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## 1. INTRODUCTIONS

The E300 miner is a FPGA mining machine, manufactured by Osprey Electronics. The E300 is capable of 14GB/s hashrate on kHeavyHash algorithm, 210 MH/s on etchash/ethash algorithm, and 24GH/s for TON algorithm (but TON is not mineable now).

E300 miners are designed for both newbie and professional miners. For newbie miners, we have developed a WebUI that allows easy login where you set your wallet address for mining. For professional miners, we have also released documentation and source code for development purposes. The beauty of an FPGAs is the ability to change algorithms and allowing developers to write new bitstreams for the E300.

There are three hash boards in each E300 box. Each hash board has one Xilinx VU35P. Each VU35P includes 872K LUT, 224Mb on-chip RAM, 8GB HBM2. With the active air cooling the E300 is plug and play, no PC is required for mining though some developers may choose to develop miners that do run on a PC and connect to the E300 over the network.

Working temperature: 1 °C - 40 °C

## 2. E300 FUNCTIONS.

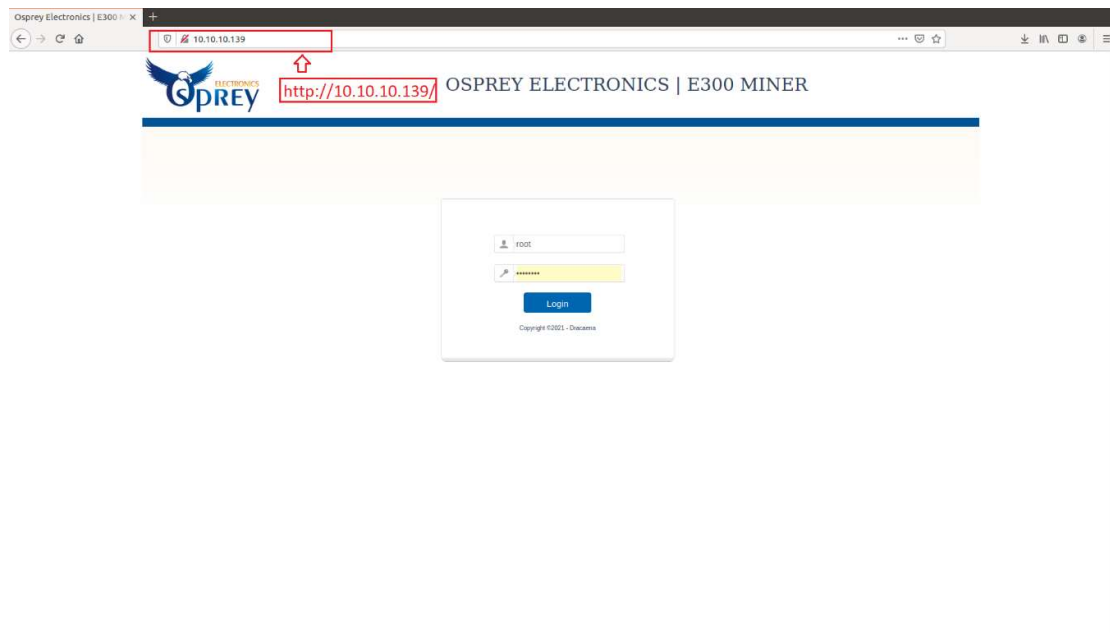
### 2.1. Log into E300 miner

Step 1: Obtain your E300's IP address by logging into your network router and reviewing the DHCP leases for a device named ARM or download and install the IP scanner tool (<https://www.advanced-ip-scanner.com>).

Step 2: Once you have the E300's IP address, open a web browser ( Chrome or Firefox suggested) and got to by typing [http://E300\\_ip\\_address/](http://E300_ip_address/) into the address bar. Your E300 should prompt you for login info like below. Please use the following information to log in:

User name: root

Password: password

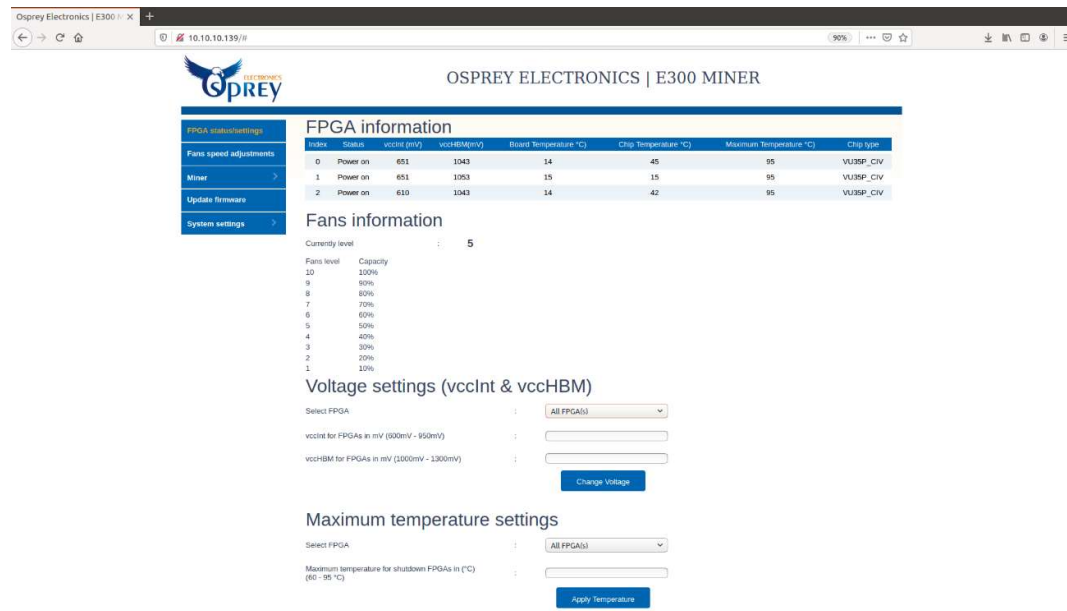


*Login window of the E300 miner*

## 2.2. FPGA status/settings

### 2.2.1. Get FPGA and Current fan level Information

Click submenu “FPGA status/settings” which will show you FPGA status, vccInt, vccHBM, Board Temperature, Chip Temperature, Maximum Temperature and Chip type. You will see your Fan levels and can set voltage and temperature settings.



The screenshot displays the OSPREY Electronics E300 Miner web interface. The left sidebar contains navigation links: "FPGA status/settings", "Fans speed adjustments", "Miner", "Update firmware", and "System settings". The main content area is titled "FPGA information" and contains a table with the following data:

Index	Status	vccInt (mV)	vccHBM(mV)	Board Temperature (°C)	Chip Temperature (°C)	Maximum Temperature (°C)	Chip type
0	Power on	651	1043	14	45	95	VU39P_CIV
1	Power on	651	1053	15	15	95	VU39P_CIV
2	Power on	610	1043	14	42	95	VU39P_CIV

Below the table, the "Fans information" section shows a "Currently level" of 5 and a list of fan levels from 1 to 10 with their corresponding capacities: 10% (10), 20% (2), 30% (3), 40% (4), 50% (5), 60% (6), 70% (7), 80% (8), 90% (9), and 100% (10).

The "Voltage settings (vccInt & vccHBM)" section includes a "Select FPGA" dropdown set to "All FPGA(s)", input fields for "vccInt for FPGAs in mV (800mV - 950mV)" and "vccHBM for FPGAs in mV (1000mV - 1300mV)", and a "Change Voltage" button.


The "Maximum temperature settings" section includes a "Select FPGA" dropdown set to "All FPGA(s)", an input field for "Maximum temperature for shutdown FPGAs in (°C) (60 - 95 °C)", and an "Apply Temperature" button.

### 2.2.2. Set *vccInt* and *vccHBM* functions

The E300 miner supports setting the `vccInt` and `vccHBM` on all of FPGAs at once or individually.

Tweaking the `vccInt` and `vccHBM` settings can influence the total power consumption. Most FPGAs should work the values below, but you may be able to tweak them even further to increase hashrate or lower power consumption.

Algorithm	Clock	vccInt	vccHBM
kHeavyHash (Kaspa)	650 MHz	620-650 mV	Kaspa doesn't use HBM
	600 MHz	600-620 mV	Kaspa doesn't use HBM
	550 MHz	600 mV	Kaspa doesn't use HBM
Etchash	600 MHz	800 mV	1150 mV
	550 MHz	750 mV	1100 mV



# OSPREY ELECTRONICS | E300 MINER

FPGA status/settings

Fans speed adjustments

Miner

Update firmware

System settings

## FPGA information

Index	Status	vccInt (mV)	vccHBM(mV)	Board Temperature °C)	Chip Temperature °C)	Maximum Temperature °C)	Chip type
0	Power on	651	1041	14	45	95	VU3SP_CIV
1	Power on	651	1053	15	44	95	VU3SP_CIV
2	Power on	608	1045	14	42	95	VU3SP_CIV

## Fans information

Currently level : 5

Fans level	Capacity
10	100%
9	90%
8	80%
7	70%
6	60%
5	50%
4	40%
3	30%
2	20%
1	10%

## Voltage settings (vccInt & vccHBM)

Select FPGA

All FPGAs()

vccInt for FPGAs in mV (600mV - 950mV)

640

enter the vccInt Value

vccHBM for FPGAs in mV (1000mV - 1300mV)

Click to apply the new value

*Setting vccint/vcchbm example image.*

### 2.2.3. *Maximum temperature settings*

For safety reasons, the E300 miner supports automatically shutting down the FPGAs by using the Maximum temperature settings. This can be set by going to “FPGA status/settings” and the “Maximum temperature settings” section and filling the maximum temperature value.

When a FPGA(s) is over the maximum temperature value, the controller service will power off FPGA(s)s. Then when the temperature drops below the set maximum, the controller service will power up FPGA(s) automatically.

## Maximum temperature settings

Select FPGA	:	<input type="text" value="All FPGA(s)"/>
Maximum temperature for shutdown FPGAs in (°C) (60 - 95 °C)	:	<input type="text" value="90"/>
<input type="button" value="Apply Temperature"/>		

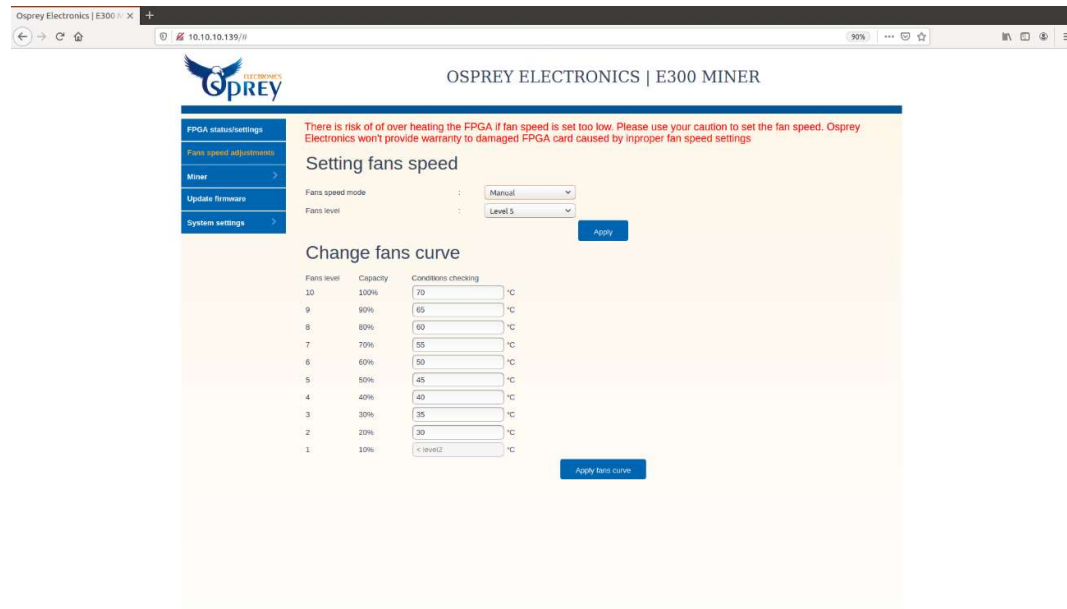
## 2.3. Fans speed adjustments

### 2.3.1. Setting fans speed

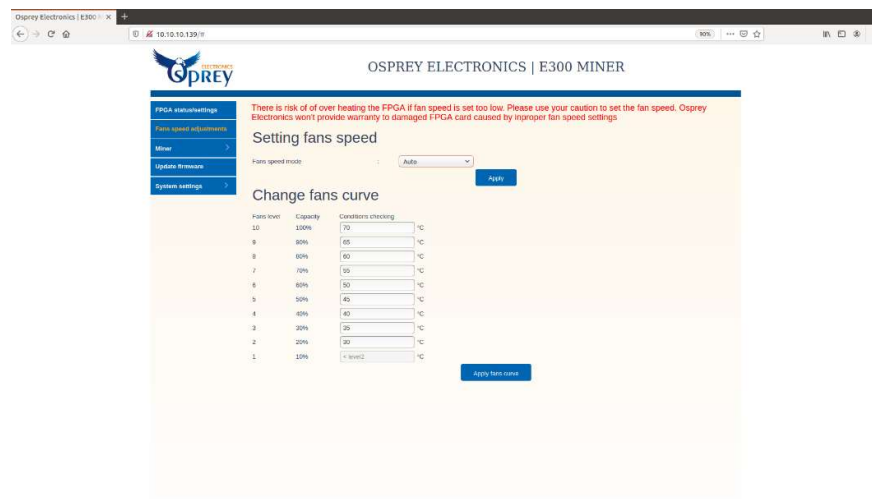
The E300 miner supports both manual and auto fan modes.

Manual mode: Go to “Fan Speed adjustments” chose manual and then the fan level.

The recommended level is 5.



Auto mode: By default, the E300 will run in Auto mode. The speed the fans run is controlled by changing the fans curve temperature condition.

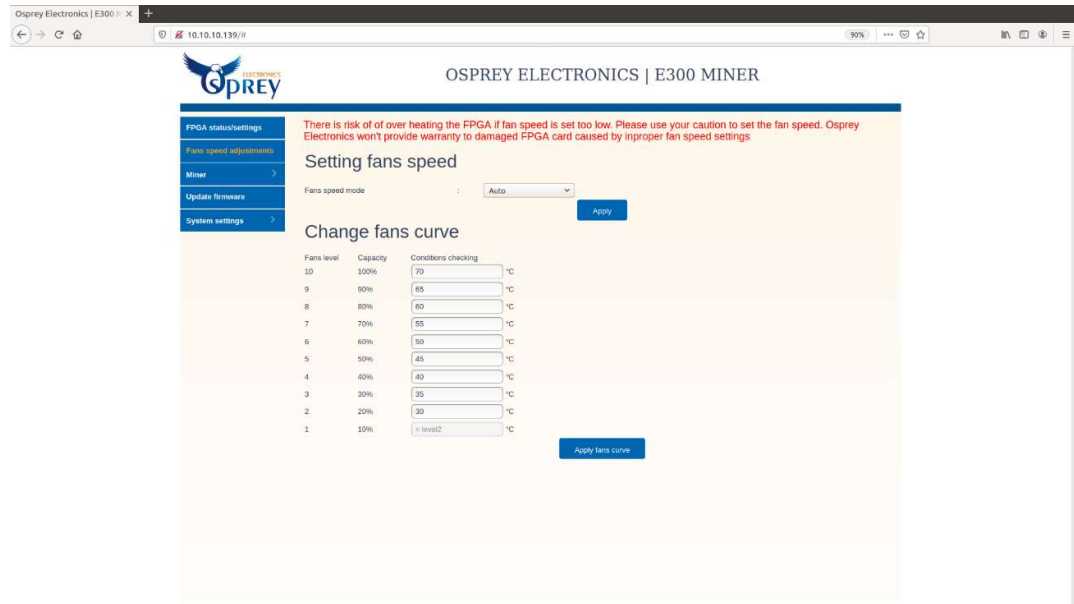


### 2.3.2. *Change fans curve*

If your E300 is set to manual you will need to change it to Auto on the “Fan Speed adjustments” menu and the click Apply button. This will allow you to set the fan curve

In “auto” mode, the controller service uses the fans curve table and current chip temperature to decide what fan level to set the E300 to.

To change the fans curve go to “Fans speed adjustments” menu and then “Change fans curve” section for adjustment.



The screenshot shows the web interface for the Osprey Electronics E300 Miner. The browser address bar shows the URL 10.10.10.139. The page title is "OSPREY ELECTRONICS | E300 MINER". The left sidebar contains a menu with the following items: "FPGA status/settings", "Fans speed adjustments", "Miner", "Update firmware", and "System settings". The main content area is titled "Setting fans speed" and includes a warning message: "There is risk of over heating the FPGA if fan speed is set too low. Please use your caution to set the fan speed. Osprey Electronics won't provide warranty to damaged FPGA card caused by improper fan speed settings". Below the warning, there is a "Fans speed mode" dropdown menu set to "Auto" and an "Apply" button. The "Change fans curve" section is also visible, showing a table with columns for "Fans level", "Capacity", and "Conditions checking". The table contains 10 rows of data, with the "Conditions checking" column showing temperature values in degrees Celsius. An "Apply fans curve" button is located at the bottom right of the table.

Fans level	Capacity	Conditions checking
10	100%	70 °C
9	90%	65 °C
8	80%	60 °C
7	70%	55 °C
6	60%	50 °C
5	50%	45 °C
4	40%	40 °C
3	30%	35 °C
2	20%	30 °C
1	10%	< level2 °C



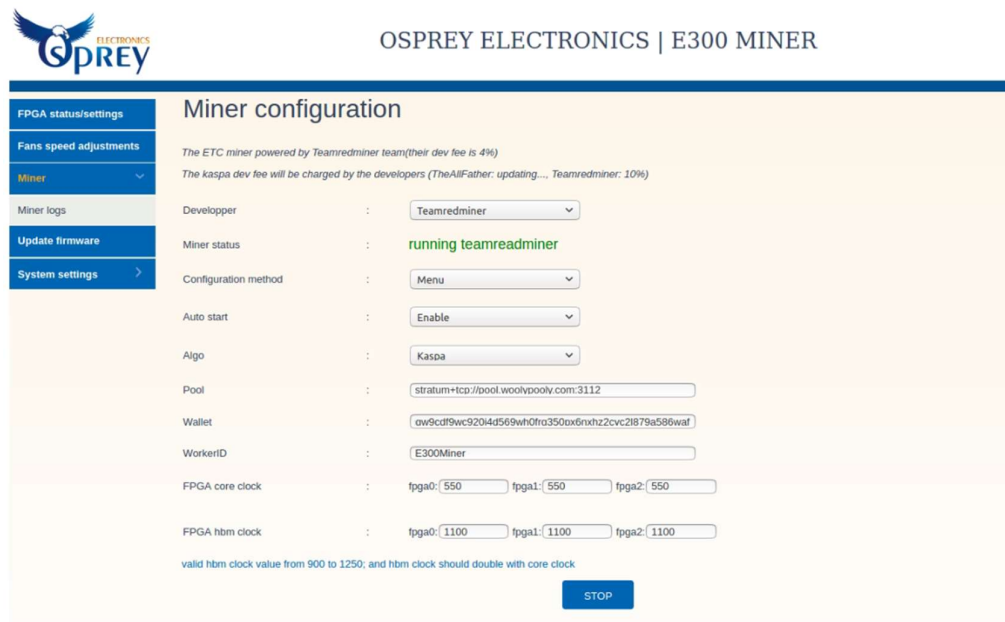
## 2.4. Miner configuration and miner logs

### 2.4.1. Miner configurations

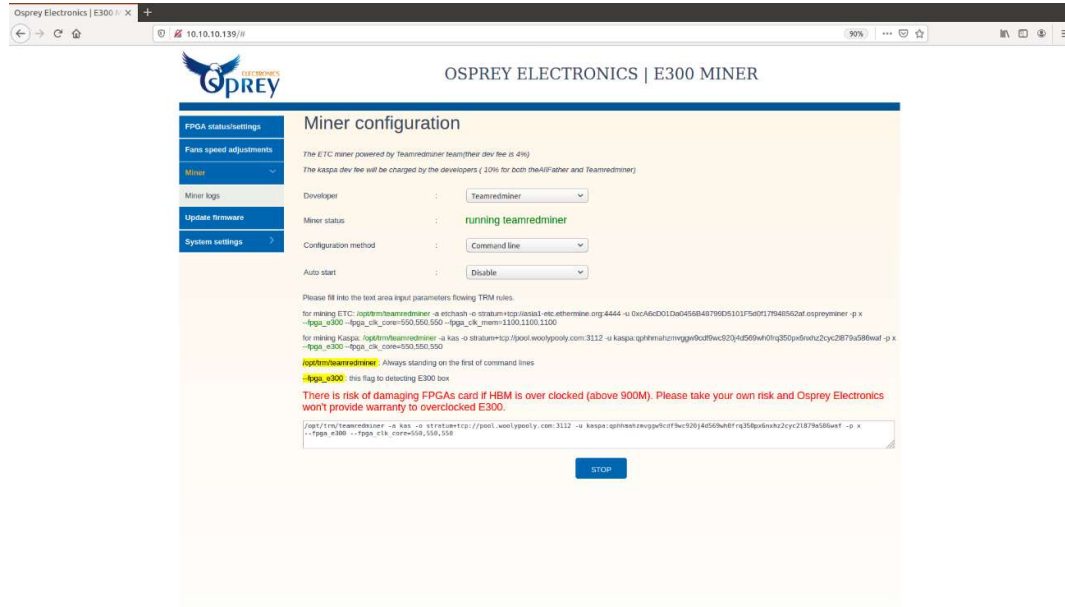
On the first firmware versions the E300 miners supported ETH (210 MH/s) and TON (24GH/s) coins. These coins are now longer mineable.

Starting with firmware version V.1.0.15 the E300 boxes can mine Kaspas and continue to mine ETC.

E300 miner supported configuration both menu method and command line method



### *Menu configuration method*

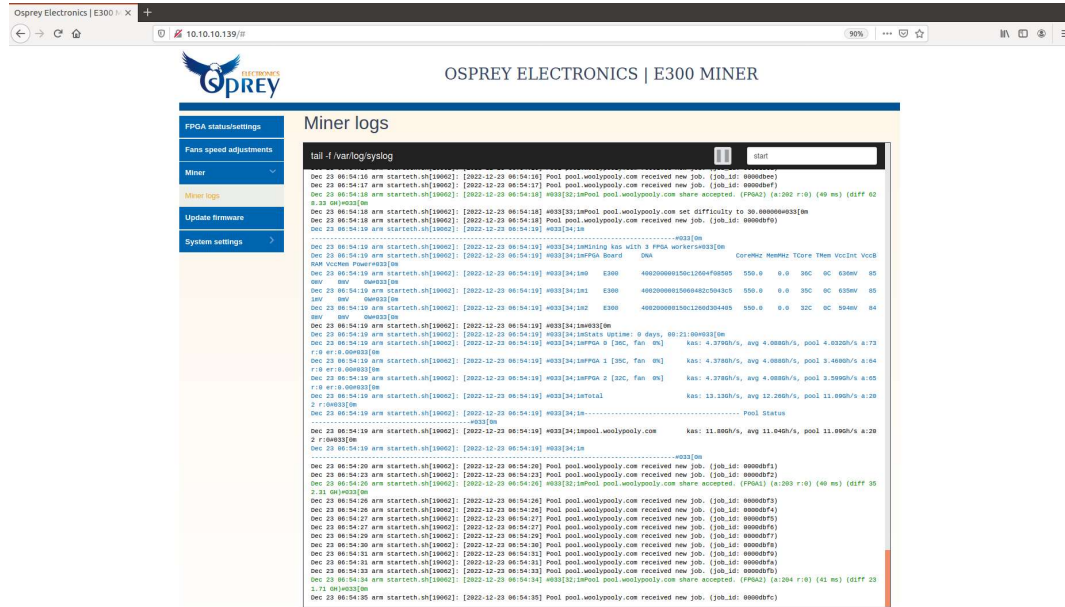


### *Command line configuration method*

#### **2.4.2. Miner Logs.**

Miner logs helps users monitor miner via WebGUI. The E300 parses and streams all of the system logs. You are also able to filter and get logs of any services on the zynq board as well.

Goto “Miner” menu and then “Miner logs” to check.



## 2.5. Firmware update

### 2.5.1. Auto update firmware

By default, all E300 miners have OTA (over-the-air) update enabled and when there is a new firmware version release, the E300 firmware will be automatically updated. To check the current firmware version and OTA status, please go to the “Update firmware” menu

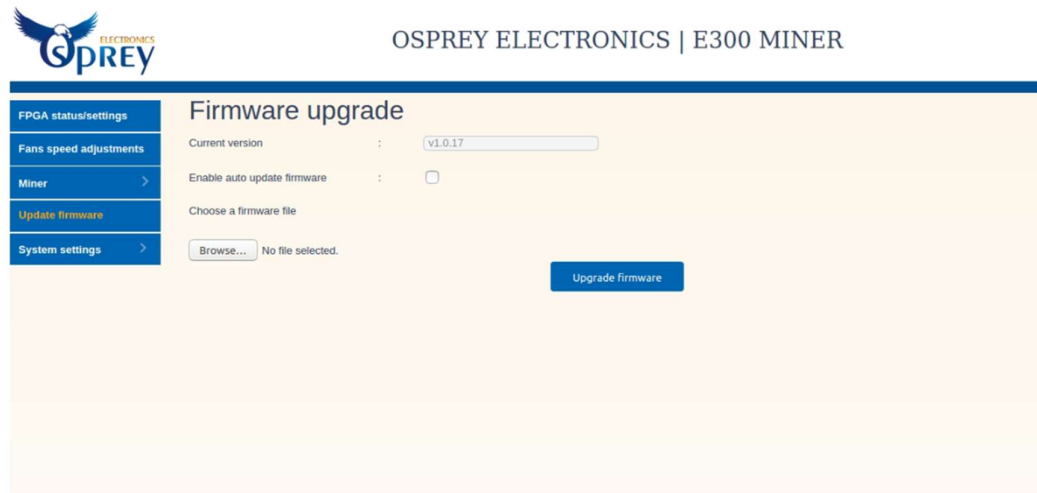


## OSPREY ELECTRONICS | E300 MINER



### 2.5.2. Manual update firmware

The E300 also supports a manual firmware update method. To enable manual firmware update, go to the "Update Firmware" menu and untick "Enable auto update firmware"



## 2.6. SYSTEM SETTINGS

### 2.6.1. IP settings.

The E300 miner supports both static and dhcp mode.

Go to the "System settings" menu and then the "Network settings" submenu and the "IP settings" sections to configure the IP settings.



FPGA status/settings

Fans speed adjustments

Miner

Update firmware

System settings

Network settings

Notification settings

Password

Reset

## IP settings

Network Information

Protocol	:	static
IP Address	:	10.10.10.139
Subnet mask	:	255.255.255.0
Gateway	:	10.10.10.1
DNS Server	:	8.8.8.8

Apply

## Hotname settings

hostname regular: letters from a to z, the digits from 0 to 9, the hyphen (-) or dot (.) A hostname may not start with a hyphen.

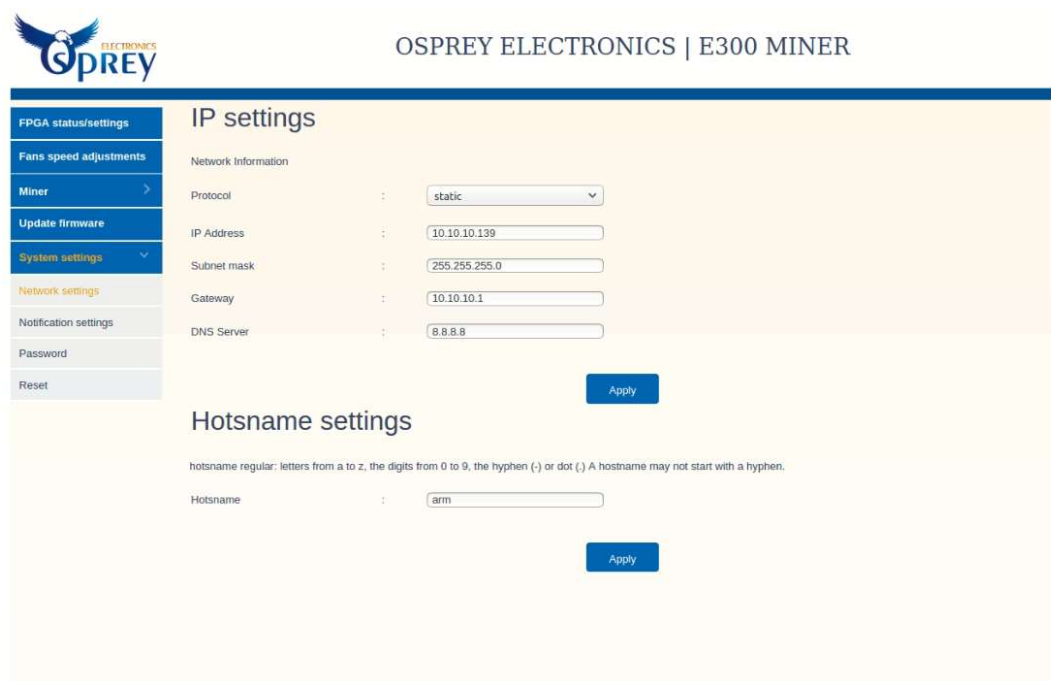
Hotname	:	arm
---------	---	-----

Apply

### 2.6.2. Hostname settings

If desired you can set the hostname of your E300 by going to “System settings” menu and then the “Network settings” submenu and the “Hostname settings” section.

Changing this setting will help you to identify your E300 on your local network especially if you have more than one.



The screenshot displays the web interface for the OSPREY E300 MINER. At the top, the OSPREY ELECTRONICS logo is on the left, and the text "OSPREY ELECTRONICS | E300 MINER" is on the right. A left-hand navigation menu contains the following items: "FPGA status/settings", "Fans speed adjustments", "Miner" (with a right arrow), "Update firmware", "System settings" (with a down arrow), "Network settings" (highlighted in orange), "Notification settings", "Password", and "Reset". The main content area is titled "IP settings" and contains a "Network Information" section with the following fields: "Protocol" (set to "static"), "IP Address" (set to "10.10.10.139"), "Subnet mask" (set to "255.255.255.0"), "Gateway" (set to "10.10.10.1"), and "DNS Server" (set to "8.8.8.8"). An "Apply" button is located at the bottom right of this section. Below the IP settings is the "Hostname settings" section, which includes a note: "hostname regular: letters from a to z, the digits from 0 to 9, the hyphen (-) or dot (.) A hostname may not start with a hyphen." Below this note is a "Hostname" field with the value "arm" and another "Apply" button.

### 2.6.3. Notification settings

The E300 miner supports notifications. You can choose the type of alarms, notification period ... and filling your email address. The E300 miner will send alarm during the notification period to your email.

Go to “System settings” menu and then the “Notification settings” section for setting your notification preferences.



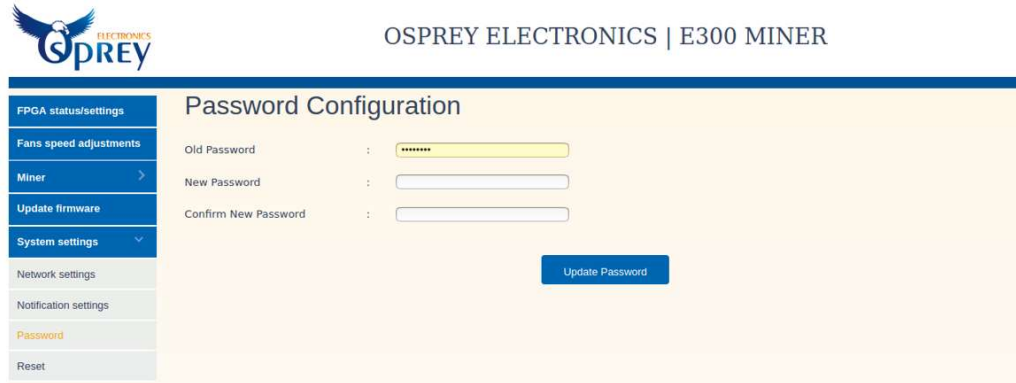
The screenshot displays the web interface of the OSPREY E300 MINER. The top header includes the OSPREY ELECTRONICS logo and the text "OSPREY ELECTRONICS | E300 MINER". On the left, a sidebar menu lists various settings: "FPGA status/settings", "Fans speed adjustments", "Miner", "Update firmware", "System settings" (which is expanded), "Network settings", "Notification settings" (highlighted in orange), "Password", and "Reset". The main content area is titled "Notification settings" and contains the following configuration options:

Automatic send notifications	:	<input type="text" value="Enable"/>
Notification period	:	<input type="text" value="once per 1 hour"/>
Destination email address	:	<input type="text" value="testing@gmail.com"/>
Overheat temperature value	:	<input type="text" value="70"/>
FPGA Temperatures	:	<input checked="" type="checkbox"/>
Mining status	:	<input checked="" type="checkbox"/>
Fans Information	:	<input checked="" type="checkbox"/>
Hashrate	:	<input checked="" type="checkbox"/>

An "Apply" button is located at the bottom right of the settings area.

### 2.6.4. Password

The E300 password can be changed on the “System settings” menu and “Password” submenu.



The screenshot shows the "Password Configuration" page. On the left is a sidebar menu with options: FPGA status/settings, Fans speed adjustments, Miner, Update firmware, System settings (selected), Network settings, Notification settings, Password, and Reset. The main content area has the title "Password Configuration" and three input fields: "Old Password" (masked with asterisks), "New Password", and "Confirm New Password". An "Update Password" button is located at the bottom right of the form.

### 2.6.5. Reset

The E300 can be factory reset using the “System settings” menu and “Reset” submenu.



The screenshot shows the "Reset factory" page. The sidebar menu is identical to the previous screenshot, with "System settings" selected. The main content area has the title "Reset factory" and a subtext: "This function resets FPGAs by default." A single "Reset" button is centered in the main area.



### 3. SUPPORTING CONTACT

If you have any troubles/issues/questions, there are 3 way you can choose to reach our to our support team:

1. Via email: Please send an email to [huong.doan@dracaena.io](mailto:huong.doan@dracaena.io) – Subject: [E300 support] ..(main issue you facing)..
2. Via website: Please open our website [www.ospreyelectronics.io](http://www.ospreyelectronics.io) and open chatbox/contact. After you fill in all the required information your message will be sent to us automatically.
3. Contact us Osprey Electronics discord channel:  
<https://discord.gg/mE8uNQMkKJ>