

SKYZONE

**SKY02S
3D FPV GOGGLE**

USER MANUAL

System Content



FPV GOGGLE



Carry case



SCAM302 Camera



STX202 Transmitter



*HDMI A-D(Separate purchase)



Futaba data cable



JR data cable



WFLY data cable



5.8G 2dBi antenna X 4



5P Camera cable



3P TX Remote control cable



AV cable

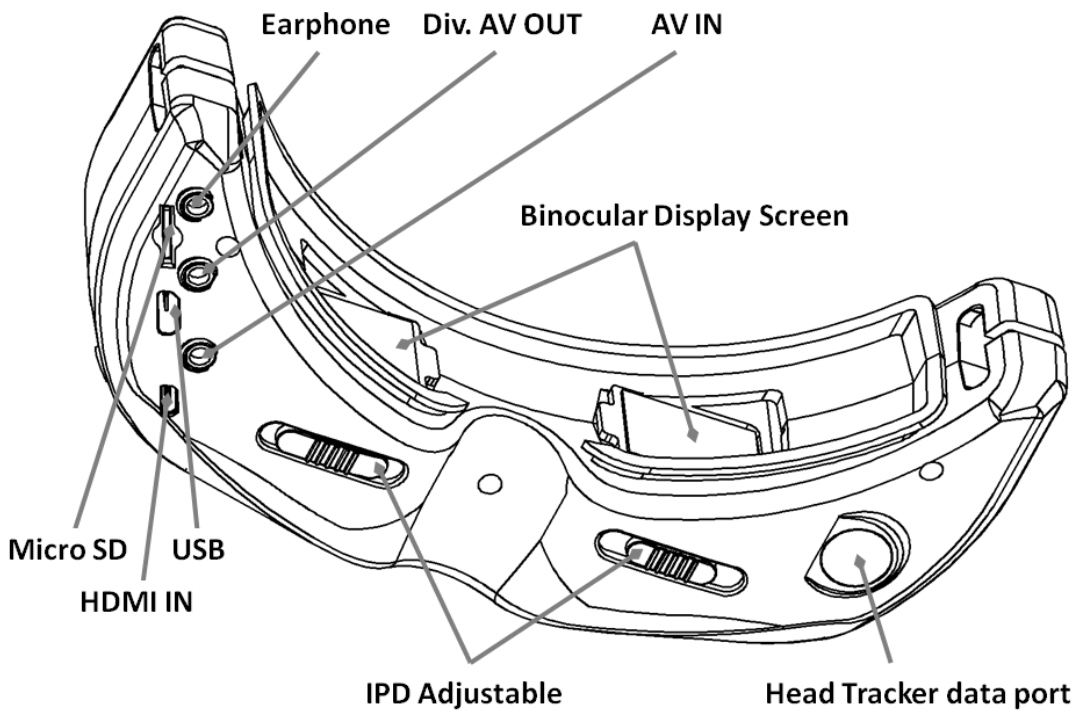
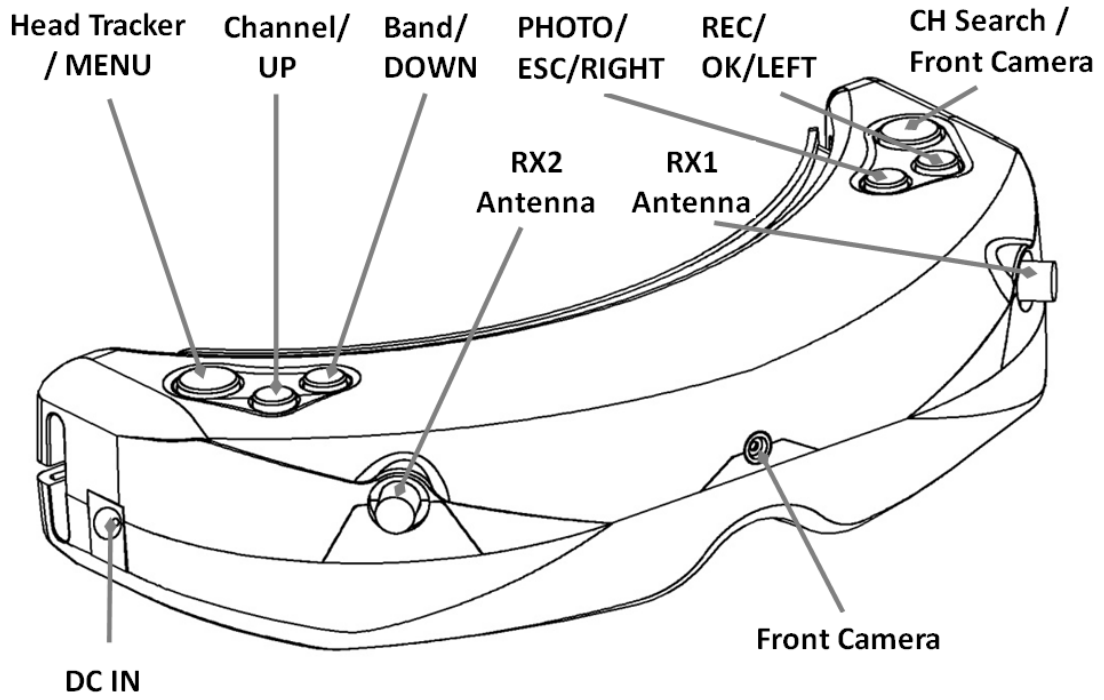


Power cable



2P TX Power cable

Function Diagram



Operation Guide

SKY02S FPV glasses are inbuilt with two 5.8GHz receiving modules, two antenna ports and two independently-working display modules, bringing you 3D FPV flight experience. In such mode, SCAM302 3D camera and STX202 two-way transmitters need to be provided. The two lens of the 3D camera work in the parallel manner so that 3D effect can be enhanced for close shot and reduced for long shot, bringing people an overall vivid visual experience.

SKY02S FPV glasses can also work in routine diversity reception mode. In such mode, it displays common 2D images. Its radio channel and band settings may be compatible with STX202 and other 5.8GHz transmitters, and in total it supports 5 bands and 40 channels (see the Specifications Description for details).

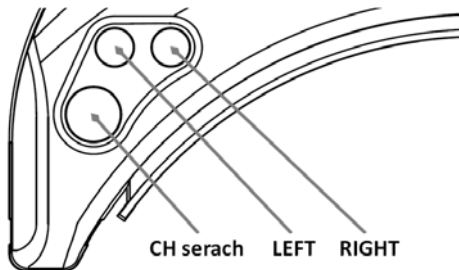
Quick Start

Preparation

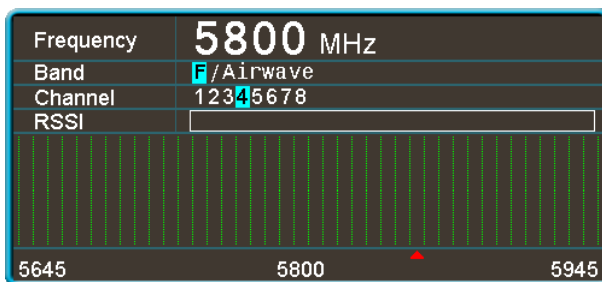
- Install lens, eyeshade, antenna and storage card for FPV.
- Connect SCAM302 camera with STX202 transmitter properly, power on the transmitter, set proper working channel and then power on SKY02S FPV glasses.
- Press short <UP/DOWN> button to adjust channels and keep consistent with the transmitter to view the images taken by the camera.
- Slide the IPD adjuster to adjust interpupillary distance (IPD).

Channel search

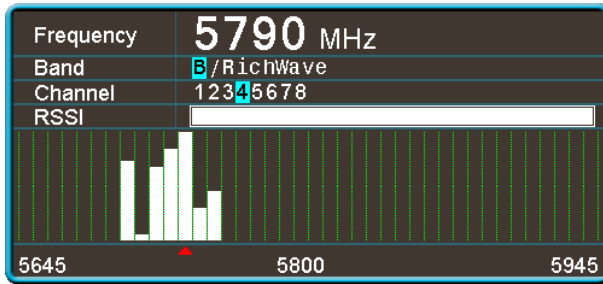
- Button function.



- Long press the <CH Search> button to pop up the channel search menu.



- press the <CH Search> button to execute channel search (repeatable). Channel search is conducted from low frequency to high frequency. After 40 channels are searched, the device will work at the strongest channel. The histogram displays the signal intensity of every channel. You may press the <LEFT> button and the <RIGHT> to choose the desired channel manually. The band, channel and signal intensity in the place where the triangular indicator stays may be updated in real time.



- After exiting from the search menu, the device can work in the current search to the channel.

Functions of Buttons (For the functions of buttons in playback mode, see the description in the “Playback” section)

TRACK Button:

- In normal mode, press short to reset the head tracker.
- Hold the Menu button 3s to enter menu setup.
- In menu state, switch 4 main menus with such button.

CHANNEL Button:

- In 3D RF mode, press short to add channels.
- In 2D RF mode, press short to cycle adjust channels.
- In 3D RF, 2D RF, HDMI IN, AV IN or PLAYBACK mode, Long press 3s to turn up volume.
- In menu state, press such button to choose upward.

BAND Button:

- In 3D RF mode, press short to decrease channels.
- In 2D RF mode, press short to cycle adjust bands.
- In 3D RF, 2D RF, HDMI IN, AV IN or PLAYBACK mode, Long press 3s to turn down volume.
- In menu state, press such button for choice.

REC Button:

- In 3D RF, 2D RF or AV IN mode, press short to take videos and again to stop.
- In menu state, press such button to confirm.
- In channel search state, press such button to choose leftward.

PHOTO Button:

- In 3D RF, 2D RF or AV IN mode, in video preview state, press short to take photos.
- In menu state, press such button to exit.
- In channel search state, press such button to choose rightward.

CAMERA Button:

- In any mode, press short to switch to the front view.
- In 2D RF mode, hold such button to search, hold it 3s to enter or exit from the search menu.

RF Mode

3D Mode

- 3D mode is effective only in RF mode and the device may switch automatically to 2D in other modes.
- There are 4 default channels. You may adjust channels with the <UP/DOWN> button; in menu, you may set RF Band as “Custom”; then choose proper bands and adjust channels properly. (Always use the “Custom” function carefully, too close frequency may result in mutual disturbance; it is advised the frequency interval should be about 40MHz).
- Such mode does not support channel search.

2D Mode

- After 3D mode is closed in menu, the device will work in 2D mode and activate the diversity reception; in 2D mode, in menu, the setup of the other functions under 3D mode will be ineffective.

- Press the <CHANNEL> button to adjust channels and <BAND> button to adjust bands in circular manner, then the screen will display BAND, CH and frequency.
- Such mode support channel search.

Front Camera

- The front camera of such FPV glasses has VGA resolution and good low illuminance, enabling to easily observe surroundings very easily without taking off the glasses.
- In any mode, you may press the <CAMERA> button quickly to open the front camera.
- The front camera is designed only for temporary view to see surroundings; so it cannot record the image to the storage card nor output the same via AV OUT. During video recording, the activation of the front camera will not affect the recorded video.
- When the front camera is activated, you may have normal mode switching.

Image Adjustment



- In the image setup menu, you may set such parameters as Brightness, Contrast, Saturation, Hue and Sharpness to as to achieve personalized display effect.
- On the function item to be set, press the <OK> button to enter setup state, press the <UP/DOWN> button to zoom in/out images with images displaying the adjustment effect in real time; press the <ESC> button to back to the previous menu.
- It is recommended to set such parameters in very clear image state.

Head Tracking

- Head tracking needs initialization time. When powered on, be sure to keep the product horizontal and stable. When you hear "Beep", it means the initialization is completed and you may start to use head tracking; or you may press the <TRACK> button shortly when this device keeps stable to use such function normally.
- Press short <TRACK> button to reset the PPM signal to the central location with warning tone.
- In menu, you may set PPM channels as CH5-CH6, CH5-CH7, CH5-CH8, CH6-CH7, CH6-CH8 or CH7-CH8.
- Pan Tracking range: 180° (90° for left and right respectively), 120° (60° for left and right respectively), 90° (45° for left and right respectively), 90° as default.
- Tilt Tracking range: (60° for left and right respectively), 90° (45° for left and right respectively), 60° (30° for left and right respectively), 90° as default.
- Pan Correction: Via such setup, you may separately compensate the central deviation of Pan. You may set it at 0~10 levels, and the actual compensation angle is related to the turning angle of the cradle head.
- Tilt Correction: Via such setup, you may separately compensate the central deviation of Tilt. You may set it at 0~10 levels, and the actual compensation angle is related to the turning angle of the cradle head.
- PPM Reverse: <Normal> as default setup, <Pan> as the reverse of such channel, <Tilt> as the reverse of such channel, <Pan & Tilt> reverse in two directions.

Recording

- It is recommended to format the storage card that is initially installed. (See "Format SD Card" section hereinafter for details).

- You may use the Record function in both RF mode and AV IN mode. In normal state, the screen will display  and SD Card Capacity Information; in such case, you may press the <REC> button to activate video recording; then the device will activate video recording with the icon  appearing in red and recording time starting to count.
- In preview state, you may press the <PHOTO> button to take photos with warning tone heard. (You cannot take photos during video recording)
- In default state, the video recorded also includes sound. You may close "REC Sound" in the system menu. In such case, you may record the video without sound.
- You may inactivate the whole video module to power save.
- In order to ensure reliability, in video state, if the capacity of the card is less than 0.5GB, the device will automatically stop recording videos; if less than 0.01GB, the function of taking photos will be ineffective.

Playback

Functions of Playback Button:

- In RF mode or AV IN mode, Long press <REC> button to enter the playback mode.
- REC < PLAY/PAUSE/OK > button.
- PHOTO < STOP/BACK > button
- BAND < PREVIOUS/ Fast Backward > button.
- CHANNEL < NEXT/ Fast Forward > button.
- TRACK < DELETE > button.
- In playback mode, you may directly preview the video or photo in the storage card and the back 4 digits of the file name appears on the upper right corner. In case of video, the recording duration of the file will appear under the file name.
- In the process of playing a video file, you may press the < Fast Backward/Fast Forward > button for 2X, 4X, 8X play, and press the <PLAY > button to restore normal speed. When the play is over, the image will stay on the first frame of this file. In such case, press the < STOP > button to back to the previous state to have other operations or replay the video.
- When browsing the files in the storage card, to delete one file, press the < DELETE > button to pop up the "Delete" menu, and press the <OK> button to delete the desired file.
- This device may be unable to identify the other files taken by other devices.

HDMI IN

- This device supports HDMI IN. When the HDMI IN connection cable is inserted, it may automatically turn off the radio reception module to save power.
- When the resolution format supported is identified, images may automatically appear; otherwise, the inbuilt test image of 8 color bar.

AV IN

- This device supports AV IN. When the AV IN connection cable is inserted, it may automatically turn off the radio reception module to save power.

AV OUT

- The AV OUT port outputs the audio and video signals of diversity reception.
- The earphone port may connect with a headset. When this device is powered on every time, be sure to minimize the volume of the headset in order to prevent large noise from affecting your hearing.












Format SD Card

- Enter the system menu, choose the option of "Format SD Card", press the <OK> button to enter the setup state, press the <UP/DOWN> button to choose <YES>, and the <OK> button again to format.
- Be careful to use such function, because, after such operation, all files in the storage cards will be deleted.

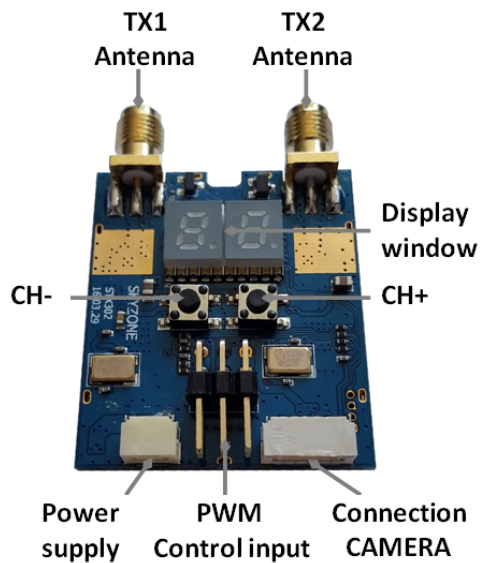
Factory Settings

- Enter the system menu, choose the option of "Format SD Card", press the <OK> button to enter the setup state, press the <UP/DOWN> button to choose <YES>, and the <OK> button again to restore all the functional settings in the menu to factory settings.
- Restore factory settings not delete the files in SD card.

Screen OSD

-  Video recording icon: In normal state, such icon is white; in video recording, it is red. If you cannot take a video for any reason, for example, the video module is inactivated, the storage card is full or the faulty, such icon will be in red, like .
-  Photo icon: In video preview state, press the <PHOTO> button to display such icon in red, indicating one photo has been taken.
-  Storage card icon: In normal state, it appears in its original color followed by capacity in GB (1,000MB), when the storage card is full, it will be in red.
- Mode icon: RF, HDMI, AV IN and PLAYBACK mode.
-  mode: You can only have 3D display in RF mode.
-  mode: Such icon will appear when 3D mode is off or the device is in HDMI IN, AV IN, PLAYBACK and Front Camera mode.
-  Mode: After this device is connected to PC, such icon will appear. In such mode, you may manage the contents in the storage card of this device via PC operation, (you may have Playback, Copy and Delete on PC).
-  Play/Pause icon.
-  Fast Backward/Fast Forward icon: when operating Fast Backward/Fast Forward operation, you will see such icon followed by corresponding speed rate.
- Power supply icon: If you do not want this device to monitor power voltage, you may set the power supply in DC IN and then the screen will display a <DC IN> icon. If battery is used for power supply, you may set the battery pack voltage range in 2S, 3S, 4S, 5S or 6S, and then the screen will display corresponding battery icon, in detail,  stands for Full battery and  for Low battery.
- Channel icon: In 3D mode, the icon "CH" will appear on the screen. If the <Custom> band setup is activated in 3D mode, then the screen will display at the same time RX1/RX2 band and channel information; in 2D mode, the screen will display "BAND" and "CH".

Transmitter Operation Guide



- When mounting the antenna, please carefully check if the antenna port matches the transmitter port, do not connect it to power supply unless it is installed securely; otherwise, the transmitter may be damaged due to wrong installation.
- Be sure to install the transmitter in the place with good ventilation rather than a sealed space, or do not wrap the transmitter tightly.
- In use, do not touch the antenna and its metal components in order to avoid affecting the work of the transmitter; in addition, touching the metal components of the antenna may have the risk of burning!
- STX202 has two LEDs, which display channels in channel preset mode. In custom channel mode, the left LED display TX1 band and channel while the right one display TX2 band and channel.
- When powered on every time, the device will work in the preset channel mode. In such mode, you may adjust channels via the buttons <CH-> and <CH+>. Totally, there are 4 channels available.
- Long press the <CH-> or <CH+> button to enter the custom channel mode. In such mode, the 2 LEDs will flicker and the device will enter firstly the band setup state. Respectively press the <CH-, CH+> button to set the bands of TX1 and TX2 and press the <CH-,CH+> button again to respectively exit from band setup mode and enter the normal working mode. In normal mode, you may press shortly the <CH-> or <CH+> button to set channels. To switch custom channel mode to the preset channel mode, press the <CH-> and <CH+> buttons at the same time.
- In preset channel mode, you may connect one PWM channel of the receiver remotely controlled to the S1 port of STX202 to control channels. On the remote controller, there is one 3-level switch with C-H for channel + and C-L for channel-.
- In custom channel mode, you may connect the other PWM channel of the receiver remotely controlled to the S2 port of STX202. On the remote controller, there are two 3-level switches with S1 port to control TX1 bands and channels, S2 port to control TX2 bands and channels, C-H to adjust bands and C-L to adjust channels.

Specifications (SCAM302)

FOV	120 degrees (Diagonal)
F/NO	F/NO=2.3
Interpupillary distance (IPD)	40mm
Resolution	720X576
Video Standard	PAL
Video output level	1.0Vp-p Typ. / 75ohm
Power supply	DC 5.0V/ 0.5A
Power Consumption	1.6W
Dimensions	56.5(L)X17.8(W)X14(H)mm
Weight	12g
Operating Temperature	0°C ~ +60°C

Specifications (STX202)

Modulate	Wideband FM Modulate									
Video Standard	NTSC/PAL									
RF Output Impedance	50 ohm									
RF Output Power	Min.		Typ.			Max.		Units		
	22.0		23			24		dBm		
Wireless Transmitter	ISM 5.8GHz 40 Channel, Dual Transmitter.									
	Preset	CH 1		CH2		CH3		CH4		
	Frequency	5733M / 5771M		5752M / 5790M		5809M / 5847M		5828M / 5866M		
	Custom Frequency	Band	CH 1	CH2	CH3	CH4	CH5	CH6	CH7	CH8
		A	5865M	5845M	5825M	5805M	5785M	5765M	5745M	5725M
		B	5733M	5752M	5771M	5790M	5809M	5828M	5847M	5866M
		E	5705M	5685M	5665M	5645M	5885M	5905M	5925M	5945M
F		5740M	5760M	5780M	5800M	5820M	5840M	5860M	5880M	
R	5658M	5695M	5732M	5769M	5806M	5843M	5880M	5917M		
Video input level	1.0Vp-p Typ. / 75ohm									
Video Band Width	8.0MHz									
Audio input level	2.0Vp-p Typ. / 10Kohm									
Audio carrier Frequency	6.5MHz									
Power supply	DC 5V/ 1.2A									
Power Consumption	5V input: 5.5W									
Dimensions	38(L)X32(W)X8.9(H)mm (Not include prominent part)									
Weight	14g									
Operating Temperature	0°C ~ +70°C									

Specifications (SKY02S)

Binocular Display	FOV	30 degrees (Diagonal)								
	Resolution	854X480(WVGA), 1,229,760 color sub-pixels								
	Brightness	350cd/m ²								
	Interpupillary distance (IPD)	59-69mm Adjustable								
Wireless Receiver	ISM 5.8GHz 40 Channel, Diversity receiver.									
	Preset Frequency	CH 1		CH2		CH3		CH4		
		5733M / 5771M		5752M / 5790M		5809M / 5847M		5828M / 5866M		
	Custom Frequency	Band	CH 1	CH2	CH3	CH4	CH5	CH6	CH7	CH8
		A	5865M	5845M	5825M	5805M	5785M	5765M	5745M	5725M
		B	5733M	5752M	5771M	5790M	5809M	5828M	5847M	5866M
		E	5705M	5685M	5665M	5645M	5885M	5905M	5925M	5945M
		F	5740M	5760M	5780M	5800M	5820M	5840M	5860M	5880M
	R	5658M	5695M	5732M	5769M	5806M	5843M	5880M	5917M	
	Sensitivity		-90dBm ± 1dBm							
Antenna port		2 X SMA,50ohm								
Front Camera	FOV	60 degrees (Diagonal)								
	Resolution	640X480(VGA)								
	FOCAL LENGTH	f=4.0mm								
	F/NO	F/NO=2.8								
Head Tracker	Sensor	Magnetic, Inertial and gyro								
	Output	PPM 8 channel, Optional 5-6CH,5-7CH,5-8CH,6-7CH,6-8CH,7-8CH								
Record	Micro SD	Support to 32GB								
	Compression	MJPEG, 30fps, AVI								
	Picture	JPEG								
	Record rate	6Mbps								
AV Signal	Video Standard	NTSC/PAL								
	Video output level	1.0Vp-p Typ. / 75ohm								
	Audio output level	1.0Vp-p Typ. / 10Kohm								
AV Port	Div. AV OUT(3.5mm4P)	Diversity Video, Audio output								
	EAR OUT(3.5mm3P)	Stereo 16Ω/150mW								
	AV IN(3.5mm4P)	Video、 Audio input								
	HDMI IN(Micro HDMI /D-Type)	HDMI 1.4 specification 1920x1080p60, 1920x1080p50, 1920x1080i60, 1920x1080i50, 1280x720p60, 1280x720p50, 576p, 576i, 480p, 480i, PC Format(Not all)								
Power Supply	DC IN	DC 7~26V/ 1A								
	Power Consumption	12V input: 5.4W								
Dimensions		168(L)X92.5(W)X41(H)mm (Not include prominent part)								
Weight		g (Not include package box)								
Operating Temperature		0℃~+60℃								