GreenValley International LiAir

WEB UI User Manual

Workflow

The platform used is a multi-platform application for drones. Configure access to the device on the WEB (192.168.0.10) side. In the browser of a mobile phone or laptop, we can perform simple state information access of the device and perform simple configuration and control operations.

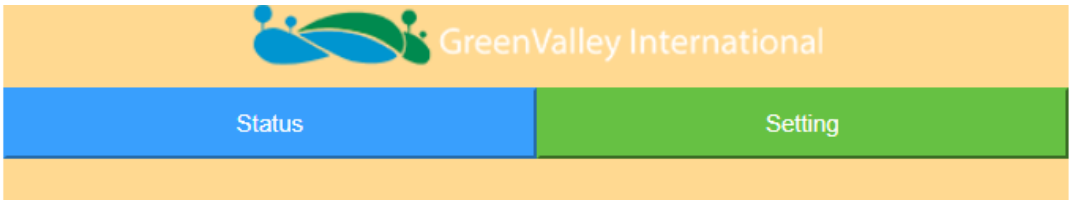
The operation process is as follows. The user can set up connection to the device through Wi-Fi, change the current state and parameters of the device through the WEB interface of the browser, and update the firmware directly uploaded from the network.

Interface Layout

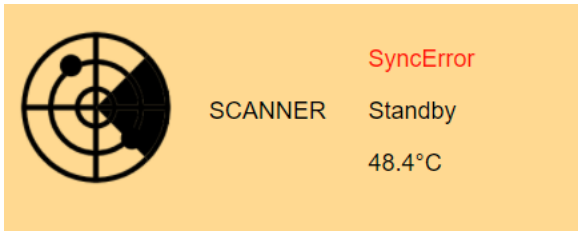
As shown in the figure below, the user can connect the device through Wi-Fi or LAN cable, check the device status, and control the scanner, such as starting and stopping operation.

In the configuration interface, you can perform simple system parameter configuration and core board firmware update for the entire system

Detailed introduction



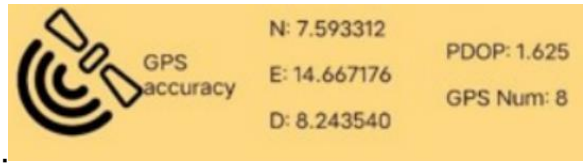
The interface is mainly divided into status and settings, which respectively display the current status of the device and the basic system settings of the device.



Scanner status display, this status mainly displays the current GPS synchronization status and working status of the scanner.

Synchronized	GPS Synchronized
Sync error	Sync. error
Standby	System in standby

Note:
Sync/synchronization error, please check the installation of GPS antenna when there is a synchronization error. Normally, if the GPS is not properly installed and connected, this error will occur.
Standby/Logging, it shows whether the current scanner is working normally, we can judge whether we need to manually start the data recording of the scanner by changing the status

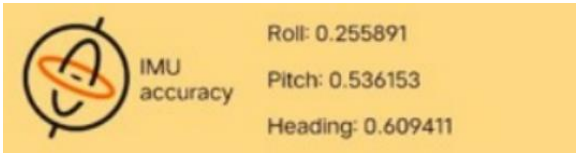


The single-point positioning accuracy information obtained by the GPS board, PDOP and the number of GPS satellites (only the number of GPS).
Note: Generally, the error range of single-point positioning accuracy is 1-2m.

PDOP is the quality of current environmental satellite observations, with a normal value of about 2.

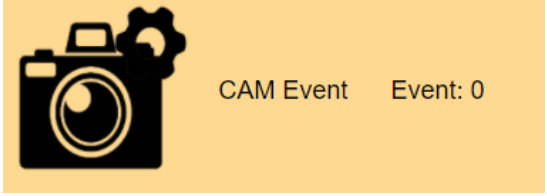
The GPS num. is the number of GPS satellites observed. This value does not include the number of other types of satellites (you can choose to add more types of your choice).

When any value is abnormal, please check whether the GPS observation status of the device is obstructed and whether the GPS feeder is damaged.



IMU accuracy information shows the true physical accuracy of the three axes of the IMU, which is only used as a reference for real-time data, not as a basis for calculation.

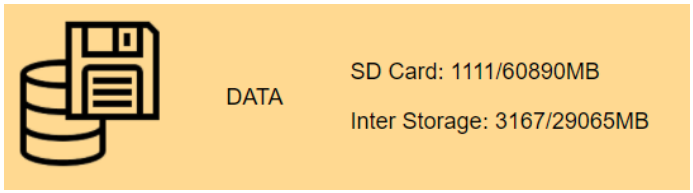
Note: The real physical accuracy of the IMU is shown here, and the accuracy after the non-real-time trajectory calculation is displayed. In this state, we can see the true accuracy of the IMU. Normally, we only observe whether there are outliers. For example, the heading accuracy has an unreasonable value (less than 1° is a normal value).



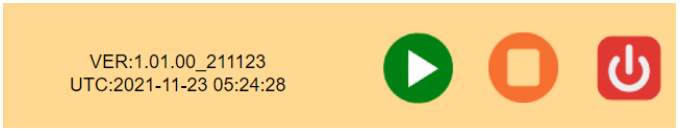
Camera feedback information, 0 core board feedback count, feedback (the camera self-

check will have one more)

Note: When we start normal data collection, the number of camera feedbacks will increase according to the interval of taking pictures. The former is the number of system triggers, and the latter is the number of times the feedback signal is received. If there are more than 3 times, please check the camera's Configuration and connection.

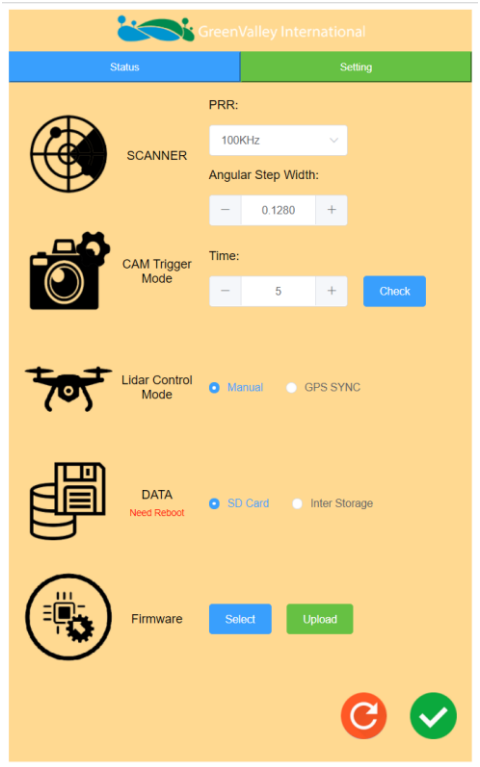


Core board storage capacity and SD card storage capacity information has been used/total



Scanner start logging>>Scanner stop logging >>Device shutdown button

Configuration interface



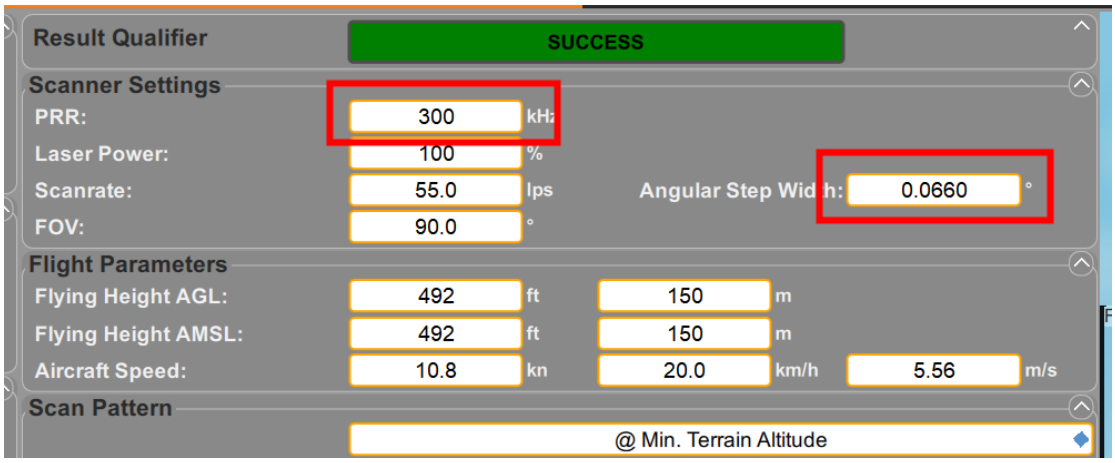
Detailed configuration interface, mainly for simple configuration of equipment

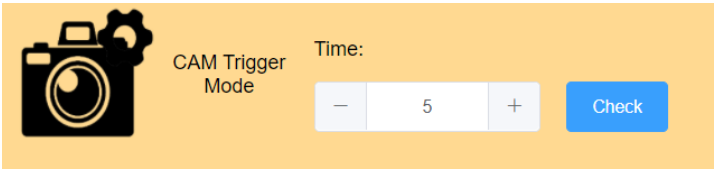
Scan parameter configuration

PRR: The scanning frequency selection of the scanner adopts the drop-down selection method (Laser PRR (pulse repetition rate configuration).
Angular Step Width: Angle step number, manual input method

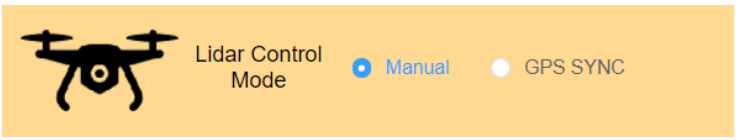
Here we recommend that users use the RiPARAMETER-GUI software to calculate the number of angle steps required by the actual project before flying, and then enter it into the device for use. We will provide RIEGL's point density calculation tool)

RiPARAMETER-GUI is a tool specially used by RIEGL for PRR and Angular Step Width calculations. Users can perform calculations with corresponding engineering projects.



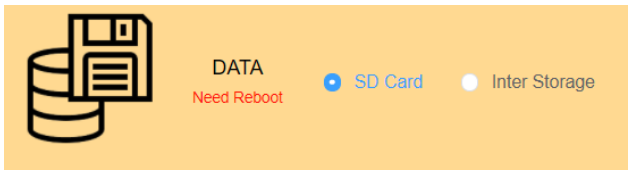


For setting the camera's photo mode, the core board sends an exposure command, and the exposure is once every 3 seconds, and the time exposure interval.
Camera photo mode selection, manual input according to time exposure
If there are no event count please try push check button and waiting for 10s

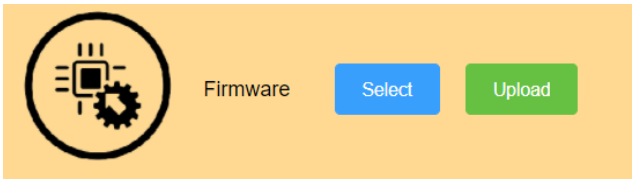


In the operating mode, you can use GPS SYNC to determine whether to automatically turn on the LiDAR. Of course, you can also select the manual mode **(requires restart to take effect)**

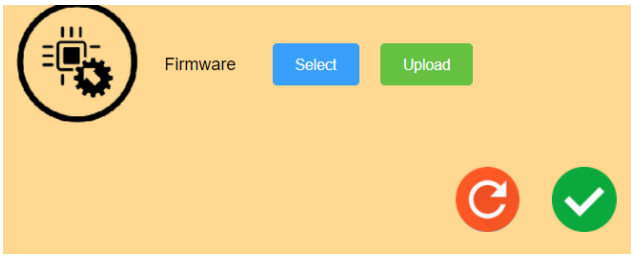
Switch the system on mode manually,
1) According to the GPS synchronization status (GPS SYNC)
2) Manual mode (default setting)



Storage configuration, manually select SD card/EMMC up to 64GB built-in storage **(requires restart to take effect)**



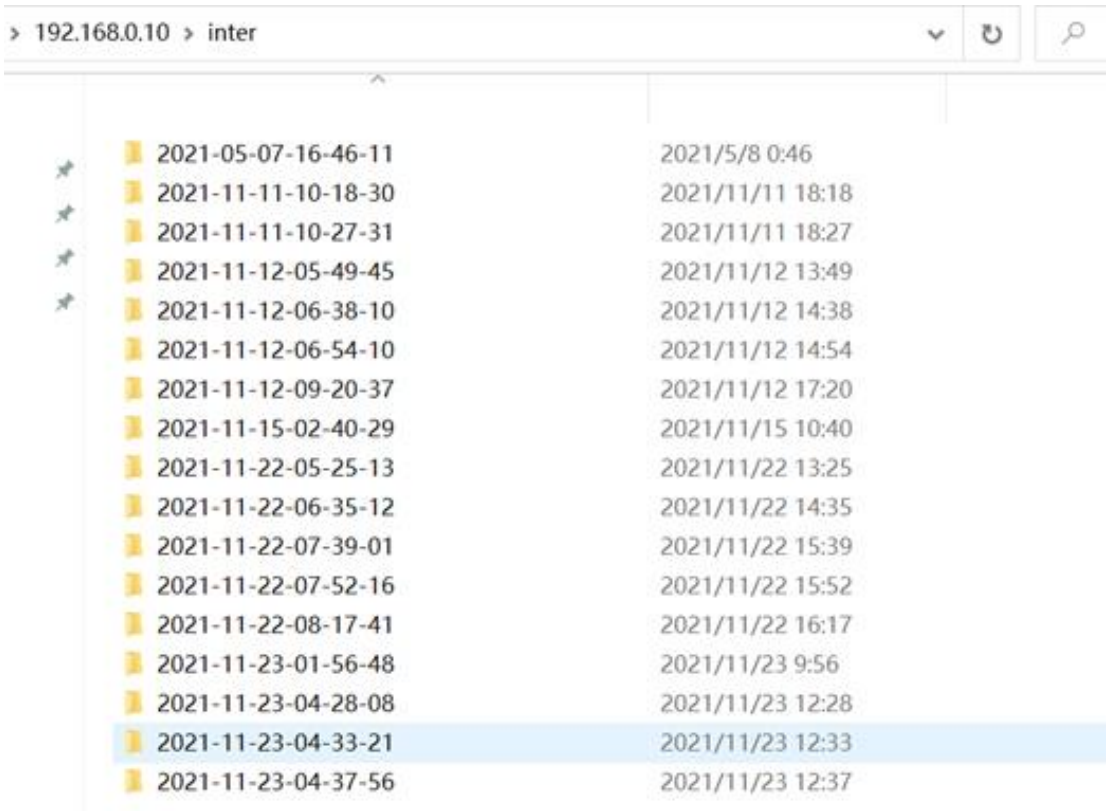
Supports the rapid upgrade of the core board on the WEB side, and the way of uploading firmware updates.



Corresponding to the return and confirm keys of the overall configuration interface.

DATA DOWNLOAD

The lidar and IMU data are stored inside the device or on the SD card. You can directly access and download (\\192.168.0.10\inter) through WIFI LAN or unload the SD card to copy the data.



The project file is shown below:

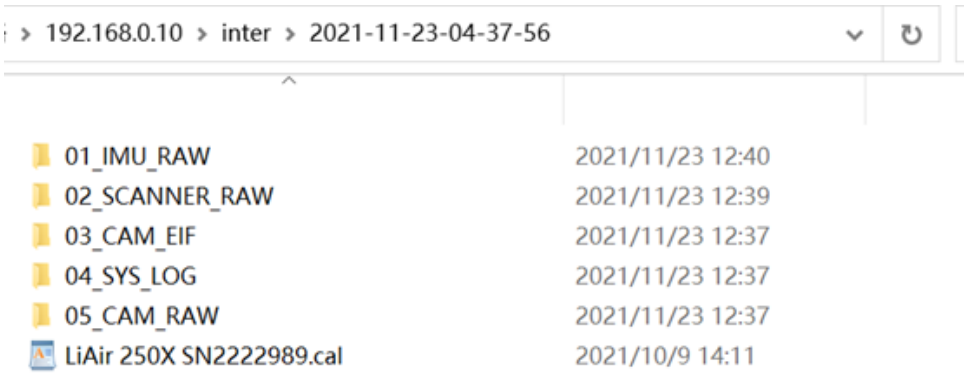


Figure 4-5 Example of project file

- 01_IMU_RAW: This folder is used to store IMU raw data (*.T04).
- 02_SCANNER_RAW: This folder stores laser data.
- 03_CAM_EIF: Customized camera feedback file (non-customized folder is empty)
- 04_SYS_LOG: This folder stores system log files.
- 05_CAM_RAW: This folder stores camera files (added to future devices, not common to all devices).
- LiAir 250X SN2222989.cal: This file equipment calibration parameter file.

Precautions:

1. At the same time, it supports Wi-Fi data download and network cable data download. SD CARD data can be directly accessed through the network for data management on the desktop