M6S PTZ Thermal Imaging Camera System Manual

1. Composition

Hardware:

One PTZ thermal imaging camera

One in-car display (optional)

One joystick controller (optional)

Two sets of cables

One mounting base

One small adjustable wrench

Some mounting screws;

The software includes a controller app, supporting both iOS and Android.

2. Main Specifications

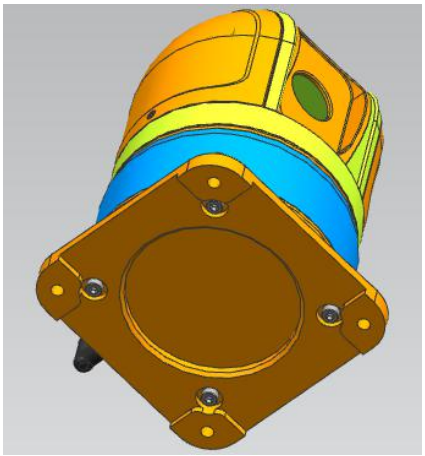
Model	M6S
Thermal imaging camera	
Detector Type	640×512 VOx Microbolometer
Pixel Pitch	12μm
Spectrum Band	8~14μm
NETD	≤50mK
Frame Rate	50Hz
Focal Length	19mm
FOV	22.9°× 18.4°
Imaging distance	3m to ∞
Digital Zoom	x1 ×2 ×3 ×4
Image Process	Digital filter noise reduction/Digital detail enhancement (DDE)
PTZ	
Horizontal Rotation Angle	360° continuously
Vertical Rotation Angle	-90°~90°
Motor	BLDC, no gear, low noise, stable performance
Preset Points	≤16
Power	
Power Supply	DC12V through car charger (including one cable)
Power Consumption	Normal power consumption 5W, peak power consumption 20W
Interface	
WIFI	Support
Ethernet	Support
Network Video Output	Support browser web page output and H.264 network video stream
Analog Video Output	Support PAL format
Storage	Built-in 64G SD card. Support take photos and videos and access memory by network.

Control	RS485 PELCO_D/ONVIF protocol and network control interface
Environmental/Physical Parameters	
Viewing Window Heater	Auto defrosting according to environment temperature after start-up
Operating Temperature	-20~60℃
Waterproof Grade	IP66
Dimension	φ133mm, height 188mm
Weight	2kg
Installation mode	
Fixed Installation	With mounting bracket

3. Installation

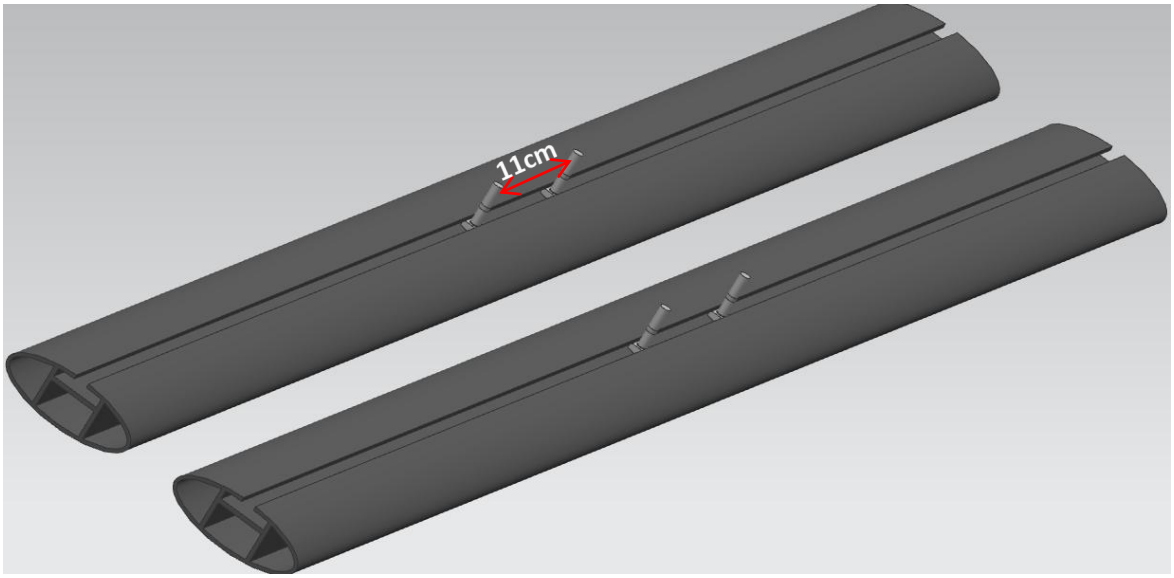
You can fix the bottom of the camera to the base with screws and mount it to the in-car bracket (the bracket is not provided with the product).Please refer to the following steps:

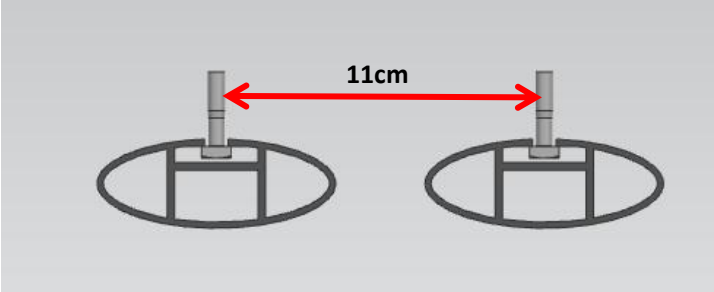
(1) Screw the base to the bottom of the PTZ camera,the screw model is M5*12 hexagon.



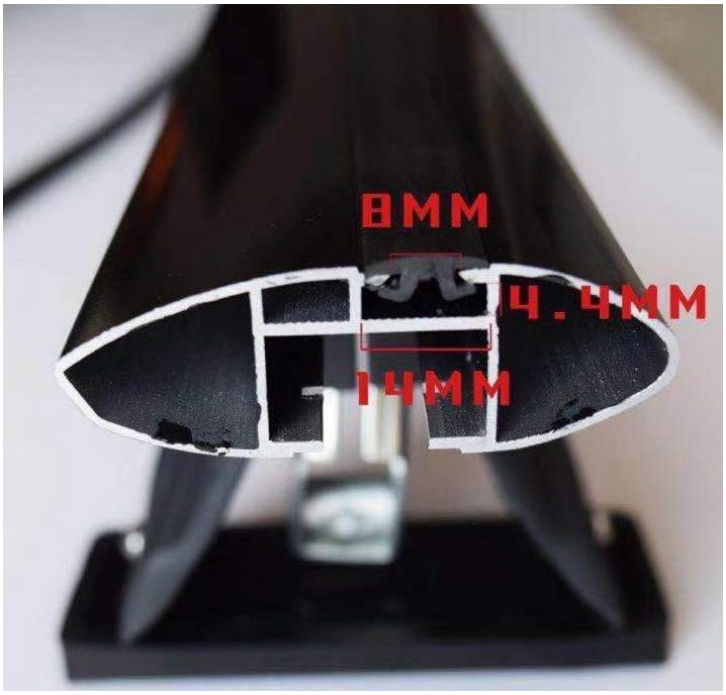
(2) Put the two cross bars parallel on the top of the car, leave a space of about 11 cm between the two bars ;put the square screw through the slot inside the cross bar.

The screw model is M6*26,and the square bottom of screw is 12mm*12mm side * 3mm height, so when you buy the cross bars please make sure you can put this screw into it and the slot of the cross bar can also clamp the square bottom of the screw.

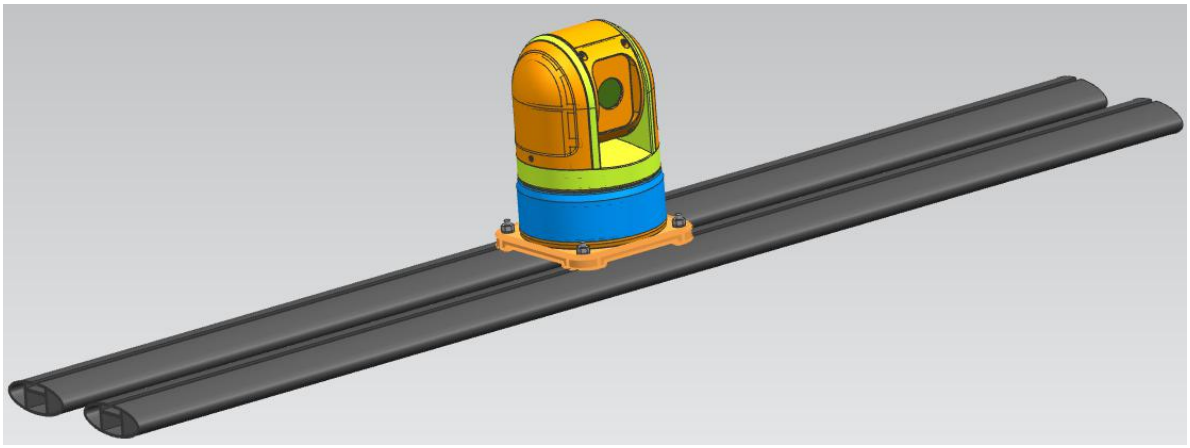


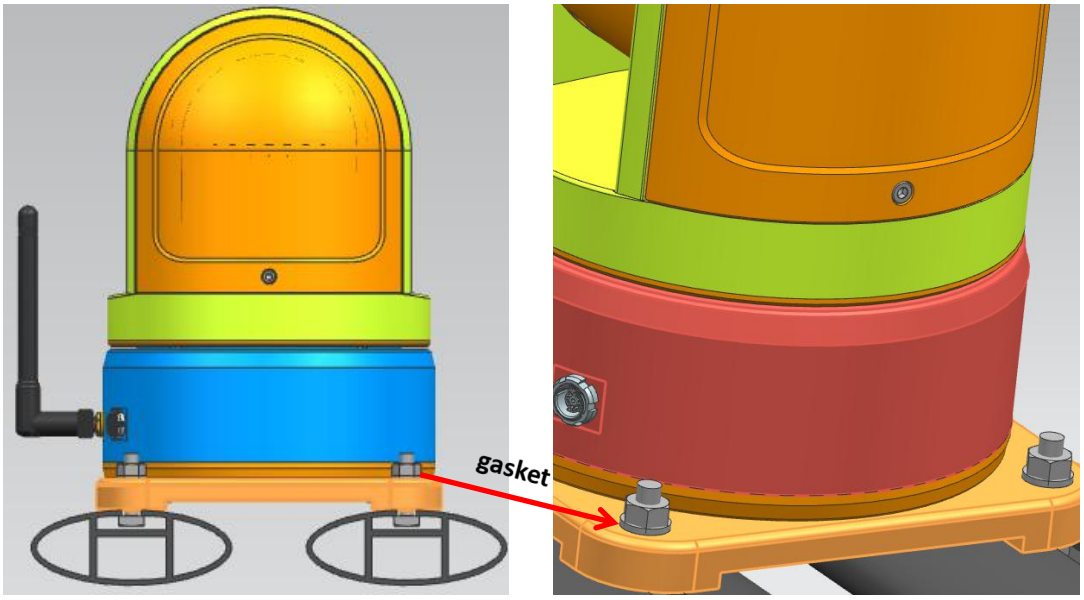


This is the size of the crossbar we bought before. You can refer to it.



（3）Put the PTZ camera on the crossbars(The direction of the PTZ camera can be changed to facilitate the connection of cables),fix it with four nuts, and fix the crossbars at the same time.Please put some gaskets on the base to prevent the base from being scratched.



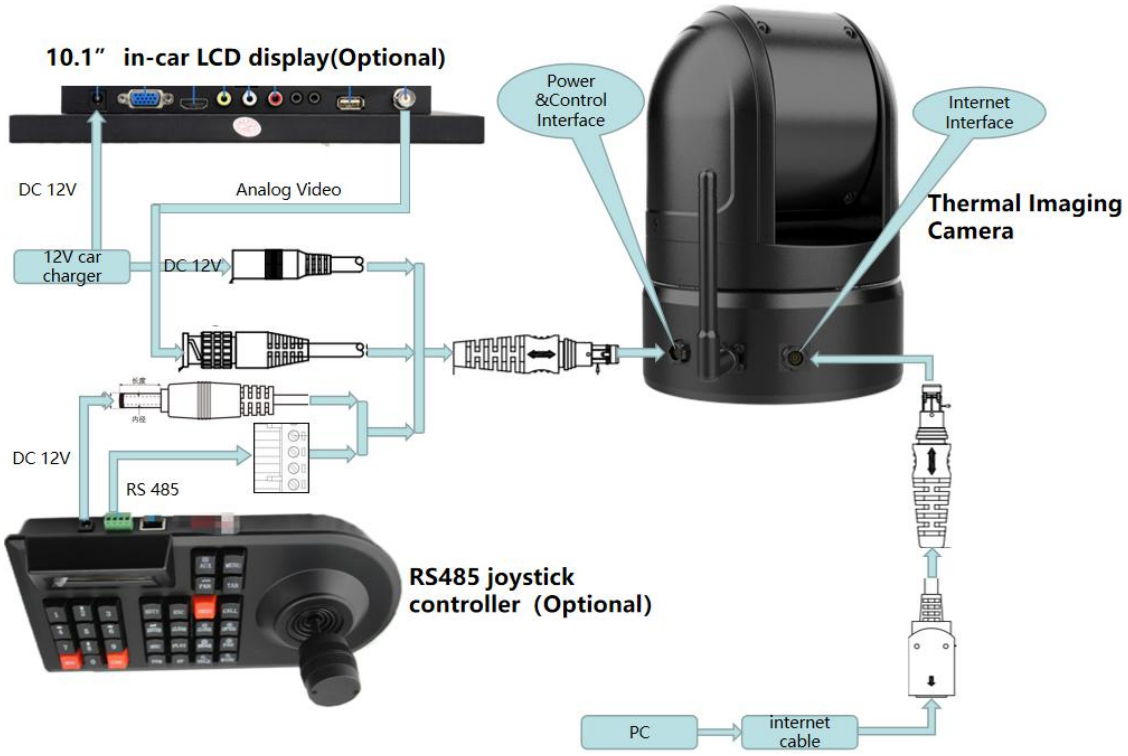


(4) The following is the effect of physical installation:

4. Power Supply and Connection

(1) Power supply: The PTZ Thermal Imaging Camera, display, and joystick controller all use DC 12V power supply. The thermal imaging camera can be used in a car and charged through the car charger. Cables include an aviation connector cable, a car charger cable, and a network cable.

(2) Connection: There are two interfaces: power & control interface and network interface. This is the connection method:



5. Function Description

(1) Infrared video output

There are two output methods for infrared video: analog video and network video (including wired network and WiFi).

1) Analog video:

Connect the analog video cable to the BNC interface of the display. The analog video can be displayed by supplying the display with DC 12V power. About 30 seconds after the camera is powered on, the analog video can be output. See the following figure for the interface of the display.

2) Network video:

Wired network: The video can be displayed by connecting a network cable to the PC. IP address: 192.168.100.2:8080.The login name and passsward are all admin.

WiFi: WiFi is enabled about 20 seconds after the camera is powered on. WiFi name: Infiray_M6S_xx. Password: infiraym6s.

(2) PTZ camera control

You can control the PTZ camera by either of the two means: joystick controller or app.

1) Joystick controller: Insert the DC 12V power cable and RS485 control cable in the interfaces on the back of the joystick controller. You can use the controller after the camera is powered on.

Move the joystick up and down and the camera rotates vertically within ±90°; move the joystick left and right and the camera rotates horizontally within 360°. When the joystick is in the center, the camera stops moving and keeps the current position. The farther you move the joystick away from the center, the faster the camera rotates.

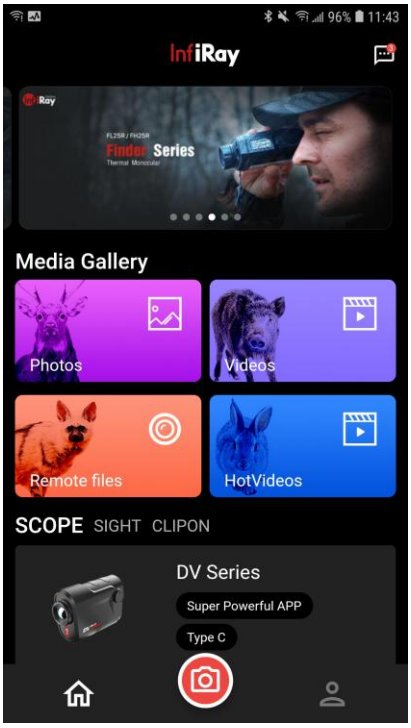
Other functions of the joystick controller are listed in the following table.

Function	Description
Setting zero position	Press NEAR and the camera sets the current position as the zero p osition. After this, the camera will start moving from this zero position on each power-on.
Returning to zero position	Press FAR and the camera moves to the zero position immediately.
Shutter correction	Move the joystick left and the camera performs shutter correction, after which the image quality is improved.
Background correction	Press CLOSE and the camera lens moves to the lowest position for background correction. After that, it returns to the original position and the image quality is improved.
Preset point	Press the number key(s) and press PRESET. You can set the number between 1 and 16. A maximum of 16 preset points is supported.
Calling preset point	Press the number key(s) and press CALL. You can set the number between 1 and 16. A maximum of 16 preset points is supported.

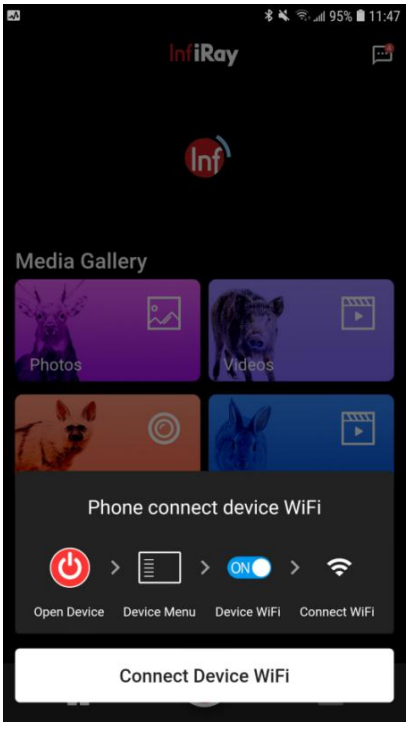
2) The app supports both Android and iOS.

For Android, you can open the following webpage to download with a browser: https://www.liqucn.com/rj/66569.shtml; for iOS, you can search for InfiRayOutdoor in App Store to download it. Steps to use the app are as follows:

a) Enter the app after powering on the camera. Tap the red camera button and the Connect Device WiFi box pops up.



b) Tap Connect Device WiFi. The app can find WiFi about 20 seconds after the camera is powered on. The app supports both Android and iOS.



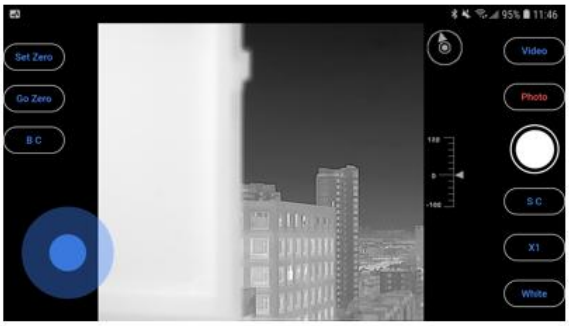
c) After WiFi is connected, tap the red camera button again to enter the video interface, as shown in the following figure.

d) On entering the video interface, the video automatically turns to the landscape orientation. There is a virtual joystick on the lower left side which has the same control function as the physical one: Move it up and down to control the pitch and left and right to control the azimuth. The app also supports the following functions:

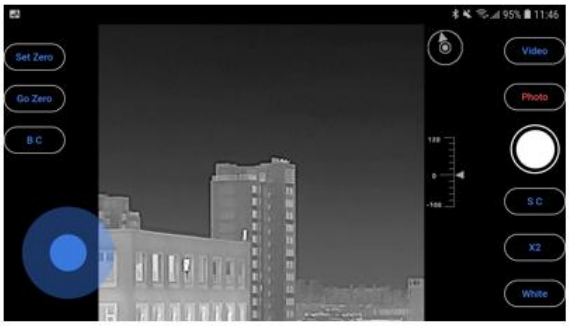
Function	Description
SET ZERO	Press this button and the camera sets the current position as the zero position. After this, the camera will rotate to this zero position on each power-on.
GO ZERO	Press this button and the camera moves to the zero position immediately.
SC (Shutter Correction)	Press this button and the camera performs shutter correction, after which the image quality is improved.
BC (Background Correction)	Press this button and the camera lens moves to the lowest position for background correction. After that, it returns to the original position and the image quality is improved.
Zoom switch	1x, 2x, 3x, and 4x zoom available. You can switch them by tapping the button.
Color mode switch	Black, White, Iron, Red available. You can switch them by tapping the button.
Video/Photo	Tap Video or Photo to switch between Video and Photo modes and tap the round button below them to start.
Photos/Videos replay	Tap and exit the video interface. Back to the home page of the app, tap Photos or Videos to watch the replay.
Full screen	The button is on the lower right side.Tap it and the control buttons are hidden; tap it again to show them.

Zoom :

X1

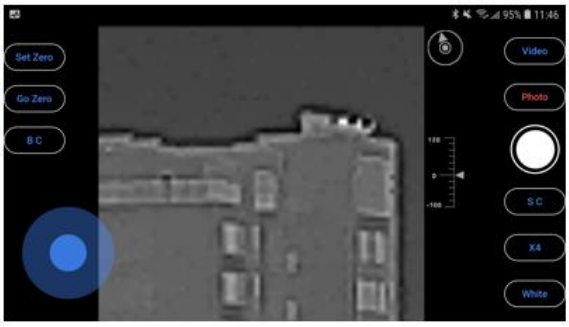


X2



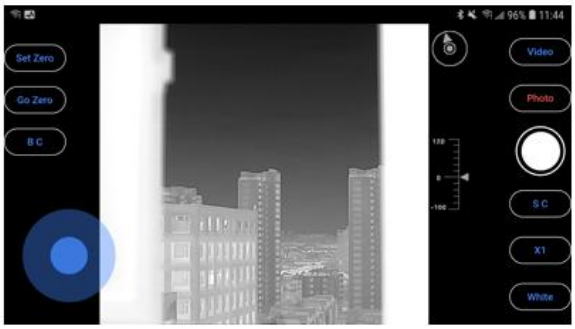
X3

X4



Color Modes:

White



Black

Iron

Red

Camera azimuth real-time display:

The small disk on the upper right side shows the direction of the current azimuth, ranging from 0° to 360°. The scale ruler in the middle below the disk shows the pitch angle. When the lens faces right the front, the angle is 0°. The pitch angle ranges from -90° to +90°. See the following figure.

6. Precautions

a) If you want the camera to stay outside of the car for a long time, move the lens to the lowest pitch angle after use to avoid sun damage to the lens. You can set the lowest position as the zero position and return to it by tapping Go Zero.

b) If the two interfaces at the bottom of the camera are not used, you need to insert sealing plugs in them to avoid dust.