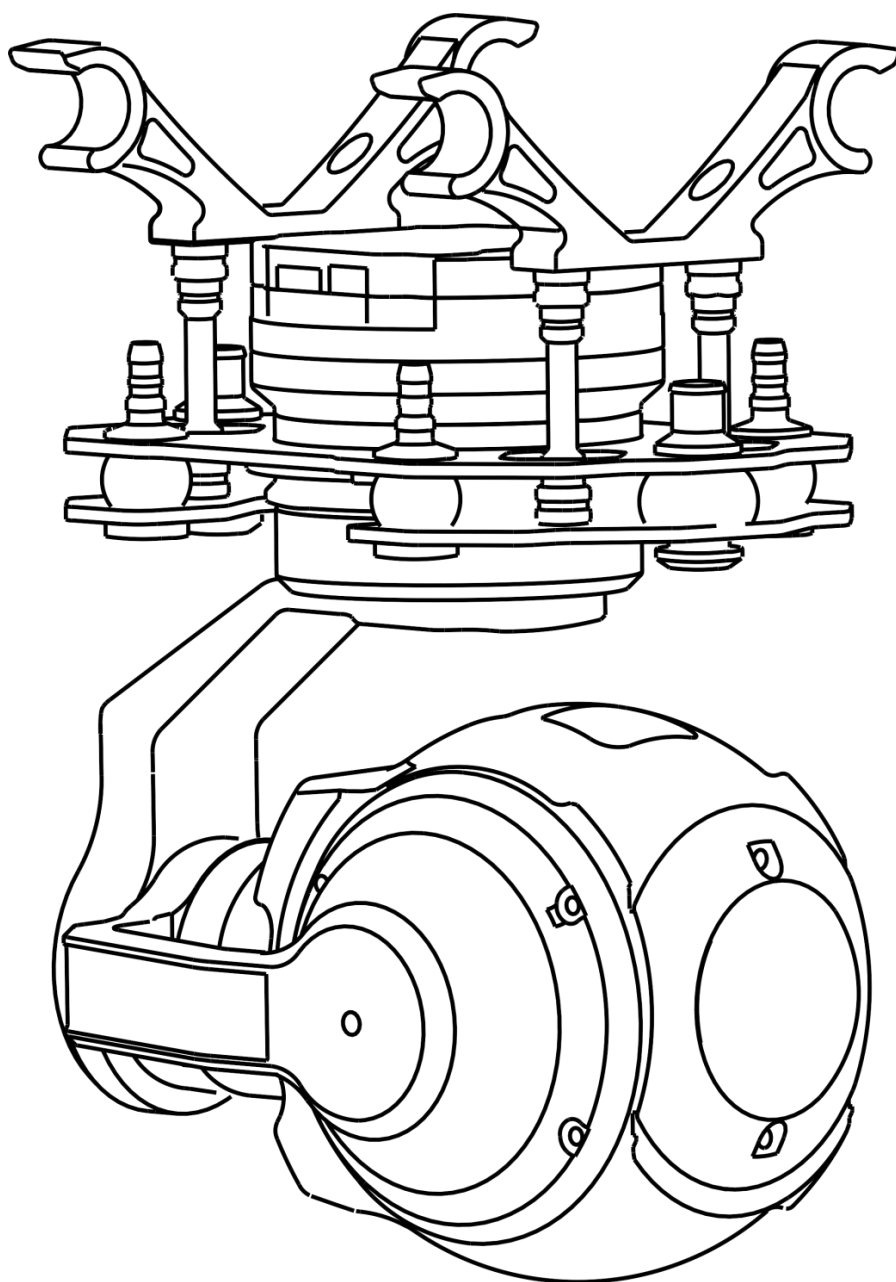


T10X

User Manual

V1.00

2017.05.10 Revision



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Warning and Disclaimer

Congratulations on purchasing your new T10X product. The information in this document affects your safety and your legal rights and responsibilities. Read this entire document carefully to ensure proper configuration before use. Failure to read and follow instructions and warnings in this document may result in serious injury to yourself or others, or damage to your T10X product or damage to other objects in the vicinity. This document and all other collateral documents are subject to change at the sole discretion of T10X. For up-to-date product information,

The T10X has been calibrated before leaving the factory. No physical or mechanical modification or adjustment of the gimbal is required or recommended. Do not add any other component or device to the camera. The T10X is a delicate instrument. Do not disassemble the gimbal or camera as this will cause permanent damage.

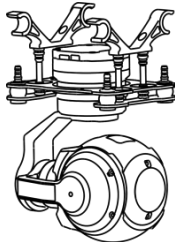
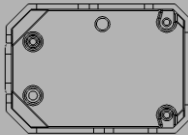

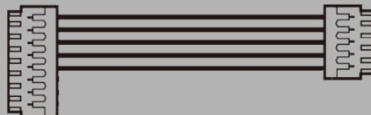
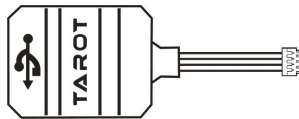

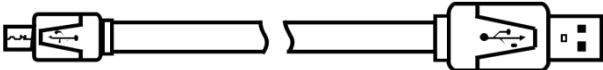

In order to ensure the safety of flight control system after powering up, we recommend you to remove all the propellers and use non -power-supply for the gimbal. Keep the entire components far from children and flammable & combustible materials!

Because we have no control of the use, mounting, assembly and modification processes, T10X will not assume any legal responsibility for the injury or damage.

I. Product Introduction

T10X, a great 3-axis gimbal for model aircraft enthusiasts, It provides a 10×optical zoom.The 1/3 CMOS sensor supports approx.4 million effective pixels.With unique internal wiring design, built-in IMU gimbal control module, specialized servo drive module, can be widely applied to various model aircraft activities and entertainments.

II. Product List

Gimbal ×1 With unique internal wiring design, built-in IMU gimbal control module, specialized servo drive module	
SBUS Decoding module ×1	
5V OUT & SBUS Receiver ×1	
SBUS Decoding module & Gimbal Connection Cable×1	
SBUS Decoding module & Assistant module	
Camera remote	
Gimbal Connection Micro-USB Cable (Not included ,you can choose to buy)	
Micro-SD Card (Not included ,you can choose to buy)	

III. Mounting & Configuration

3.1 Gimbal installation attention

1.pls don't hang on the frame when you not used gimbal, Long-term suspension will

accelerate damper deformation led to the decrease of the damper that jelly appearance;

2. Pls regular (7days) replace the gimbal damper (6pcs spare parts free)

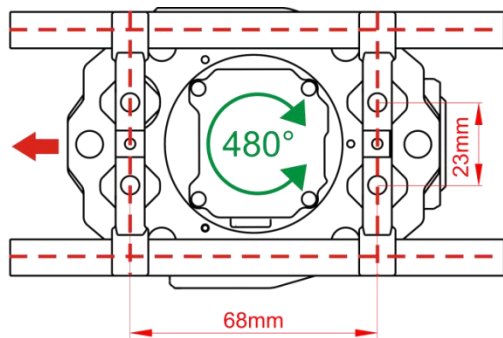
3. Mount Gimbal installation the rod, hanging hook and suspension plate must be maintained between the absolute vertical and parallel to each other (as show bellowing), wrong installation will cause the deformation of damper to lower then lead to suspension effect.

4. When the gimbal connect HD transmission equipment, if the picture can't normal to the display device, pls checking:

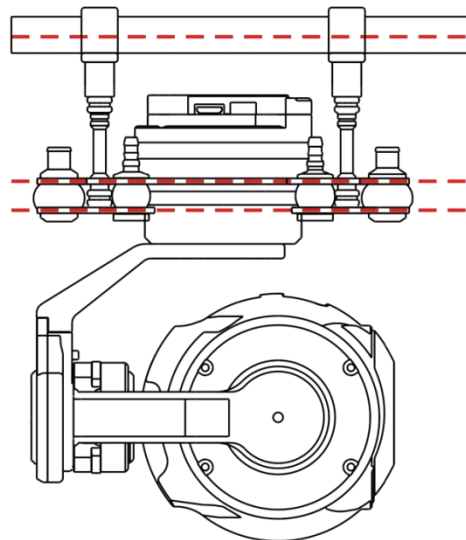
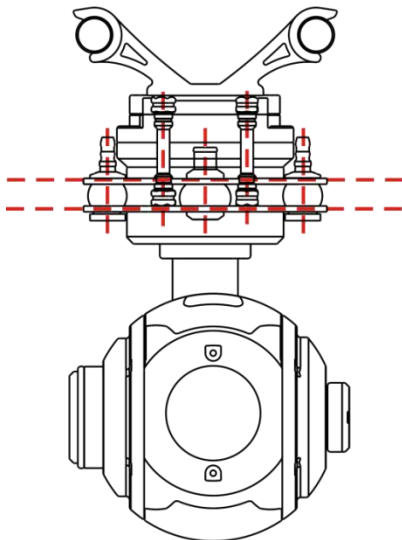
①. The gimbal HDMI wire (HDMI Wire Version 1.4) connect the display device directly, no pass the HD transmission equipment, check the picture is normal display and confirmed the gimbal normal working.

②. When connect the HD transmission equipment, pls Do not leave both on the same level, to avoid interference with the equipment. At the same time check whether the connection line is stable.

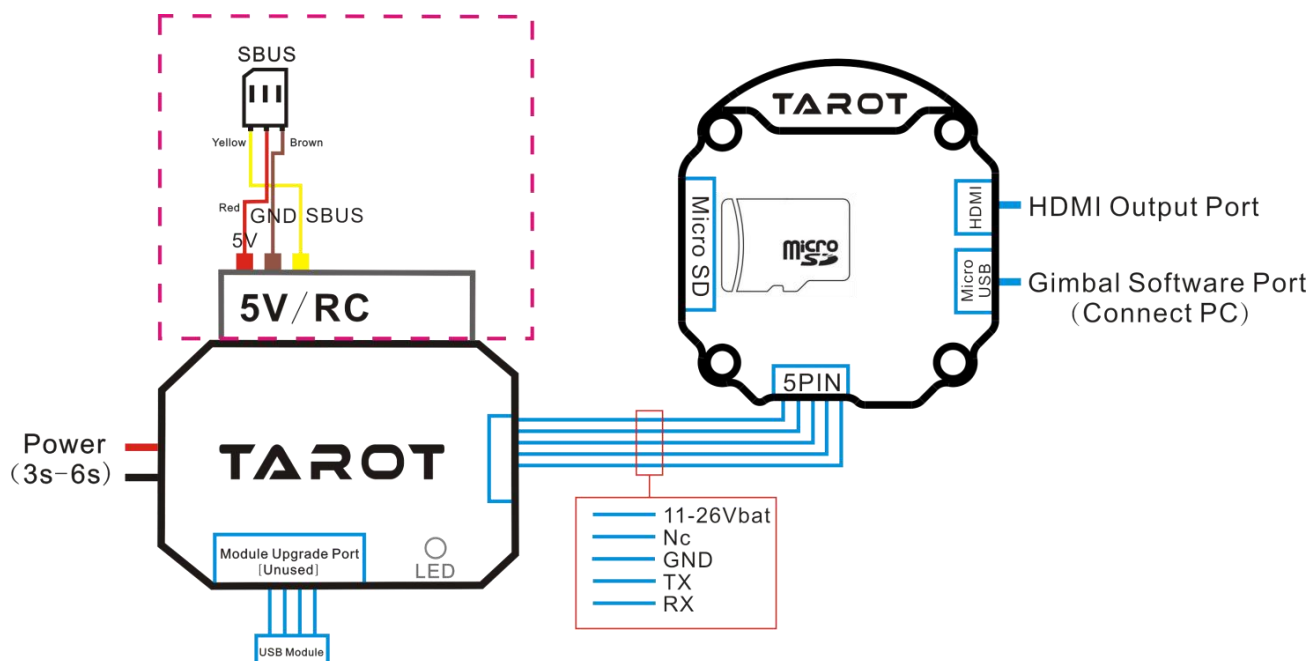
③. Gimbal camera output format support 1080P 60FPS / 720P 60FPS / 480P 60FPS, Please check the device support for high definition.



Vertical 90 deg Parallel 180 deg

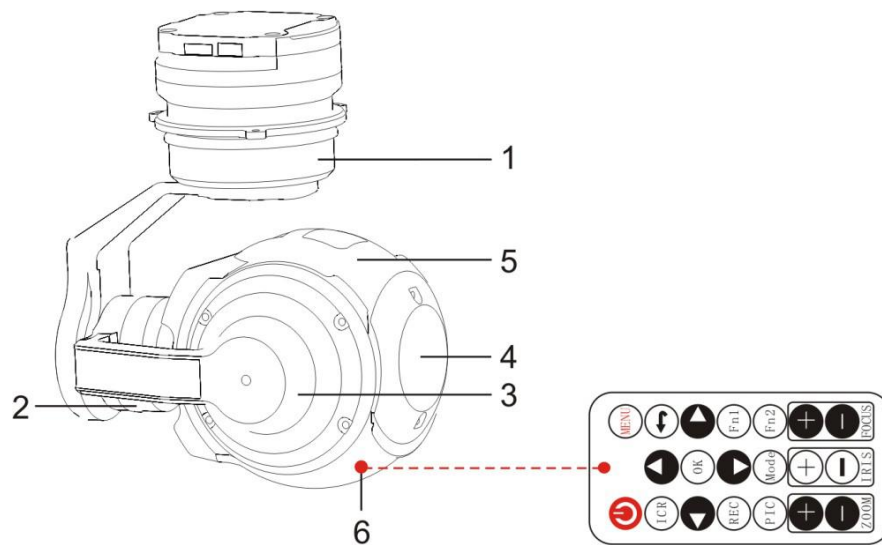


3.2 SBUS Connection Wiring Diagram & Descriptions



Battery	<p>Power Supply:3S-6S Li (11V-26V)</p> <p>* If you choose a battery to power up the gimbal and multi-rotor, please make sure this battery meets requirements of both components.</p>
Receiver	<p>FUTABA SBUS: connect it to SBUS channel in the SBUS Decoding module</p> <p>*If you have 5V power supply to the receiver, please disconnect the 5V power of SBUS channel.</p>
Video	Connect the video wireless transmission module to HDMI out port
Card	<p>The T10X supports Micro SD cards with a capacity of up to 32G.We recommend using a UHS-1 Micro SD card to minimize the delay when reading and writing high resolution video data.</p> <p>*DO NOT remove the Micro SD card form the T10X when it is powered on.</p>
Adjustment parameters	Connect the Gimbal via the Micro-USB cable.

3.3 Gimbal structure description



Number	Corresponding
1	Pan Motor
2	Roll Motor
3	Tilt Motor
4	Lens
5	Camera
6	Infrared remote camera point * Pls used the original remote,and Please setting camera parameters on the location of the lens below point 6

IV. T10X Assistant Software

4.1 Drive & PC Assistant Software Installation and Setup

①Please download the drive and PC assistant software from <http://www.T10X.com/>
②Run the drive program under USB Driver folder, and finish the installation procedures step by step.

Windows x86: "CP210xVCPInstaller_x86.exe";

Windows x64: "CP210xVCPInstaller_x64.exe";

③Connect the Micro-USB Cable to the computer, and finish the installation.

④Run the assistant software TOP-PEEPER.EXE and set the parameters.

4.2 Introduction

T10X, the three-axis gimbal, could support the camera to stabilize its positions on the roll, tilt and pan axis.

Customers can setting TOP- T10X by this software

Firstly connect Gimbal port to PC port by Micro-USB (Pls refer to the zip"Wiring diagram-Gimbal Assistant"), then"Right Click"[Computer]-[Manage]-[Device Manager]-[Port(Com&LPT)]Check the Gimbal real port number **(if not confirmed the number, pls re-plug the corresponding USB cable,the port number will be refresh)** , finally choose the correct port on Gimbal Assistant software, click"Open Port".



When gimbal power and connection successful, the gimbal would stop rotating to protect your device.

After finish parameters setup, click "Gimbal Run". Push sticks and toggle switches to ensure the gimbal works correctly.

When finish parameters setup, you should click "Save Parameter Flash" to ensure all the parameters have written to the gimbal. Moreover, the gimbal will automatically run the parameters you have saved in the flash next time.

4.3 Tool



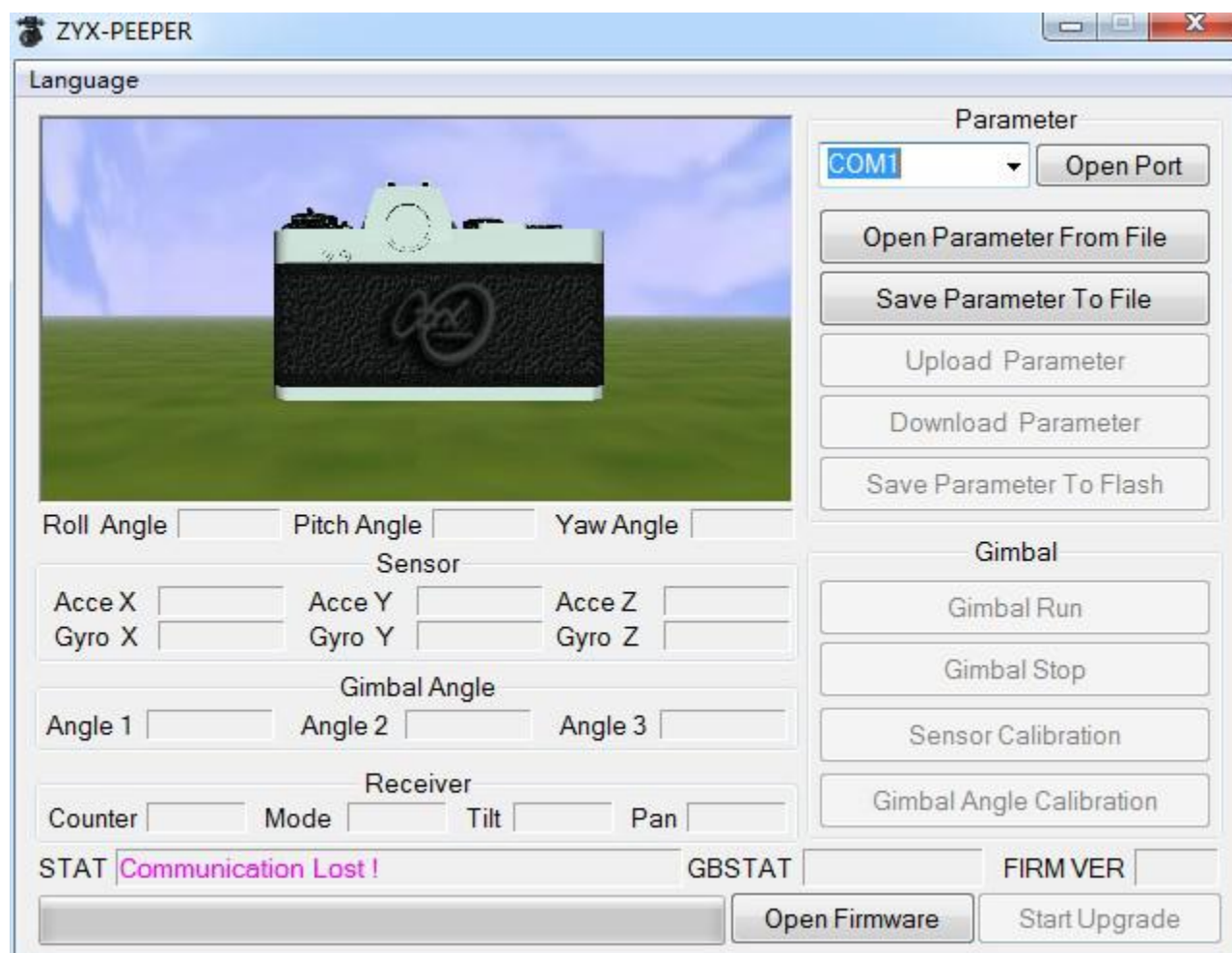
Please calibrate sensors when the output of gyro is far from zero while the gimbal is stationary.

Methods to calibrate

It is necessary to keep the gimbal in the stationary state. Click "Sensor Calibrate". When "Calibration is successful" shows on status bar, the calibration procedures finishes.

Then click"Gimbal Angle Calibration", When"Calibration is successful" show on the left bottom . the calibration procedures finishes

4.4 Firmware upgrade



Upgrade

- (1) Please download latest version software from <http://www.T10X.com/>
- (2) Connect the gimbal with the assistant software through a Micro-USB cable.
- (3) Unzip the upgrade package and click “Open Firmware” to choose the firmware you have unzipped,
- (4) Click “Start Upgrade” and wait for finishing.

Attention:

If something wrong occurs during update, please check the connection and power supply. Also, make sure you have correctly installed the drive program. You can repeat upgrading for several times until your device is broken.

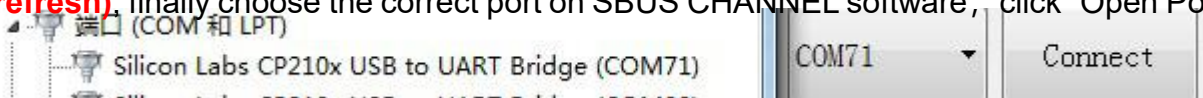
V. Channel setting & gimbal function

5.1 Assistant software installation&setting

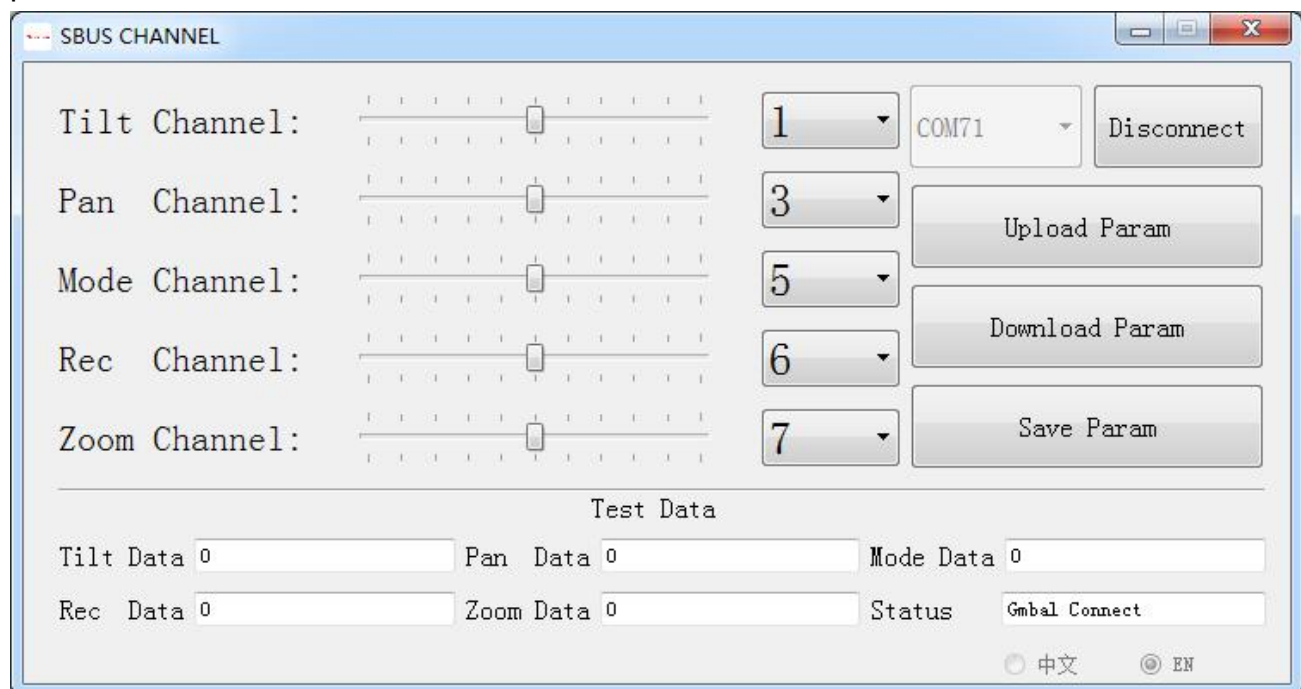
- ① Please download the drive and PC assistant software from <http://www.T10X.com/>
- ② Run the drive program under USB Driver folder, and finish the installation procedures step by step.
Windows x86: "CP210xVCPInstaller_x86.exe";
Windows x64: "CP210xVCPInstaller_x64.exe";
- ③ Connect the "SBUS decode module" to PC by USB Assistant module, finished the driver installation
- ④ Choose the mapping port and power , running the "SBUS_CHANNEL.exe" software ,then setting parameter

5.2 Introduction

- ①. T10X gimbal control by SBUS, compatible FASST, SFHSS etc SBUS1 mode (not support FASSTest etc SBUS2 mode) .
- ②. pls connect the SBUS decode module to PC by USB module & USB line (Pls refer to the zip "Wiring Diagram-SBUS Module"), then "Right Click" [Computer]-[Manage]-[Device manager]-[Port (COM & LPT)], check the SBUS decode module's the real port number **(if not confirmed the number, pls re-plug the corresponding USB cable, the port number will be refresh)**, finally choose the correct port on SBUS CHANNEL software, click "Open Port".



- ③. corresponding channel fault 1、3、5、6、7, Please use the software corresponding to modify, modify the corresponding channel and click "parameter upload" and "Save parameter To flash"



SBUS decode module connect with RC receiver'SBUS port, setting the mapping for the channel on remote control. For different positions, use endpoint fine tune function to set. Please refer to the MODE Channel section in assistant software for detailed information.

① Gimbal Tilt

Choose Rotate switch, stick or three-positioned switch:

Take the three--positioned switch as an example:

Position 1 refers to look up ,position 2 no-ops, position 3 refers to look down

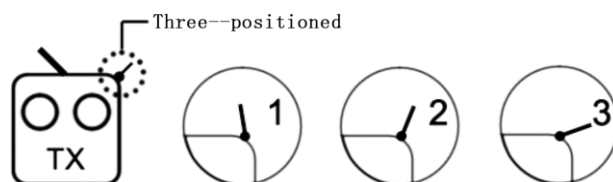
+Position 2 to 1 :Look up operation on

Position 1 to 2 : Pause

Position 2 to 3 :Look down operation on

Position 3 to 2 :Pause

Position 1and position 3 can be exchanged



② Gimbal pan

Choose Rotate switch, stick or three-positioned switch:

Take the three--positioned switch as an example:

Position 1 refers to left ,position 2 no-ops, position 3 refers to right

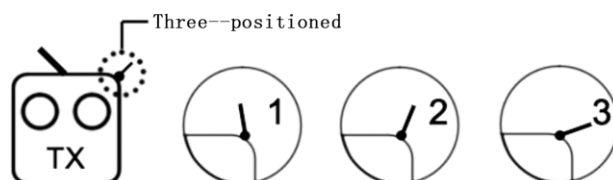
Position 2 to 1 : Pointing to the left

Position 1 to 2 : Pause

Position 2 to 3: Pointing to the right

Position 3 to 2 :Pause

Position 1and position 3 can be exchanged



③ Pan mode switch

Choose a two-positioned or three-positioned switch:

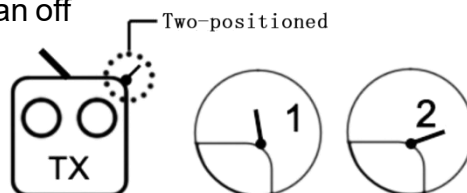
Take the two-positioned switch as an example:

Position 1 refers to Pan On , Position 2 refers to Pan off

Position 2 to 1: Pan On,gimbal Pan can be control

Position 1 to 2 : Pan Off ,Pan can't be control

Position 1and position 2 can be exchanged



④Video

Choose Rotate switch or three-positioned switch:

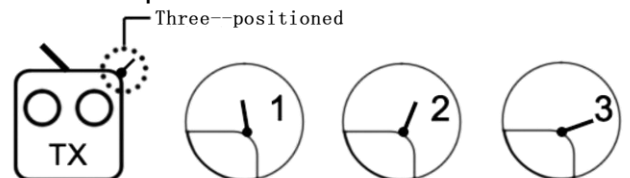
Take the three--positioned switch as an example:

Position 1 no-ops ,position 2 no-ops, position 3 make the video

Position 1 to 3: Video operation

Make again Position 1 to 3 then to position 1 : Video operation over

Position 1and position 3 can be exchanged



⑤Zoom

Choose Rotate switch or three-positioned switch:

Take the three--positioned switch as an example:

Position 1 refers to Zoom + ,position 2 no-ops, position 3 refers to Zoom -

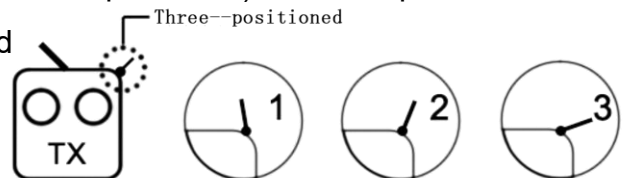
Position 2 to 1: Zoom more + ,until 10X

Position 2 to 1 then to position 3 (support back to position 2): Zoom + operation Pause

Position 2 to 3 : Zoom - , until 1 X

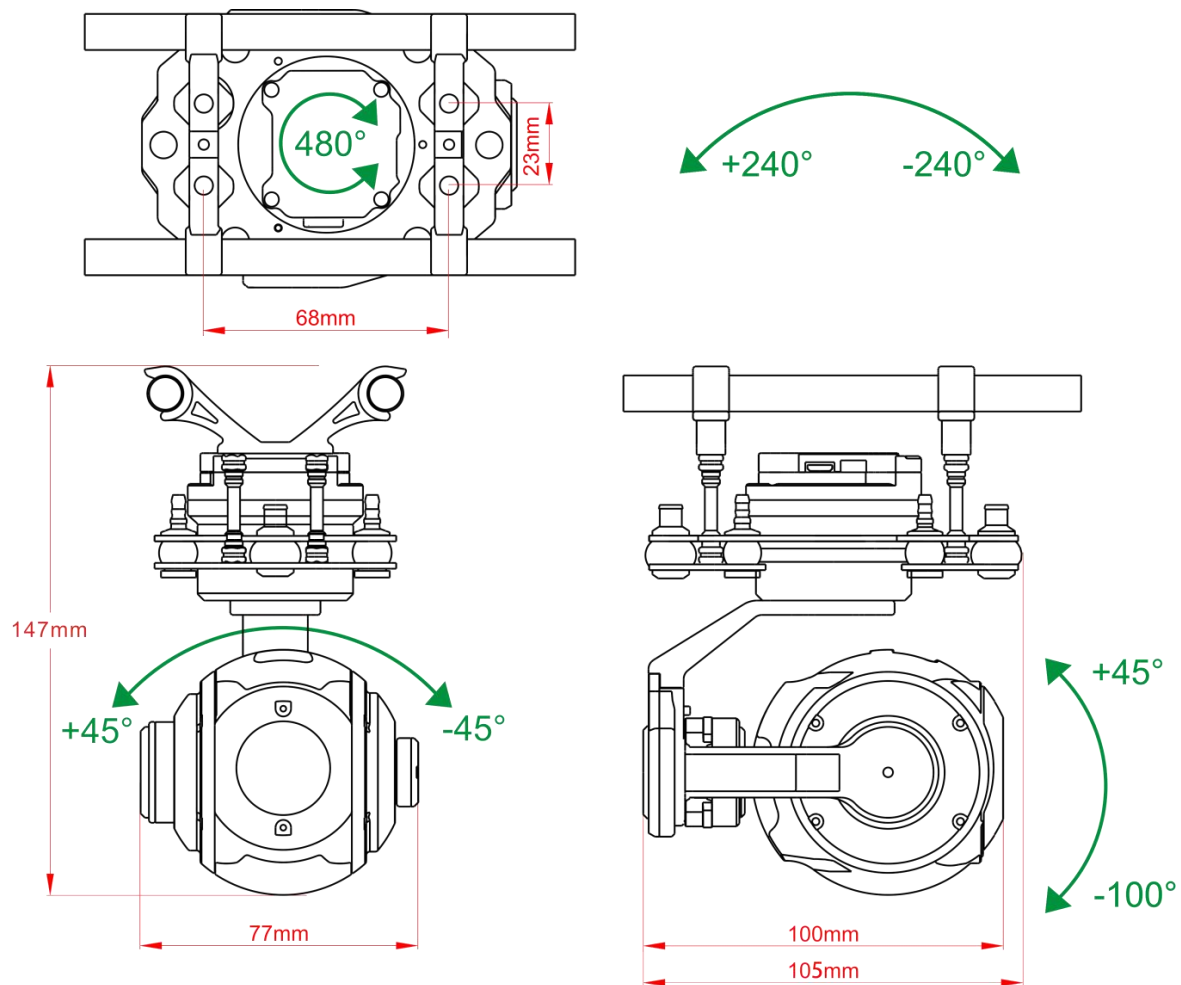
Position 2 to 3 then to position 1 (support back to position 2): Zoom - operation Pause

Position 1and position 3 can be exchanged



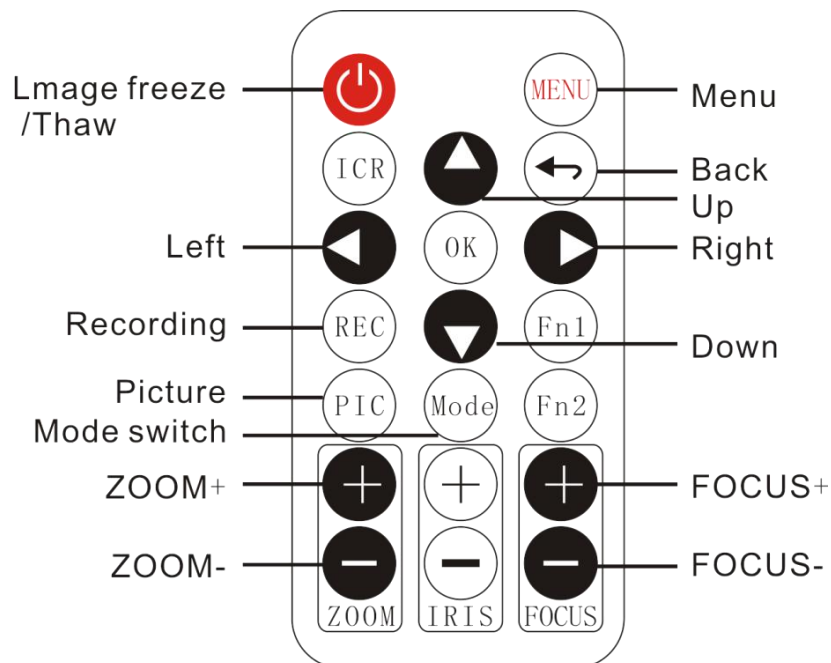
VI. Specifications

Product parameters	
Name	T10X
Input Power	3S-6S Li (11V-26V)
Working Current	250ma
Working Environment	-20℃~+50℃
Weight	365g
Max Controllable Rotation Speed	77 mm *105 mm *147mm
Controllable Rotation Range	TILT: -120 deg~ +15deg
Attitude Control Accuracy	±0.02deg
Camera	
Sensor	Effective Pixels:4 M
Lens	10× Optical Zoom
Diagonal FOV	66.6° - 7.2° (A1)
HDMI Wire Version	1.4
Output Format	1080P 60FPS / 720P 60FPS / 480P 60FPS
Min.Focus Distance	10 mm - 300 mm
Video Formats	MOV
Working	Record
Exposure Compensation	Auto(default Shutter Priority)
Exposure Compensation	±2.0 (1/3 increments)
Metering Mode	Average metering
Electronic Shutter Speed	Auto
White Balance	Auto/Daylight / cloudy / fluorescent light / tungsten lamp
Video Captions	Supported
One Key to 1× Image	Supported
Anti-flicker	50Hz, 60Hz
PAL/NTSC	Supported
Supported SD Cards	Max.Capacity:32GB
Supported File Systems	FAT32 (≤ 32 GB)
Assistant Software Supporting Platform	Windows XP/VISTA/7/8/10



VII. Gimbal and FC agreement (Refer to attach B)

VIII. Camera remote control instructions



Movie Mode

Movie Mode; Movie Quality; Movie Clip Time; Motion event Reo; Exposure; White Balance; ISO Sensitivity; Color; Effect; HDR; Contrast; Saturation; Sharpness; Gamma; Video Time Lapse; Slowmotion; WNR

Still Capture

Still Image Size; Still Quality; Exposure; ISO Sensitivity; Contrast; Saturation; Sharpness; Gamma

Playback Volume; Delete; Protect;

Video Type **Media Tool**

Format SD-Card; SD-Card Info

General Settings

Language: English; Espanol; Portugues; Pyccknn; 简体中文; 繁体中文; Deutsch; Ltalano; Latviski; Polski; Romana; Slovincina; YkpaiHcbKa; Francais; 日本語; 한국어; Cestina
TV System; HDMI Output; Flicker; USB Function; LCD Rotate; Motion Detection; Reset Setup; FW Version

IX. Port Descriptions

SBUS decode module port	
PWR	PWR port , support 3-6S
SBUS decode module port	Module upgrade for our factory
5V/RC	5V PWR output ,SBUS receiver input
Gimbal main controller	
Micro SD	Micro SD card ,support max 32GB
Micro USB	Used the Micro-USB wire connection to PC and adjustment the parameters
HDMI	HDMI output port , connection to device of video receive
5PIN	Connect SBUS decode module

X. LED Indicator

SBUS decode module indicator	
No lights	The module not connected the gimbal or bad contact
Blue light blinks	Normal Power supply
Blue light constantly on	Module with gimbal normal working