Hanshow ESL Controller HS_C09961 Product Manual

V1.0.0

HS-AP-GEN5002

HS1456 Confidential 2024-11-08

For more information, visit our website at: *https://www.hanshow.com*

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ABOUT THE MANUAL

Thank you for using Hanshow ESL Controller HS_C09961!

This document describes ESL controller HS_C09961, including features, specification, configuration and precautions. Help you quickly understand all information of this device.

Before using the product for the first time, please read this document carefully and retain the manual for subsequent use or for the next owner. If the instructions contained in this manual are insufficient to resolve issues that occur during device operation or maintenance, please contact Hanshow Technical Customer Service Center (China: 400-0365-305; Netherlands: 0800-022-5037; Belgium: 0800-71-335; France: 0800-902-530; Thailand: 1800-011-185; Germany: 0800-182-7358; Australia: 0061-1800-953-008) directly, we will provide you with multi-channel technical services.

TARGET USERS

This document provides engineers with necessary data and related guidelines. Users have to master the basic knowledge on communication, DSP, network and so on. This manual is applicable for the below engineers:

- Testing Engineer
- Technical Support Engineer
- After Sales Engineer
- Installation Engineer

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SYMBOL DESCRIPTION

Icon	Description
⚠	Information indicated with this icon should be paid special attention and attached great importance by the reader.
🕮	Information indicated with this icon is the explanation on the formal text for the readers to comprehend the text better.
[X-X]	It means special noun definition is provided here.

EXPLANATION OF TERMS

Acronym	Expanded form	Description
ESL Controller	ESL Controller	Also called AP that is used for data interaction between ESL-Working and ESL Controller.
ESL	Electronic Shelf Label	Used for displaying product information like promotion information, price and grade, etc.
CAT5E	Enhanced Category 5 Cabling	Enhanced Category 5 Cabling.
RF	Radio Frequency	Electromagnetic frequency that can radiate into space.
AOA	Angle-of-Arrival	Angle-of-Arrival ranging.

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1 Product Introduction

1.1 Appearance and naming

HS_C09961 is the fifth generation ESL controller developed by Hanshow. This new generation AP has such advantages as fast transmission speed, high performance and low power consumption etc. and can therefore deliver better user experiences in data businesses. It also integrates high-precision positioning technology based on "Angle-of-Arrival (AOA)" ranging, capable of providing customers with real-time high-precision positioning services.

HS_C09961 is used for the data transmission and information exchange between the upper-layer software service system and ESLs in the 2.4 GHz RF band, as well as ranging the angle of arrival of the received wireless signals. It utilizes modular and onboard omnidirectional antenna design and comes with ARM processor. In addition, HS_C09961 has integrated RF etc. modules and can support all Hanshow ESL products. The appearance is as shown in *Figure 1-1* and *Figure 1-2*.

Figure 1-1 5th Generation AP (White)

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Figure 1-2 5th Generation AP (Black)

1.2 Product characteristics

1.2.1 Hardware characteristics

- Multiple power supply: Support power supply by PoE or DC power adapter.
- RF system: 5-way RF channels, supports parallel communication.
- LED indicator: Displays working status in real-time manner.
- Physical interfaces and indicators.

  Physical interfaces are shown in *Figure 1-3*; indicators are shown in *Figure 1-4*; functions of interfaces are shown in *Table 1-1*.

Figure 1-3 Physical interfaces of HS_C09961

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Figure 1-4 Indicators of HS_C09961

📖 NOTE: The above figures are only for reference and the actual product shall prevail.

Table 1-1 Interface function descriptions of ESL controller HS_C09961

No.	Interface name	Description
1	RESET	● Press and hold: Press it for more than 5s to restore factory settings. ● Press: HS_C09961 could switch between enabling DHCP and fixed IP (192.168.1.199). After triggering the function, it is invalid when pressing again within 30s. For more detailed information, sees section of *Key operation*.
2	POWER	Hanshow standard 12V/1A DC power adapter.
3	AUX	Ethernet interface, supports 10M/100M/1,000M adaptive speeds, supports PoE power output (PSE), and complies with IEEE802.3af/at standards.
4	PoE IN	Ethernet interface, supports 10M/100M/1,000M adaptive speeds, supports PoE power input (PD), and complies with IEEE802.3af/at standards.
5	USB INTERFACE 1	A USB2.0 interface whose max. output current is 5V/500mA, by default, this interface is off.
6	USB INTERFACE 2	A USB2.0 interface whose max. output current is 5V/500mA, by default, this interface is off.
7	LED INDICATOR	This is a broadband service indicator: 1. When the green light is steady on, the broadband

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No.	Interface name	Description
		service is operating normally. 2. When the red light is steady on, the broadband service is operating abnormally. 3. When the light is off, the broadband service is turned off.
8	LED INDICATOR	This is a geolocation service indicator: 1. When the green light is steady on, the geolocation service is operating normally. 2. When the red light is steady on, the geolocation service is operating abnormally. 3. When the light is off, the geolocation service is turned off.
9	LED INDICATOR	This is a power supply status indicator: 1. When the light is on, the device is powered on. 2. When the light is off, the device is powered off.
10	2-DIGIT LED NIXIES ((The reading direction of the LED nixies should refer to the "Hanshow" logo on the front of the ESL controller casing))	Green Display: 1. When displaying numbers "1~99", the device has connected to the server, and the number shown is the current ID. If the ESL controller ID exceeds 99, only the last two digits are displayed. 2. When displaying the symbol "Ex", such as "E1", the device is currently in an abnormal state. (For specific meanings, please consult after-sales technical support personnel) Red Display: 1. When displaying the symbol "--": Ethernet connection is normal, but the device has not connected to the server. 2. The device will switch to DHCP mode when displaying "DH" (lasting for 5 seconds). 3. The device will switch to static IP mode when displaying "ST" (lasting for 5 seconds, the default static IP is 192.168.1.199): 4. When displaying "Ex", such as "E1". The device is currently in an abnormal state. (For specific meanings, please consult after-sales technical support personnel)

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1.2.2 Software characteristics

- Operating System (OS): Embedded Linux handles data interaction with the system, including the registration of ESL controller system, heartbeat reception, data transmission, geolocation data parsing and so on. The OS can be upgrade online.
- Smart dual system: support dual system and have automatic disaster recovery capacity.
- Compatibility: Supports all Hanshow ESL series products.
- Administration configuration: Supports remote administration configuration via either cloud server or local web page.

1.3 Product specifications

Product specifications are shown in *Table 1-2*.

Table 1-2 HS_C09961 specifications

Item		Description
Power supply	**DC input**	DC12V/2A
	PoE input	PoE 802.3af/at
Expansion interface	**AUX interface**	Supports PoE power output (PSE), compliant with IEEE802.3af/at
	USB interface	2 x USB Type-A, compliant with USB 2.0
RF module (2.4 GHz module)	**Work frequency**	2,402MHz ~ 2,480MHz
	Emitting frequency	Default as 6dBm
	Antenna gain	≥1dBi
	Antenna characteristics	5 x built-in omnidirectional onboard antenna 1 x built-in antenna array (receives signal only)
	Ultra-high sensitivity	-95dBm at 500Kbps -97dBm at 100Kbps
	System throughput	Up to 60,000 ESLs per hour per device

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Item		Description
Ethernet module	Connection rate	10/100/1,000M (Adaptive)
	Auto-negotiation	support
	Automatic flip	support
	DHCP	support
Power consumption	Rated power	1.9W
	Max. power	4W
Temperature	Operating temperature	0°C ~ 50°C (32°F ~ 122°F)
	Storage temperature	-30°C ~ 70°C (-22°F ~ 158°F)
Humidity	Relative humidity (%RH)	10% ~ 90% (Non-condensing)
Dimension	L*W*H (mm)	264.5*249.5*51.5
Weight	Net weight	764g
Color	N/A	Black or white

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2 Ex-factory state description

2.1 Nameplate description

The information in the nameplate of HS_C09961 as shown in *Figure 2-1*.

- Product model: HS_C09961.
- QR code contains MAC address and serial number information.

Figure 2-1 HS_C09961 nameplate information

NOTE: Nameplate image is only for reference, the actual nameplate shall prevail.

2.2 Ex-factory packaging

HS_C09961 ESL controller is packaged by brown paper. The package contains:

- ESL controller (HS_C09961) *1.
- Installation bracket *1
- Toggle bolt *1
- Expansion screws *4
- M8 mounting rail screw *2
- 304 stainless steel cable ties *2
- QuickStart Guide *1

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3 Product features

3.1 System architecture

The ESL system is composed by Electronic Shelves Label (ESL), ESL controller (Access Point), ESL-Working, PriSmart, databases, integration server, monitor system and Hand-hold Terminals (e.g. PDA, PAD, RC), as shown in *Figure 3-1*.

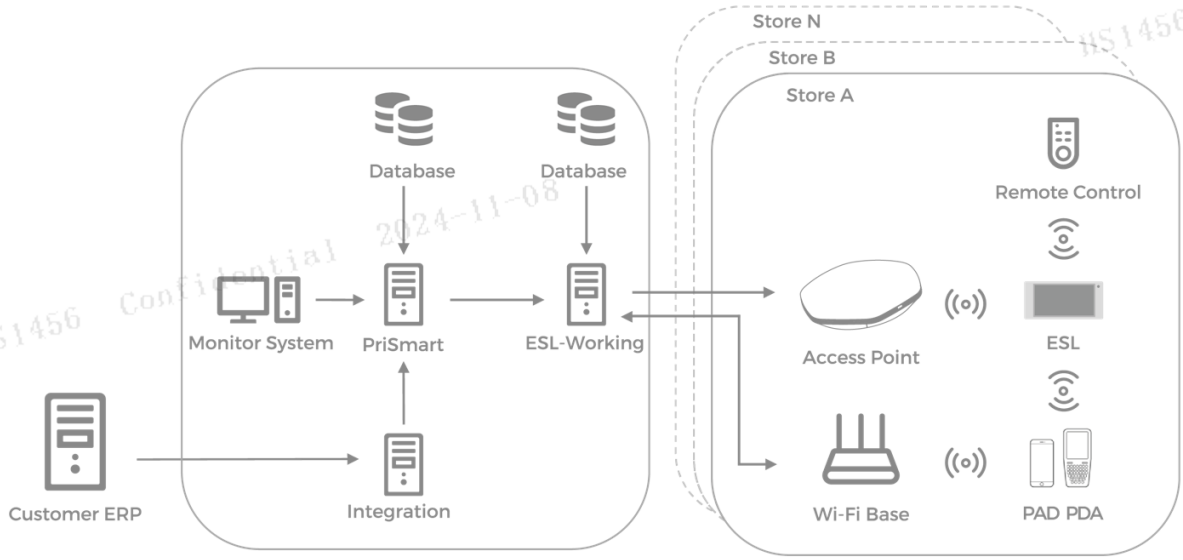

Figure 3-1 ESL system architecture diagram

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3.2 Product features

The ESL controller is an integral part of Hanshow ESL system, it is responsible for data transmission and controlling information interaction between ESL-Working and ESLs. ESL-Working implements ESL administration, business control and obtains ESL reported information via ESL controller.

The ESL controller connects to ESL system and establish bidirectional RF communication at 2.4 GHz via Ethernet interface (PoE). It has the following features:

- Downlink: The ESL controller receives downlink packets from ESL-Working to perform operations such as updates, networking, upgrades, flashing, and global commands on the ESLs.
- Uplink: The ESL controller forwards ESL heartbeat packet etc. information to ESL-Working platform based on the ESL wireless protocol standard.
- Cellular networking technology: Provides a network coverage radius of up to 30 meters.
- Financial grade security chip: support AES-256, AES-128 and RSA1024/2048 encryption algorithms, SHA digest algorithm, TRNG true random integers to guarantee system safety and reliability.
- Utilize multi-antenna technology to improve single ESL controller capacity.
- Antenna array technology: Supports high-precision geolocation based on AOA technology.
- Support remote upgrade.
- Enables cascading based on POE power.
- Support real-time status report and monitoring.
- Assisting ESL management.

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3.3 Feature list

ESL system features are shown in *Table 3-1*.

Table 3-1 Feature list

No.	Feature	Description
1	Webpage configuration	Supports network settings, ESL-Working settings, device reboot, device description, NTP service settings, password modification, factory reset, and system upgrade.
2	Heartbeat reception	Collects the periodic heartbeat reported by the ESLs, including basic ESL information such as ESL ID, firmware version, wake-up cycle, working frequency, battery level, etc.
3	Update	When product information changes, the system activates this function to update and refresh the ESLs, such as price change or promotional information publishing etc.
4	Geolocation	After ESL installation in the store, supports automatic position tracking of ESLs, allowing precise understanding of the ESL's location and the corresponding bound products.
5	PoE cascading	When ESL controllers are installed using PoE power supply, PoE power can be obtained from the AUX interface of the ESL controller already connected to the PoE switch, sharing the network access.

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4 Product instructions

4.1 Key operation

Reset key supports press and press and hold, each owns different function.

4.1.1 Press

Press is used to switch IP address acquisition mode. This feature is strictly limited and just to operate when AP is not connected to network. AP address will switch between DHCP and static IP with each press.

- When the ESL controller is in DHCP client mode, device IP will be obtained from DHCP server in the network.
- When the ESL controller is in static IP mode, the default settings are as follows: IPv4 address -- 192.168.1.199, subnet mask -- 255.255.255.0, gateway -- 192.168.1.1.

The LED nixies shall display the work mode of ESL controller:

- "dh" shall be displayed by LED nixies for 5s when ESL controller is switched to DHCP mode.
- "St" shall be displayed by LED nixies for 5s when ESL controller is switched to static IP mode.
- "--" shall be displayed by LED nixies when ESL controller is not connected to ESL-Working.

📖 **NOTE: The protection interval between two operations should be at least 30s, that is, if you press again within 30s after last successful operation, your operation will be invalid.**

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4.1.2 Press and hold

Press and hold the reset key for more than 5 seconds to restore the device to factory settings. The LED nixies on the front panel of the device will turn off, and the device will restore factory settings and restart. The contents restored to factory settings include:

- Restore to DHCP client mode.
- Restore to auto search mode of ESL-Working.
- Clear custom description.
- Restore web login password to “admin”.
- NTP restores to disabled by default.

4.2 Parameter setting

HS_C09961 supports Web configuration mode. Users can manage ESL controller configuration via Web.

4.2.1 Device homepage

You can access HS_C09961 IP address to enter configuration page. For example: If HS_C09961 IP is 192.168.51.100, IP address is: *https://192.168.51.100*, that is, enter logon page and configuration homepage to configure HS_C09961. The default username is: **webadmin**, the default password is: **admin**.

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When logging in, you will be prompted to set a password. The password must be 8 to 32 characters long, consisting of numbers, letters, and special symbols (~!@#) to enhance password strength. After resetting the password, click **OK** or click **Cancel** otherwise, as shown in *Figure 4-1* and *Figure 4-2*.

Figure 4-1 Login page

NOTE:

- **The device's web page is not enabled by default. It needs to be authorized using a dedicated tool provided by Hanshow. For details, please consult our technical support personnel.**
- **The page supports both Chinese and English languages. Users can switch between the languages using the button at the top right corner of the login page.**

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The configuration page of HS_C09961 is shown in *Figure 4-2*:

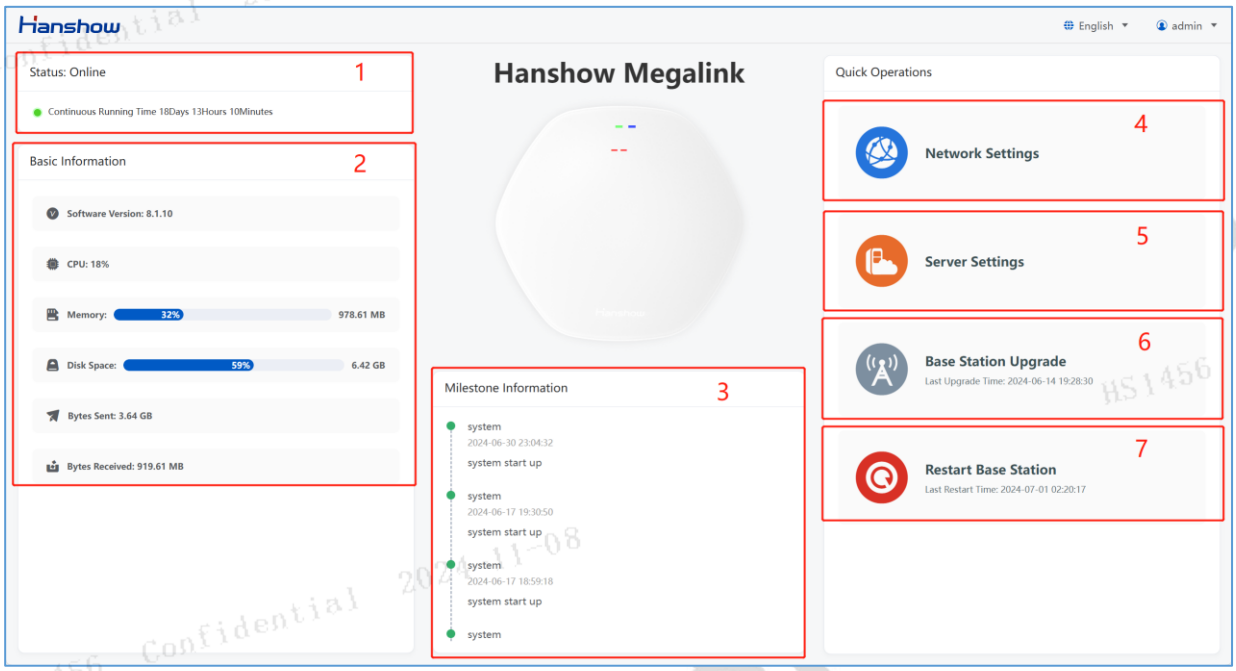

Figure 4-2 Configuration page

The configuration items in the configuration page are illustrated as shown in *Table 4-1*:

Table 4-1 Configuration item description

No.	Item	Description
1	Status	Displays the status information of the device.
2	Basic Information	Displays the current software and hardware information of the device.
3	Milestone Information	Displays the milestone information of the device itself and its operations.
4	Network Settings	Sets the network parameters of the device.
5	Server Settings	Sets the parameters of the server that the device will connect to.
6	Base Station Upgrade	Performs software upgrade operations for the device.
7	Restart Base Station	Performs device restart operations.

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4.2.2 Network settings

Network settings are used for setting network parameters of HS_C09961. It supports two IP types: IPv4 and IPv6; two IP address acquisition modes: DHCP or static IP.

If IP type is IPv4, the configuration page is shown in *Figure 4-3*:

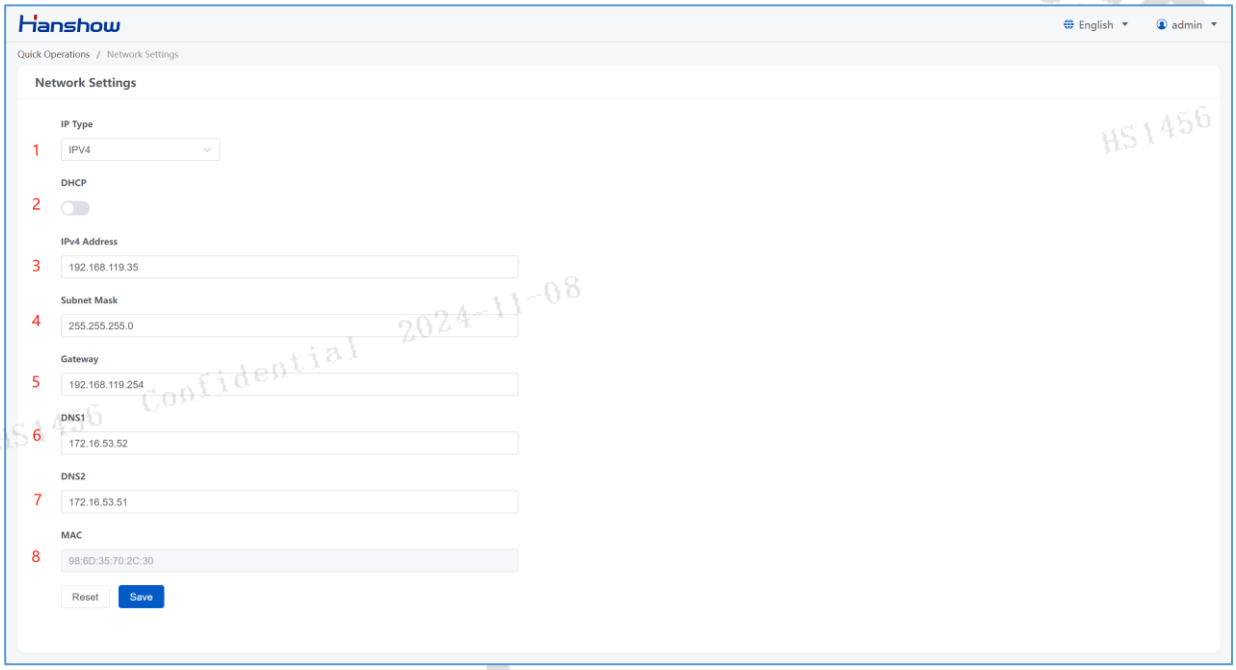

Figure 4-3 Network configuration page 1

The configuration items are illustrated as shown in *Table 4-2*:

Table 4-2 Configuration item description

No.	Item	Description
1	IP type	Support IPv6/IPv4 dual protocol stacks. To configure the parameters when selecting IPv4.
2	DHCP	● When set to OFF, IP address should be configured manually. ● When set to ON, the device is DHCP client, and IP address should be obtained from DHCP server.
3	IPv4 Address	IPv4 address, configurable when DHCP is OFF.
4	Subnet Mask	Subnet mask, configurable when DHCP is OFF.

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No.	Item	Description
5	Gateway	Gateway address, configurable when DHCP is OFF.
6	DNS1	Domain Name Resolution Server, DNS1: Primary DNS Server; DNS2: Backup DNS Server. When the ESL-Working address is configured as a domain name, these settings must be configured. When DHCP is enabled, DNS is obtained from the DHCP server.
7	DNS2	
8	MAC	Unique valid MAC address, refer to the nameplate.

If IP type is IPv6, the configuration page is shown in *Figure 4-4*:

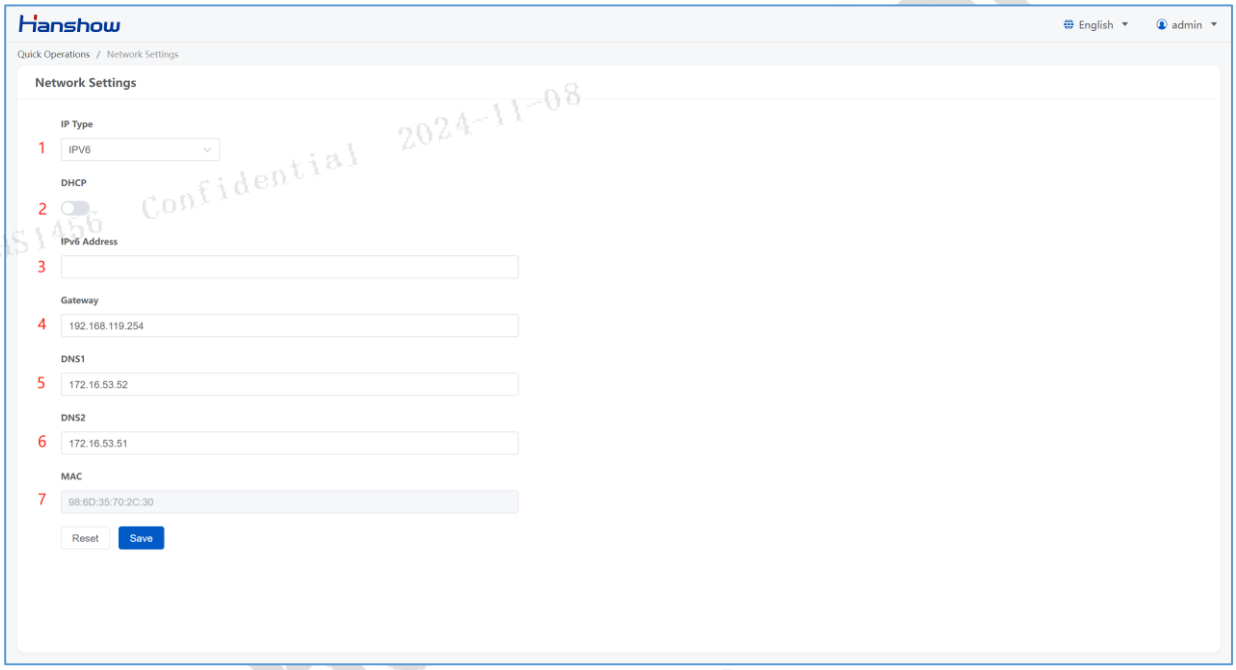

Figure 4-4 Network configuration page 2

The configuration items are illustrated as shown in *Table 4-3*.

Table 4-3 Configuration option description

No.	Configuration item	Description
1	IP type	Support IPv6/IPv4 dual protocol stacks. To configure the parameters when selecting IPv6.
2	DHCP	• When set to OFF, IP address should be configured manually. • When set to ON, the device is DHCP client, and IP address should be obtained from DHCP server.

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No.	Configuration item	Description
3	IPv6 address	IPv6 address, configurable when DHCP is OFF.
4	Gateway	Gateway address, configurable when DHCP is OFF.
5	DNS1	Domain Name Server (DNS), DNS1: Primary DNS server; DNS2: Backup server; Must be set when the ESL-Working address is configured as domain name address; When DHCP is enabled, DNS is obtained from the DHCP server.
6	DNS2	
7	MAC	Unique valid MAC address, refer to nameplate.

NOTE: The modified network settings take effect immediately; you need to re-enter the set URL to access the web.

4.2.3 Server settings

This feature allows setting the server IP address and port number that the device will connect to, as shown in *Figure 4-5*:

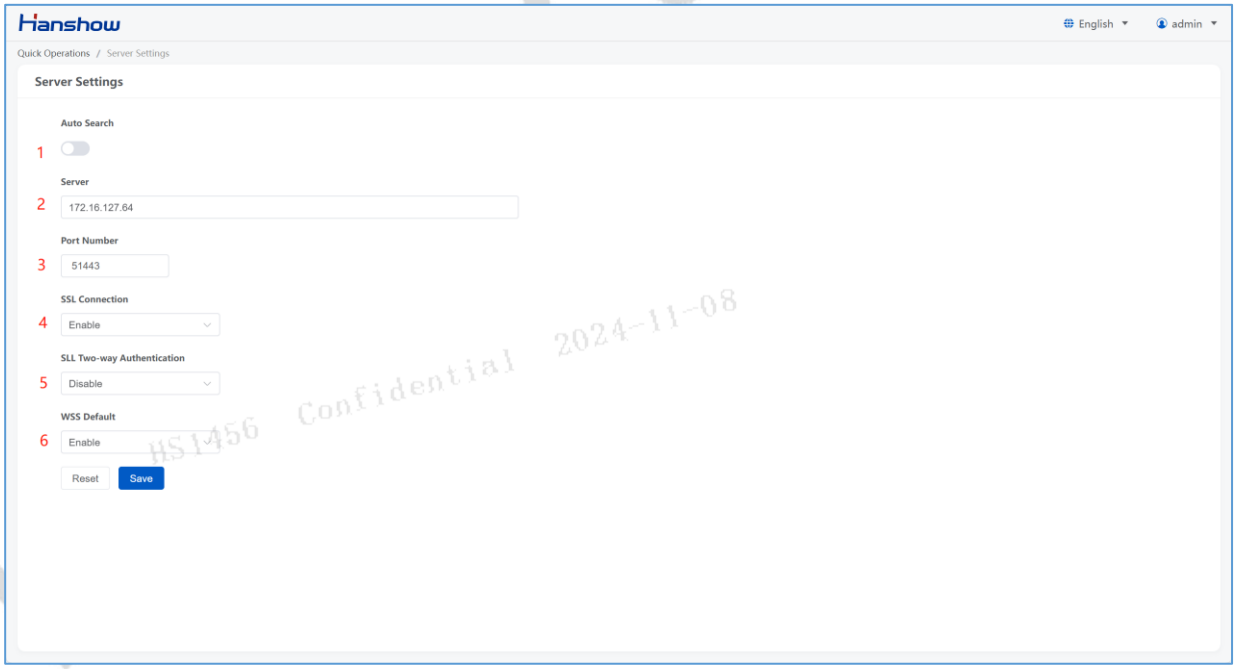

Figure 4-5 ESL-Working settings

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Each configuration item is illustrated as shown in *Table 4-4*.

Table 4-4 Configuration option description

No.	Configuration item	Description
1	Auto Search	● When set to OFF, server parameters must be specified manually. ● When set to ON, the device can search for the server address within the local area network and connect automatically.
2	Server	Server address or domain name address, configurable when Auto search is OFF.
3	Port Number	Server port number: ● When Auto search is set to ON, this port number is the target port number for the device to search for the server address. ● When Auto search is set to OFF, this port number is the target port number for the device to connect to the server.
4	SSL Connection	Whether to use SSL secure connection to the server.
5	SSL Two-way Authentication	Whether to verify the server certificate; SSL must be enabled to use this feature.
6	WSS Default	Whether to enable the server's reverse access to the device feature.

NOTE:

- **After setting the server domain name and address, ensure that the DNS server in the network configuration is correct.**
- **After enabling SSL, confirm that the port number is correct. Generally, the port number for SSL connections differs from the port number for non-SSL connections.**
- **The modified server information takes effect approximately 30 seconds later without needing to restart the device.**

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⚠**NOTICE: When the ESL controller and the server are used across different network segments, the server address must be configured manually.**

4.2.4 Restart the base station

Click **Restart Base Station**, click **OK** on pop-up box, the device will restart. Restart takes about 3 minutes, as shown in *Figure 4-6* :

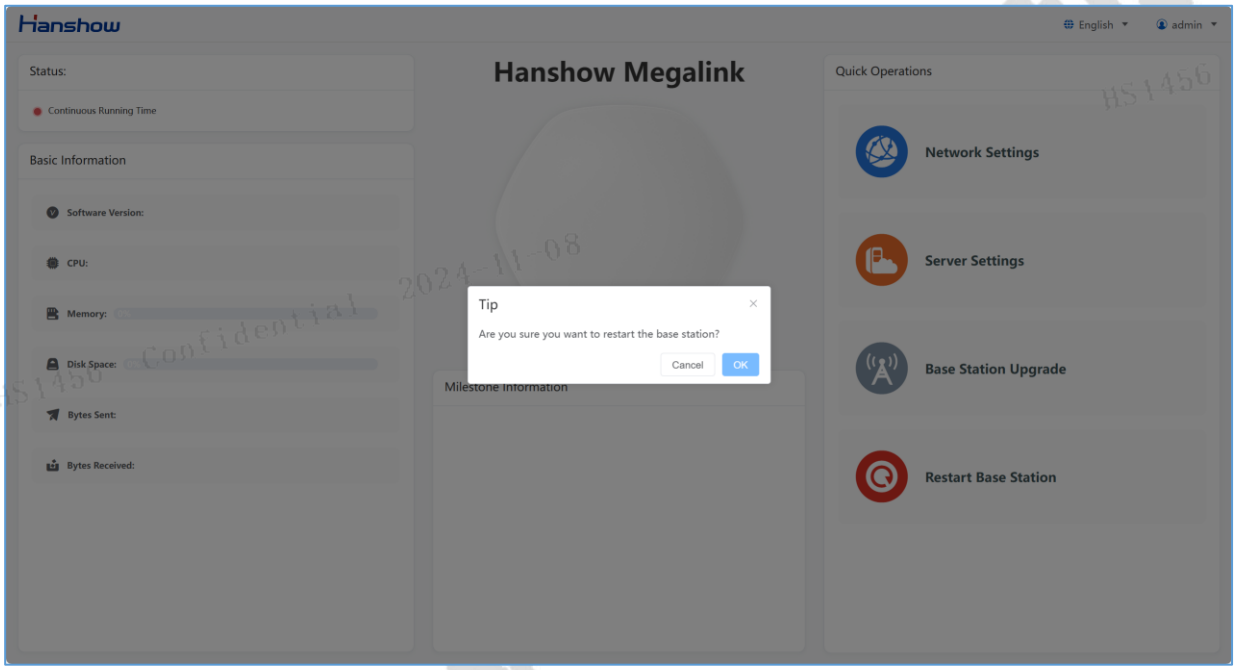

Figure 4-6 Restart base station

4.2.5 Upgrade system

HS_C09961 supports local upgrade and remote upgrade modes.

- Local upgrade: Must use the upgrade package with the specified version number. During the upgrade process, you can simultaneously perform a factory reset on the device.
- Remote upgrade: The ESL controller can be upgraded remotely via the server software platform.

⚠**NOTICE:**

- **Don't cut off the power during the upgrade, otherwise the device can be damaged.**

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- **The entire upgrade procedure takes about 5min.**

For more information, please refer to *(HP-AP-GEN5002) Hanshow ESL Controller HS_C09961 Upgrade Manual.*

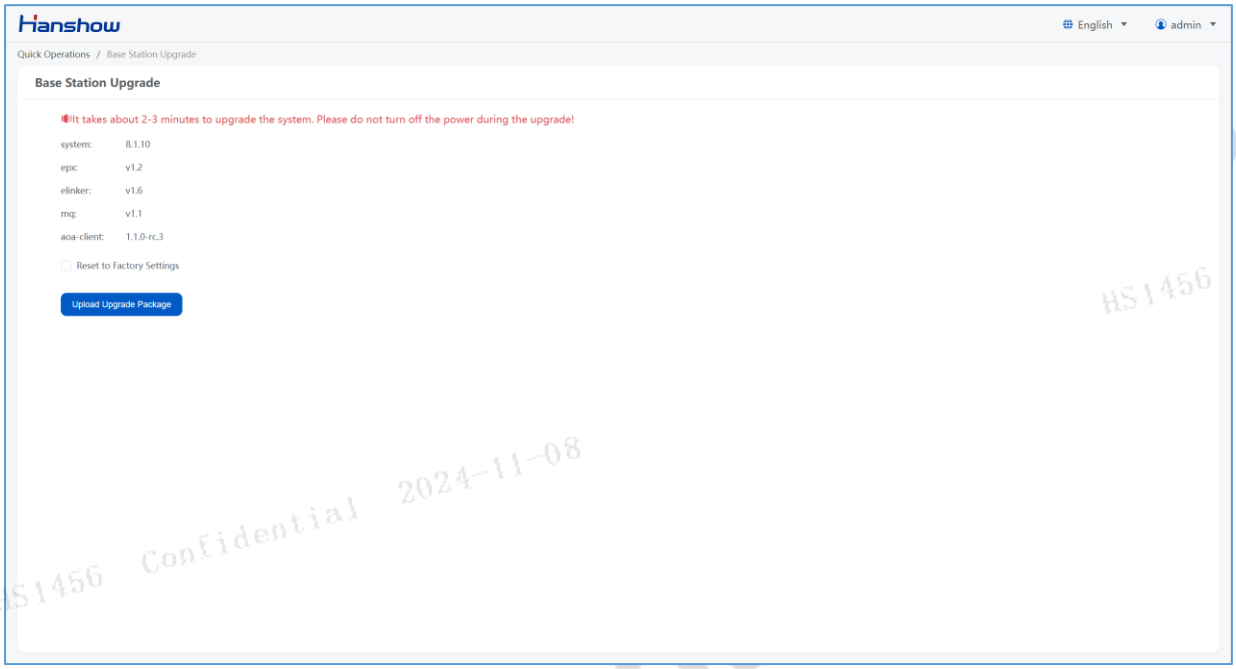

Figure 4-7 Local upgrade

4.3 Workflow

Specific workflow is as follows:

1. Before using the ESL controller, please check whether the power cable and network cable connections are correct.
2. Confirm whether you are using the standard 12V power adapter or PoE power supply.
3. After powering on the ESL controller, the power indicator light on the front panel will light up, and the system will start up, which takes about 1 minute.
4. Once successfully started, the system status and network status indicator lights will turn on, and the ESL controller will enter working mode.
5. Configure the relevant parameters step by step as described in *Parameter setting*.

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6. After the parameters are correctly configured, the ESL controller will automatically connect to the server. If the connection is successful, the network status indicator will display green; if the connection fails, there will be a prompt on the page. The ESL controller will periodically attempt to connect to the server.
7. After successfully connecting to the server, the LED nixies will show the ESL controller ID.

5 Product FAQ

5.1 Hardware FAQ

5.1.1 The power indicator does not work

Handling procedure:

- Confirm whether the device is powered.
- Confirm whether the device power cable is firmly plugged.
- Check if the power source can support PoE, if there is malfunction.
- Check if the network cable is plugged into the PoE interface correctly.
- Confirm where there are exceptions with PoE cable or 12V adapter by replacing the PoE cable(s) or 12 adapter(s) of those powered device(s).

If the device still cannot be powered on after all the above-mentioned steps are confirmed, please contact technical support personnel or the agent for assistance.

📖 NOTE: as per the 802.3af standard, the output power of the PSE port is 15.4W; while as per the 802.3at standard, the output power of PSE port is 30W.

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5.1.2 The red light of system indicator is constantly on

Handling procedure:

1. Once booted, the AP will enter self-checking status, the bicolor system status indicator is supposed to flash alternatively and mono-color light shall be on. After this stage, the system will start to run, lights will stop flash. In case of exception, 2 red lights will be on for 5 seconds, the LED nixies will display “Ex” (in which the “x” indicates the minimum abnormal sub-board number). 5 seconds later, the system will enter normal status and the red lights will be off.

If the indicator light does not turn green after the above steps, first rule out any issues with the network cable and try changing the port on the opposite switch for testing. If the problem persists, please contact technical support or the dealer from whom you purchased the ESL controller for assistance.

5.1.3 The red network indicator is constantly on

Handling procedure:

- The device supports 10M/100M/1,000M adaptive Ethernet, please confirm the device capacity and configuration of your side.
- Check if the network cable is plugged into the PoE In interface correctly.
- Determine the fault point using cross validation method.

If the indicator still fails to turn into green, please check the Ethernet cable, change the port of your network exchange and try again. If it still fails to access to the network, then it must be a single-board failure, please contact the technical support personnel for assistance.

5.1.4 Ethernet cable type and power supply distance for PoE?

Select CAT5E or above.

According to the transmission distance rules in IEEE 802.3af and IEEE 802.3at standards, the length limit of CAT5E cable is 100m.

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6 Repair instructions

6.1 Return and repair process

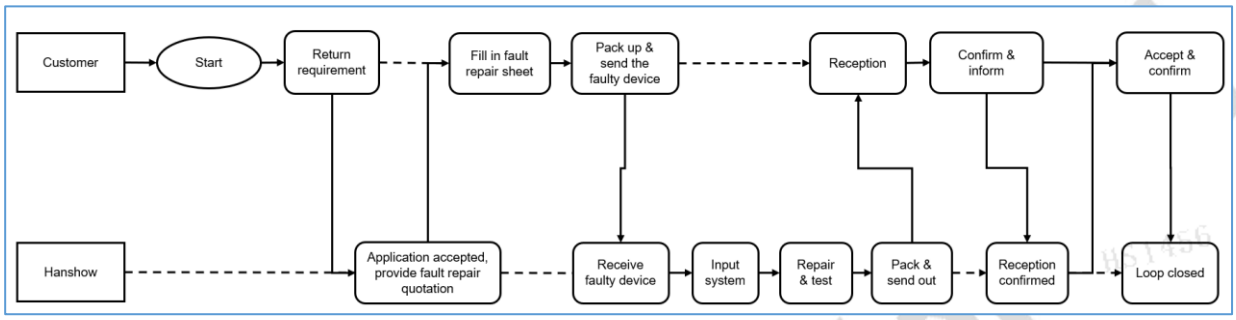

Figure 6-1 Return and repair process chart

6.2 Repair time limit

Repair of faulty device: since the faulty device is received by Party B and Party B confirms that the faulty device is within repair range; or since Party B receives repair expense, the faulty device shall be repaired within 30 days. After that, the repaired device shall be sent to the designated place by Party A. In case Party B fails to repair the faulty device, Party B shall provide substitute with the same capacities.

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7 Maintenance

Please follow below advices when installing and using HS_C09961 (hereafter as AP) ESL controller.

Table 7-1 Precautions and suggestions

Items	Description
Environment requirements	● Keep AP operating in standard temperature and humidity. ● The AP operates best in normal indoor conditions. To prevent circuit damage, avoiding poor ventilation or other extreme conditions. ● Do not install the AP in an environment with dust, poisonous gases, flammable or explosive objects, or electromagnetic interference.
Safe precautions	● Take proper measures to avoid AP damaged and installer injuries. ● Keep the AP clean. ● Clean the device with a dry or damp soft cloth. Do not clean the device with wet cloth or liquid directly. ● Ensure the ventilation hole is not blocked. ● Unplug the power first when you need to move or clean the device. ● Place the AP in a dry and flat position away from any liquid. ● Keep the device away from water or damp places to avoid water or moisture entering the case.
Pre-installation check	● Use network cable tester to check the network cable is normal. ● All power cables are not short-circuited or reversely connected and must be intact with no damage. ● Labels on cables are clear and correct. ● Ensure the ground conductor is intact.
Installation scenario	● Try to reduce the number of obstacles such as walls between the AP and user terminals.

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Items	Description
	● Limit the metal shielding around the AP to prevent cage interference effect.
Installation distance	● If the shelf height is ≤3m, it is recommended that the installation distance of two Hanshow APs is about 25m, and at least 5m. ● If the shelf height is 3m ~ 5m, it is recommended that the installation distance of two Hanshow APs is about 20m and at least 5m. ● If shelf height exceeds 5m, the installation height of AP is determined according to actual situation after on-site field investigation. ● Keep the distance more than 2m from operator 4G mobile communication antenna. ● The AP installation height should be higher than shelf to avoid signal shielding. 📖 **NOTE: The above recommendations are intended for non-high-precision geolocation scenarios. If you are using high-precision geolocation services, please consult our technical service personnel separately.**
Network settings	● If Wi-Fi AP is 2.4GHz, recommended to set Wi-Fi channel to 1, 6 or 11. ● If the Wi-Fi device operates at 2.4GHz, it is recommended to stagger the RF tuning time of the Wi-Fi network and the ESL update time to achieve better performance. ● Hanshow AP may be limited or affected by other IoT devices that share the 2.4GHz frequency-band such as Wi-Fi, BT or Zigbee.
Post-installation check	● Ensure the AP is securely installed to avoid loosening or falling. ● The power cable or network cable is intact. ● Check that the AP indicator lights are steady or blinking.

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8 Contact information

Table 8-1 Hanshow after-sales contact information table

Service method	Description
Hotline	● China: 400-0365-305; ● Netherlands: 0800-022-5037; ● Belgium: 0800-71-335; ● France: 0800-902-530; ● Thailand: 1800-011-185; ● Germany: 0800-182-7358; ● Australia: 0061-1800-953-008
Email	● Global/China: support@hanshow.com ● Netherlands: support.nl@hanshow.com ● France: rma_france@hanshow.com ● Southeast Asia: support.sea@hanshow.com ● Germany: support.de@hanshow.com ● USA: support.us@hanshow.com ● Australia: support.au@hanshow.com
Work order system	https://rma.hanshow.online/rma
Technical Support (China)	

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9 FCC ID warning

9.1 Warning for nameplate

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(l) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

The distance between user and device should be no less than 20cm.

9.2 Warning for product manual

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment 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 residential installation. 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. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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REIMAGINE INTELLIGENT RETAIL

10 IC STATEMENT

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

(1) This device may not cause interference; and (2) This device must accept any interference, including interference that may cause undesired operation of the device. (3)
The distance between user and device should be no less than 20cm.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils

radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement

(3)la distance entre l'utilisation et l'appareil ne doit pas être inférieure à 20 cm.

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