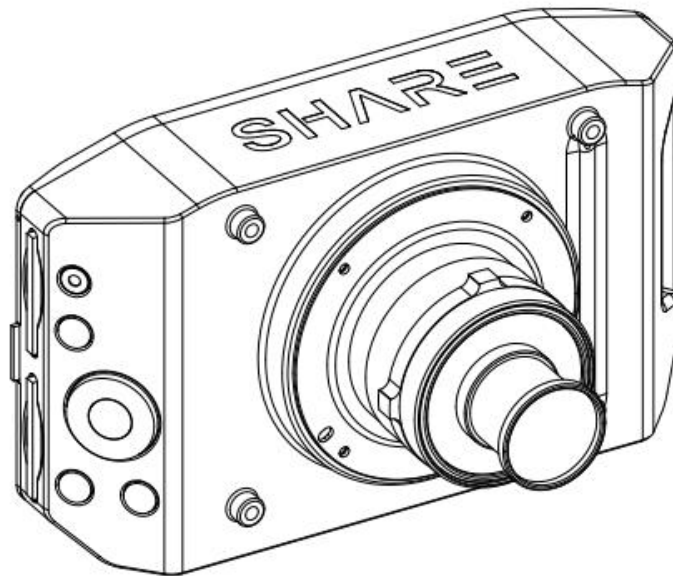# SHARE 6100 Pro
User Manual V1.2

2021.01

Disclaimer and Warning

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Do not allow people under the age of 18 to use the SHARE 6100 Pro.

Do not modify or disassemble the SHARE 6100 Pro . SHARE UAV accepts no liability for damage, injury or any legal responsibility incurred directly or indirectly from the use of this product. The user shall observe safe and lawful practices including, but not limited to, those set forth in this manual.

By using SHARE UAV products, you hereby signify that you have read this disclaimer and warning carefully and that you understand and agree to abide by the terms and condition herein.

You agree that you are solely responsible for your own conduct while using this product, and for any consequences thereof. You agree to use this product only for purposes that are proper and in accordance with all applicable laws, rules, and regulations.

Contents

1. Product Overview

SHARE 6100 Pro camera with gimble is a surveying and mapping product equipped with 61 million pixel sensor and professional-grade surveying and mapping lens, with vertical angle as the main direction of image acquisition. At the same time, the use of the mainstream UAV platform carrying cameras for terrain and building mapping and automatic modeling system can bring revolutionary efficiency improvement to the mapping field.

1.1 SHARE 6100 Pro Introduction

Manufacturer:	SHARE UAV	Camera Type:	Single lens Camera
Model No.:	SHARE 6100 Pro	Material:	Aluminium alloy
Size:	130 x76 x 103 mm	N.W.:	≈360 g
Supply Method:	SkyPort / connector	Exposure Interval:	≥1.3s
Sensor Size:	35.7*23.8mm	Storage:	256GB

SHARE 6100 Pro camera adopts the leading uni-body molding structure in the industry, and creates a more professional mapping camera through excellent shape structure design and advanced manufacturing technology.The camera is made of industrial grade aluminum alloy with high structural strength and only 360g weight.The camera can work normally in the environment of -10~40℃. Thanks to special manufacturing materials and excellent design structure, the camera has the most excellent performance in electromagnetic interference resistance, heat resistance, water resistance, fall resistance, ultraviolet resistance and dust-proof. The design of the plug-in card can read the data without power supply of the camera, and users can use the SHARE Data Manager for sortie-parsing and data preprocessing.

1.2 Features

* Mounting via DJI SkyPort, highly compatible with DJI M300 RTK drones
* No need for modifying DJI drones.
* Double interface design, highly compatible with DJI and other UAV brands in the market, one device with multi-purpose
* Support DJI Terra, to realize high-precision without setting ground control points
* Camera firmware will automatically upgraded online when connect to Data Manager

* SHARE Data Manger management flight intelligently
* Real-time image transmission display, the data can display on the ground station synchronously.
* Adjust the parameter via DJI Pilot app (or buttons)
* Pluggable and removable card design, equipped with USB 3.0 card reader for data reading, more convenient and fast
* Professional mapping lens, high mapping working rate

1.3 In the box

Name	Camera	Interface Case	Protection Case	Data Cable	Wipe Cloth	J30J-15 Cable	User Manual
Quantity	1 pc	1 pc	1 pc	1 pc	2pcs	1 pc	1 pc

1.4 Camera Parameters

SHARE 6100 Pro Parameters		
Camera Parameters	Lens Qty	1 pc
	On/Off	Auto On/Off
	Power Supply	DC 13.6-48V SkyPort/Connector
	Time of Endurance	External Power supply by drone
	Data Copy	Storage card, R/W via USB 3.0 card reader
	Pixels	61MP
	Sensor Size	Full frame（35.7mm × 23.8 mm）
	Pixels Size	3.7 um
	Resolution	9504×6336
	Storage	256 GB
	Exposure Mode	Autopilot trigger
	Exposure Time	≥1.3 S
	Focal Length	40 mm（can change to 56 mm）
Working Environment	Working Temperature	-10 ℃ ~ 40 ℃
	Humidity	≤ 95%
Measurement	Size	130×76×103 mm
	Weight	≈360 g

2. Installation

2.1 Camera Introduction

SHARE 6100 Pro Camera housing radium carved with the "SHARE" direction is defined as the front, installation with the aircraft nose in the same direction. Photo drive

(SD card) should be named "3 Down View", POS information drive (TF card) should be named "GPS" to be compatible with SHARE Data Manager.

The camera is equipped with a interface, which is highly compatible with DJI M300 RTK and M210 RTK V2. It can realize integrating power supply, data transmission, RTK signal, image transmission, loading and other functions through connecting to the Skyport interface.

The J30J- 15 connector can connect to other UAVs which integrates power supply, trigger, hot shoe, serial port, picture transmission and other functions.

Four threaded holes are arranged at the bottom of the camera to connect other UAVs.

## 2.2 Camera Installation

2.2.1　SkyPort installation

Installation steps：

（1）Remove SkyPort cover of the drone, press and hold the release button;

（2）Remove SkyPort cover of the camera, align the white point of the camera with the red point of the drone, and embed it in the installation position;

（3）Rotate the camera to the lock position, align the red dots, and the camera is installed;

（4）Uninstall camera，press and hold the release button, rotate the camera in the opposite direction until the red point is aligned with the white point, then remove the camera;
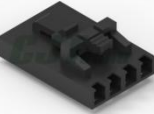
（5）Put on SkyPort covers and lens cover.
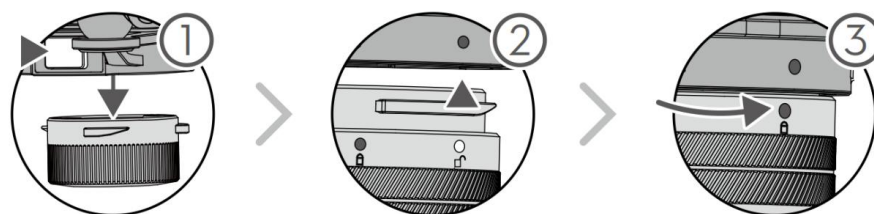
Pic 1　Camera Installation

2.2.2 J30J-15 Interface
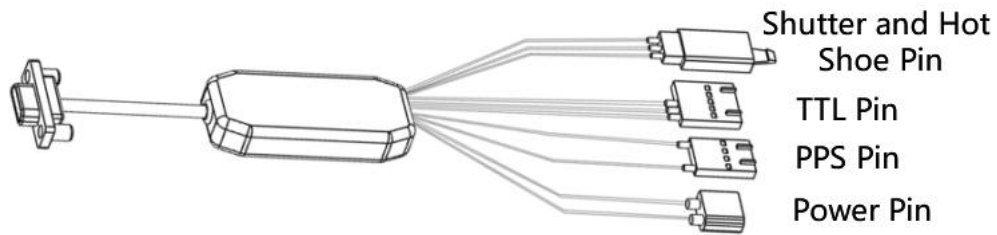
Pic 2 J30J-15

J30J-15 Connector Definition：

Name	J30J-15	Power Pin XT30	PPS Pin C/A2547H-4P	Shutter and Hot Shoe Pin D/A2510HM-3P-R	TTL Pin E/A2547H-5P
Pic					
Function	Connect to Camera	Power Line 1-DC 13.6-48V 2-GND	PIN1:PPS PIN4:GND	PIN1: Shutter PIN2: Hot shoe signal + PIN3: Hot shoe signal -	PIN1&2:NC PIN3:GND PIN4:TXD PIN5:RXD

Connect one end of the J30J-15 cable to the J30J-15 port of the camera.   The XT30 power pin is used to supply power to the camera;   The three-pin signal plug (male connector) is the shutter hot shoe cable of camera. The serial cable and PP S signal cable are used for camera and aircraft communication. They need to be developed and tested separately.   After the signal cable is connected, secure it with adhesive tape.

The camera is powered on by the external power supply of the camera and the control system. The device is compatible with 12-48V DC power supply. When the camera is working, the instantaneous power of power supply must reach 15W to ensure the normal operation of the device.   When reading data, the card reader is connected to the computer for reading, and the camera does not need to be powered on .

2.2.3 Fix the Camera
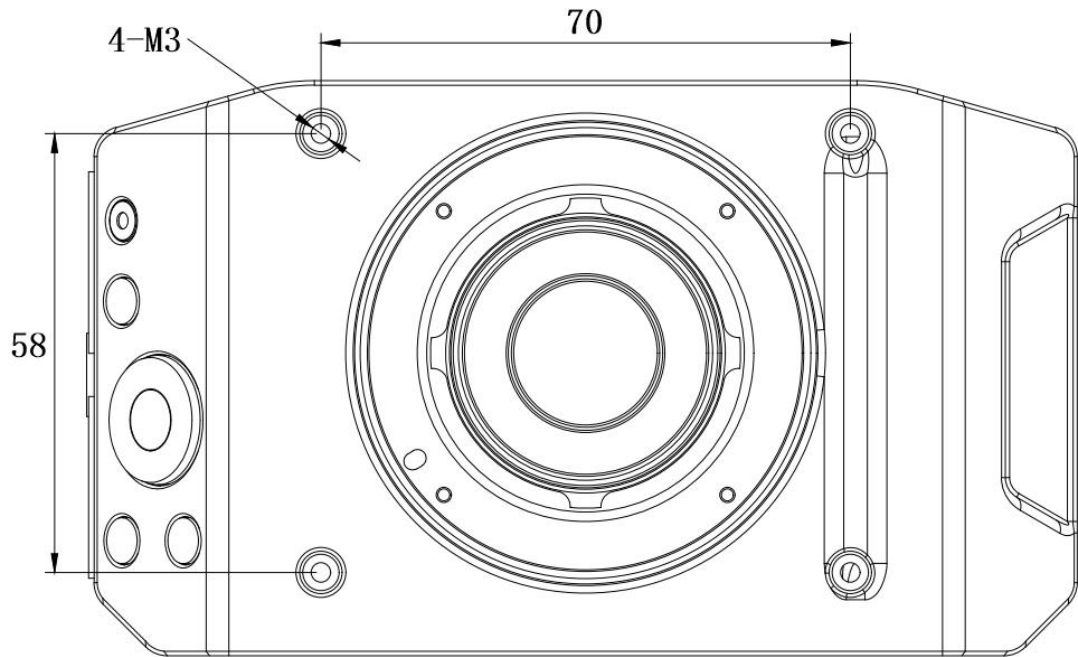
Pic 3 Mounting Holes at the Bottom of the Camera

(1) Four M3 threaded holes are arranged at the bottom of the camera, with a depth of 3.5mm and distributed in the rectangular corners of 70×58 mm.

(2) Four threaded holes can be used for installing and fixing rubber damping ball, also can be designed according to the different structure of the flight platform installation structure. The installation methods are flexible and diversified.

2.2.3 Camera Interface Description
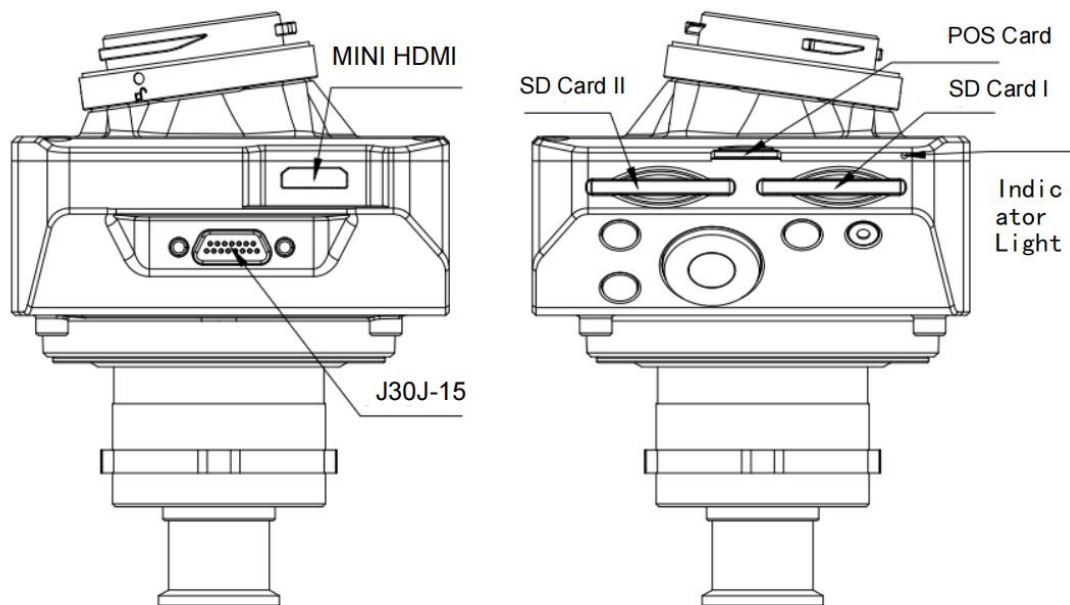

Pic 4 Camera Interface

3. Camera Operation

3.1 Power On

3.1.1 Power by DJI SkyPort, turn on automatically when drone is on.

steps of power on:

（1）Mount the 6100 Pro on the drone, and make sure the installation is firm；

（2）Turn on the drone, the camera will start automatically and enter the self-test. The total startup duration of the camera will be 40 S, during startup, the blue indicator blinks quickly. After startup, the camera beeps and the blue indicator blinks slowly；

（3）During startup, the real-time data window on the Pilot screen displays "Unable to take photos", and "Available to take photos" after startup.

SHARE 6100 Pro

Photo 42℃ RTK:No Solution
Photographing Instruction:0
D:0
Rtkflag:0
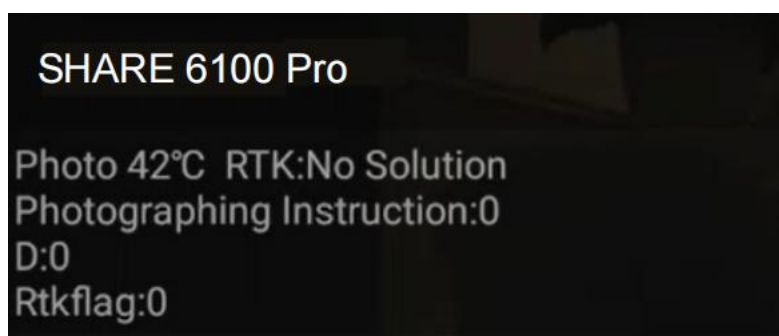
Pic 5   Pilot Real-Time Screen

Pilot Real-time Data Display:

	Display	Meaning	Remark
1	Photo	Camera is turned on, it can capture normally	
2	RTK	RTK status	0 -- no solution, 16 -- single point solution 34 -- floating point solution 50 -- fixed solution
3	Receive trigger times	The trigger times that camera received	The camera should execute shutter times
4	D	Actually shutter times of the camera	
5	RTK Flag, SD	/	/

（4）During the startup of the camera, a time setting or camera setting interface will appear on the photo transmission interface. At this time, the camera initialization will automatically switch this interface. After the startup is complete, the photo transmission image display will enter the photo taking interface.

3.1.2 Power by J30J-15

The camera will be turned on automatically when drone is on when powered by J30J-15.

It is recommended that the power supply voltage be 13-48 v DC. When the camera is working, the instantaneous power of the power supply must be more than 15W to ensure the normal operation of the device.

Steps：

（1）Mount the 6100 Pro on the drone, and make sure the installation is firm；

（2）Turn on the drone, the camera will start automatically and enter the self-test. The total startup duration of the camera will be 40 S, during startup, the blue indicator blinks quickly. After startup, the camera beeps and the blue indicator blinks slowly；

（3）After startup, camera can take photos now；

（4）Do not turn off drone till 15 seconds after last photo was taken;

（5）It is recommended that you connect the camera power after UAV startup is completed, to avoid frequent camera restart caused by frequent on-off of the UAV.

3.2 Take Photo

DJI Pilot App of DJI M300 RTK
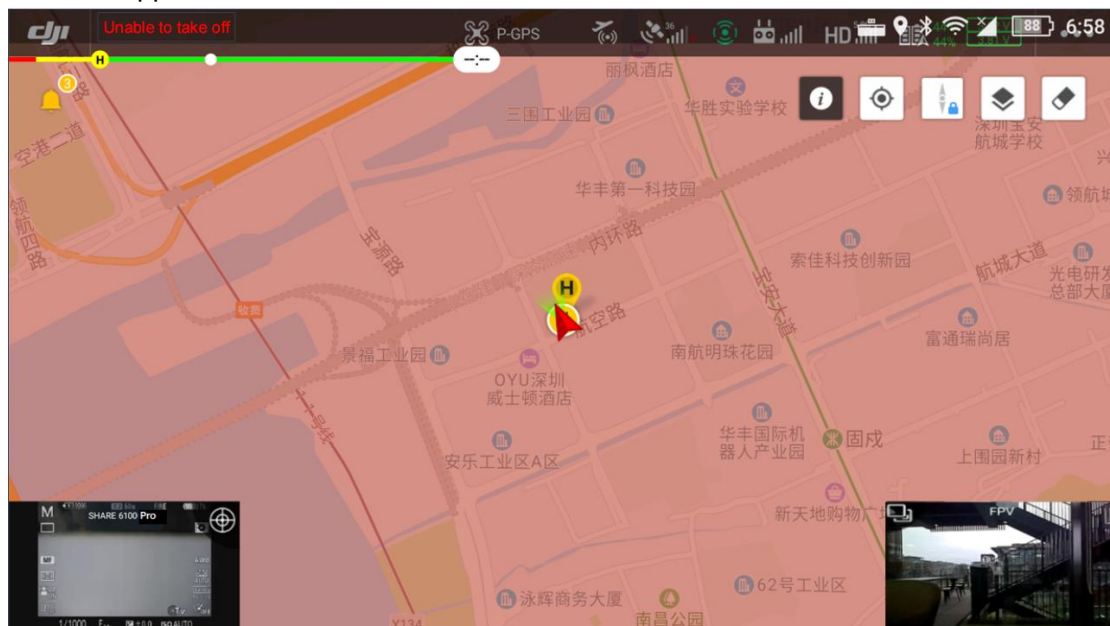
Pic 6　DJI M300 RTK Pilot Screen

Take working with DJI M300RTK as an example, camera is on, the left bottom window shows the real-time image. As the indoor light is insufficient and the image is black. User can press the 'photo' button on controller to test the photo function.

3.3 Camera Setting

Take working with DJI M300 RTK as an example, using DJI Pilot for route planning and setting flight parameters.
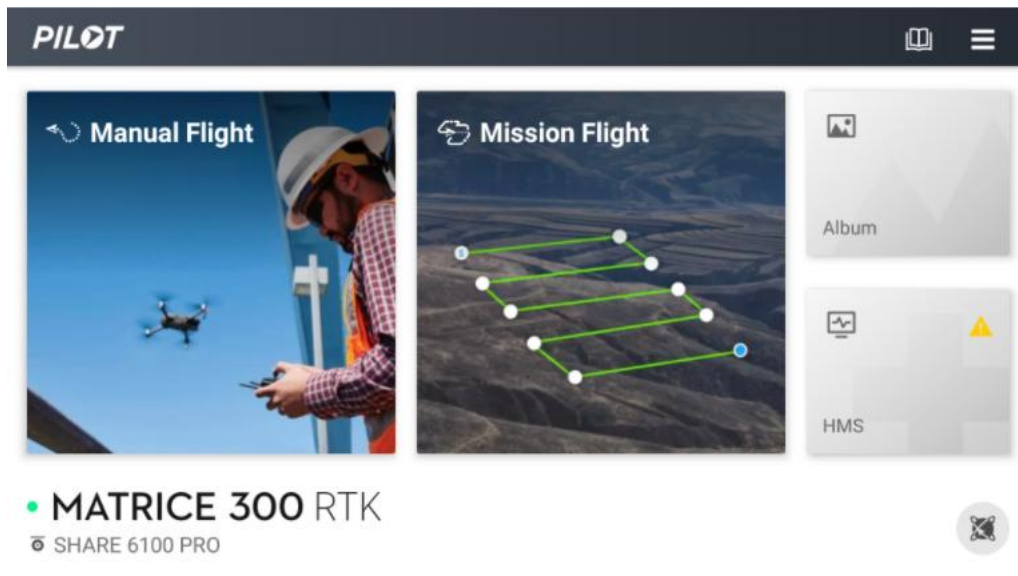
Pic 7   Pilot App

（1）Camera setting on DJI Pilot
Open DJI Pilot – Mission Flight -- Create a Route -- Mapping -- Create a mapping area – Custom Camera – Add Camera – Camera Setting -- Overlap setting
（2）SHARE 6100 Pro parameter：

	Photo resolution (W)	Sensor size (W)	Focal length
SHARE 6100 Pro	9504px	35.7mm	40.0 mm
	Photo resolution (H)	Sensor size (H)	Minimum interval
	6336px	23.8mm	1.3s

As shown in Pic 8, click Finish and save after completing the custom camera Settings

Pic 8 Create Customize Camera

（3）Payload setting
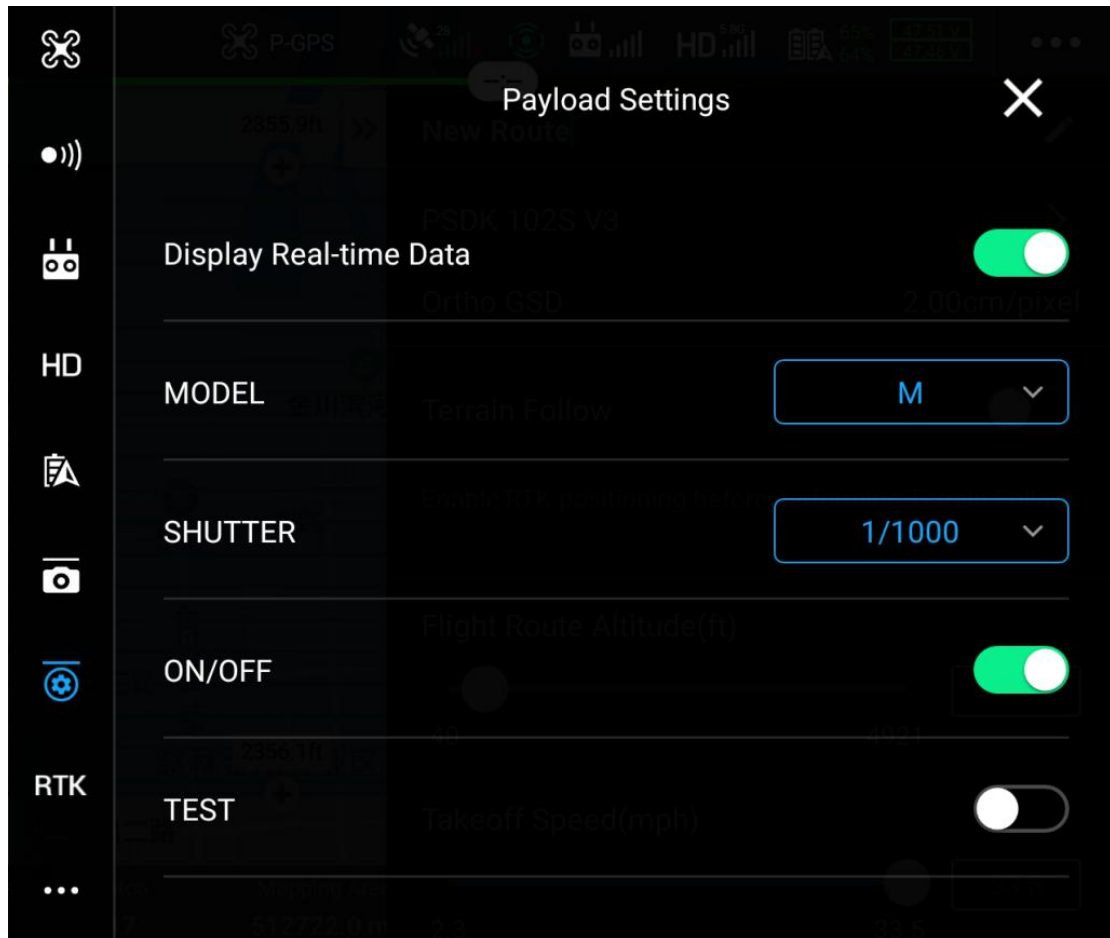
Pic 9   Payload Setting

Click the three points in the upper right corner of the screen and select Payload.

Functions:

Key	Function
Real-time data(On/Off)	Real-time data window display/hide
Mode	Camera mode switch (A,S,M), default is M
Shutter	Shutter speed(1/640,1/800,1/1000,1/1250)
On/Off	Camera On/Off (default Off)
OK	Confirm button
Menu	Menu button
Up	Up button
Down	Down button
Left	Left button
Right	Right button
Play	Play button
Delete	Delete button

（4）Mechanical button setting
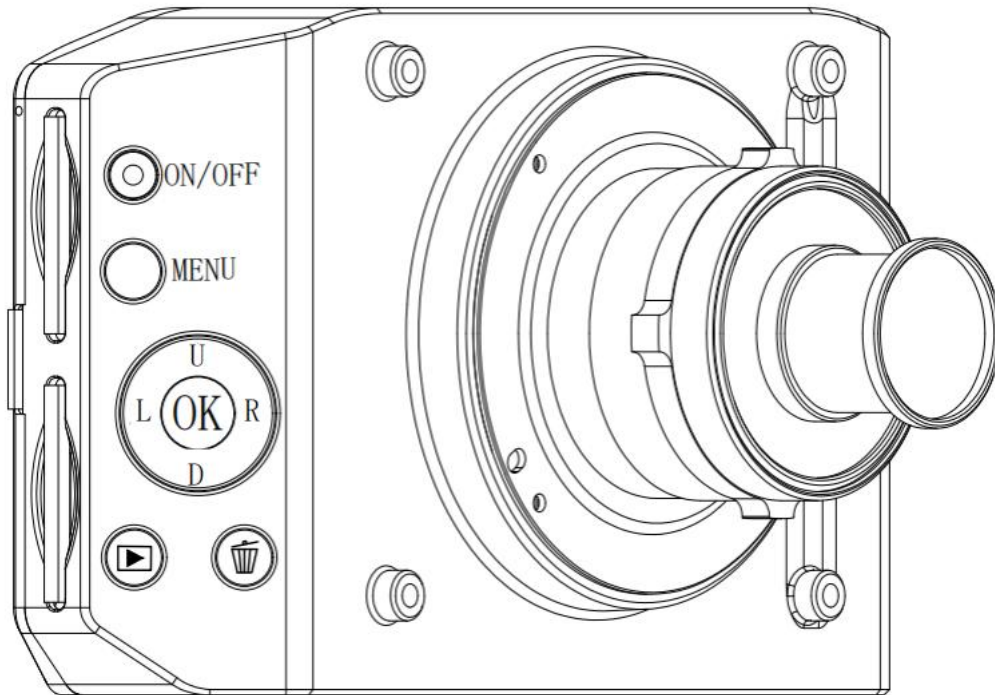
Pic10 Buttons

You can also change the basic parameters (Settings) of the camera through the external button of the camera, as shown in Pic 10.

3.4 Camera Repair

(1) Common problems in camera use
①Image database file error

②Writing into the memory card error

③Can not find Image database file

(2) There are two repair methods：
① Automatic repair: the user can restart the camera power, the camera will automatically perform an initial repair; If the problem cannot be fixed automatically, you can format the camera memory card and restart the camera power again.
② Manual repair: Click the "Confirm" button in the Payload Settings or the "OK" button of the mechanical button and confirm the operation as prompted.

4. SHARE Data Manager

4.1 Introduction

SHARE Data Manager is a data processing auxiliary software which is designed for surveying and mapping cameras to improve internal efficiency, simplify data pre-processing operations.   The main function of the SHARE Data Manager include flight management, copying/cleaning photo data, writing geographic location information into photos, generating engineering files, upgrading camera firmware, etc.   It can help users to conveniently manage aerial camera information and maintain camera firmware.

4.2 Operation Environment

Recommended Minimum Configuration:

| Items	Specs
CPU	Intel Core i7
RAM	8GB
Hard Drive Space	512GB
Operation System	Windows 7/10

4.3 Operation Process

The main operation of SHARE Data Manager is to copy photo data from the camera and write shooting information and geographic information into photos. The operation process of copying photos is as follows:
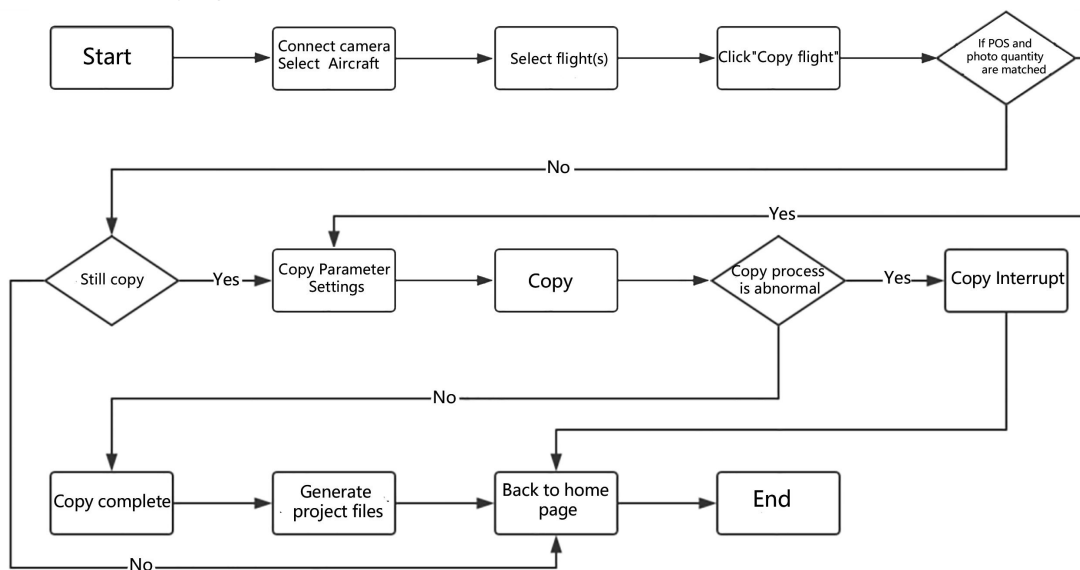
4.4 Software Installation

(1) If you receive an installation package, open the package and click "Next" to complete the installation. You can use the default settings for all installation settings.
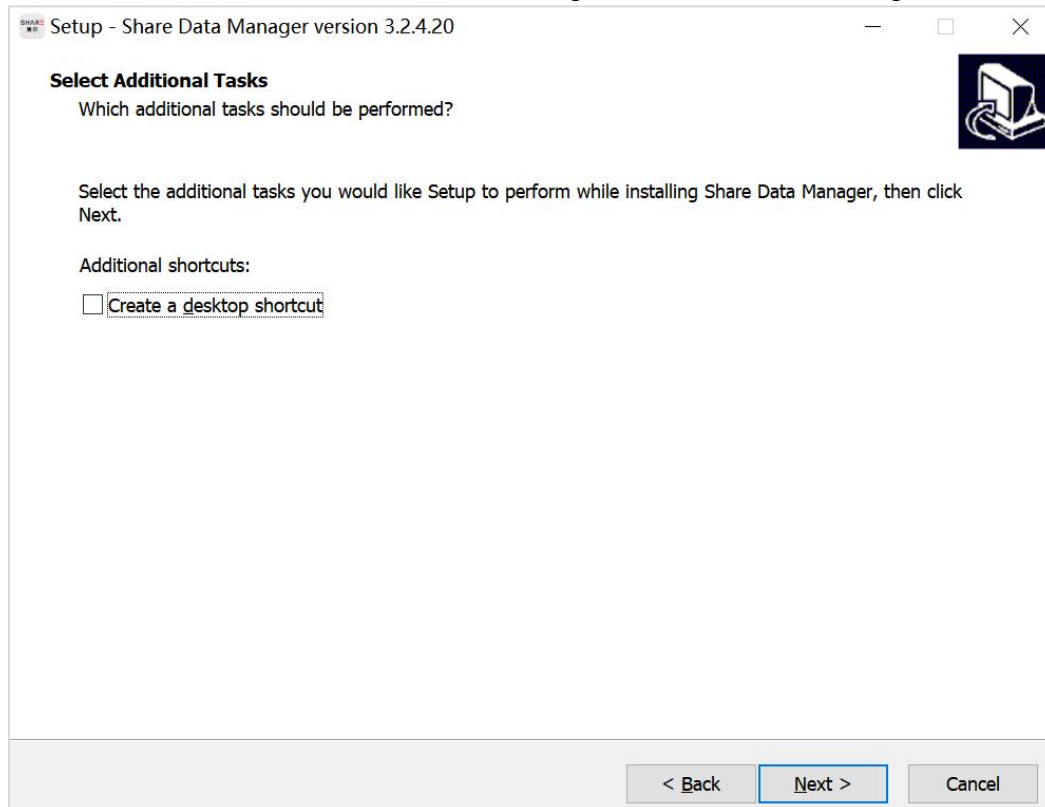
(2) Once the installation is completed, SHARE DATA Manager creates two shortcuts on the desktop: "SHARE Data Manager" and "SHARE Tool Box".

(3) Please log in to the website below to view the latest online tutorial of SHARE Data Manager：

http://bbs.SHAREuavtec.com/upload/software/SHAREElfInstaller.exe

4.5 Software Function

Open the SHARE Data Manager on the desktop, select the camera model as SHARE 6100 Pro, select the UAV model as the actual flying model, and click OK to enter the interface to wait for connecting device. Insert the SD card and TF card of the camera into the card reader then connect the card reader to the USB 3.0 port of the computer. The drive letter driver may need to be installed when connecting to the PC for the first time. Please be patient. After the drive letter is identified, the software interface will be automatically switched to the device details interface.

The device details interface consists of three parts. The first is the function list which is displayed on the left. The second is the connection status and capacity of memory, which is displayed on the upper part on the right . Click the status bar of each drive letter to open the corresponding folder. The third one is the flight sorties which is showed on the bottom half on the right. When the mouse is placed over the sorties it shows the number of POS and photos contained in the sorties.

There is also a "Disconnect" button in the lower left corner. If you do not need to use the camera, click this button to pop up the drive letter, and then unplug the card reader.
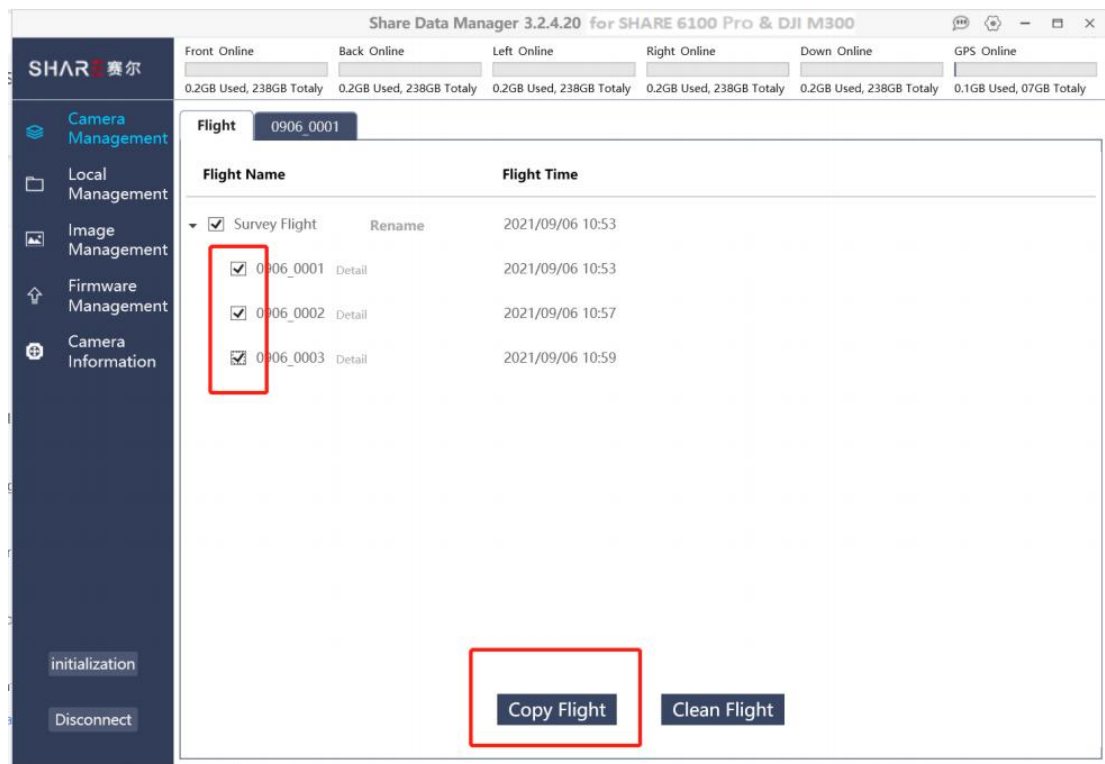
As shown in the image above, sorties are sorted by aerial shooting time and displayed on the SHARE Data Manager.　We can see the name (corresponding to the POS file on the GPS disk) and the shooting time of each flight.

There is a "detail" button for each sortie. Click to go to the individual sortie details interface.

ID	Group	Name	Lat	Lon	AbsAlt	RltAlt
00005	1	DSC00041.JPG	22.79456381	113.95649210	19.739	0.000
00007	2	DSC00042.JPG	22.79456378	113.95649216	19.747	0.000
00013	3	DSC00043.JPG	22.79456378	113.95649216	19.749	0.000
00018	4	DSC00044.JPG	22.79456376	113.95649217	19.762	0.000
00022	5	DSC00045.JPG	22.79456373	113.95649220	19.763	0.000
00027	6	DSC00046.JPG	22.79456374	113.95649219	19.761	0.000
00033	7	DSC00047.JPG	22.79456375	113.95649220	19.765	0.000
00037	8	DSC00048.JPG	22.79456372	113.95649224	19.768	0.000
00042	9	DSC00049.JPG	22.79456372	113.95649222	19.771	0.000
00048	10	DSC00050.JPG	22.79456373	113.95649223	19.776	0.000
00052	11	DSC00051.JPG	22.79315711	113.95644324	139.790	118.956
00057	12	DSC00052.JPG	22.79322726	113.95658583	139.763	119.956
00063	13	DSC00053.JPG	22.79328850	113.95672343	139.858	119.956
00068	14	DSC00054.JPG	22.79334851	113.95685732	139.826	119.956
00073	15	DSC00055.JPG	22.79340495	113.95698287	139.838	119.956

Click the name of the sortie to pop up the window of sortie details which shows numbers of POS the number and name of photos from different perspectives for users to check whether the sortie data is correct.　Click on a row of photo data to see a thumbnail and detailed data of the photo on the right.

The photos and POS data are stored separately in the camera. The photos can be associated with the corresponding POS , the POS can be written into the photos when copying data through the SHARE Data Manager.

4.6 Functions

4.6.1 Copy Flights

Copying flight is the copying of POS data and photo data from one or more flights from the camera to the computer and pre-processing for modeling. The process for copying flights is as follows:
（1）Select flights to be copied, for example, 100_0039;
（2）Click the copy button to enter the copy setting interface
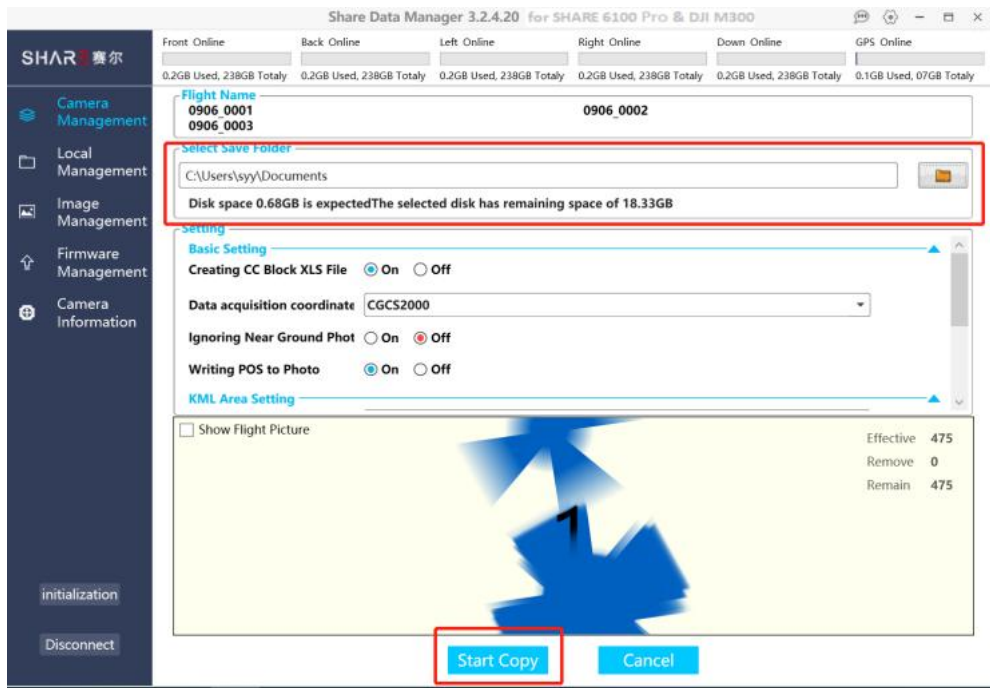
（3）Copy Settings complete, click Start Copy to enter the copy process interface. The current copy progress and remaining time are displayed on the page.
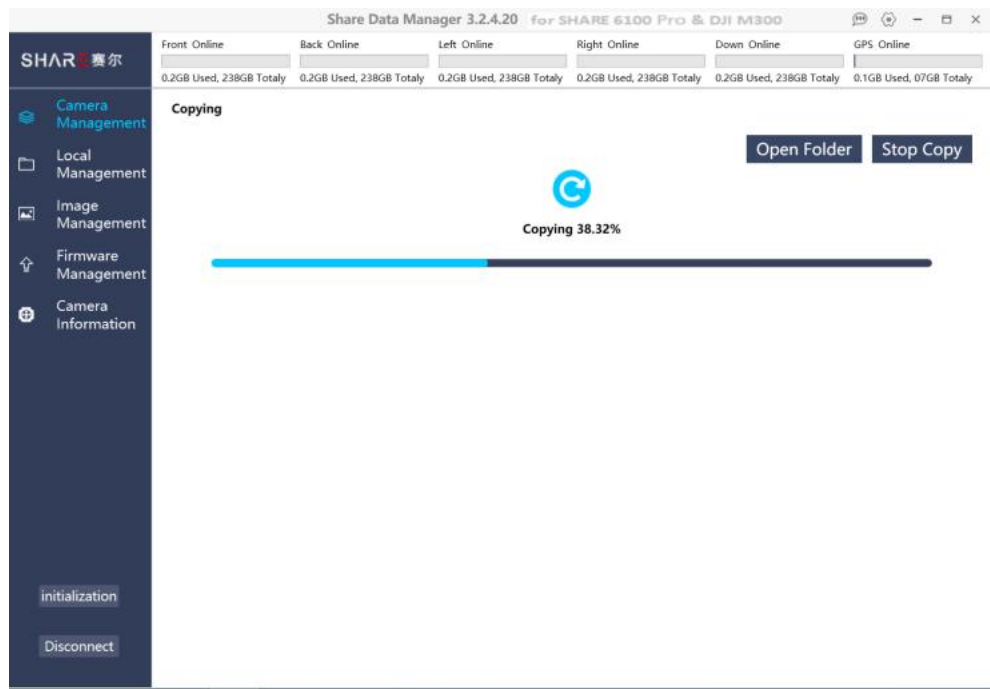
（4）Under normal circumstances, the copy is completed when the copy progress reaches 100%. At this point, all the images have been copied to the save folder and the stand project files have been generated.

（5）Open folder and view the copied imagery data. There are several flight folders and an Excel file that can be imported into ContextCapture as a block file.

Name	Date Modified	Type	Size
100_0039	2020/6/30 14:49	File Folder	
BlockImport_2020_06_30_14_50_43	2020/6/30 14:50	XLSX File	23 KB

There is a "txt" file for storing original POS data under the photos folder, another folder is for storing photos.

| Name	Date Modified	Type	Size
x	2020/6/30 14:50	File Folder	
100_0039	2015/1/1 0:00	Txt File	23 KB

Each parameter in the copy setting screen must be set correctly to obtain the photos that meet the requirements. The specific meanings of setting parameters are shown in the following table:

| Parameter	Meaning	Mandatory/Enable
Target Folder	The target location of images to be copied	Yes
Generate CC Project File	Whether to generate excel files imported into CC	Enable when use CC modeling
CC Project File Coordinate System	The coordinate system used to import CC project files	Enable when use CC modeling
Do Not Copy Ground Photos	Photos that are low relative to the ground are not copied	No
Write POS Into Photo	Write longitude and latitude information into the photo	Enable when use DJI Terra modeling
KML File	KML files are used to filter the photos of the aligned modeling area	No

4.6.2 Clean Flights

Clearing flights is the function of clearing old, captured imagery from the camera. The cleaning process is as follows:

（1） Select "Clean Flight";
（2） Click the Clean Flights button, the software will pop up a tip window, asking if you want to clean the selected flights to avoid the error deletion.
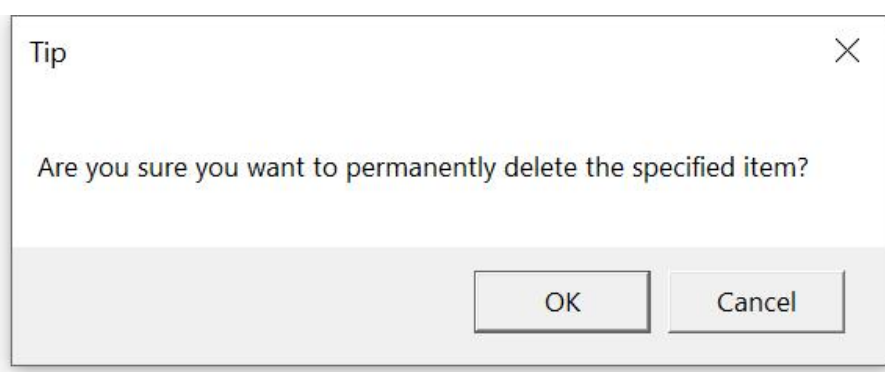
（3） Click OK and the software will automatically delete the selected flights and restore the camera parameters.
（4） When the cleaning progress reaches 100%, the formatting is complete.
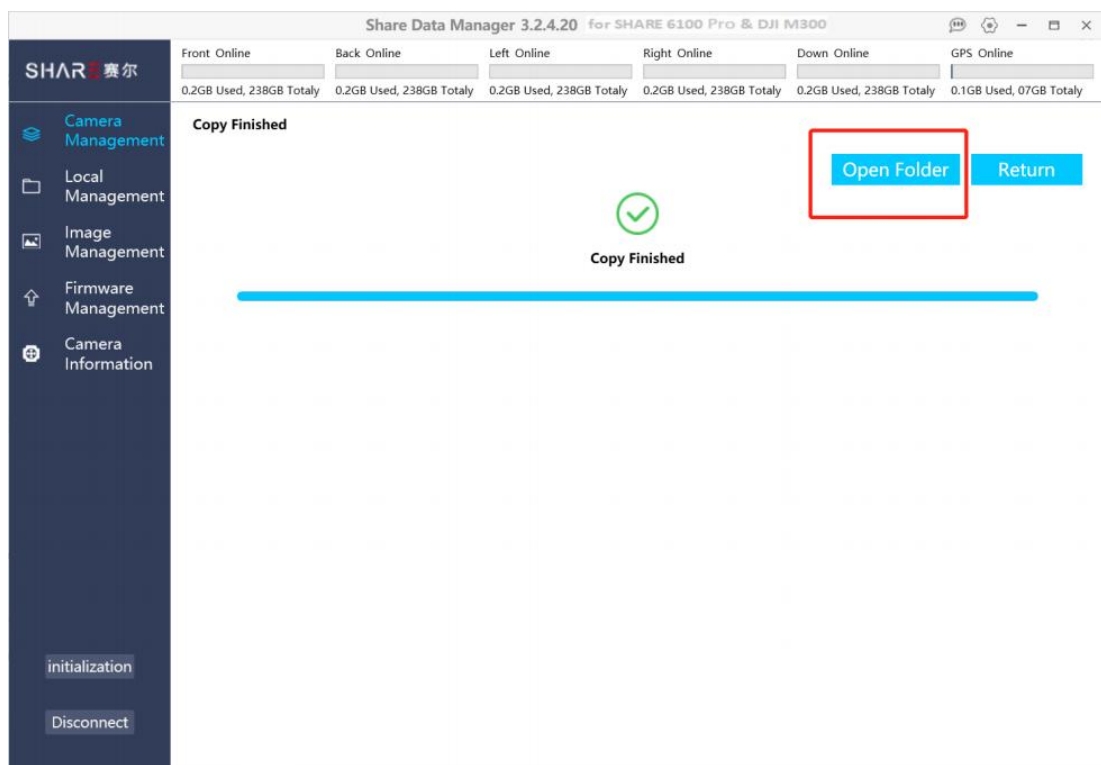
【Attention】
(1) The old photo data in the camera should be removed by SHARE Data Manager. Manual deletion of the photo data is not recommended. Manually deleting data will cause the camera to fail to take pictures.
(2) Once the data in the camera is removed, it cannot be restored. Therefore, before removing data, it is important to check whether the photos contained in the details of the flight are the ones to be deleted to avoid deleting flights by mistake.
(3) It is recommended that after exporting the photo data, the original photo should be kept in the camera before the completion of the aerial triangulation, and then delete the photos in the camera after the aero triangulation is successful.

4.6.3 Firmware Upgrade

SHARE Data Manager can upgrade the camera firmware online. Click the firmware upgrade button on the left of the software interface to enter the firmware upgrade function interface. This feature can only be used if you are connected to the Internet, so we recommend that you stay connected to the Internet when using the SHARE Data Manager, so that you do not miss the latest firmware updates.

The current firmware version and the latest firmware version of the camera are displayed on the upgrade screen. If there is a new firmware version, you can click "Download" button to upgrade.

The downloaded firmware upgrade package is stored in the camera, and the upgrade will be completed automatically the next time the camera is powered on.

4.6.4 Camera Information

Before the camera disconnection, it will save the lens distortion correction and default offset compensation parameter settings to the GPS drive on the camera.

This information is important for the pre-processing of photo data, which can be viewed in the SHARE Data Manager and can be alerted in case of unexpected data loss.

Don't worry if you accidentally delete the camera info, we have saved an online backup for you, which can be downloaded to the camera using the SHARE Data Manager.

5.Camera Maintenance

When using the oblique camera, please pay attention to the daily maintenance.
(1) Avoid storing the camera in a place of extreme hot, strong vibration, strong magnetic and high humidity.
(2) Please do not use detergent containing diluent or gasoline and other organic solvents to clean UV Lens.
(3) When storing the camera, avoid long-term exposure of light to the lens.
(4) Avoid bringing the equipment directly from cold places to warm places, to prevent moisture condensation.
(5) The working temperature of the equipment is about - 10 ~ 50 ℃. It is not recommended to work in extremely cold and hot environment beyond the working temperature range.
(6) Pay attention to the cleaning and drying of DJI SkyPort connector and put on the protective when not attached to the craft.
(7) Camera shutter is consumable item, under normal circumstances, the effective number of shutter is about 200,000 times; 200~250 thousand will occur shutter fatigue, there is a risk of photo loss; Above 250 thousand, the camera has a high probability of losing the photo, not taking photos, slow reaction, camera error and other phenomena. After the number of camera shutters reaches 200k, it is recommended to return the camera to the factory for a paid replacement of the shutter, to avoid the impact of equipment failure on flight operation

6. After sales

6.1 Delivery

(1) All equipment delivered by SHARE UAV shall be packed in accordance with the standard protective measures for packaging and transportation. Such packaging shall meet the requirements for long-distance transportation, moisture resistance, shock resistance, rust prevention, etc. required according to the specific properties of the equipment to ensure that the equipment arrived safely at the place of delivery.

(2) Packaging
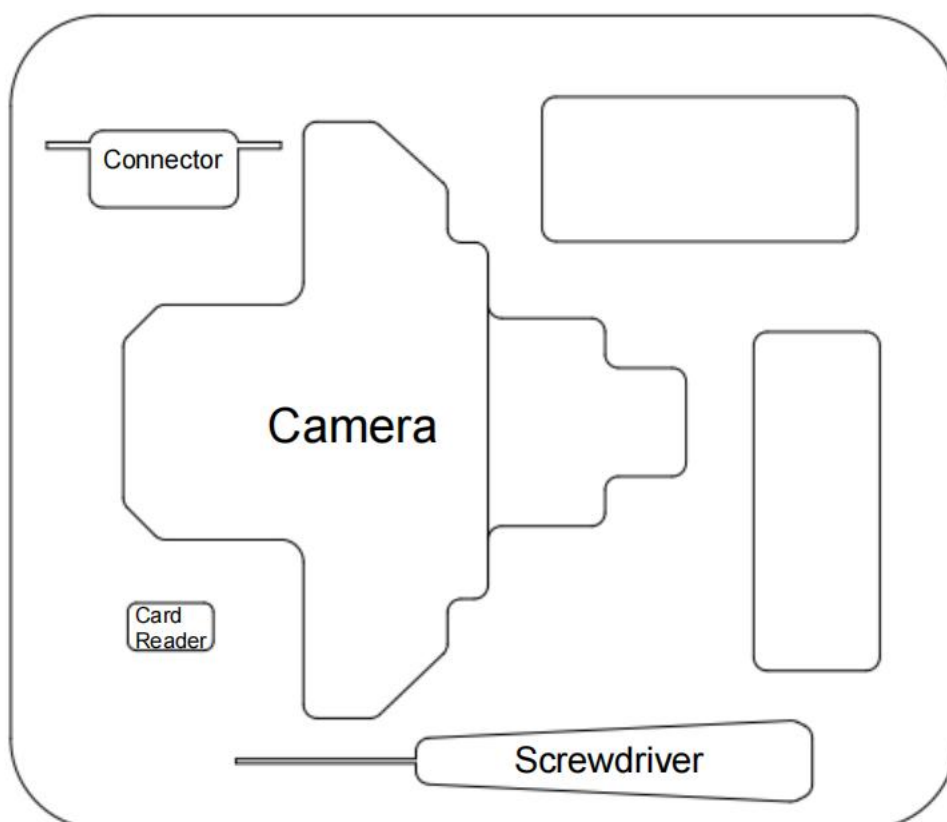
SHARE 6100 Pro Case layout

Please keep the cover of SHARE 6100 Pro transport case upword and do not place it upside down. Avoid severe vibration and turbulence during transportation.

6.2 After-sales Service

(1) Hardware warranty terms: 1 year warranty since delivery. During the warranty period, Party B shall only undertake the delivery, maintenance and quality guarantee of Party A's goods within the territory of the People's Republic of China.

(2) Warranty conditions: Quality issues only. Devices with below conditions will be out of warranty even if within warranty time: damaged, water damaged, out of order caused by improper usage, failure caused by mis operation or software/firmware parameter changes, or disassembled without authorization etc.

(3) Warranty service: Regulations on after-sales service of SHARE UAV

Party A: Buyer of Products   **Party B**: Shenzhen SHARE UAV Technology Co., LTD

The after-sales service content shall refer to the after-sales service regulations of SHARE UAV;

If you have any questions, please contact Shenzhen SHARE UAV Technology Co., LTD

After-sales service and technical support tel: 0755-23216686 (working days 9:00-18:00 Beijing time)

SHARE 赛尔

Official Website	YouTube	FaceBook

If you have any questions about the product
Please contact us via email：
INFO@SHAREUAVTEC.COM
SHENZHEN SHARE UAV TECHNOLOGY CO.,LTD