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ALFATRON ELECTRONICS GmbH GERMANY

ALF-IPCON-HDMI
PTZ CONTROLLER

Preface

Read this user manual carefully before using this product. Pictures shown in this manual is for reference only, different model and specifications are subject to the real product.

This manual is only for operation instruction, not for any maintenance usage. The functions described in this version are updated till November 2024. Any changes in functions and parameters since then will be informed separately. Please refer to the dealers for the latest details.

Trademarks

Product model and logo are trademarks. Any other trademarks mentioned in this manual are acknowledged as the properties of the trademark owner. No part of this publication may be copied or reproduced without the prior written consent.

FCC Statement

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation.

Operation of this equipment in a residential area is likely to cause interference, in which case the user at their own expense will be required to take whatever measures may be

necessary to correct the interference

Any changes or modifications not expressly approved by the manufacture would void the user's authority to operate the equipment.

Do not dispose of this product with the normal household waste at the end of its life cycle. Return it to a collection point for the recycling of electrical and electronic devices. This is indicated by the symbol on the product, user manual or packaging. The materials are reusable according to their markings. By reusing, recycling or other forms of utilization of old devices you make an important contribution to the protection of our environment. Please contact your local authorities for details about collection points.

Important Safety Instructions

- Do not expose this device to rain, moisture, dripping or splashing. No objects filled with liquids, such as vases, shall be placed on the device.
- Do not install or place this unit in a bookcase, built-in cabinet, or in another confined space. Ensure the unit is well ventilated.
- To prevent risk of electric shock or fire hazard due to overheating, do not obstruct the unit's ventilation openings with newspapers, tablecloths, curtains, or similar items.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other device (including amplifiers) that produce heat.
- Do not place sources of naked flames, such as lighted candles, on the unit.
- Clean this device only with dry cloth.
- Unplug this device during lightning storms or when unused for long periods of time.
- Protect the power cord from being walked on or pinched, particularly at plugs.
- Only use attachments / accessories specified by the manufacturer.
- Refer all servicing to qualified service personnel

Surge protection device recommended

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lighting strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

1. Introduction

The ALF-IPCON-HDMI can connect up to 255 cameras via either analog mode or network mode. It supports various control protocols, allowing each numbered camera to independently set its control protocol, such as network protocols: ONVIF; Visca over IP (UDP); Visca over IP (TCP); Sony Visca; NDI; and analog protocols: Visca; Pelco-D; Pelco-P. Additionally, the network interface supports PoE 802.3af standard power supply. The device features a four-axis joystick for precise control of the camera's pan-tilt movements, enabling simultaneous motion across horizontal, vertical, and zoom functions. This product allows for independent and precise control of the camera's zoom and focus, with eight-speed levels to freely adjust zoom/focus speed. It supports connection to a PC for web control, where device configurations can be imported/ exported, camera settings can be added or modified, and device upgrades can be performed.

The product supports HDMI video output. During video transmission control of compatible network cameras, the controller’s HDMI OUT interface connects to an HDMI cable for real-time output of the camera feed to a display device (1080P/30Fps), however, cameras utilizing analog protocols cannot output video via this method.

This product offers an intuitive set of front panel buttons and a display screen, supporting camera control through the front panel buttons.

2. Features

- Supports both network and analog control modes, with an independent IP address in network mode.
- Supports network protocols: Onvif; Visca over IP (UDP); Visca over IP (TCP); Sony Visca; NDI; and analog protocols: Visca; Pelco-D; Pelco-P.
- Supports HDMI video output, allowing the controller to provide real-time output of the camera feed (1080P/30Fps) during camera control.
- Supports a four-axis joystick for precise control of the camera's pan-tilt, enabling simultaneous movement across horizontal, vertical, and zoom functions.
- Supports independent and precise control of the camera's ZOOM and FOCUS, with eight-speed levels to freely adjust zoom and focus speeds.
- Supports connecting the device to a PC for web control, allowing for importing and exporting device configurations, adding or modifying camera settings, and performing device upgrades and other extended functions.
- Supports PoE 802.3af standard power supply.

3. Package Contents

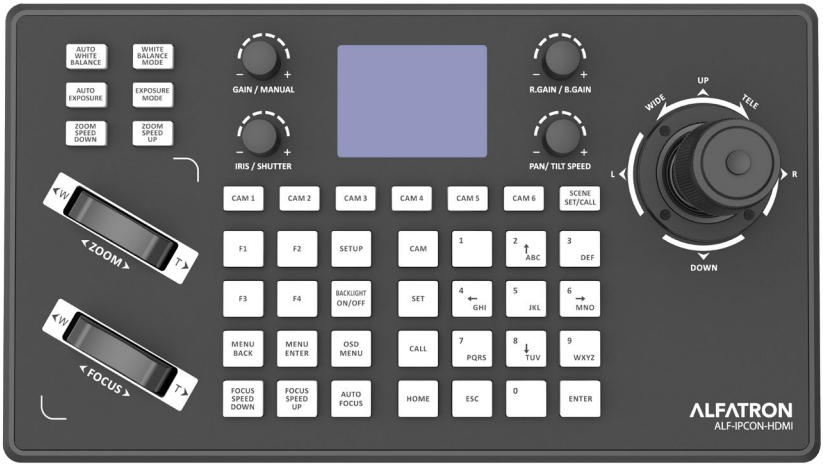
1. 1 × ALF-IPCON-HDMI
2. 1 × 12V 1A power adapter.
3. 1 × Certificate of Compliance
4. 1 × Warranty Card
5. 1 × User Manual

4. Specifications

Technical	
Main control chip	HiSilicon 3536DV100
Operating System	Linux
Audio feedback	Key press sound indication on/off
Interfaces	RS422, RS232, RJ45, HDMI, USB, DC12V.
Output resolution	1080P/30
Operational components	boat switch, infinitely variable knob, four-axis carbon film joystick, illuminated silicone buttons.
Supported protocols	Onvif; Visca over IP (UDP); Visca over IP (TCP); Sony Visca; NDI; Visca; Pelco-D; Pelco-P
Display method	TFT LCD 320×240
Power consumption	≤5W
Power supply	DC 12V-2A / center positive, outer negative
Operating temperature	-10℃~55℃ / 14°F~131°F
Operating humidity	20%~80% non-condensing
Storage temperature	-10℃~55℃ / 14°F~131°F
Storage humidity	0%~90% non-condensing
Net weight	1630g per unit

5. Operation Controls and Functions

5.1 Key panel / Main panel



NO.	Name	Function Description
1	WHITE BALANCE CYCLE	Single-click the button to enter multiplexing functions: indoor white balance, outdoor white balance, manual white balance, and one-touch white balance mode.
2	AUTO WHITE BALANCE	Press the button to directly select the automatic white balance.
3	EXPOSURE MODE	Includes video image exposure adjustment, with a single button press to enter manual exposure/ brightness priority mode.
4	OSD MENU / MECN ENTER /MENU BACK	[OSD MENU] Camera menu: Pressing this key brings up the camera menu settings for the PTZ camera (specifically for conference cameras). [MENU BACK] Camera Menu Return: After entering the menu and setting parameters, press this key to return to the previous level, incrementally returning to the main menu (for conference cameras) [MENU ENTER] Camera Menu Confirm: Press this confirmation key to enter and confirm each menu item for related settings (for conference cameras).

5	ZOOM SPEED DOWN	Zoom speed -: Click to reduce the camera's zoom speed.
6	ZOOM SPEED UP	Zoom speed +: Click to accelerate the camera's zoom speed.
7	BACKLIGHT ON/OFF	Backlight switch: Click to toggle the camera's backlight mode.
8	FOCUS SPEED DOWN	Focus speed -: Click to decrease the camera's focus speed.
9	FOCUS SPEED UP	Focus Speed +: Click to increase the focus speed of the camera.
10	AUTO FOCUS	Auto Focus: Press the button to enter automatic focus adjustment mode.
11	F1-F4	Custom buttons: Functions can be edited by the user.
12	CAM	Camera call: Achieve the calling of any camera by combining the numerical keys with the confirmation key.
13	SET	Preset Position Settings: Complete the setting of the camera's pan-tilt preset positions using the numeric keys in conjunction with the confirm key.
14	CALL	Preset position recall: Completes the recall of the camera's pan-tilt preset positions through the combination of digit keys and the confirmation key.
15	HOME	Watch pre-set position call: Click to instantly call the camera's watch pre-set position.
16	CAM1-6	Camera recall: Click to activate the corresponding numbered camera.
17	NUMBER 0-9	Numeric keys: Applicable in any scenario requiring input, with short consecutive presses allowing entry of the corresponding English letters.
18	SETUP	Setup key: Click to access the controller settings menu.

5.2 Settings Page

SETUP	Description	
1. Add network device	Camera	The number of the camera can be 1-255, adding the camera information, press [ENTER] to save
	Protocol	Onvif; Visca over IP (UDP); Visca over IP (TCP); Sony Visca; NDI; Visca; Pelco-D; Pelco-P
	IP address	Camera IP address
	Port	Enter the camera's port number
	User, Password	User name and password assigned to the camera
2. Add Analog device	Camera	The number of the camera can be 1-7; adding the camera information, press [ENTER] to save
	Protocol	Select the protocol corresponding to the camera
	Address	Select the address corresponding to the camera
	Baud rate	Select the baud rate corresponding to the camera
3. Device List	List of added cameras, you can use the joystick up and down to switch, and the middle button of the joystick to confirm control	
4. Network attributes: Static/DHCP	Attributes	Switch left or right, and press [ENTER] to confirm.
	DHCP	Dynamic allocation based on switch settings
	Static	You need to fill in IP, gateway, subnet mask, and keep it in the same network segment as the camera
5. Native language: EN		Switching is not supported yet
6. Button tone: on/off		Switch left or right, and press [ENTER] to confirm.
7. Factory Reset		Press [ENTER] twice to resume, [ESC] to cancel
8. System Information		Check software, hardware, version, etc

5.3 Knob & Joystick Description

Operate	Output	Operate	Output	Operate	Output
	Up		Down		Left
Operate	Output	Operate	Output	Operate	Output
	Right		Zoom +		Zoom −

(1) [PAN/TILT SPEED/PERSET SPEED] Pan/tilt speed/preset position rotation speed: Turn the knob to the right to increase speed, turn it to the left to decrease speed, press the knob to switch speed type;

(2) [R.GAIN/B.GAIN] Red and blue gain: Turn the knob to the right to increase gain, turn it to the left to decrease gain, press the knob to switch gain type;

(3) [IRIS/SHUTTER] Aperture/shutter: Turn the knob to the right to increase exposure gain, turn it to the left to decrease exposure gain, press the knob to switch control type;

(4) [GAIN/MANUAL] Gain: Turn the knob to the right to increase exposure gain, turn it to the left to decrease exposure gain, press the knob to switch control type;

(5) Joystick reset knob: Turn it to the right to increase zoom; turn it to the left to decrease zoom.

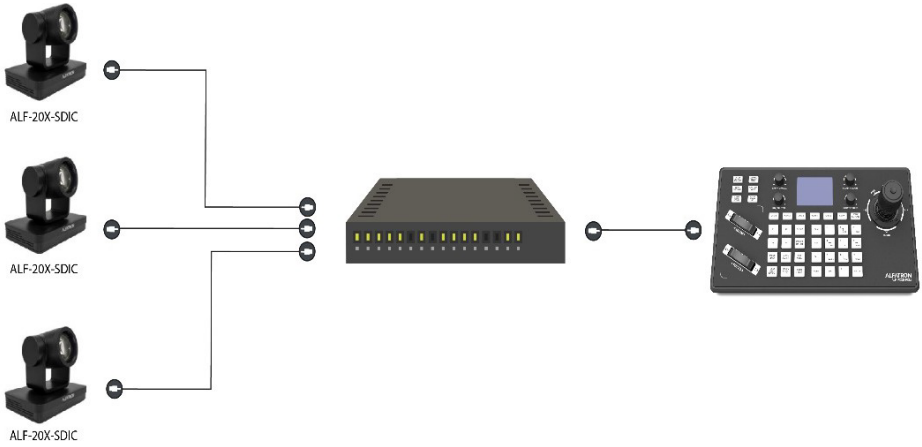
(6) [ZOOM/FOCUS] reset boat switch: Press to the right to increase zoom/focus farther, press to the left to decrease zoom/focus closer.

5.4 Rear panel/interface board

No.		Function Description
1	POWER	Power on/off
2	DC12V	Standard 5.5/2.1 power connector, DC 12V1A ±10%.
3	USB	For keyboard upgrade use
4	HDMI	HDMI video output. During video transmission control of compatible network cameras, the controller's HDMI OUT interface connects to an HDMI cable for real-time output of the camera feed to a display device (1080P/30Fps),
5	ETHERNET	For keyboard upgrade use
6	RS422	Connect RS-422 control line Connect RS-485 control line
7	RS232	Connecting the RS-232 control cable

6. Device connection & usage

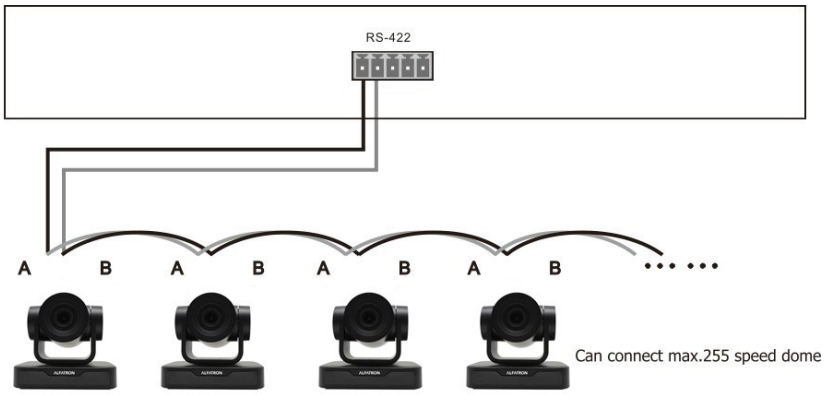
6.1 Network Mode Network VISCA over IP, ONVIF Camera Connection Diagram



The keyboard and the PTZ camera must be connected within the same local area network, ensuring that the IP addresses are in the same subnet. For example, 192.168.1.123 and 192.168.1.111 belong to the same subnet, while 192.168.1.123 and 192.168.0.125 do not. In this case, it is necessary to modify the IP address of either the keyboard or the PTZ camera. The default IP acquisition method for the keyboard is dynamic.

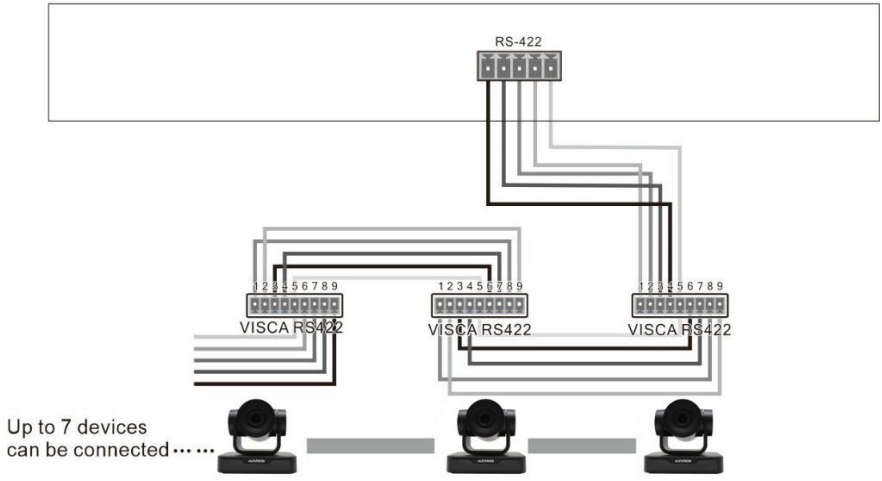
6.2 RS485 connection

Analog mode RS485 dome camera connection diagram.

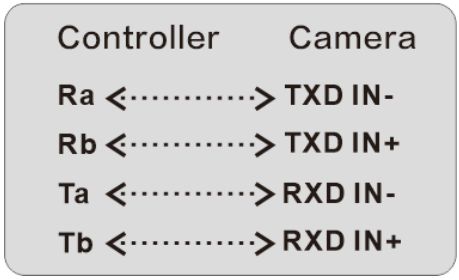


Control output: RS485+ of the camera is connected to Ta of the control keyboard, and RS485- of the camera is connected to Tb of the control keyboard.

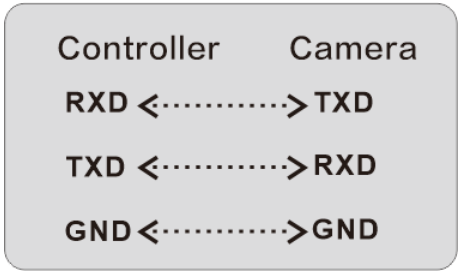
Analog mode RS422 control camera connection diagram



(1) Using the RS422 bus connection method, the third pin Ra of the control keyboard is connected to the TXD IN- of the camera, the fourth pin Rb of the keyboard is connected to the TXD IN+ of the camera, the first pin Ta of the control keyboard is connected to the RXD IN- of the camera, and the second pin Tb of the keyboard is connected to the RXD IN+ of the camera.

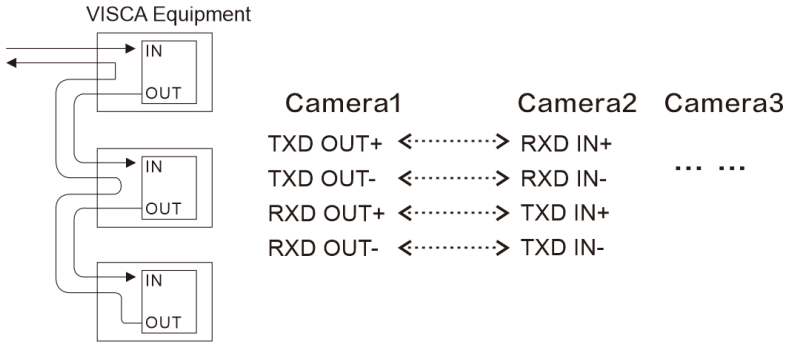


(2) Using RS232 connection, the 1st pin RXD of the control keyboard (10-pin terminal block) is connected to the camera input interface TXD, the 2nd pin TXD of the keyboard is connected to the camera RXD, and the 3rd pin of the keyboard is connected to the camera GND (the standard RS232 interface (DB0) of the control keyboard can also be used to connect the camera).

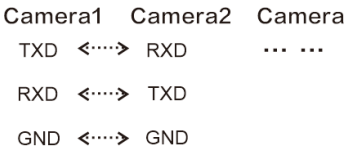


6.3 Connection between cameras

Use RS422 bus cascade connection mode, the output of camera 1 is connected to the input of camera 2, the output of camera 2 is connected to the input of camera 3, and so on. As shown in the following figure:



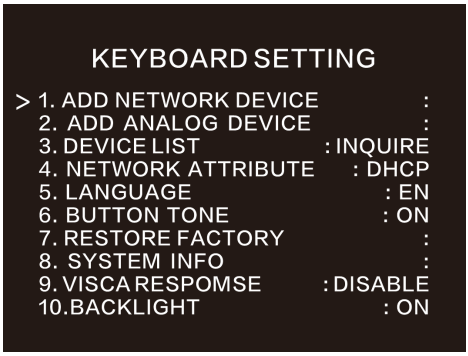
The connection method of RS232 cascade connection is basically the same as 422. The output of camera 1 is connected to the input of camera 2, the output of camera 2 is connected to the input of camera 3, and so on.



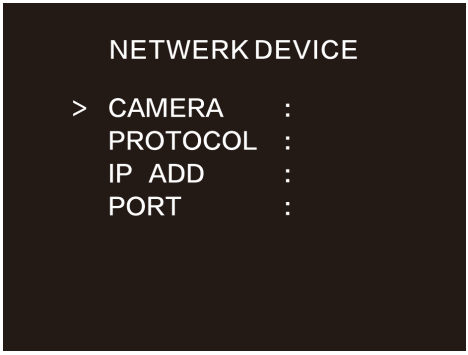
7. Equipment Operation

7.1 Adding a Network Device

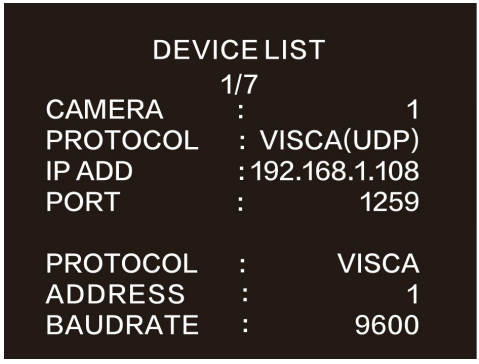
The operation of adding a network camera device using the controller is as follows:
(1) Click "SETUP" on the keyboard to enter the main menu.



(2) Click Add Network Device, fill in the camera, protocol, IP address, port, correct user name and password, and press [ENTER] to confirm.

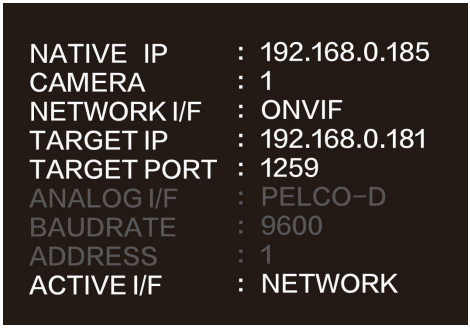


(3) Enter the device list, use the joystick to select the newly added device, and press the [ENTER] key to control it.



7.2 Adding an Analog Device

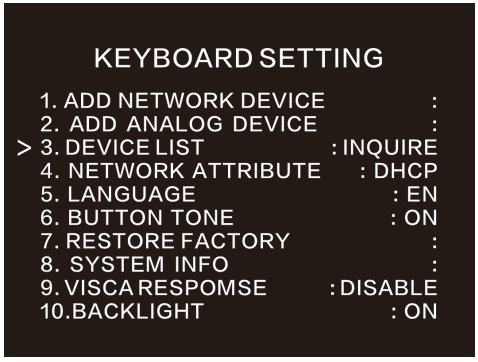
(1) Press and hold the middle button on the joystick to switch to Analog mode.
(2) Press the SETUP button to enter the setup interface, and select Add Analog Device.



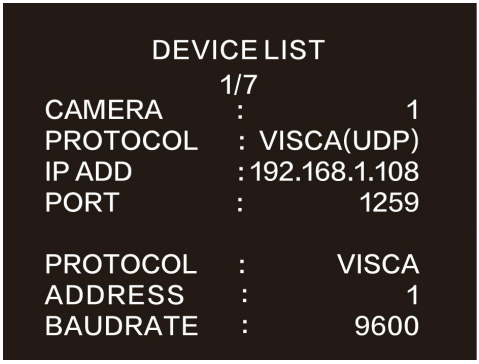
(3) Enter the device adding interface, select the camera with a number from 1 to 7, select the corresponding analog protocol, select the address code corresponding to the camera, select the baud rate, and press the [ENTER] key to confirm the addition.

7.3 Query and Control

(1) On the main menu interface, press the "SETUP" button to enter the setup interface, move the joystick up and down to select the device list, and press the [ENTER] key to view the added device.



(2) Use the joystick to view the saved devices, press the middle button on the joystick or the [ENTER] key to select the camera you want to control.



(3) When the screen displays "Connected successfully", it means the keyboard has been connected to the IP device. You can now control the PTZ, zoom, and set preset positions.
Ps: Can also exit the keyboard system settings main interface and press the corresponding camera shortcut key on the keyboard to quickly connect and control the camera.

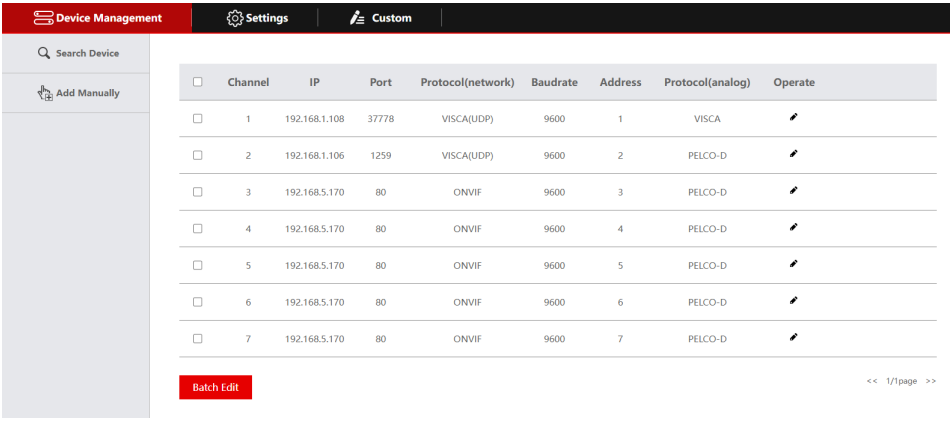
8. Network Configuration

8.1 Home page connection and login

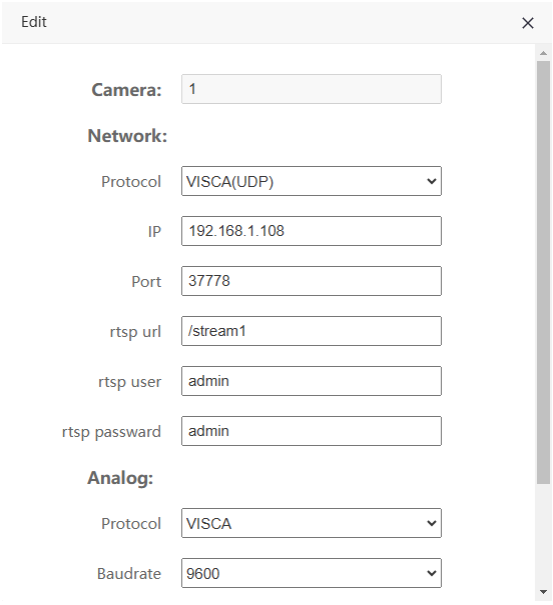
Connect the keyboard's power cord and the network cable. After the keyboard is started, the display will show the local IP: 192.168.x.xxx. Enter this IP address into the browser to access the page configuration. Initial username: admin; Password: empty.

(1) Connect the keyboard and computer to the same LAN and enter the keyboard's IP address in the browser. The page is displayed as follows:

(2) Default username: admin; Password: blank
(3) After entering the device web client, the page is displayed as follows:



(4) After entering the device homepage, you can view the device parameter details and modify them.
(5) Click the " " button to add and modify device parameters in the LAN. The page is displayed as follows:

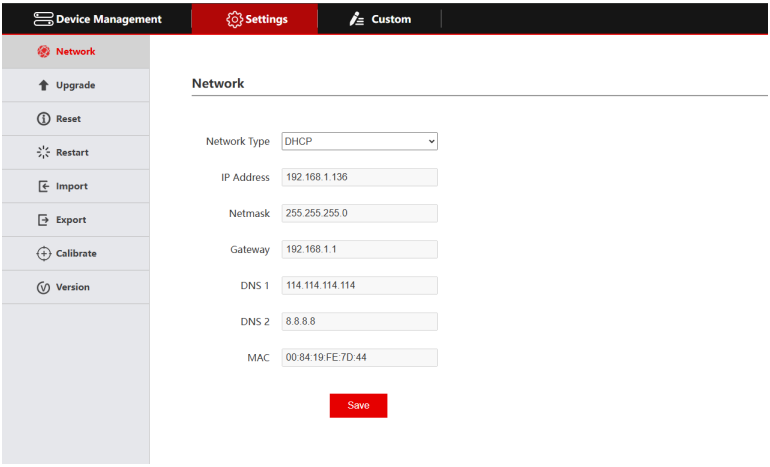


(Enter the device number, corresponding IP address, port number and user name, and click Save.)

Note: When entering the keyboard WEB end to successfully add a device, it will be synchronized with the keyboard. After successfully adding the device on the web page, click the corresponding number on the keyboard to control the ball machine.

8.2 WEB network settings

The LAN settings can modify the device's IP acquisition method and port parameters, as shown below:



Static address (STATIC): When the user needs to set the network segment by himself, change the network type to static address and fill in the network segment information that needs to be modified.

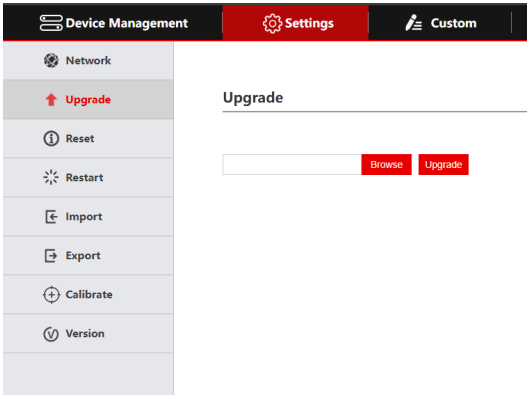
Dynamic address (DHCP) (default acquisition method): The keyboard will automatically request an IP address from the router.

After the request is successful, it will be displayed on the keyboard display screen in the format of "Local IP: xxx.xxx.xxx.xxx".

8.3 System Upgrade

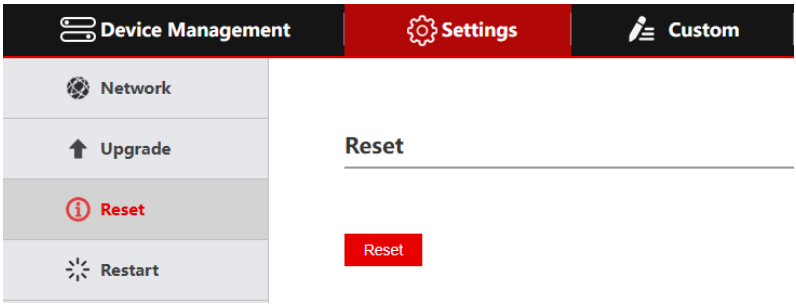
The upgrade function is used to maintain and update the keyboard function. After entering the upgrade page, select the correct upgrade file and click "Start". After the upgrade is completed, the device will automatically restart.

Ps: Do not perform any operations on the device during the upgrade process, and do not disconnect the power or network!



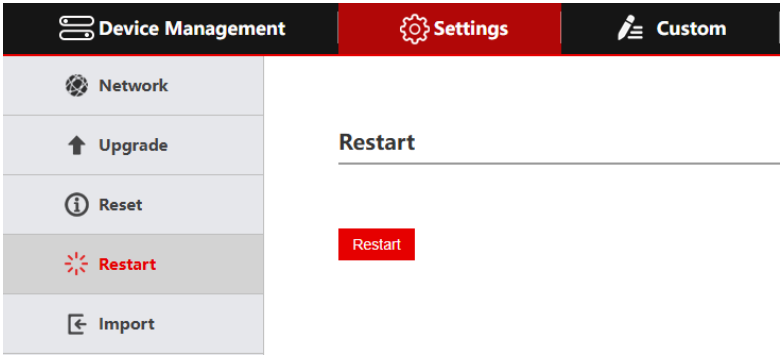
8.4 System Reset

When you click on device reset, the keyboard will clear all data, so please be careful!



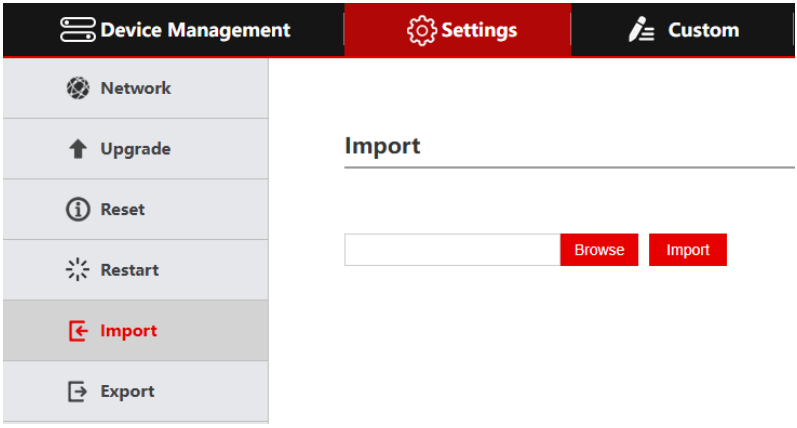
8.5 System Restart

When the device needs to be restarted for maintenance after being used for a long time, click Restart to achieve the purpose of restarting for maintenance.



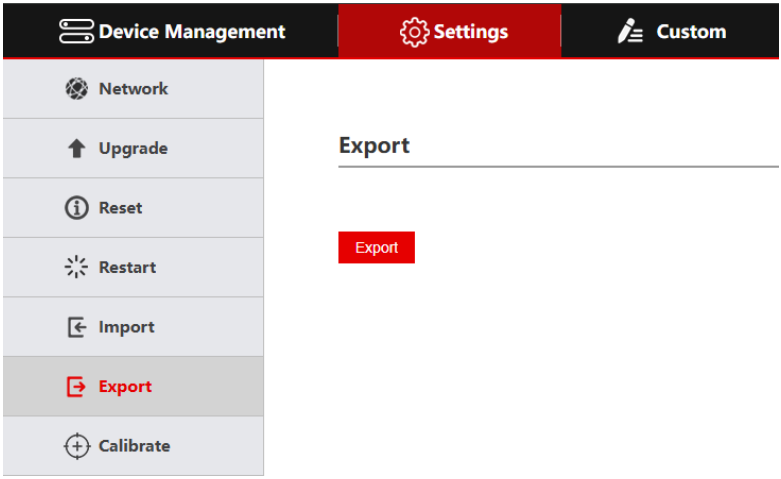
8.6 Export Configuration

Export the information about adding multiple devices to the current keyboard, which can be exported to other keyboard devices for use.



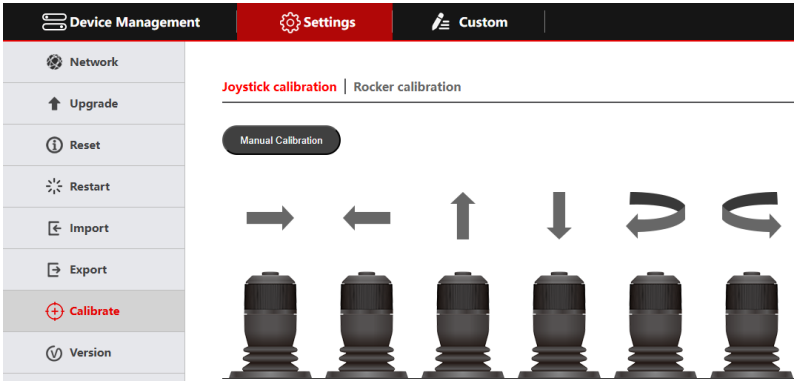
8.7 Import Configuration

Import the device information of the previous keyboard (for example, when adding multiple devices to the keyboard, export the file type, and import it to another device when adding a new keyboard.)



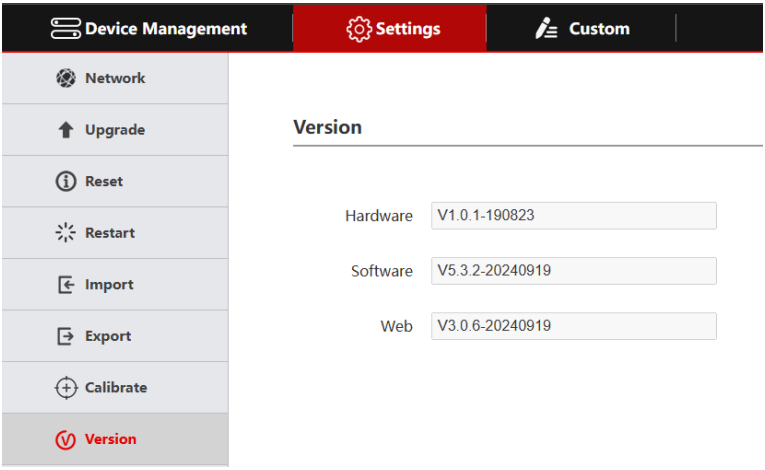
8.8 Joystick Calibration

During long-term use, the joystick may become inaccurate due to aging. You can recalibrate the joystick through the joystick calibration page to extend its service life.



8.9 Version Information

During long-term use, the joystick may become inaccurate due to aging. You can recalibrate the joystick through the joystick calibration page to extend its service life.



Warranty

1.1 This limited warranty covers defects in materials and workmanship in this product.

1.2 Should warranty service be required, proof of purchase must be presented to the Company. The serial number on the product must be clearly visible and not have been tampered with in any way whatsoever.

1.3 This limited warranty does not cover any damage, deterioration or malfunction resulting from any alteration, modification, improper or unreasonable use or maintenance, misuse, abuse, accident, neglect, exposure to excess moisture, fire, improper packing and shipping (such claims must be presented to the carrier), lightning, power surges, or other acts of nature. This limited warranty does not cover any damage, deterioration or malf unction resulting from the installation or removal of this product from any installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by the Company to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product. This limited warranty does not cover equipment enclosures, cables or accessories used in conjunction with this product.

This limited warranty does not cover the cost of normal maintenance. Failure of the product due to insufficient or improper maintenance is not covered.

1.4 The Company does not warrant that the product covered hereby, including, without limitation, the technology and/or integrated circuit(s) included in the product, will not become obsolete or that such items are or will remain compatible with any other product or technology with which the product may be used.

1.5 Only the original purchaser of this product is covered under this limited warranty. This limited warranty is not transferable to subsequent purchasers or owners of this product.

1.6 Unless otherwise specified, the goods are warranted in accordance with the manuf acturer's product specific warranties against any defect attributable to faulty workmanship or materials, fair wear and tear being excluded.

1.7 This limited warranty only covers the cost of faulty goods and does not include the cost of labor and travel to return the goods to the Company's premises.

1.8 In the event of any improper maintenance, repair or service being carried out by any third persons during the warranty period without the Company's written authorization, the limited warranty shall be void.

1.9 A 7 (seven) year limited warranty is given on the aforesaid product where used correctly according to the Company's instructions, and only with the use of the Company's components.

1.10 The Company will, at its sole option, provide one of the following three remedies to whatever extent it shall deem necessary to satisfy a proper claim under this limited warranty:

1.10.1 Elect to repair or facilitate the repair of any defective parts within a reasonable period of time, free of any charge for the necessary parts and labor to complete the repair and restore this product to its proper operating condition.; or

1.10.2 Replace this product with a direct replacement or with a similar product deemed by the Company to perform substantially the same function as the original product; or

1.10.3 Issue a refund of the original purchase price less depreciation to be determined based on the age of the product at the time remedy is sought under this limited warranty.

1.11 The Company is not obligated to provide the Customer with a substitute unit during the limited warranty period or at any time thereafter.

1.12 If this product is returned to the Company this product must be insured during shipment, with the insurance and shipping charges prepaid by the Customer. If this product is returned uninsured, the Customer assumes all risks of loss or damage during shipment. The Company will not be responsible for any costs related to the removal or reinstallation of this product from or into any installation. The Company will not be responsible for any costs related to any setting up this product, any adjustment of user controls or any programming required for a specific installation of this product.

1.13 Please be aware that the Company's products and components have not been tested with competitor's products and therefore the Company cannot warrant products and/or components used in conjunction with competitor's products.

1.14 The appropriateness of the goods for the purpose intended is only warranted to the extent that the goods are used in accordance with the Company's installation, classification and usage instructions.

1.15 Any claim by the Customer which is based on any defect in the quality or condition of the goods or their failure to correspond with specification shall be notified in writing to the Company within 7 days of delivery or (where the defect or failure was not apparent on reasonable inspection by the Customer) within a reasonable time after discovery of the defect or failure, but, in any event, within 6 months of delivery.

1.16 If delivery is not refused, and the Customer does not notify the Company accordingly, the Customer may not reject the goods and the Company shall have no liability and the Customer shall pay the price as if the goods had been delivered in accordance with the Agreement.

1.17 THE MAXIMUM LIABILITY OF THE COMPANY UNDER THIS LIMITED WARRANTY SHALL NOT EXCEED THE ACTUAL PURCHASE PRICE PAID FOR THE PRODUCT.