

BITMAIN HS3 Server Handshake Algorithm Mining Machine



# BITMAIN HS3 Server Handshake Algorithm Mining Machine User Manual

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# BITMAIN

**BITMAIN HS3 Server Handshake Algorithm Mining Machine**



## Introduction

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## Overview

- The HS3 server is BITMAIN's newest version in this series.
- Power supply APW12 is part of the HS3 server.
- All HS3 servers are tested and configured before shipping to ensure easy setup.



**Front View**



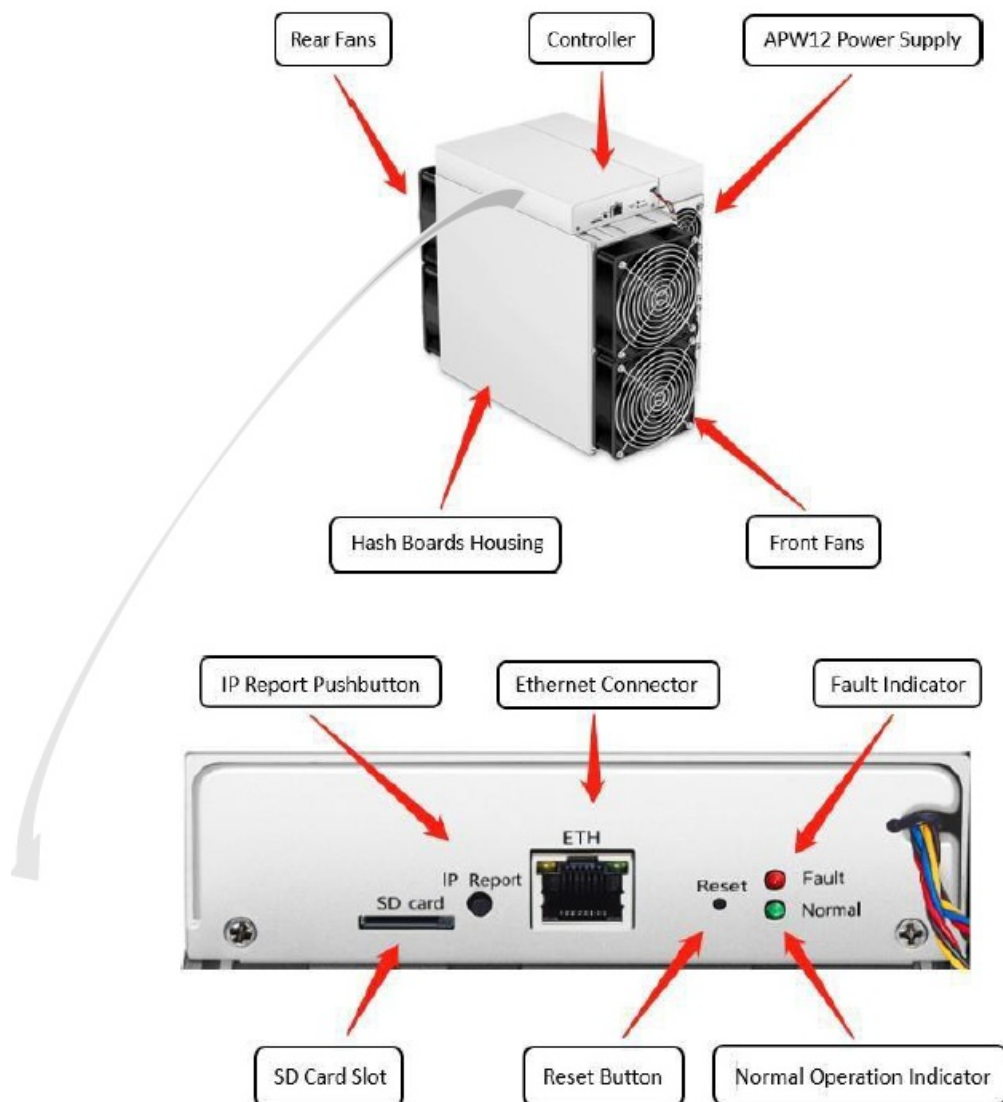
**Back View**

## Caution

1. Please refer to the layout above to place your goods in usage in case of any damage.
2. The equipment must be connected to an earthed main socket outlet. The socket outlet shall be installed near the equipment and shall be easily accessible.
3. The equipment has two power inputs. Only by connecting those two power supply sockets simultaneously can the equipment run normally. When the equipment is powered off, be sure to power off all power inputs.
4. DO NOT remove any screws and cables tied to the product.
5. DO NOT PRESS the metal button on the cover.
6. Please note that the actual server shall prevail.

## HS3 Server Components

- The main components and controller front panel of HS3 servers are shown in the following figure:



## APW12 Power Supply



### Note

- Power supply APW12 is part of the HS3 server. For detailed parameters, please refer to the specifications

below.

2. Additional two power cords are needed.

## Specifications

**Model: HS3-9T**

**Hashrate: 9 TH/s**

Product Glance	Value
Version	240-HS
Model	HS3-9T
Crypto Algorithm/Coins	blake2b+sha3
Hashrate, <b>GH/s</b>	9000 ±3%
power on wall@25°C, <b>Watt</b>	2079 ±10%
power efficiency on wall @25°C, <b>J/TH</b>	231 ±10%

Detailed Characteristics	Value
<b>Power Supply</b>	
Power supply AC input voltage, <b>Volt</b> <sup>(1-1)</sup>	200~240
Power supply AC Input Frequency Range, <b>Hz</b>	47~63
Power supply AC Input current, <b>Amp</b> <sup>(1-2)</sup>	20(1-3)
<b>Hardware Configuration</b>	
Network connection mode	RJ45 Ethernet 10/100M
Server Size (Length*Width*Height, w/o package), <b>mm</b> <sup>(2-1)</sup>	430*195.5*290
Server Size (Length*Width*Height, with the package), <b>mm</b>	570*316*430
Net weight, <b>kg</b> <sup>(2-2)</sup>	16.1
Gross weight, <b>kg</b>	17.7
<b>Environment Requirements</b>	
Operation temperature, °C	0~40
Storage temperature, °C	-20~70
Operation humidity(non-condensing), <b>RH</b>	10~90%
Operation altitude, <b>m</b> <sup>(3-1)</sup>	≤2000

**Model: HS3-8.55T**

Hashrate: 8.55 TH/s

Product Glance	Value
Version	240-HS
Model	HS3-8.55T
Crypto Algorithm/Coins	blake2b+sha3
Hashrate, <b>GH/s</b>	8550 $\pm$ 3%
power on wall@25°C, <b>Watt</b>	1975 $\pm$ 10%
power efficiency on wall @25°C, <b>J/TH</b>	231 $\pm$ 10%

Detailed Characteristics	Value
<b>Power Supply</b>	
Power supply AC input voltage, <b>Volt (1-1)</b>	200~240
Power supply AC Input Frequency Range, <b>Hz</b>	47~63
Power supply AC Input current, <b>Amp<sup>(1-2)</sup></b>	20(1-3)
<b>Hardware Configuration</b>	
Network connection mode	RJ45 Ethernet 10/100M
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<b>Environment Requirements</b>	
Operation temperature, <b>°C</b>	0~40
Storage temperature, <b>°C</b>	-20~70
Operation humidity(non-condensing), <b>RH</b>	10~90%
Operation altitude, <b>m<sup>(3-1)</sup></b>	$\leq$ 2000

## Notes

- **Caution:** Wrong input voltage may probably cause Server damaged
- Max condition: temperature 40°C, altitude 0m
- Two AC input wires, 10A per wire
- Including PSU size

- Including PSU weight
- When the Server is used at an altitude from 900m to 2000m, the highest operating temperature decreases by 1°C for every increase of 300m

## Setting up the Server

### To set up the server

The file IPReporter.zip is supported by Microsoft Windows only.

1. Go to the following site: <https://shop.bitmain.com/support/download>
2. Choose 'Others' and download the following file: IPReporter.zip.
3. Extract the file.
  - The default DHCP network protocol distributes IP addresses automatically.
4. Right-click IPReporter.exe and run it as Administrator.
5. Select one of the following options:
  - Shelf, Step, Position – suitable for farm servers to mark the location of the servers.
  - Default – suitable for home servers.
6. Click Start.

IP Reporter

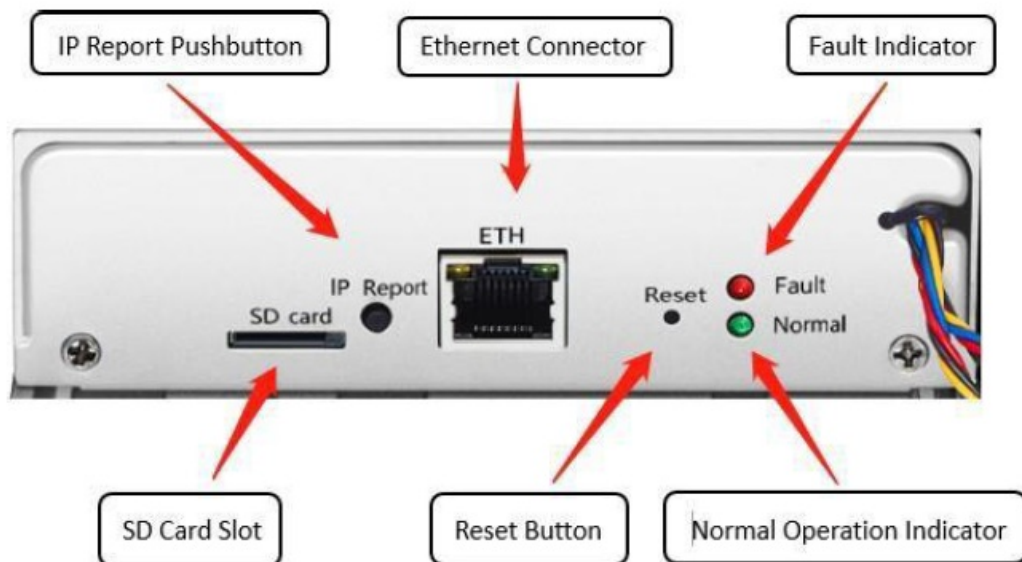
Shelf  Step  Position

Information

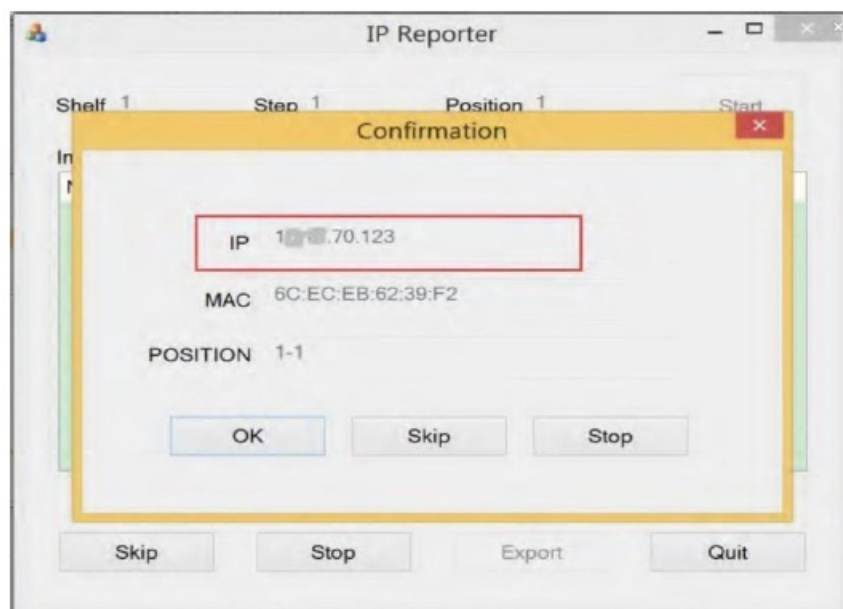
NO.	IP	MAC	POSITION

7. On the controller board, click the IP Report button. Hold it down until it beeps (about 5 seconds).





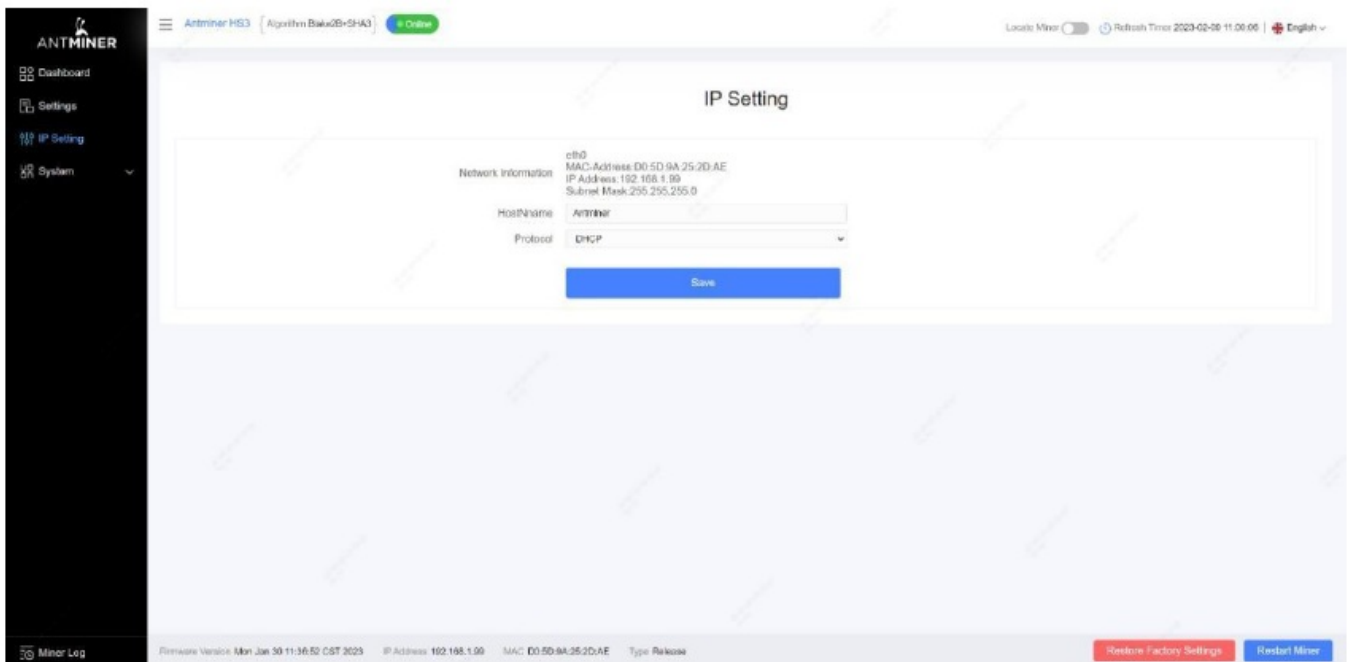
The IP address will be displayed in a window on your computer screen.



8. In your web browser, enter the IP address provided.
9. Proceed to login using root for both the username and password.
10. In the Protocol section, you can assign a Static IP address (optional).
11. Enter the IP address, Subnet mask, gateway, and DNS Server.
12. Click "Save".
13. Click <https://support.BITMAIN.com/hc/en-us/articles/360018950053> to learn more about the gateway and DNS Server.

## Setting up the Server



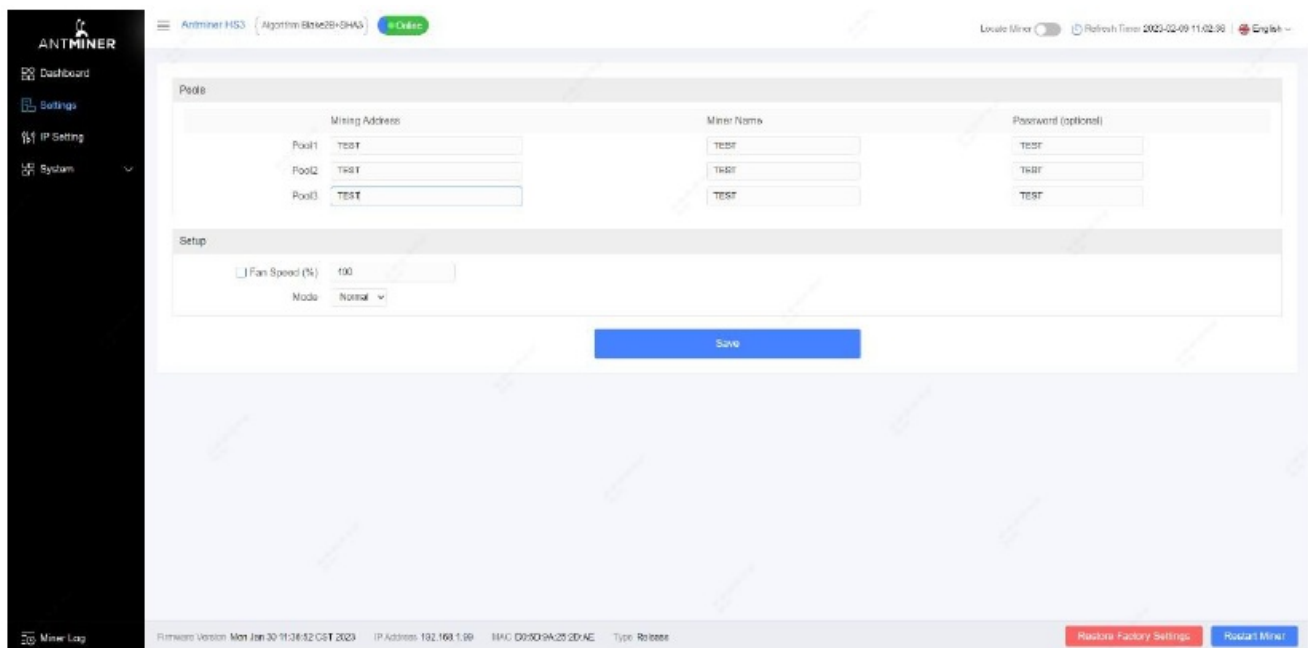


## Configuring the Server

### Setting up the Pool

To configure the server:

- Click Settings marked below.



### Note

1. Fan speed percentage can be adjusted, but we recommend keeping the default setting. The server will adjust the fan speed automatically if the fan speed percentage has yet been selected.
2. There are two working modes of the HS3 server: Normal mode and Sleep mode. The server enters sleep mode under the condition that the control board is powered while the hash boards are not powered.

- Set the options according to the following table

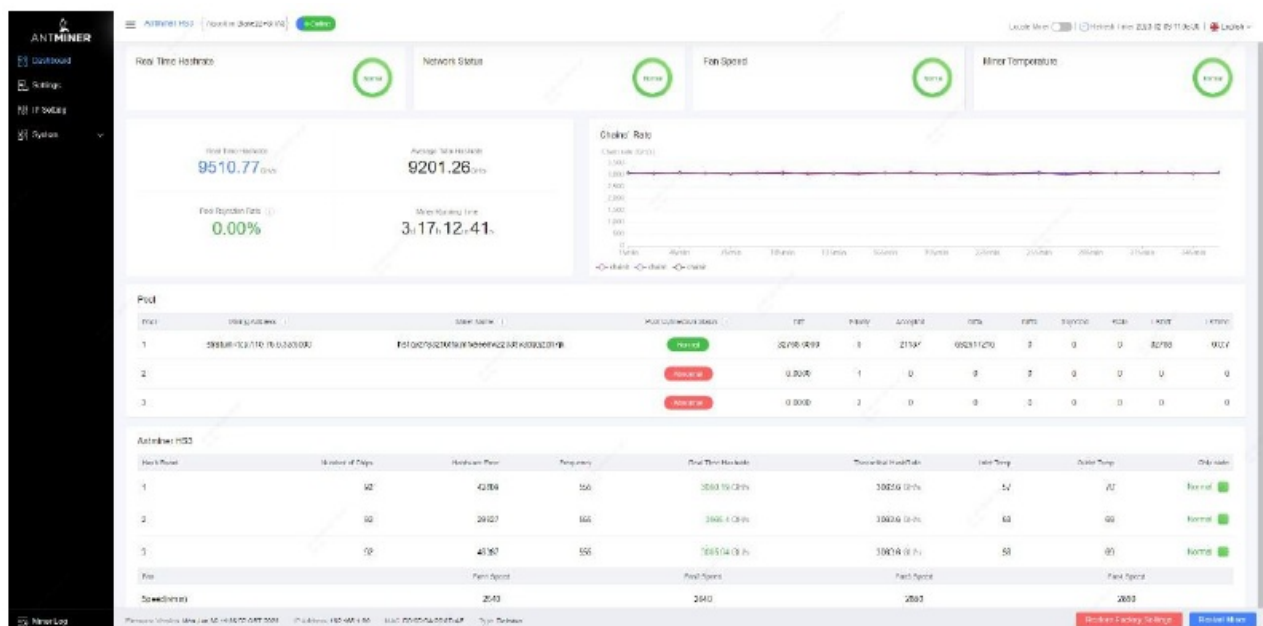
Option	Description
Mining address	Enter the address of your desired pool.  The HS3 servers can be set up with three mining pools, with decreasing priority from the first pool (pool 1) to the third pool (pool 3). The pools with low priority will only be used if all higher-priority pools are offline.
Name	Your worker ID on the selected pool.
Password (optional)	The password for your selected worker.

- Click Save after the configuration.

## Monitoring Your Server

To check the operating status of your server:

1. Click the dashboard marked below to check the server status (taking HS3-9T as an example).



2. Monitor your server according to the descriptions in the following table:

**Note:** The HS3-9T server is with a fixed frequency of 555 MHz. Firmware will stop running when the Temp (Outlet) reaches to 95°C there will be an error message “high temp exceeds the limit (Overtemperature duration/s), max\_chip\_temp = (chip-real-temperature), max\_pcb\_temp = (board-real-temperature)!” shown on the bottom of kernel log page. Meanwhile, the server temperature on the dashboard interface turns to abnormal and shows “Temp is too high”.

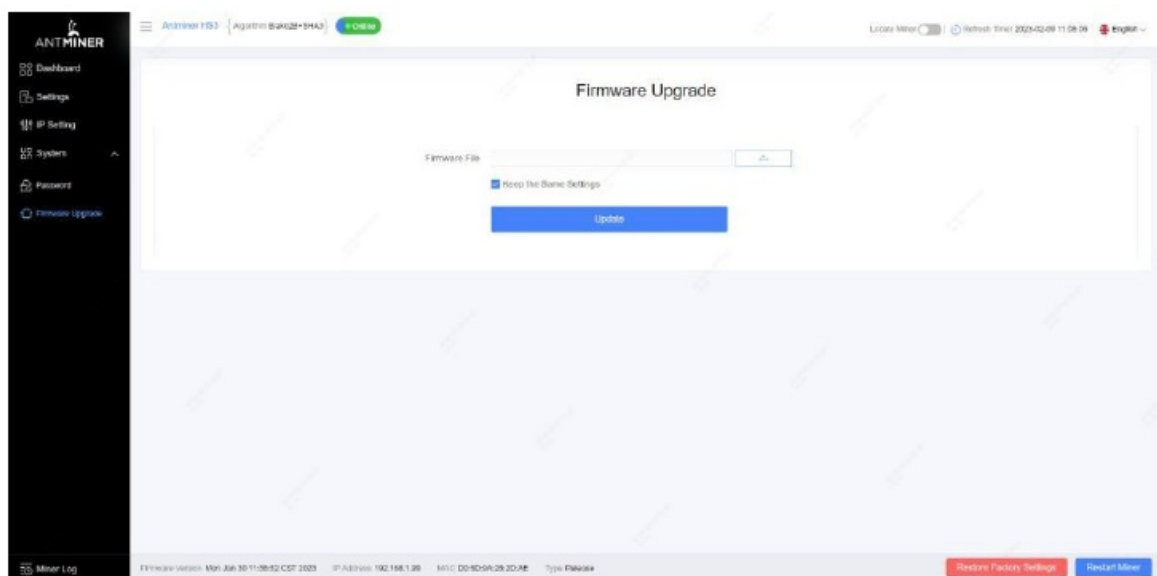
Option	Description
Number of chips	Number of chips detected in the chain.
Frequency	ASIC frequency setting.
Real Hashrate	Real-time Hashrate of each hash board (GH/s).
Inlet Temp	Temperature of the inlet (°C).
Outlet Temp	Temperature of the outlet (°C).
Chip state	<p>One of the following statuses will appear:</p> <ul style="list-style-type: none"> <li>● <b>The Green Icon</b> – indicates normal</li> <li>● <b>The Red Icon</b> – indicates abnormal</li> </ul>

## Administering Your Server

### Checking Your Firmware Version

To check your firmware version:

1. Enter the backstage of your server, and find the firmware version on the bottom.
2. Firmware Version displays the date of the firmware your server uses. In the examples below, the server is using firmware version 20230130.

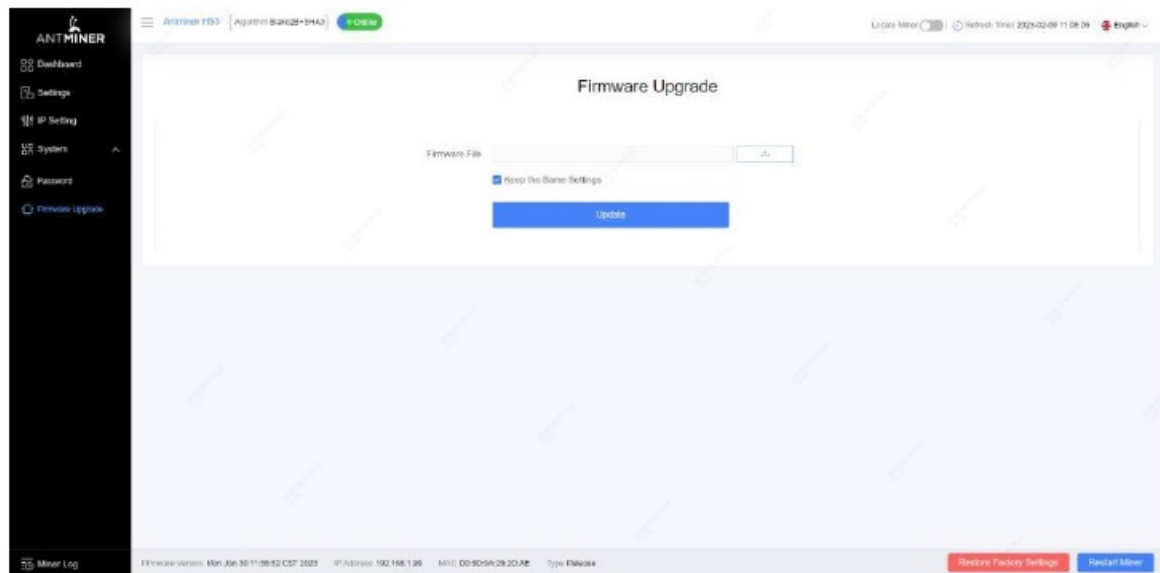


## Upgrading Your System

Make sure that the HS3 server remains powered during the upgrade process. If power fails before the upgrade is completed, you will need to return it to BITMAIN for repair.

### To upgrade the server's firmware

1. In System, click Firmware Upgrade.

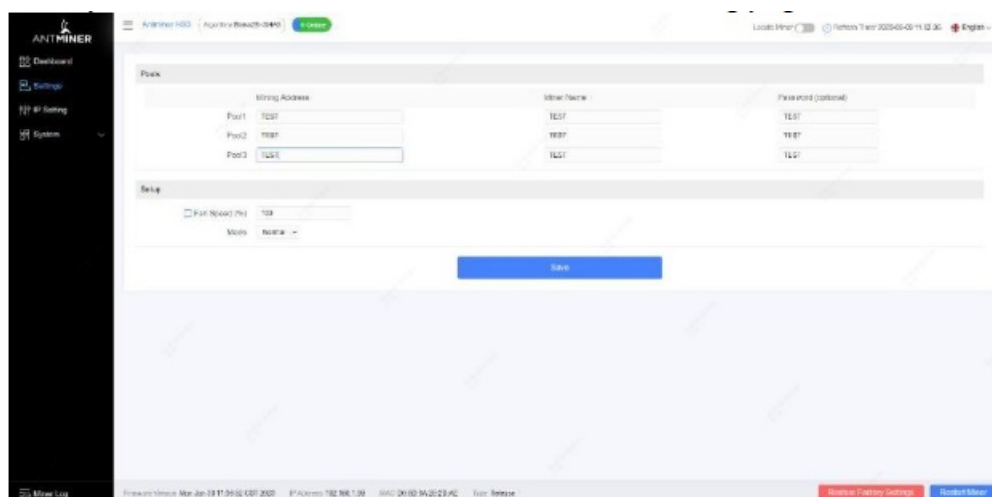


2. For Keep Settings:

- Select “keep settings” to keep your current settings (default).
- Unselect “keep settings” to reset the server to default settings.

3. Click the  button and navigate to the upgrade file. Select the upgrade file, then click Update.

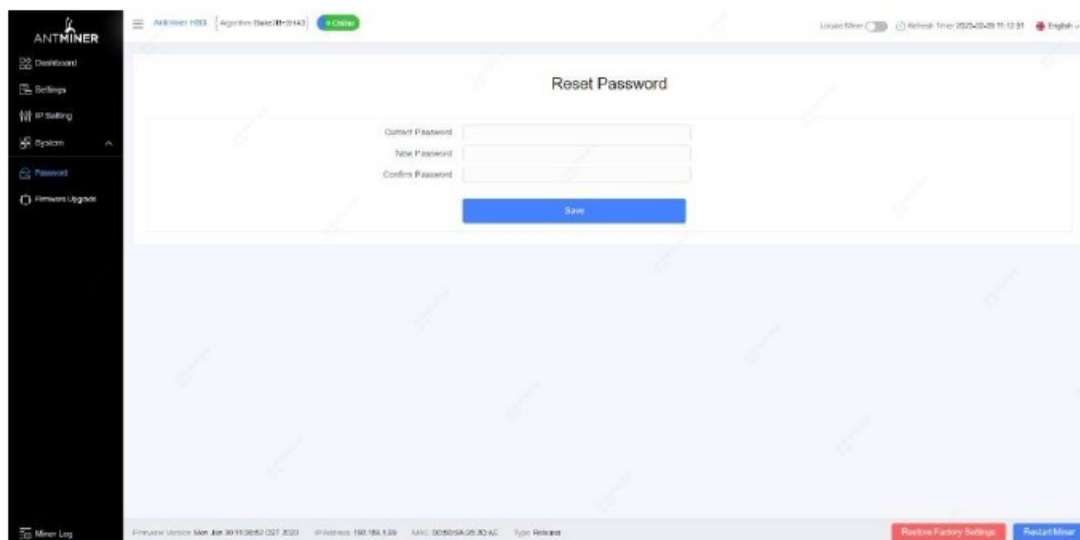
4. When the upgrade is completed, restart the server and it will turn to the settings page.



## Modifying Your Password

To change your login password:

1. In the System, click the Password tab.
2. Set your new password, then click Save.



## Restoring Initial Settings

### To restore your initial settings

1. Turn on the server and let it run for 5 minutes.
2. On the controller front panel, press and hold the Reset button for 10 seconds.

Resetting your server will reboot it and restore its default settings. The red LED will automatically flash once every 15 seconds if the reset is operated successfully.

## Environmental Requirements

### Please run your server under the following requirements

Basic Environmental Requirements:

Climatic Conditions:

Description	Requirement
Operating Temperature	0-40°C
Operating Humidity	10-90%RH (non-condensing)
Storage Temperature	-20-70°C
Storage Humidity	5-95%RH non-condensing
Altitude	<2000m

### Site Requirements of the Server Running Room

- Please keep the server running room away from industrial pollution sources:
- For heavy pollution sources such as smelters and coal mines, the distance should be more than 5km.
- For moderate pollution sources such as chemical industries, rubber, and electroplating industries, the distance should be more than 3.7km.
- For light pollution sources such as food factories and leather processing factories, the distance should be more

than 2km.

- If unavoidable, the site should be chosen in the perennial upwind direction of the pollution source.
- Please do not set your location within 3.7km from the seaside or the salt lake. If unavoidable, it should be built as airtight as possible, and equipped with air conditioning for cooling.

#### Electromagnetic Environmental Conditions:

Please keep your site away from transformers, high-voltage cables, transmission lines, and high-current equipment, for example, there should be no high-power AC transformers (>10KA) within 20 meters, and no high-voltage power lines within 50 meters.

Please keep your site away from high-power radio transmitters, for example, there should be no high-power radio transmitters (>1500W) within 100 meters.

#### Other Environmental Requirements

The server running room shall be free of explosive, conductive, magnetically conductive, and corrosive dust. The requirements of mechanical active substances are shown below:

#### Requirements of Mechanical Active Substances

Mechanical Active Substance	Requirement
Sand	$\leq 30\text{mg/m}^3$
Dust (suspended)	$\leq 0.2\text{mg/m}^3$
Dust (deposited)	$\leq 1.5\text{mg/m}^2\text{h}$

#### Requirements of Corrosive Gas

Corrosive Gas	Unit	Concentration
H <sub>2</sub> S	ppb	< 3
SO <sub>2</sub>	ppb	< 10
Cl <sub>2</sub>	ppb	< 1
NO <sub>2</sub>	ppb	< 50
HF	ppb	< 1
NH <sub>3</sub>	ppb	< 500
O <sub>3</sub>	ppb	< 2

**Note:** ppb (part per billion) refers to the unit of concentration and 1 ppb stands for the volume ratio of part per billion.

#### Regulations

#### FCC STATEMENT

##### FCC Notice (FOR FCC CERTIFIED MODELS):

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

1. This device may not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.

#### Note

This equipment has been tested and found to comply with the limits for a Class A digital device, according to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used under the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

#### EU WEEE: Disposal of Waste Equipment by Users in Private Households in the European Union

This symbol on the product or its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service, or the shop where you purchased the product.



## CONTACT

### BITMAIN

- Tel: +86-400-890-8855
- [www.BITMAIN.com](http://www.BITMAIN.com).

## Documents / Resources

A thumbnail image of the BITMAIN HS3 Server Manual cover. It features the BITMAIN logo at the top, followed by 'ANTMINER' and 'HS3 Server Manual'.	<p><a href="#">BITMAIN HS3 Server Handshake Algorithm Mining Machine</a> [pdf] User Manual HS3 Server Handshake Algorithm Mining Machine, HS3, Server Handshake Algorithm Mining Machine, Handshake Algorithm Mining Machine, Algorithm Mining Machine, Mining Machine</p>
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## References

- [BITMAIN](http://www.BITMAIN.com)



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