger cable and connect it to the appropriately labeled female end on the Reach unit
- ❑ Take the female connector on the PPK Trigger Cable labeled R10C Feedback and connect it to the male connector also labeled the same coming from the rear of the R10C
- ❑ Plug the Micro USB cable into the side of the R10C. All cables should now be connected.

The following parameters will need to be changed:

CAM_RELAY: 1
CAM_TRIGG_TYPE: 1
RELAY_DEFAULT: 1
RELAY_PIN: 54

Operation

Plug the flight battery in and wait for the Pixhawk and Emlid Reach to boot. During this process, the camera may trigger 1 or more times. These photos will be stored on the camera's SD card, but the time marks will not be registered on the Reach. Be sure to take this into account prior to geotagging the images. To verify that everything is plugged in properly, connect to the Reach

via the web interface or Reachview mobile app and go to the Camera control menu. Send a camera trigger command to the R10C through your ground control station software and the date and time of the camera trigger should appear under the Camera events section.

REACH v2.10.0

reach 192.168.1.106

Camera control

Camera trigger OFF ON

Period 2 s 30 s 20 ms 100 ms

Duty cycle 20 ms

Polarity Normal

20 ms 20 ms 2 s

Camera events

Last time mark: 2018/03/29 14:13:40.8 GPST

Only works with GNSS satellites in view for time synchronization. Event is triggered by driving time mark pin down, usually by a camera hot shoe. All event marks are stored in the raw data log.