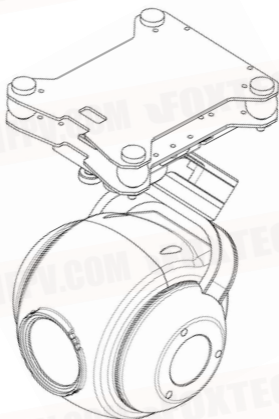# EH26 26X Optical Zoom Camera with 3-axis Gimbal

User Manual

V1.1 2023.2

Disclaimers

This product shall not be used for any illegal actions such as military, terrorist or anti-personnel activities! The buyer should comply with the relevant laws and regulations of each country, and once purchased, is considered to agree to the statement. The company does not assume any direct or indirect property damage, security compensation liability, etc. caused by the user's illegal, non-compliant use.

Catalog

Brief description

EH26 is a cost-effective camera with 26x optical zoom, 1/2.8CMOS sensor , effective 2.13 megapixels, supports 1080PHD photo and Ethernet video output, which is perfect for long-distance drone inspection and surveillance.

In the industry application, in order to prevent the risk of accidental loss of memory card and consequent leakage of stored data, EH26 adopts the data encryption storage method. The videos and photos stored on the Micro SD card in the gimbal camera need to be decoded by special PC data software before they can be read and used normally.

With TGA display control software, you can control the gimbal camera and watch the videos in real time on the computer and Android mobile devices.

EH26 can support mainstream UAV image display software in the market for image display, such as Yunzhuo FPV software, SiYi FPV software, QGC, JiYi ground station, etc.; it als supports mainstrea video playback software with RTSP video streaming function, such as VLC, etc.

EH26 is a gimbal camera with MAVIink2 communication protocol, which can be easily integrated with open source flight control products. Through simple wiring, setup, you can realize the open source flight control coordinates, altitude and other information video overlay, in QGC or missionplanner to achieve the gimbal camera image display.

EH26 supports SBUS, serial, CAN, TCP control, and open control protocols for easy integration and use by developer users.

List of Items

Serial number	Name	Quantity
1	EH26 Gimbal camera	1
2	Power supply quick release board	1
3	XT30 Power Cord	1
4	4P to 5P Network Port Cable	1
5	4P to RJ45 network port cable	1
6	2P SBUS cable	1
7	CAN, serial port adapter cable	1
8	Memory Card	1

Wiring Definition

Description

Power quick release board with 2p, 4p, 5p GH1.25 locking connector, XT30 connector.

The standard 4p to 5p cable can be directly connected to the MX16 remote controller or other data link products with the same wire sequence and connector. In order to facilitate user debugging test, 4p to RJ45 network port cable is also provided.

The standard CAN and serial port adapter cable can be directly connected to the Hershey cube series of flight controls, LISI X5 or other flight control products with the same wire sequence and connectors. Open source flight control settings are described in the software.

Installation

Installation Preparation

Types of platforms supported for installation

Multi-rotor, Helicopter, Fixed Wing, VTOL

Supported Micro SD Card Types

The gimbal camera supports Micro SD cards up to 128GB in capacity. Since the camera requires fast reading and writing of 1080p video data, please use a Micro SD card of Class 10 or UHS-1 and above to ensure proper video recording. Please do not pull out the Micro SD card during taking pictures or recording, otherwise the images obtained during the shooting may be lost.

EH26 adopts data encryption technology, videos and photos are stored encrypted, before use please convert Micro SD card to encrypted format by TGA setting upgrade software .The specific operation process is described in the software settings.

We strongly recommend that you use one memory card for one EH26 device and do not use the same storage card for multiple EH26 devices simultaneously. Doing so may result in video storage errors. If you use the same card on multiple EH26 devices, please perform encryption formatting after installing the card on the new EH26 device.

Mounting the Gimbal Camera

As shown below, please make sure to power off before plugging or unplugging the gimbal, and check to confirm that the lock is securely fastened.
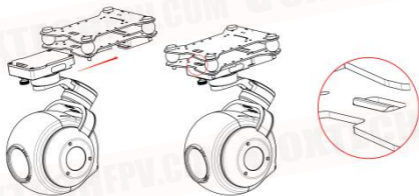

The gimbal power supply range is 4s-12s, 15V-60V, please supply power to the gimbal camera within the specified range.

For optimal use, please keep the gimbal camera relatively still for 20 seconds just after power on, without moving the gimbal or drone. EH26 will complete sensor calibration within this time period.

Please make sure that there is no obstruction within the range of motion of the head camera and that the rotation is smooth and smooth. Do not add hoods and other accessories that are not standard or recommended by the manufacturer to the head camera. Otherwise, the equipment will not work properly, or even destroyed.

Three Views

Unit : mm Screw hole M3

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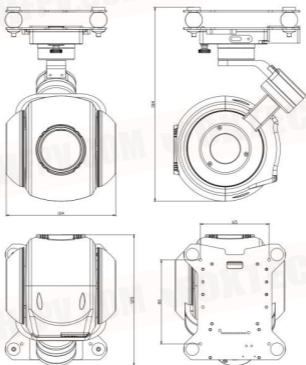
Software

Download and Install

You can get TGA setting upgrade software, TGA display control software, SD card conversion tool, camera search setting tool from sales manager, distributor.

You can download the latest QGC, MissionPlanner display control software from the open source website.

TGA Setting & Upgrade Software

Software Installation

TGA setup upgrade software is free installation software. After receiving the software zip package, users can unzip it directly and open the TGA.EXE program.

Connection to Serial Port:

Please power on the EH26 first, and after the gimbal camera self-test is completed, use the TYPE-C data cable to connect the gimbal to the computer.

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Click Search Serial Port, and click Open Serial Port when the serial port number is displayed corresponding to EH26 serial port. If the connection is successful, the IMU interface on the right side of the software will have data jumping and you can proceed to the next step. If the connection is unsuccessful, see the FAQ for details.

SBUS Settings

Note: The SBUS output interface in the EH26 quick-detachable po wer board does not provide power output to the receiver. Please provide a suitable power input separately for the SBUS receiver.

After the serial port is successfully connected,configure the SBUS channel as needed in the SBUS setup interface.

Caution:

Pitch,Yaw: It is necessary to configure a proportional control joystick with the function of retu-to-center, such as channels 1-4 on a regular remote controller or the small cross joystick on the MX16 remote controller.

One-click-downward: We suggest using a two or three-position switch or button for control.
Mode (free mode, follow mode): We suggest using a two or three-position switch or button for control.

Zoom: three-position switch

Taking pictures and video: two independent channels can be used, two-position switch and button control. Can also be configured in the same control channel, through a three-position switch to achieve the control of photography, video.

Maximum Rate Configuration

To meet the needs of different users, users can adjust the maximum control speed of the gimbal pitch and yaw according to their own operating habits. After modifying the control rate, click "Write Parameters" to save the parameters. The adjustable control rate is 5-60 degrees/second.

Once the configuration is complete, in the lower right area of the software, click on Write Parameters and then Save Parameters. You can click Parameter Query again to check to make sure the parameters have been saved correctly.

SD card formatting (encrypted format conversion)

Please format the new memory card for the first time through the webpage, subsequent formatting during use can be done through TGA.

Web page formatting

After the SD card is inserted into EH26 ,
please connect the 4p to rj45 cable to the
pod and set the computer network port correctly. Power up the pod and after the pod completes the self-test action, the computer will recognize the new wired network. Please set the TCP/IPv4 of this wired network correctly as shown below, then OK and save the settings.

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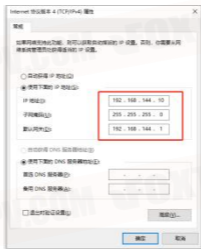
Open the web browser and enter the URL: 192.168.144.68

Enter username: admin password sgz888888. After logging in, go to
Configuration - Storage Settings - Storage Management - Disk Management to
check the disk information and then click Format.

You can adjust the allocation ratio of photo and video storage in the disk quota
according to your actual usage needs.

TGA Formatting

After inserting the SD card into the EH26, power on the gimbal and connect it to the computer using a USB cable. Once the TGA has correctly identified the S33 port and successfully connected, click "Format SD Card". The software in the upper right corner will show a message that it is formatting the card. When the formatting is complete, a message will appear indicating that it has been completed. (Formatting time will increase with larger SD cards; a 128G card will take approximately 4 minutes to format.)
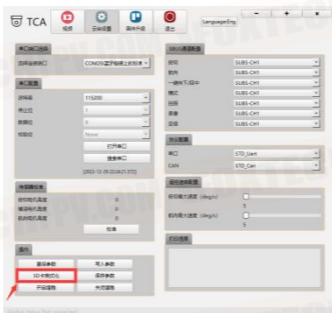
Upgrade

When upgrading the EH26, please complete the serial port connection first and then enter the upgrade interface. Click to enter the upgrade mode (after successfully entering the upgrade mode, the heartbeat packet will display data jumping), and follow the interface icon prompts to upgrade the core board firmware, X-axis firmware, Y-axis firmware, and Z-axis firmware in order. When the upgrade is complete, click to exit the upgrade mode. Then, power off and restart the EH26 .

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Please strictly follow the steps and corresponding firmware to write when upgrading the firmware of EH26. Incorrect firmware upgrade may cause EH26 to malfunction.

Communication serial port settings

To complete the connection steps, refer to Connecting Serial Ports.

PIX open source flight control settings:

In the TGA parameter configuration interface, in the communication connection, select Mavlink2 protocol, first click Write Parameters, then click Save Parameters. Then power off and restart the EH26 .

Pixhawk serial port settings:

Take the cube flight control serial port 2, MissionPlanner ground station software as an example: the serial port used needs to be configured as: rate 115200, mavlink2 protocol.
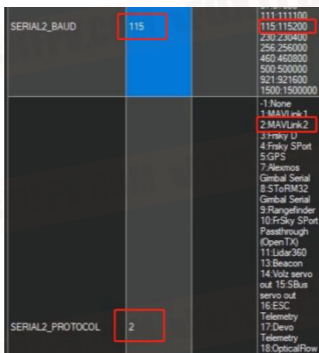
Display Control

Camera rtsp video stream address for EH26 :
rtsp://admin:sgz888888@192.168.144.68:554/Stream/Live /101

This video stream is 1080p 25 fps 2Mbps, please fill in the correct address of this stream to the corresponding location of the desired software according to your needs.

The default camera address of EH26 is: 192.168.144.68

When the user uses the radio c o n t r o l l e r of MK15, MX16, H30, herelink 2, HuazhiYi, it can be used directly without modifying the camera network segment.

Camera network segment modification
Please connect the 4p to RJ45 cable correctly to the gimbal and set the computer network port.

The computer will detect a new wired network. Please correctly set the TCP/IPv4 settings for this wired network as shown in the figure below, then click "OK" and save the settings.
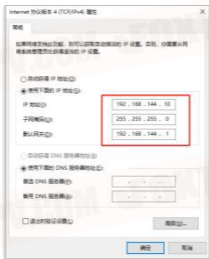
Open the camera search settings tool

First click the Refresh button at the bottom right, and the newly recognized camera device will pop up in the interface.

After checking the device, the network segment configuration information of the current camera device will pop up in the lower left red box. Modify the camera network segment according to your needs, enter the administrator password: sgz888888 after the modification is completed, and then click Modify.

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You can click Refresh again to check that the camera has saved the modified parameters correctly.

TGA Display Control Software

Windows

The computer TCP/IPv4 is as follows.
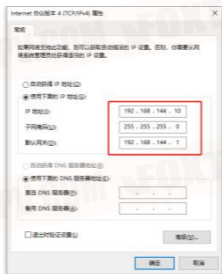
TCP connection: Select the corresponding gimbal according to your needs, fill in the correct IP address, and click "Connect" to automatically enter the video display interface. The default address for EH26 is as follows.

EH26 supports computer keyboard control
specific key operations are as follows:

↑ ↓ ←→ control the gimbal movement, <> control the lens zoom, K photo
, L video, N one-click downward, B back-to-center, M follow mode / free mo
de switching.

QGC

For MAVlink serial port configuration, see Communication Serial Port Settings.

According to the network segment requirements of the data chain, first modify to
the appropriate camera network segment, see Display Control for details.

Android

Open the QGC software-Settings-Video stream setting interface, enter the following video stream address:

rtsp://admin:sgz888888@192.168.144.68:554/Stream/Live/101

Video Settings	
Source	RTSP Video Stream ▼
RTSP URL	rtsp:// ?
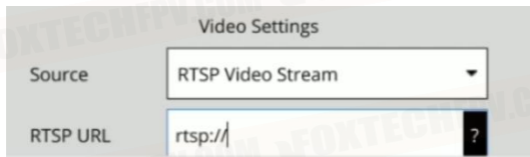
Caution:

If the camera network segment is modified, the network segment in the rtsp video stream address should be modified accordingly, and the computer TCP/IPv4 should also be set to the same network segment to keep the network segment consistent.

To prevent IP conflicts, the last digit of the IP address for the camera, video transmitter, and computer must be set to different numbers.

JIYI Ground Station

Wiring instructions: Wiring instructions: SBUS is used for gimbal control, and the ground station is only used for image display.

After registering your user information, enter the ground station and enter the following RTSP streaming address:

rtsp://admin:sgz888888@192.168.144.68:554/Stream/Live /101

Note: If the camera network segment is modified, the network segment in the rtsp video stream address should be modified accordingly. Keep the network segment consistent.

Decoding Software

The decoding software is free to install. After unpacking the software, open the SD card conversion tool.
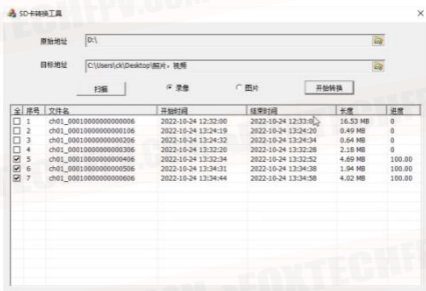
To access the photos and videos stored on the memory card of EH26, remove the memory card and insert it into the computer. The original address is the path of the memory card, and the destination address is the path where the converted files will be saved.

Select either video or photo according to your needs, click on "Scan", and the list will arrange the video or photo files according to the time and date. Check the photos or videos that you want to convert, and click "Start Conversion". Once the progress reaches 100%, the conversion is complete, and the files will be saved in the destination address.

Specification Parameters

Type	Network type
Material	Aviation aluminum alloy, nylon
Size	121 (L) × 104 (W) × 180 (H) mm
Weight	630g
Power supply	4S-12S 15-60v
Operating Temperature	-5℃～45℃
Control angle (pitch)	-130° to 60°
Control angle (direction)	360° continuous rotation
Accuracy	±0.01°
Control Signals	SBus, serial port, CAN, network port
Storage	TF Card
Output Interface	GH1.25 interface: 4 core (network port), 5 core (serial port, can), 2 core (sbus) XT30 (power supply) power supply
Working Mode	Direction lock; course follow; one button down
Camera	

Focal length	5 to 130mm
Zoom	26x optical zoom
Focusing speed	<1S
Video output formats	1080P, 25 fps
Video Storage Formats	1080P, 25 fps
Sensors	1/2.8 CMOS 2 Mega Pixels

FAQ

1. TGA upgrade software cannot recognize the COM port.
Reasons:
- EH26 has no power or the voltage is below 13V, so EH26 cannot start working properly.
- Some slimmed-down systems may lack the corresponding USB serial port driver program. You can download and install the CH340 driver program by yourself.

2.Forgot camera IP.
You can use the camera configuration software to search and modify the camera IP. During this process, you don't need to set up the computer TCP/IPv4.

3.About the use of memory cards.

After inserting a new memory card, you can control the camera to take photos and videos and execute normally, but there is no relevant data in the card.

Reasons:

-EH26 uses an encrypted storage mode. When the memory card is first
used in EH26, it needs to be converted to the encrypted format
through the webpage before it can store videos and photos normally.
Use a dedicated SD card conversion tool to decode and convert the
format before you can view it normally.
You can use the TGA software to format the SD card for subsequent use on the
same camera.
If the memory card is formatted through other methods, you still need to perform the
encrypted format conversion through the webpage
before using it normally in EH26.

When using one memory card on multiple EH26 gimbals, data loss or inability to read photos and videos correctly may occur.

Reason:
EH26's encrypted storage method defines the number of videos/photos
first, and then fills the content in order. The memory card is bound to EH26 one by
one. Therefore, if one card is used on multiple EH26
gimbals, please perform the memory card encryption format conversion (on the
webpage or TGA) before use. Make sure to perform this step on the webpage for
the first use.