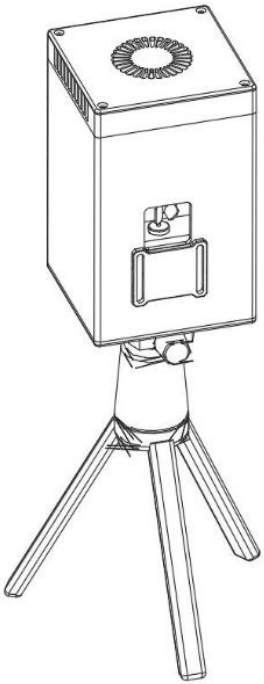
WIFI PROFESSIONAL
ANIMATION LASER LIGHT

MODEL AW03RGB



USER GUIDE

To ensure proper operation, please read this manual carefully before using the product

SAFETY NOTES
ANIMATION LASER SHOW SYSTEM SAFETY NOTES

Thank you very much for choosing our product, for your safety, please read the laser safety instruction and this manual carefully before your operation.

This manual includes installation and user information.

Please install and operate the laser according to the requirements of this manual and safety guidelines.

DO NOT OVER DRIVE THE SCANNERS. WHEN USING MAX SPEED KEEP THE ANGLE SMALL. FOR MAX ANGLE DO NOT EXCEED 40000PPS ON THE ILDA SOFTWARE SETTING.

Class 3B and 4 Laser Lighting Effect User Safety Guide
Important Warnings

Class 4 Lasers have the potential to harm eyesight if viewed directly in the face, and in many instances this may be the case even if viewed over longer distances of several tens of meters. Therefore before using the laser product you should familiarize yourself with its operation, and also the safety aspects that need to be considered.

Laser lighting effects are quite safe to watch if installed and used correctly, and being aware of a few basic factors will help you to achieve this. This guide has been prepared to help provide a basic backgrounder to the key safety aspects, and is based on current UK health and safety guidance on the use of lasers for public displays.

Installation and Operation Notes

1. The laser should only be installed and operated by those that are aware of how to operate laser, and what the various controls perform.

2. The laser should be mounted in a suitable and secure position in the venue, so that once in position it is unlikely to be affected by unintended movement.

3. Prior to installation and operation of the laser, the paths of the beams and effects should be considered, particularly with respect to how they will touch the audience. If direct audience scanning is desired then the laser energy in the effects needs to be considered to decide if the effects are safe for direct viewing.

Introduction

Laser lighting products are used to create some of the most vivid and striking visual effects, and are often noted for how they seem to produce solid shapes that cut through the air, and pick up highly defined swirling smoke patterns. The light that is used to create these stunning effects is different from normal light and therefore several precautions need to take when using lasers to ensure that the lighting effects are safe and enjoyable to view. The optical power output from the kind of lasers used for lighting displays can be harmful if not properly setup or is misused. But when used following the recommended health and safety guidelines, laser lighting effects no more harmful than looking at any conventional lighting effect.

Although this guide covers the main points to consider when using laser effects, users are advised to familiarize themselves with other guidance, particularly that issued by the Health and Safety Executive, HS(G)95 The Radiation Safety Of Lasers Used For Display Purposes.

A laser product that emits more than 5mW of light and less than 500mW can be classified as a Class 3B laser product

A laser product that emits more than 500mW of light and can be classified as a Class 4 laser product

Class 3B and 4 are safe if used responsibly, and in accordance with the relevant the guidance issued by the Health and Safety Executive.

Class 4 laser devices may cause fires and burn the skin if exposed directly.

In the simplest terms, generally keeping the beams and effects above the audience will not present a hazard to those viewing the show or effects. When you start to aim the laser effects down into the audience area is when it becomes harder to tell if the effects could cause harm. With a Class 3B and 4 laser lighting effect, the problem can arise if the beams or effects actually hit someone's face. If in doubt, keep the effects above the audience.

Class 3B and 4 laser devices can be harmful to eyesight if viewed directly. i.e. that is, the beam or effect strikes the face of a person directly. The actual injury that a Class 3B and 4 laser can cause depends upon a number of factors, including how long the laser beam enters the eye for, the intensity of light, and what part of the eye it actually gets focused onto. The most susceptible part of the eye to receive damage from a laser is the internal back wall of the eyeball, known as the retina. It is this part of the eye that receives the light signals that are sent to brain. All light entering the eye gets focused onto the retina.

There are no specific "laser laws" or any "laser licences" that anybody needs in order to own or operate a laser for lightshow use. However, there is specific guidance issued by the Health and Safety Executive in the form of a document called HS (G) 95 The Radiation Safety of Lasers Used for Display Purposes. HS (G) 95 outlines a number of detailed points to consider when using lasers for lightshow purposes.

Class 3B and 4 laser products are required to have several specific safety features as part of their design. These features are laid out in the British Standard on Laser Product Safety BS/EN 60825-1 and are a

requirement of the product meeting CE approvals. The important ones are listed below:

1) Laser Safety Warning Labels 2) Emissions Indicator 3) Remote Interlock Connector

Audience Scanning

Audience Scanning is the term commonly used to describe when laser effects are being directly aimed at the viewing audience. This creates a very dramatic looking effect, as people can touch the light, and look down smoky tunnels. But because the laser light can touch or scan past people's faces, it also carries a risk that it could cause damage to people's eyesight, if they are overexposed to the laser light.

The amount of laser light that a person can be exposed to without it causing harm to eyesight is known as the Maximum Permissible Exposure or MPE. These levels are defined the in the British Laser Safety Standard BS/EN 60826-1. When people are exposed to laser light which is above the MPE, it poses a risk of causing eye damage. This could be of concern when the laser effects are viewed directly in the face or there is a chance that they could be.

Knowing what the MPE and exposure level is for a given laser effect is quite a complex and involved process to establish. For it is dependant on a whole number of conditions and variables that need to be taken into account. The laser safety standard BS/EN 60825-1 contains the data required to calculate the safe levels, but it is not straightforward to interpret. Laser Safety Calculation Software has been developed to help ease the task of establishing laser effects exposure.

The BS/EN60825-1 Laser Safety Standard recommends that all establishments that use, or businesses that work with Class 3B laser products, should appoint a Laser Safety Officer (LSO). The Laser Safety Officer should be aware of the safety issues when using lasers, and is responsible for overseeing how the laser is used. In smaller businesses, the LSO will probably also be the installer, operator, owner etc.

The worst case effect to look at directly is a static single beam, because all the light energy is concentrated into one point.

General instructions

Unpacking

Thank you for purchasing this product. Please read user guide for safety and operations information before using the product. Keep this manual for future reference. This product can create perfect laser programs and effects since it has passed a series of strictly tests before delivery. Please check the attachments listed on the page after opening the carton. In the event of carton damage or attachment missing in transit, please contact your dealer or our after sales service department.

Attachments

1. Laser Light: 1PC
2. AC/DC Adapter: 1PC
3. User Guide: 1PC
4. Tripod: 1PC
5. DB25 Female To RJ45: 1PC
6. Hexagonal Screwdriver: 1PC

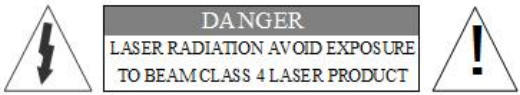
Notice

1. Avoid eye or skin exposure to direct or scattered radiation.
2. Class 4 laser products, don't observe in the beam. Please keep at least 0.5 meters between the lamp and the combustible material.
3. The housing is IP54 only, avoid water, moisture and shake. The working temperature of this unit is -30～40℃, do not use this continuously over 2 hours, otherwise it shortens the lifetime.
4. The scanner speed setting in the software should not be higher than the named speed in the manual. Otherwise reduce the scanner life and may cause scanner damage.
5. When installing with a tripod, it should be fixed firmly and prevent the machine from falling down.
6. The product uses DC low voltage power supply. The voltage must be consistent. If higher, it will damage the machine.
7. The product can use battery as power. Do check the requirements to the voltage, interface polarity of the battery pack carefully.
8. When the machine is working, make sure that the fan rotates normally and is not stucked by the hard object
9. Use cleaning tissue to remove the dust absorbed on the external lenses periodically to optimize light output.
10. Operate as the instructions strictly, do not remove the lamps without authorization. If a fault, please call for a qualified person to check it.

11. Don’t open the machine if not necessary and without qualified person.

12. When the laser brightness drops obviously or other problem, please contact the dealer.

13. Please pack it well with original package before shipping.



Features

1. Simple control and easy operations. With WIFI connection and APP laser software control, the operations of professional laser light become more simple, convenient. The application of laser lights is more powerful, such as being used as effect light, projection light, advertising light, entertainment light and other applications.
2. Professional APP laser control ZQShowAPP software (One Machine with Multi-function): Built-in colorful theme laser programs in various fields, powerful writing, drawing, text input, real-time display function and entertainment laser games.
3. High-speed signal transmission of WIFI, makes the laser animation effect more smoothly, realizing professional ILDA control effect.
4. High-power analog modulation laser, with professional laser level, small beam diameter and low divergence.
5. Low power consumption but high performance 25KPPS scanner (30KPPS is optional).
6. Two battery groups are reserved, and a single battery group can run for 2-3 hour, which is convenient to take for outdoor application
7. Mini compact design, small and light; dust-proof, reducing maintenance cost, long service life
8. Safety configuration: laser single point protection (SFS), laser key switch.

Technical Specification

1. AC/DC Adapter: AC100-240V Input and DC13.5V/5A Output, Max power consumption 50W ,50/60HZ
2. Laser module: RGB analog module, 3W laser power in total

   Red laser 600mW@638nm; Green laser 900mW@525nm; Blue laser 1500mW@450nm
3. Beam Diameter<4.0*5.0mm,
4. Divergence<1.3mrad
5. Laser life: >10000 hours
6. Laser level: Class 4 laser
7. Waterproof Level: IP54
8. Working Environment: Indoor, -30 °C -40 °C
9. Scanner: low power consumption and high performance 25KPPS scanner (30KPPS is optional), max scanning angle is 50°, XY mirror 7*12mm

   The highest quality of optical scanner, high speed and high precision, high stability and long service life.
10. APP Control Software：ZQShowAPP with Android
11. Working Modes: WIFI (ZQShowAPP), AUTO, ILDA(QS/BEYOND)
12. Interface: RJ45-ILDA interface for PC control (Part: DB25-TO-RJ45 interface)
13. Battery Packs (optional): Lithium ion battery * 2 packs, each pack 18650 * 3 PCS, Voltage 12V, Capacity >5000mAh
14. Installation Way: Desktop, tripod support
15. Heat Radiation: Radiator + PWM fan with temperature control
16. Machine Dimension: 100(L)*100(W)*165(H)mm
17. ABS Box Dimension: 335(L)*260(W)*185(H)mm
18. Net Weight: 1.6Kg (Battery packs not included)

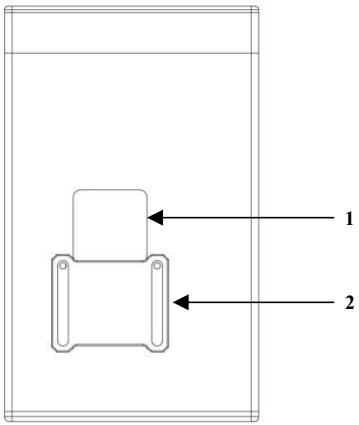
    1.9Kg (2PCS battery packs included)
19. Gross Weight: 4.5Kg (Battery packs not included)

    4.8Kg (2PCS battery packs included)

Machine Pictures

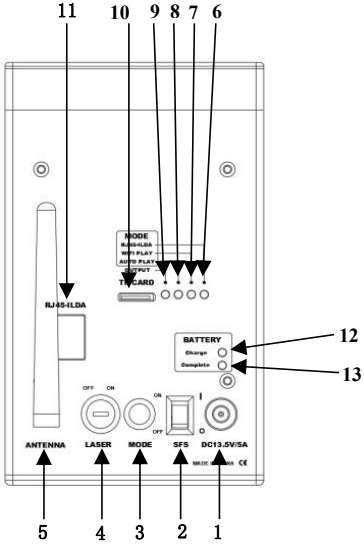
The following pictures are for your reference only, the specific kind prevail.

Front Panel Picture



1. **Laser Aperture:** Laser light is emitted from this aperture. Please do **not** look the laser beam directly, avoid radiation by the laser.
2. **Beam Block:** Prevents laser emission and limits laser scanning from going to the audience. In order to protect the lens, only open the block when use it, otherwise, close it.

Rear Panel Picture

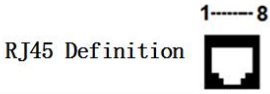


1. **Power Input (DC13.5V/5A):** DC power connection or charging port. If the input voltage is above14.0V, the system may fail. If the voltage is below 13.0V, the battery charging can't be 100% complete.
2. **SFS: S**canner failure safety control ON/OFF. If switch OFF, a single point of laser will appear if the scanner fails. If switch ON, if there is a single point, the system will turn off the laser output automatically.
3. **MODE:** Display mode selection button, long time press this button and then to select AUTO PLAY, WIFI PLAY and RJ 45-ILDA PLAY.

There is also a system reset function, when the power is off, long time press the MODE button in the machine panel and then power on (for more than 5 seconds). When the LED indication change from off state to flash state, it has been back to the default WIFI setting.

4. **LASER (Key Lock):** Power ON/OFF the power of laser.
5. **ANTENNA**: The antenna receives the WIFI signal in WIFI PLAY mode
6. **RJ45-ILDA PLAY:** When this LED ON, it is in RJ45-ILDA PLAY mode. Then can control the laser via Pangolin FB3, FB4, etc. laser control software.
7. **WIFI PLAY:** When this LED ON, it is in WIFI PLAY Mode. Then can connect control with ZQShowAPP or PC version ZQShow software. When APP connected successfully, the LED is in bright indication. When no APP connection, it is slow flashing indication. When no device (AP) or no network (Station), it is fast flashing indication.
8. **AUTO PLAY:** When this LED ON, it is in AUTO PLAY Mode. The projector is running the laser programs stored inside the TF card. When TF card has programs inside, the LED is often bright indication. When have card but no programs, it is slow flashing indication. When no card, it is fast flashing indication.
9. **OUPUT:** Indication light of laser ON/OFF. When it is ON, there is laser output. When it is OFF, without laser output.
10. **TF CARD:** Store laser program of AUTO PLAY mode. Free APP software stored inside it too.

    Warning! Do **not** Insert or pull out the TF card when laser power is on.
11. **RJ45-ILDA: RJ45 ILDA Interfac**e, Use laser software control (such as QuickShow of Pangolin). Simple ILDA interface, using RJ45 network port as input, only 8 pin signal.



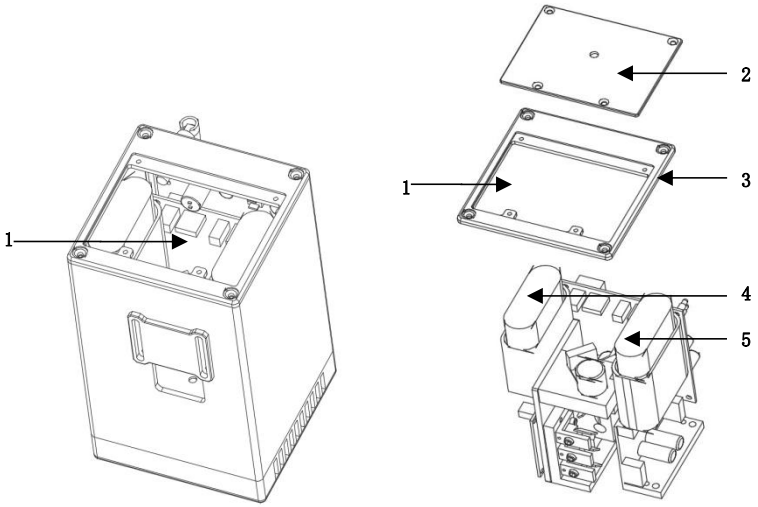
RJ45 Pin	1	2	3	4	5	6	7	8
ILDA signal	X+	X-	Y+	Y-	R	G	B	GND

12. **Charge:** Red indicator light of charged state
13. **Complete:** Green indicator light of charged complete state

Red light	Green light	Description
ON	OFF	Charging

OFF	ON	Charged completion
Strobe	Strobe	No battery
OFF	OFF	Hardware error, or a problem with the supply voltage

Bottom Panel Picture



1. Battery placement hole **2. Battery cover panel** **3. Bottom panel**

4. Battery Pack 1 **5. Battery Pack 2**

Notice：

1. The battery packs are optional accessories. Users have to pay extra for them. The battery pack must be purchased and installed in accordance with the requirements of the manufacturer. If not, the damage caused by mistakes is out of warranty!

2. Battery Packs requirements:

1) Lithium ion battery * 2 packs. Each pack includes 3 PCS 18650 battery.

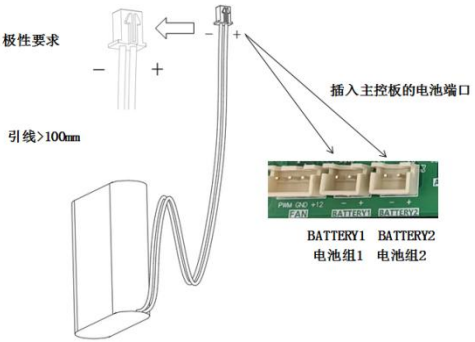
2) Voltage 12V with charging protection board, capacity recommended > 2500 mAh/pack,

3) 3 PCS one-type distribution, size 70 * 55 * 19mm.

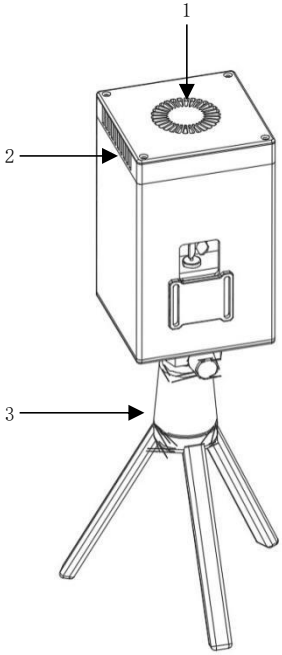
Warning! Damage caused by Not according to the requirements is out of the warranty!

3. The battery pack lead has positive and negative electrode requirements as shown in the figure. If reversed, the damage to the main control board, etc

4. Insert the battery pack lead into the corresponding port of the control board, with the positive and negative electrode identification, as shown in the figure



Tripod Installation Picture



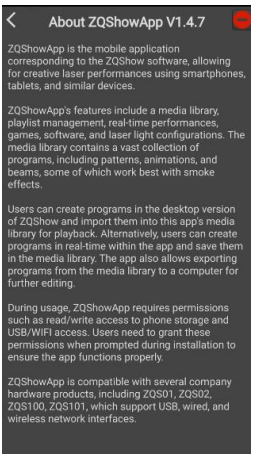
1. **FAN:** Built-in PWM fan, the speed is controlled by the temperature. Please maintain the fan regularly. Do not let the hard objects into the fan. If the fan defected, it is necessary to open the upper plate screw to check whether it is stuck by hard objects.
2. **Integrated Radiator:** The whole top cover is an integrated radiator, which uses the fan convection to take the heat away
3. **Metal Tripod:** Desktop all-metal tripod

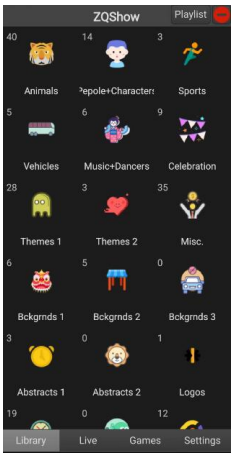
Control System

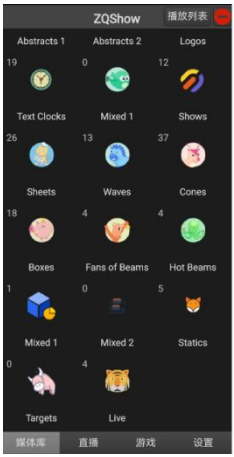
ZQShowAPP is a mobile application corresponding to the ZQShow software, using to creative laser performances via smart phones, tablet-PC, and similar devices.

ZQShowAPP's features include a media library, playlist, live (real-time show), games, software, and laser light configurations. The media library contains various programs (cue), such as patterns, animations, and beams, some of which work best with smoke effects.

Users can create cue in its PC version ZQShow software and import them into this app's media library for playback. Alternatively, users can create cue in real-time within the app and save them in the media library. The app also allows exporting cues from the media library to a computer for further editing





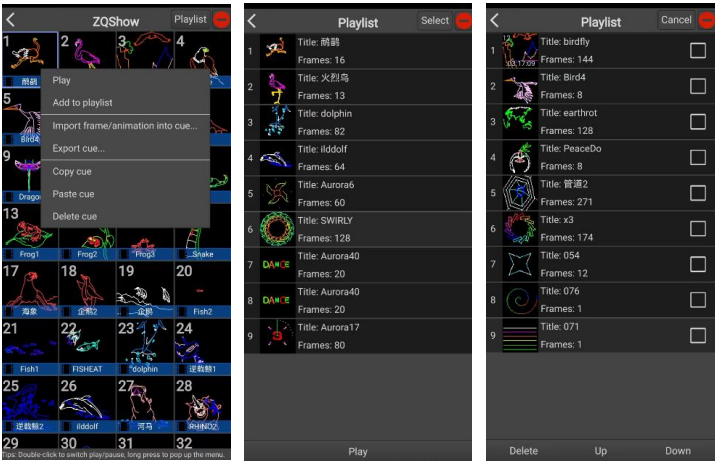


Media Library

The programs (cue) in the media library section of ZQShowAPP are common to the programs (cue) of PC ZQShow. The cue saved in the Live (real-time show) section will be classified in the [Live] cue pool of the media library. In the cue pool, click the cue to select it; double-click the cue to play or pause i; long press the cue to pop up the function (stop, pause, add to the playlist, import frame/animation into cue, export cue, copy cue, paste cue, delete cue).

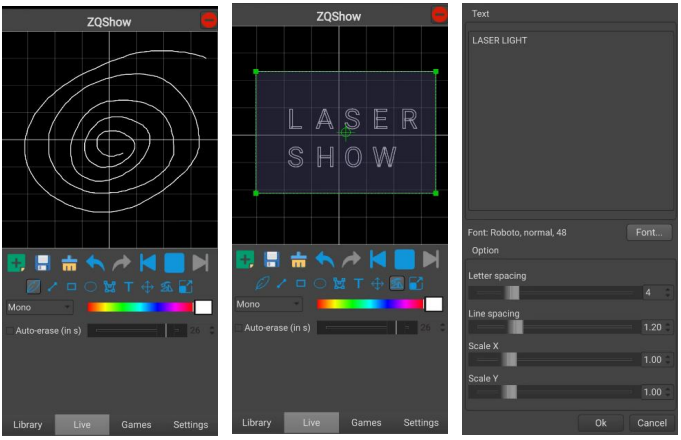
Playlist

Select the cue in the cue pool and add it to the playlist. In the playlist, the cue can be deleted, moved-up, moved-down, etc.



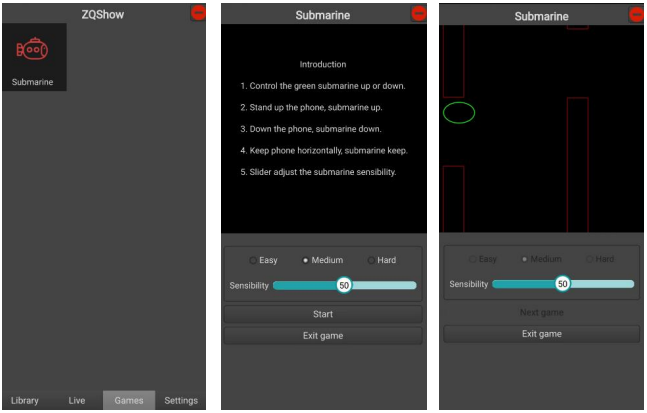
Live (Real-Time Show)

The live broadcast section can be displayed in real time in the drawing area after it is opened for playback. The functions currently supported by the live broadcast section include: create, save, delete, undo, redo, etc. Drawings that can be performed include: free drawing, straight line, rectangle, circle, polygon, text, etc. The supported graphic transformations include: move, rotate, zoom, rainbow colors, etc.



Game

The game board can use the sensors of the mobile phone for game interaction. Users do not need to operate the mobile phone screen, but can use the mobile phone to move up and down to play laser interactive games. Subsequent game development plans include table tennis, shooting, etc. Among them, the table tennis game is a two-person interactive game. Two players can control the table tennis ball projected by the laser through the local area network to play against the game.

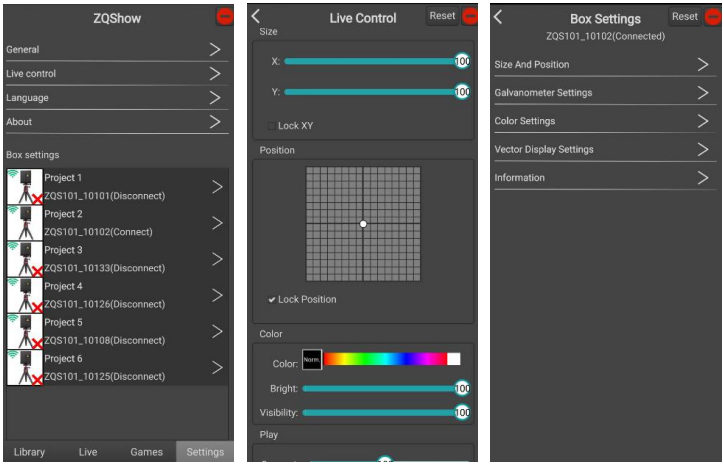


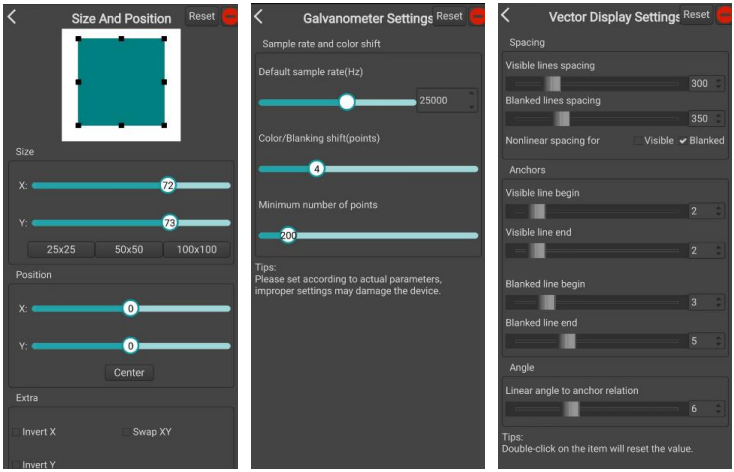
Setting

The setting panel is convenient for users to configure the App or the configuration of the laser light. Most of the configuration information will be saved on the mobile phone and the set parameters will be used when entering the software next time.

In real-time control, users can adjust the laser light position, XY size, intensity of red, green and blue, number of visible points, contrast, animation speed, galvanometer speed and other parameters in real time like ZQShow, the settings made here will be reflected immediately onto the working laser.

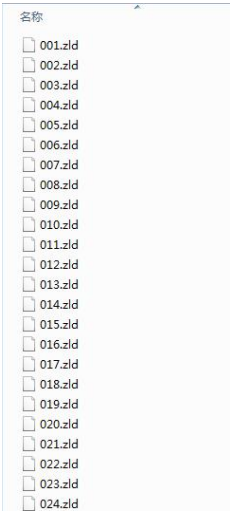
Click the signal box on the signal box list, you can enter the signal box settings, you can configure the position, size, galvanometer parameters, color parameters, optimization parameters, custom signal box name, etc. These configurations will be saved in the phone, and so on. The saved parameters will be used when the app is launched or the signal box is connected.





AUTO PLAY

In AUTO PLAY Mode, the system automatically plays program file stored in the TF card, according to the playlist file PLAY to define playback. It is running independently without connecting to ZQSHOWAPP.



Screenshot Of The PLAY File

Screenshot Of The CONFIG File

Programs should be stored in the specified path: TF card root directory \ ZLDA \ LIST \ 001. The laser program file shall be stored on the 001 folder. The laser program file must be in a three-digit format with a suffix name. zld. If there are multiple folder programs, saved them by 002, 003..., and select play by short pressing MODE key. Laser program file, through the PC software ZQShow, or ZQShowAPP export stored in

the TF card.

You also need to have a playlist file PLAY.txt in this folder, and each line can have only one program name, and no other characters.

In AUTO PLAY mode, the system also needs to read the system configuration data as a running parameter. The system configuration parameters are stored in the TF card root directory \ CONFIG \ CONFIG file. Users only need to understand a few configuration data, and do not change the other data, so as not to affect the system operation.

Rate: The scanner speed should be consistent with the actual speed of the scanner. The default is 25000PPS, and the recommended range is 20000-30000PPS.

MasterSize: Pattern size, range of 10-100, and default value is 70. The setting here is the default pattern size of WIFI PLAY mode too.

WIFI PLAY

When the system working in WIFI mode, it can realize more powerful functions and convenient operation. Creating programs (cue) by the mobile version of ZQShowAPP or the PC version of ZQShow software to achieve the designed laser effect by connecting with WIFI and controlling the laser light.

The WIFI System has two working modes: AP mode (SOFTAP mode, Mobile hotspot mode) and STATION mode (Device mode). The AP or STATION name is ZQS101-XXXX, and the initial password is 12345678.

AP mode, ZQS101 can be used as a hotspot (hotspot name and password can be user-defined), which can be connected by the phone or computer or tablet. Only in this mode, you can login to the WIFI configured web page (http://192.168.20.1), with fixed IP and content page, only the changeable part will take effect after settings.

Station mode means that ZQS101 can be used as a device to connect to a router (2.4G signal is required, and 5G is not supported) or a mobile phone hotspot, etc. But the name and password of the connection target should be specified. This step is similar to our usual connection to a WIFI router. If you change to this mode, the WIFI configuration page will not be accessible, and you can only go to the http://192.168.20.1 webpage for configuration after ZQS101 is restored to AP mode.

The configuration page refers to the page of ZQS101 in AP mode, which is the only way to change the WIFI configuration of ZQS101. The address of this page is http://192.168.20.1.

1. WIFI Default State and Return to WIFI Default State

The default state of WIFI is AP mode. In this mode, mobile phones, tablets and computers can be directly connected to ZQS101 for playback control, and the operation procedure is only one step.

When the power is off, long time press the MODE button in the machine panel and then power on (for more

than 5 seconds). When the LED indication changes from off state to flash state, it will return to the default state of WIFI.

2. The WIFI Mode Configuration

1） AP Mode Configuration

Press the operation "Return to WIFI default state", that is, long press the MODE key to reset the system (the WIFI restore AP mode).

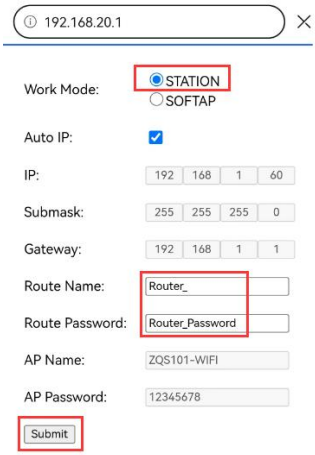
Or in AP mode and then enter the http://192.168.20.1 web page for configuration. Select SOFTAP mode, set the AP Name (recommended to use the original default AP name, because it will be returned after reset), AP Password (password also will restore to the original default one after reset).

2） STATION AP mode configuration

When you are in the AP mode, then enter the http://192.168.20.1 webpage for configuration. Select STATION, and choose to obtain IP automatically. Then fill in the name (or mobile phone hotspot) and password of the router to be connected. It will fail to connect if it is wrong.

Detailed operation: The laser light should be in WIFI PLAY mode, and WIFI is in AP mode. The WLAN network of mobile phone or computer should find and select the ZQS101-XXXX hotspot, then enter http://192.168.20.1 in the browser and click Enter. If the page cannot be entered, it means that the laser or mobile phones (computers) are not being set correctly or have been configured already. After that, select the required configuration, and then click "Submit". Next, turn on the laser again and update the configuration information. The web page configuration can only be done once, and if it needs to be reconfigured, you need to press and hold the MODE key for system reset.

AP Mode Configuration



STATION Mode Configuration

If ZQShowAPP cannot find the ZQS101 hotspot or device, please try to reopen the APP software. Please confirm that whether the ZQS101 Hotspot (AP mode) is selected by the mobile phone. Please confirm that whether the mobile phone and ZQS101 device (STATION mode) are in the same router network.

3. As The AP Mode

1) As an AP mode, it is very convenient for operation by computer or mobile phone with ZQS101. So we recommend new users to use this mode as well as when do the configuration.
2) In this mode, if a mobile phone or computer is connected to the ZQS101, because the ZQS101 itself does not have the function of connecting to the internet, thus the mobile phone communication will be affected, such as WECHAT and QQ fail to log in, etc.

4. As The STATION Mode

1) When comes to the STATON mode, ZQS101 can be connected to the specified router or mobile phone or computer. Although there are several steps more than AP mode, it can ensure that the mobile phone or computer communication not to be affected, and the network can be used as normal.
2) As a STATION mode, it is easy to have problems because it is connected to other routers or mobile phone hotspot, for example, the name and password of the target router are not correctly configured; the mobile phone and ZQS101 are not connected to the same router, and the mobile phone and ZQS101 are not in the same network segment of the router, etc. These problems are easy to cause the mobile phone APP cannot find the ZQS101 device, and the phenomenon is no connection or unstable connection.
3) The method of troubleshooting the problem is to enter the setting of the router, check whether the online devices, mobile phones and ZQS101 are online, and check whether the IP of the mobile phone and ZQS101 are in the same network segment. Generally, if there is no problem with these steps, the mobile phone APP and ZQS101 will be able to connect.

5. Attention

1) If ZQS101 is connected to the router as STATION mode, it is necessary to ensure that the mobile phone is also connected to the router, and the router is 2.4G signal as well as the mobile phone and ZQS101 are in the same network segment. For example, 192.168.1.x, it needs to ensure that the IP of the mobile phone and ZQS101 is only different from the last x, otherwise the mobile phone APP will not be able to find the ZQS101 device. If some routers have both internal network and visitor network, although they are in the same router, but the IP of the internal network is 192.168.1.X network segment and the IP of the visitor network is 192.168.2.X, which will also cause the mobile phone APP cannot find ZQS101 devices.

2 ） When the users are doing the configuration, it is necessary to carefully check whether the name and

password of the router are completely correct, otherwise it will cause the mobile phone APP cannot find the ZQS101 device.

3）If ZQS101 is used as AP mode, it is necessary to ensure the same network space at the same time (for example, with ZQS101 as the center and within a radius of 50 meters), and there is only one AP Name in AP mode (it is recommended to use the original default name to avoid duplicate names), otherwise the connection will be unstable or the mobile APP cannot discover the ZQS101 device due to network name conflicts.

4）If ZQS101 is used as the STATION mode, multiple ZQS101 will be connected to the same router; if use PC ZQShow, it can allow different ZQS101 to play different program through the function of region setting; if use mobile phone ZQShowAPP, the current version can only play the same program for all ZQS101.

5）Generally, the effective connection range of WIFI is within 10 meters, but actually 15 meters and 20 meters can be played in a stable connection after testing. But this is also related to the specific network environment, for example, whether there are other WIFI or Bluetooth signals around, whether there are a large number of iron frames, etc. Therefore, it is necessary to measure the connection effect if it is used in engineering implementation and other occasions.

RJ45-ILDA PLAY Mode

The control signal interface of most laser software is the international standard ILDA-DB25 (25Pin), and it needs to be converted into the RJ45 interface signal which is consistent with ours. If need to use the RJ45-ILDA interface on the machine, it is recommended to use our "DB25 to RJ45 interface", which is compact and reliable.

With the control of ILDA interface software (such as QuickShow/Beyond of Pangolin), the scanner speed set by the software should not exceed the maximum speed that the machine can withstand, the recommended speed should be lower than 30KPPS, and the scaning angle should be appropriately reduced. If the speed is too high and the scanning angle is too large, the load of the scanner is very heavy and the pattern is deformed, which can damage the scanner if for a long time. Therefore, when the pattern is starting to be changed or deformed, it is necessary to immediately slow down the setting speed of the scanner, or even turn it off to cool for a while before the scanner can return to normal. If the pattern is seriously deformed at the normal speed, which means the scanner has been damaged and needs to be replaced.

Troubleshoot

1. Battery charging and error indicator lamp

Charge-Red light	Complete-Green light	Description
ON	OFF	Charging
OFF	ON	Charged completion
Strobe	Strobe	No battery
OFF	OFF	Hardware error, or a problem with the supply voltage

2. Laser output indicator and mode indicator are off

When the OUPUT 、AUTO PLAY 、WIFI PLAY and RJ45-ILDA PLAY all these indicators are off，but the Charge, Complete indicators are still on， indicating that the power supply is normal but the "LASER" key switch maybe damaged (not connected).

3. The MODE key is invalid

Press the MODE key, if the working mode indicator does not change, which means the MODE key is disconnected

4. No laser output for a single point or minimal pattern

When the SFS single-point protection is ON, it has entered the single-point protection function to force the light to be turned off to protect the surrounding environment. Do not design a single-point laser unless it is necessary, if need to do that, please turn the SFS to the OFF.

5. No laser output, the mode indicator is on and off frequently

Most of the reasons are caused by high adapter voltage (> 14.0V) or insufficient adapter power (< 4A). Please use the specified voltage of 13.0-13.8V (low voltage leads to insufficient battery charging and high voltage leads to failure of the booster circuit) and the electric current should be > 5A.

6. WIFI PLAY Mode without laser output

When the WIFI PLAY indicator is always flashing, this means that the WIFI is not connected successfully. Please configure the WIFI and connection correctly. The simplest method is to long press the MODE key to restart the WIFI default state. Then the mobile phone needs to select the corresponding ZQS101-XXXX hotspot and enter the APP software to play the program to start the laser test. When the indicator light is always on, which means the WIFI has been connected.

7. WIFI PLAY Mode works unstable, laser output unsteadily

There may be many peripheral interference sources, so please shorten the control distance.

If working in AP mode, it is recommended to change to the STATION mode, the system will be more stable and reliable.

If working in the STATION mode, please ensure that both the mobile phone and ZQS101 are on the same router and on the same network segment. If both are on 192.168.1.x, the first three digits -192.168.1 should be the same.

8. The RJ 45-ILDA mode without laser output

Please confirm that DB25-ILDA has the same pin definition as RJ 45-ILDA and has a reliable connection. Please use DB25 to RJ 45 interface; please use the new network cable to test.

9. AUTO-PLAY without laser out

If the TF card is inserted, and the AUTO-PLAY indicator flashes fast, then the TF card is damaged; if the indicator flashes slowly, it means that the TF card has no program or the program is not as required (including: name, storage path, PLAY.txt).

10. All modes have laser patterns, but without blue laser, or without blue & green laser

If the machine is powered by battery only, this phenomenon is caused by the exhausting and low voltage of the battery. Please charge the machine with DC power adapter immediately or turn off the machine immediately to wait for charging.