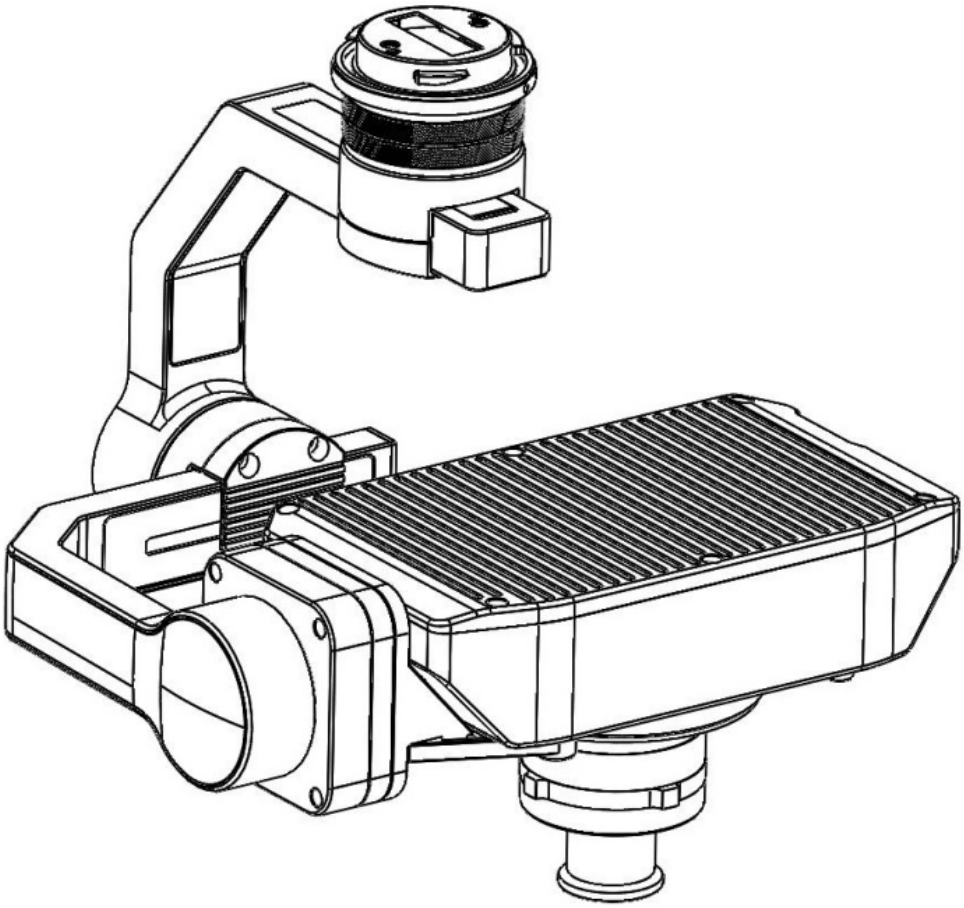
SHARE 6100 X-Port Photogrammetry Camera User Manual

6100 X-Port Photogrammetry Camera
User Manual



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Product Overview

SHARE 6100 X-Port camera with gimble is a surveying and mapping product equipped with a 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 6100X-port Introduction

Manufacturer:	SHARE UAV	**Camera Type:**	Single lens Camera
Model No.:	SHARE 6100 X-Port	**Material:**	Aluminum alloy
Size:	130 x75 x 80 mm	**N.W.:**	≈670 g
Focal length:	40mm	**Exposure Interval:**	≥1.2s
Sensor Size:	23.5*15.6mm	**Storage:**	256GB

SHARE 6100 X-port 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 fuselage is made of industrial-grade aluminum alloy with high structural strength and is lightweight. The camera can work normally in an 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 camera and gimble can be disassembled and used separately. Skyport connector integrates a variety of signal lines, and automatic identification of flight control signals, which can be highly compatible with many brands of high-performance UAVs and can realize the user needs of the multi-purpose machines. Open mounting and fixing interface to meet the installation integration of different flight platforms.

1.2 Features

- Mounting via DJI SkyPort, highly compatible with DJI M300 RTK drones
- Automatic recognition of trigger signal, highly compatible with a variety of flight control, support serial communication, can be deeply adapted development
- Support DJI Terra, to realize high-precision without setting ground control points
- Camera firmware will automatically be upgraded online when connect to Data Manager
- SHARE Data Manger management flight intelligently
- Real-time image transmission and support video recording
- Wide voltage input, a wider range of aircraft
- The camera and gimble can be disassembled, the camera supports separate use
- Professional mapping lens, high mapping working rate

1.3 In the box

Camera	Gimble	Connector	Protection Case	Card Reader	Lens Cover	Skyport Cover	Wipe Cloth	J30J-15 Cable	shock absorber ball	User Manual
1pc	1pc	1pc	1pc	1pc	1pc	1pc	2pcs	1pc	4pc	1pc

1.4 Parameter

SHARE 6100 X-Port		
Camera parameters	Power	DC 13.6 ~ 48 V
	Duration	Depend on UAV
	On/Off	Auto On/Off
	Data copy	Storage card, R/W via USB 3.0 card reader
	Storage	256 GB
	Pixels	61MP
	Sensor size	Full frame 35.7mm × 23.8 mm
	Pixels size	3.7 um
	Resolution	3:2 9504 × 6336
	Angle range	Pitching +30°to -120° Yaw ±150°
	Lens qty	1 pc
	Focal length	40 mm
	Exposure time	≥1.2s
	Exposure mode	Autopilot trigger
	Video	One button record
Working environment	Working temperature	-10 ℃ ~ 50 ℃
	Humidity	≤ 95%

Measurement	Size	130 × 75 × 80 mm
	Weight	≈670 g

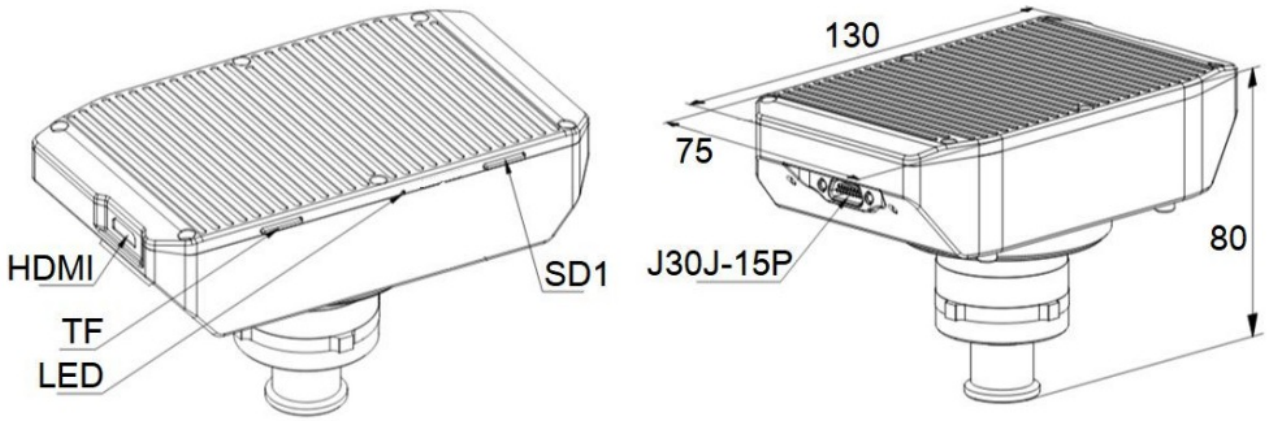
Installation

2.1 Camera Introduction

SHARE 6100 X-Port Camera housing radium carved with the “SHARE” direction is defined as the front, installation with the aircraft nose in the same direction. The photo drive (SD card 1) should be named “3 Down View”, POS information drive (TF card) should be named “GPS” to be compatible with Share Data Manager.

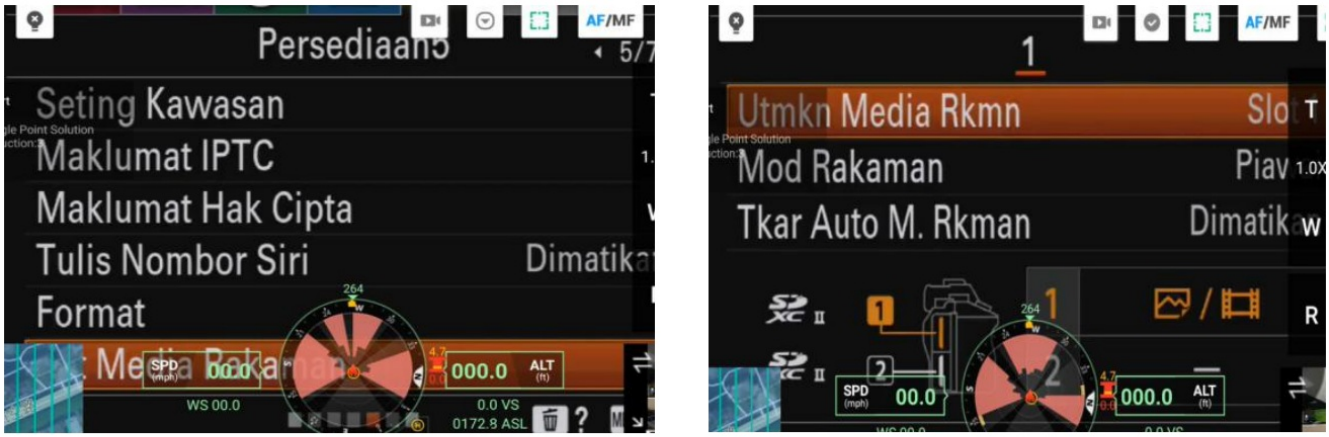
The camera can be separated from the gimble and used separately. Four threaded holes are arranged at the bottom of the fuselage to connect the camera with the fixed bracket of the aircraft.

The J30J- 15P cable can connect to the UAV flight control system and integrate power supply, trigger, hot shoe, serial port, picture transmission, and other functions.



Pic1 Interface

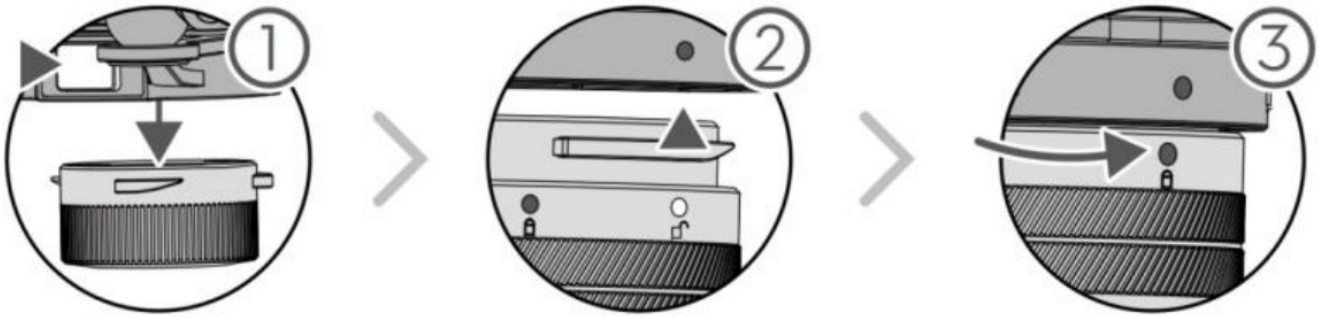
Pic 1 shows the interface of the SHARE 6100 X-Port camera. Among them, HDMI is a mini HDMI interface, TF is a POS card slot, LED is a camera working status indicator, SD1 is a camera card slot1, and J30J-15 is a camera cable interface. Users can enter the menu according to their requirements and set SD1 in Camera Settings-5, and Camera media Settings (generally there is no need to set it, the default setting is SD1 to store photos).



Pic2 SD card setting

2.2 SkyPort installation
Installation steps

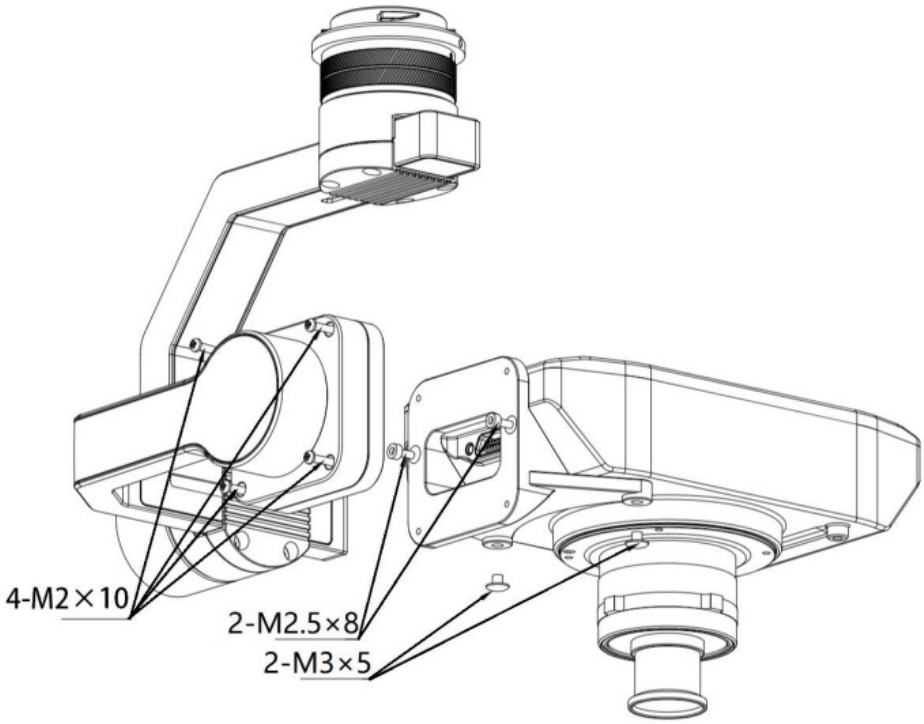
1. Remove the SkyPort cover of the drone, press and hold the release button;
2. Remove the SkyPort cover of the camera, align the white point of the camera with the red point of the drone, and embed it in the installation position;
3. Rotate the camera to the lock position, align the red dots, and the camera is installed;



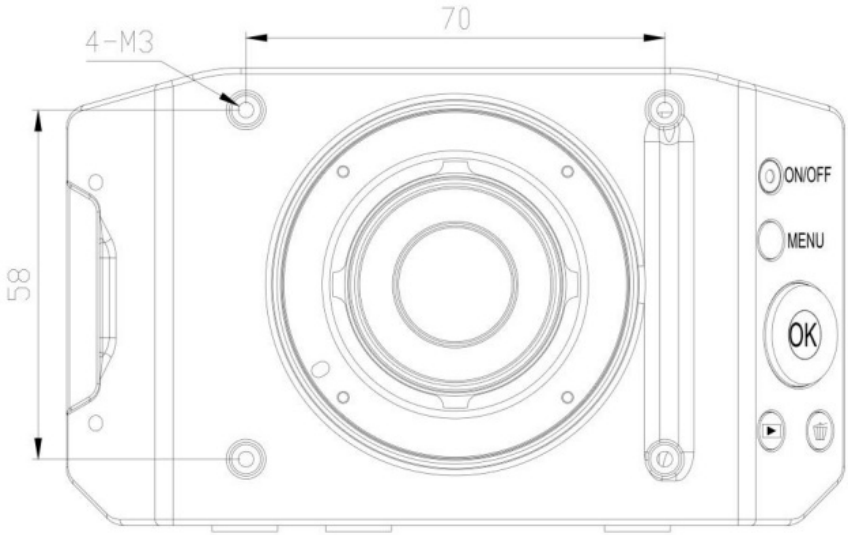
Pic 3 Camera installation

4. Uninstall the camera, press and hold the release button, and 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 covers.

2.3 Camera mounted to other aircraft

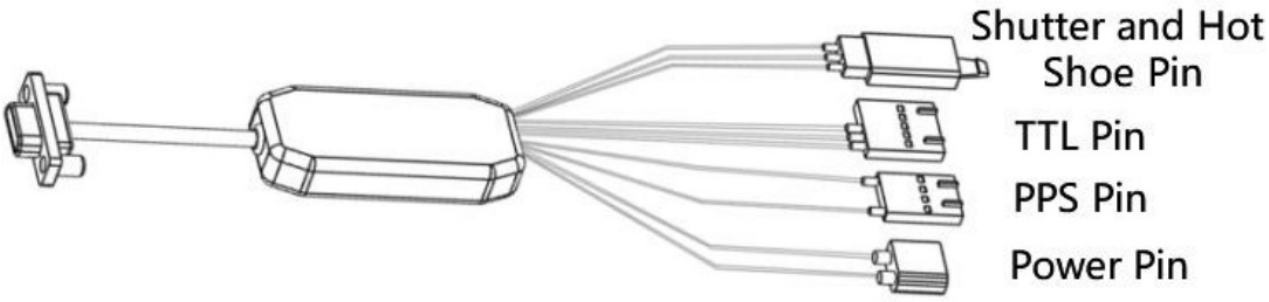


Pic4 Mounted to gimble



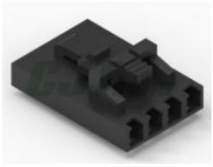
1. The user needs to disassemble the gimble and camera with the screwdriver as shown in Pic 4, pull out the connection cable between the gimble and camera, and connect the camera and the aircraft with J30J-15P equipped to complete the power supply and control;
2. Users can design the mounting structure matching the flight platform by referring to the connecting holes shown in Pic 5 to complete the assembly of the aircraft and camera. It is recommended to install shock absorber balls to prevent camera shake during flight and affect the photo quality.

2.4 Connect cable



Pic6 J30J-15P

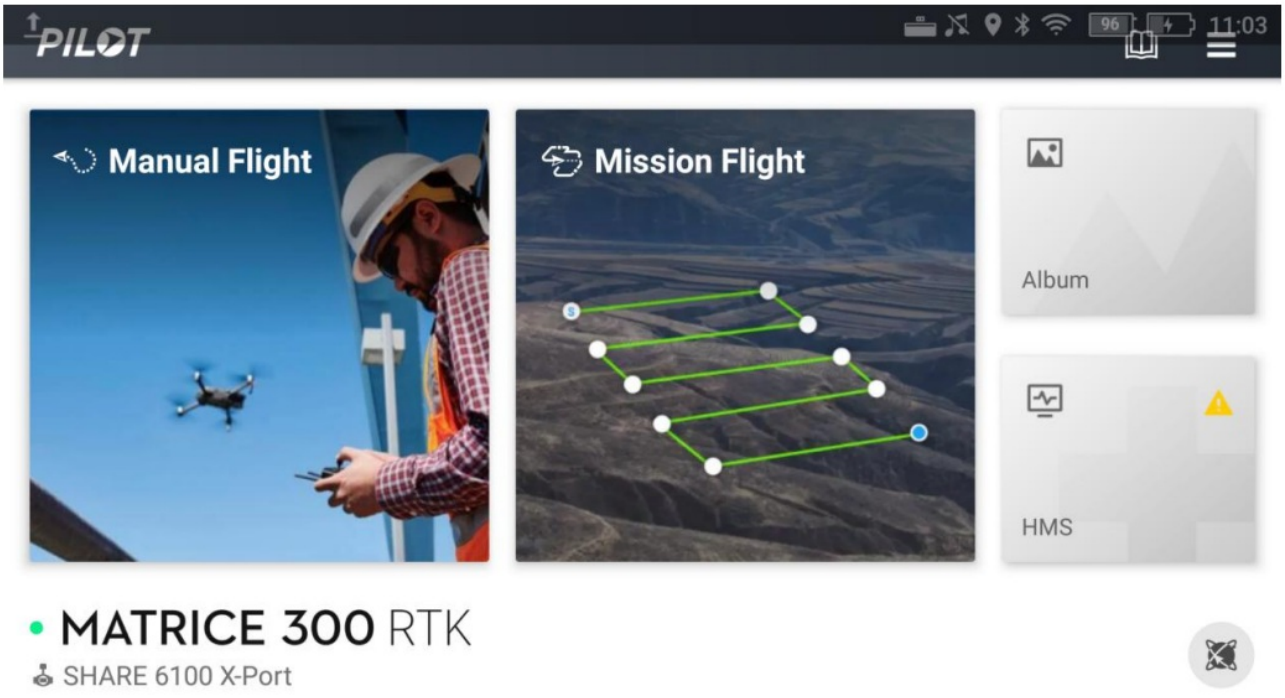
J30J-15P Definition:

Name	J30J-15P	Power Pin XT30	PPS Pin C/A2547H-4 P	Shutter and Hot Shoe Pin D/A2510HM-3P-R	TTL Pin E/A2547H-5 P
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

Camera Operation

3.1 Power On

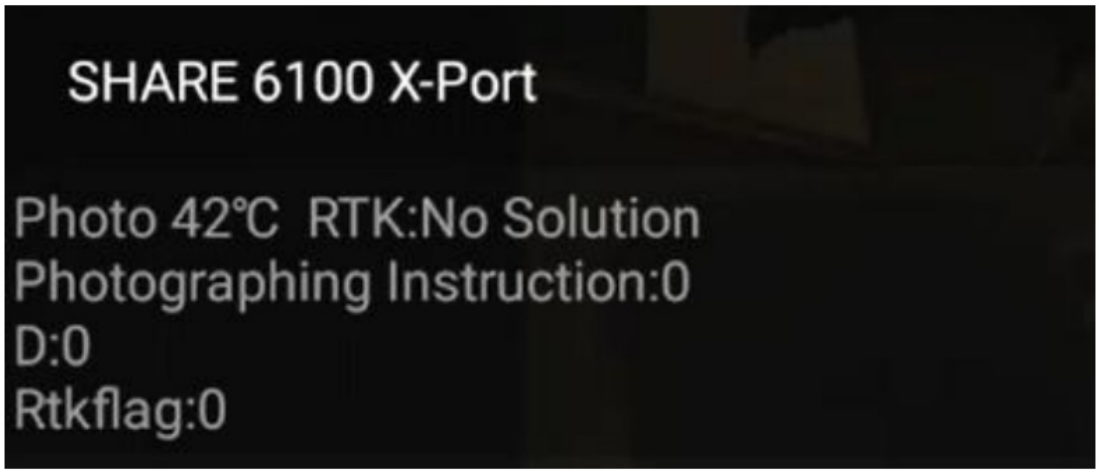
3.1.1 Power by DJI SkyPort, turn on automatically when the drone is on



Pic 7 Pilot ground station

steps of power on:

1. Mount the 6100X-port on the DJI 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.



Pic 8 Pilot real-time screen

Pilot Real-time Data Display:

	Display	Meaning	Remark
1	Photo	The 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 the camera received	
4	D	Actually shutter times of the camera	
5	RtkFlag, 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.

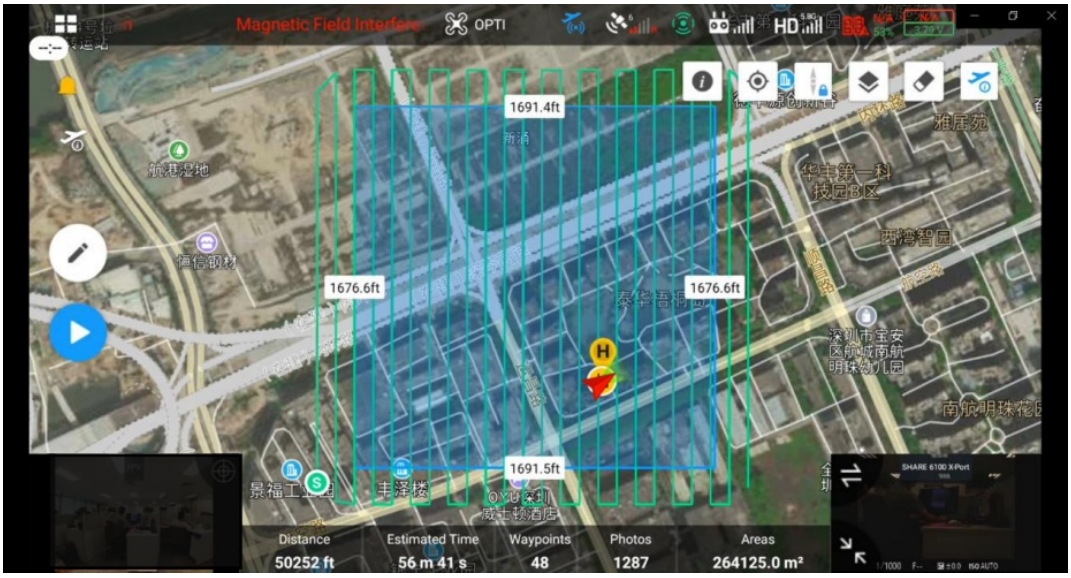
3.1.2Power by J30J-15, turn on automatically when the drone is on

It is recommended that the power supply voltage be 13.6-48 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 6100X-port 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, the camera can take photos now
4. Do not turn off the drone till 15 seconds after the last photo was taken;
5. It is recommended that you connect the camera power after the UAV startup is completed, to avoid frequent camera restarts caused by frequent on-off of the UAV.

3.2 Take photo



Pic 9 DJI M300 RTK Pilot screen

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

3.3 Video recording

3.3.1 Operation

Pic 10

Take working with DJI M300RTK for example, the camera is on, The photographing is enabled by default, the User can click on red frame ① of Pic 10, and the icon  to enter video mode. Click once the  icon will turn

to and start to record. Click again, the icon restores,  and the camera stop recording. Users can know the status of the camera by red frame ② 

and red frame ③ 

in photographing or recording mode. Red frame ④ shows the remaining available video time. It should be noted that the camera may fail to switch from photographing to recording mode if the camera is switched too fast. It is recommended that users wait for 1-2 minutes after finishing photographing (or observe the progress bar in the upper left corner of the camera's picture transmission interface) and start recording after the photo is saved.

3.3.2 Video file format

Pic 11

File Format (movie)

Selects the movie file format.

① MENU → (Camera Settings2) → [File Format] → desired setting.

Menu item details

File Format	Characteristics	
XAVC S 4K	Records movies in 4K resolution (3840×2160).	You can save movies on a computer using the PlayMemories Home software.
XAVC S HD	Records movies in crisper quality than AVCHD with larger amounts of data.	
AVCHD	The AVCHD format has a high degree of compatibility with storage devices other than computers.	You can save movies on a computer or create a disc that supports this format using the PlayMemories Home software.

The default video format of the camera is 1080P (XAVC S HD). Users can modify the video file format by remote control as required.=

Attention When the video file is set to 4K (XAVC S 4K) format, the camera image transmission will enter the black screen state!

3.3.2 Storage recording file

XAVC S 4K and XAVC S HD formats are stored as .MP4 files, stored in

AVDHD formats are stored as.MTS file, stored in:

3.4 Camera setting

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

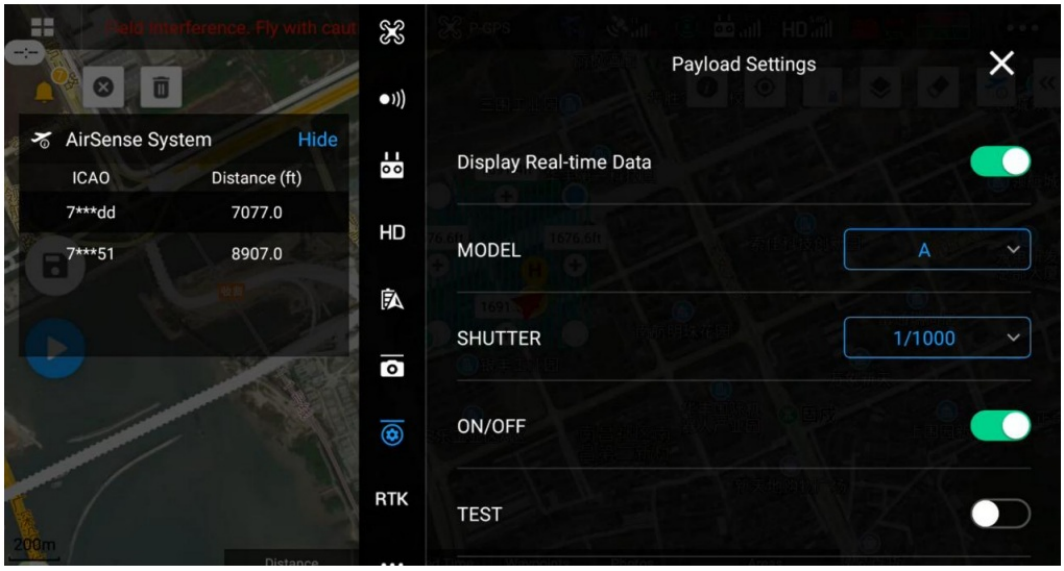
2. SHARE 6100 X-Port parameter:

SHARE 6100X-Port	Photo resolution (W)	Sensor size (W)	Focal length
	9504px	35.7mm	40.0 mm
	Photo resolution (H)	Sensor size (H)	Minimum interval
	6336px	23.8mm	1.2s

Pic12 create customize camera

As shown in Pic 12, click Finish and save after completing the custom camera Settings

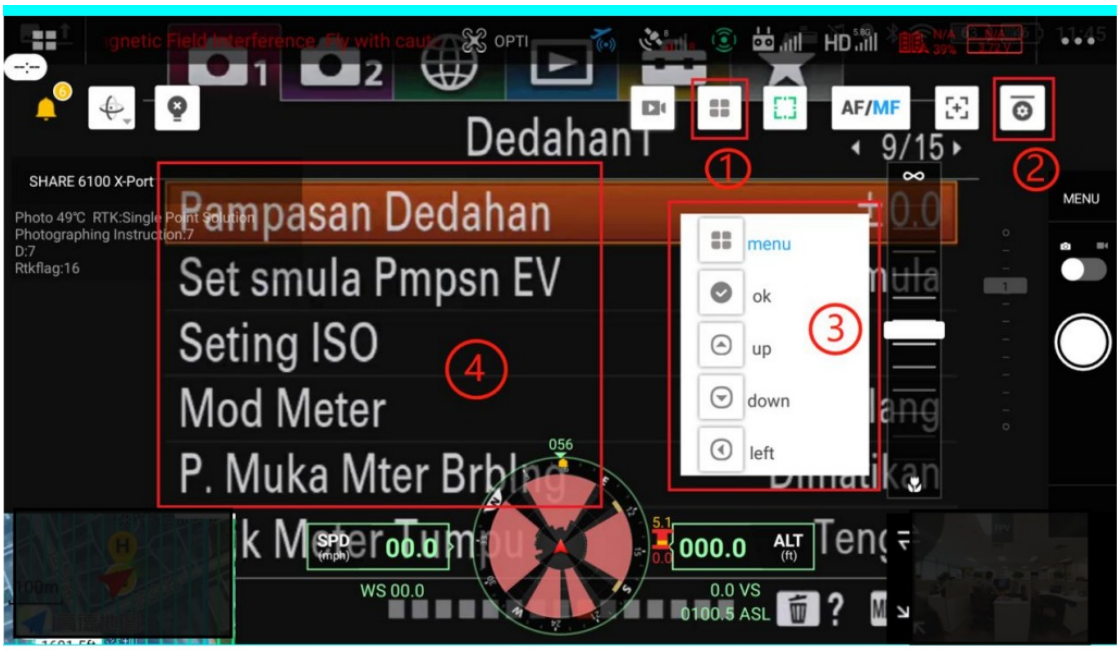
3. Payload setting



Pic 13 Payload setting

Click the three points in the upper right corner of the screen and select Payload. On this screen, users can adjust the camera exposure mode, and shutter speed, and switch on and off the camera.

4. Camera parameters



Pic 14

As shown in Pic 14, in the camera image transfer interface, click the icon in the red frame① in the picture to open the camera adjustment panel (click close again). The adjustment panel is shown in the red box (③).

Slide up and down in the adjustment panel to view all keys. Click the menu icon to the left menu When the camera enters the setting interface ④, users can set the required parameters by confirming up, down, and left of the adjustment panel according to their requirements.

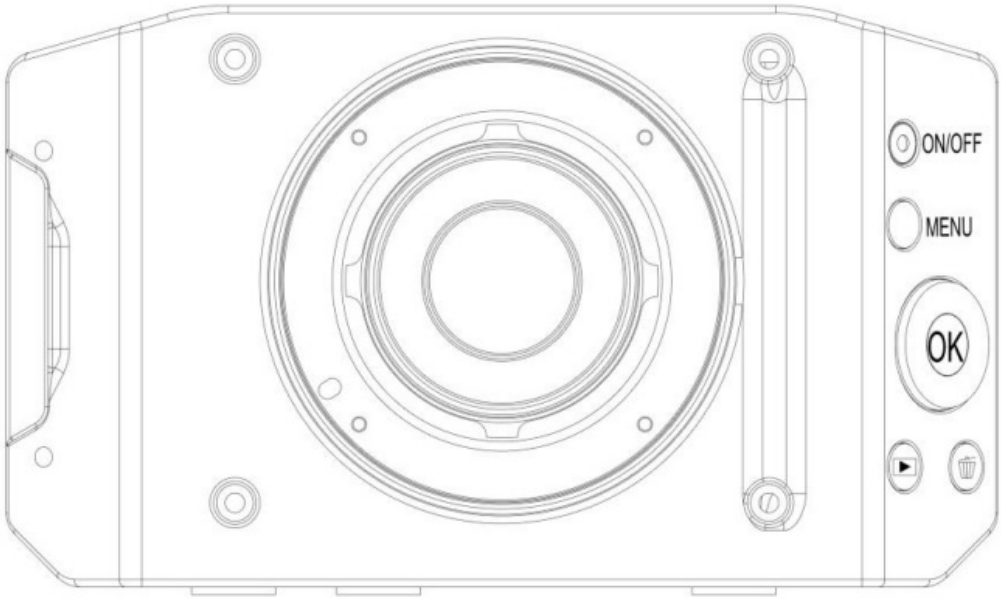
[Note] After modifying the parameters, you need to click the button ② to enter the payload setting screen. Click to shut down the camera once to save the modified Settings.

If the camera is powered off directly without a click, the modified parameters will not be saved.

Key function description:

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

5. Mechanical button setting



Pic 15 Buttons

You can also change the basic parameters (Settings) of the camera through the external button of the camera, as shown in Pic 15.

3.5 Camera repair

In the case of data writing errors caused by an abnormal power supply or another working abnormality such as the camera not taking photos, there are two repair methods:

1. Automatic repair: the user can restart the camera power, and 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.

3.6 Data copy and delete

Copy the data, Remove the memory card from the camera, and put it into a USB 3.0 card reader, connect to the computer, there are 3-D drives and GPS drives.

1. Open Share Data Manager, select the corresponding camera and aircraft model, and enter the home page;
2. Select the flight to be copied and check the details to ensure that the photos match the POS correctly;
3. Select a copy path, modify the copy Settings as required, and click Copy flight. It is recommended to copy to computer local site;
4. After the copy is complete, click View data to check whether the data is normal.
5. Delete the data. Select the flights to be deleted, click Delete flights, and wait for the clearing to be completed; Or select initialize camera to clear all user data;
6. Click disconnect, eject drives, and insert the memory card back into the original slot of the camera.

Attention

1. Please delete the drive letter file by using Share Data Manager.
2. Clean flights and initialize cameras. The data cannot be restored after being cleaned.

Camera Maintenance

Do not disassemble or alter the camera without permission

Lens distortion has been checked and adjusted before dispatch. Please do not disassemble or alter the camera by yourself. Especially the camera lens.

If you need to design or modify the camera to install and mount, please contact Share technical support.

4.1 Cautions

When using the camera, please pay attention to the daily maintenance.

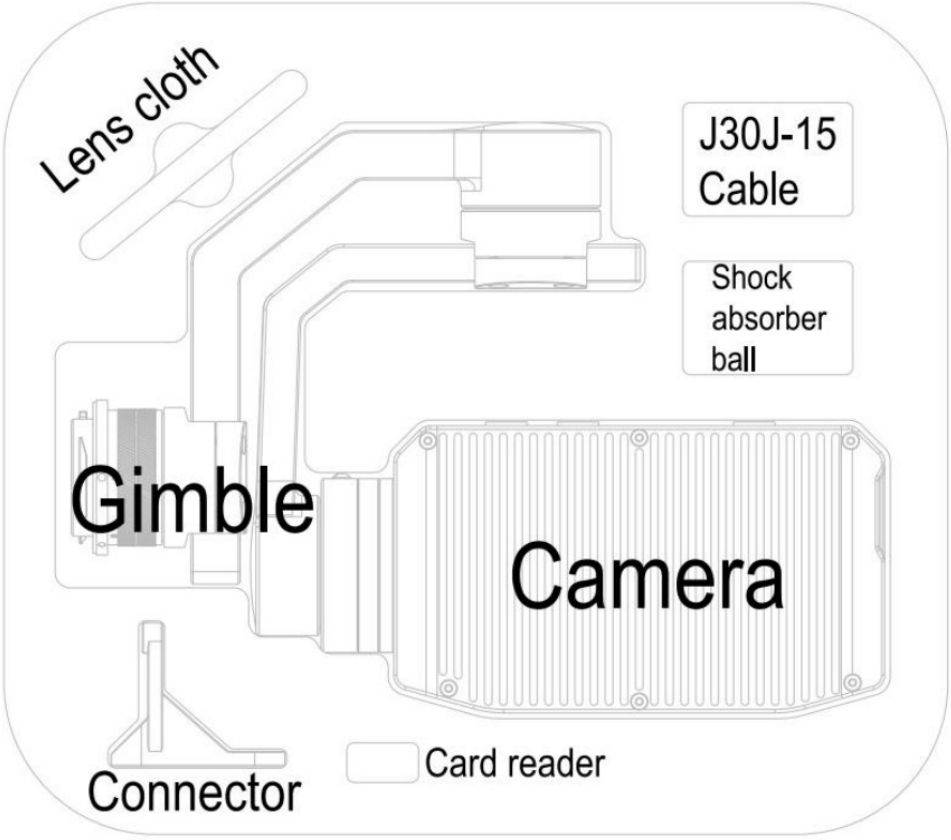
1. Please store the camera in a dry and ventilated place at normal temperature to avoid fogging caused by excessive humidity. It is recommended that the ambient temperature be between 15 ° C and 25 ° C and the relative humidity be less than 40%. If the lens fogs up, water vapor will dissipate automatically after the camera is turned on and heated up for a period of time.
2. Avoid storing the camera in places with strong vibration and close to a strong magnetic field;
3. Do not bring the device directly from a cold place to a warm place to prevent moisture condensation.
4. Do not place the camera in direct sunlight for a long time, and try to avoid direct sunlight on the lens. Strong light can easily stimulate the imaging chip and reduce the service life of the sensor.
5. The internal working temperature of the equipment is about -10~50 ℃, and it is not recommended to work in an extremely hot and cold environment beyond the working temperature range;
6. Do not use hands or hard objects to scratch the surface coating of UV lens or lens, otherwise, it will cause camera imaging blur;

7. Pay attention to the camera interface and UV lens clean and dry, timely installation of protective cover;
8. When cleaning the lens, please use a soft and dry cleaning cloth to wipe the surface, please do not use detergent containing thinner or gasoline and other organic solvents to clean the UV lens;
9. Do not use an unstable power supply or power supply beyond the range of voltage the camera can bear;
10. Do not turn on or off the camera frequently. Please wait for more than the 30s between continuous switching on and off, otherwise, the service life of the sensor will be affected;
11. The camera shutter is consumable. Under normal circumstances, the effective shutter count is about 100k; When the shutter is used more than the effective times, the camera will not take pictures, lose pictures, slow reaction, camera error and etc. It is recommended to return the camera to Share for a paid replacement of the shutter, so as to avoid the impact of equipment strain on flight operations
12. Please copy and clean the data with Share Data Manager to reduce the residual debris of garbage files. After using the camera for a period of time, it is recommended to
    perform an initial cleaning of the camera to improve the service life of the memory card.
13. The camera is precision equipment, please place it in the transport case during the transit;

After-sales

5.1 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



Pic 16 6100X-port Case layout

SHARE 6100 X-PortKeep the cover of the transport case upward, and do not place it upside down. Avoid

severe vibration and turbulence during transportation.

5.2 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 the below conditions will be out of the warranty even if within warranty time: damaged, water damaged, out of order caused by improper usage, failure caused by misoperation or software/firmware parameter changes, 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)

Feedback

Official Website	YouTube	Facebook
http://www.shareuavtec.com/en/	https://www.youtube.com/channel/UCVUzsSmVdF1tFe4k9cxWKwA/videos	https://www.facebook.com/BLV-Technology-Group-Share-Oblique-Camera-Water-Scooter-100135702301343

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

Documents / Resources

	**SHARE 6100 X-Port Photogrammetry Camera** [pdf] User Manual 6100 X-Port, Photogrammetry Camera, 6100 X-Port Photogrammetry Camera

References

- **Share UAV Aerial Oblique Camera, Mapping camera**