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1. INTRODUCTIONS

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

E300 miners is designed for both newbie miner and professional miner.

For newbie miners, we developed WebUI functions and you guys just need to login and change wallet address for mining

For professional miner, we also released all of documents/source code for developing purpose. The beautiful of FPGAs is come from changing algorithm capacity, and developers can develop a new bitstream for E300.

There are three hash boards in a 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, E300 is plug and play, no PC needed for mining program.

2. E300 FUNCTIONS.

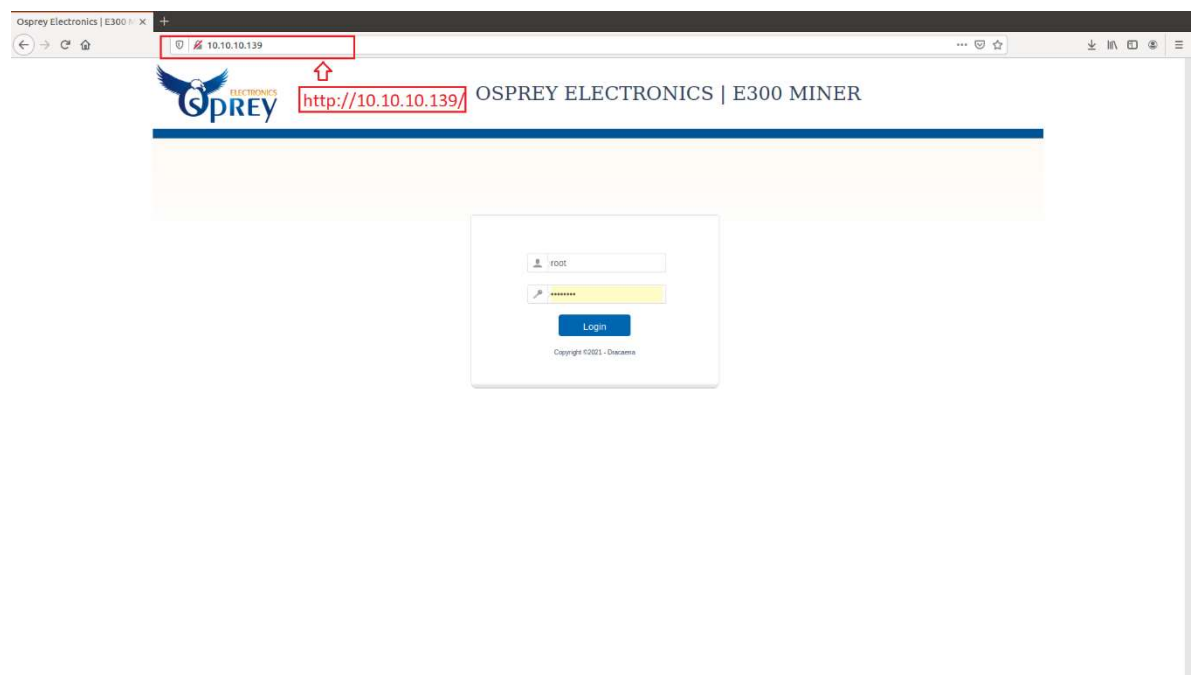
2.1. Log into E300 miner.

Step 1: Get E300 IP address by login your network router or download and install the IP scanner tool (<https://www.advanced-ip-scanner.com>).

Step 2: Now that you have the E300's IP address, open web browser (should Chrome/Firefox suggested) and type/paste http://E300_ip_address/ into the address bar. Your E300 login panel will then load within the browser window.

User name: root

Password: password

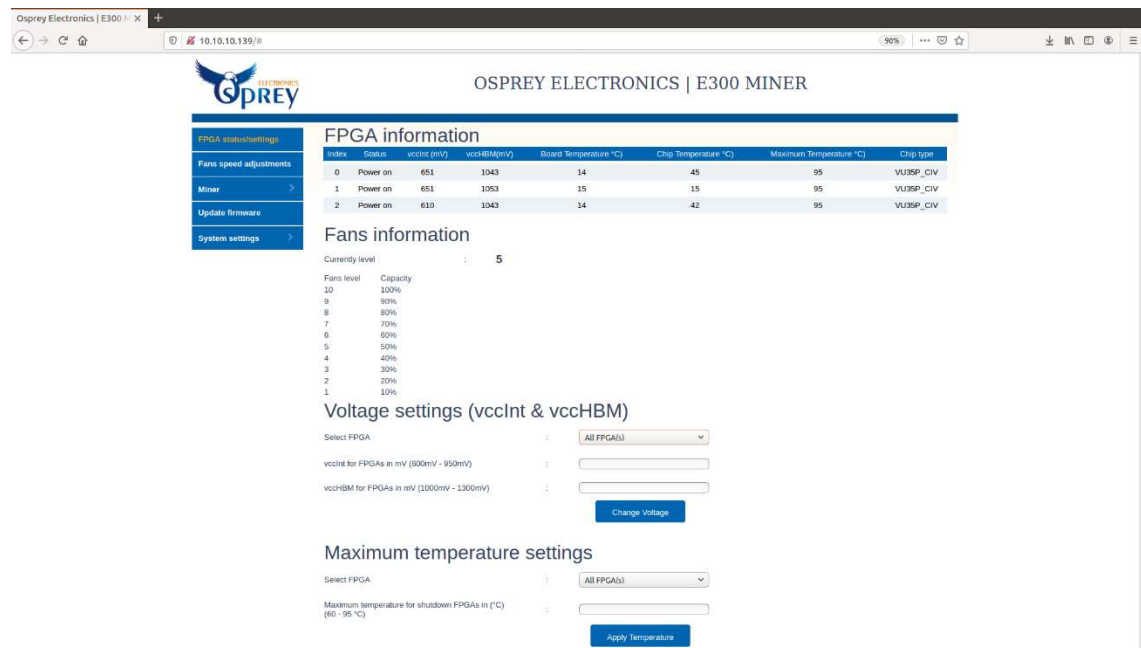


Login window of the E300 miner

2.2. FPGA status/settings.

2.2.1. Get FPGA and Current fan level Information

Click submenu “FPGA status/settings” to get all of FPGAs and current fans level.



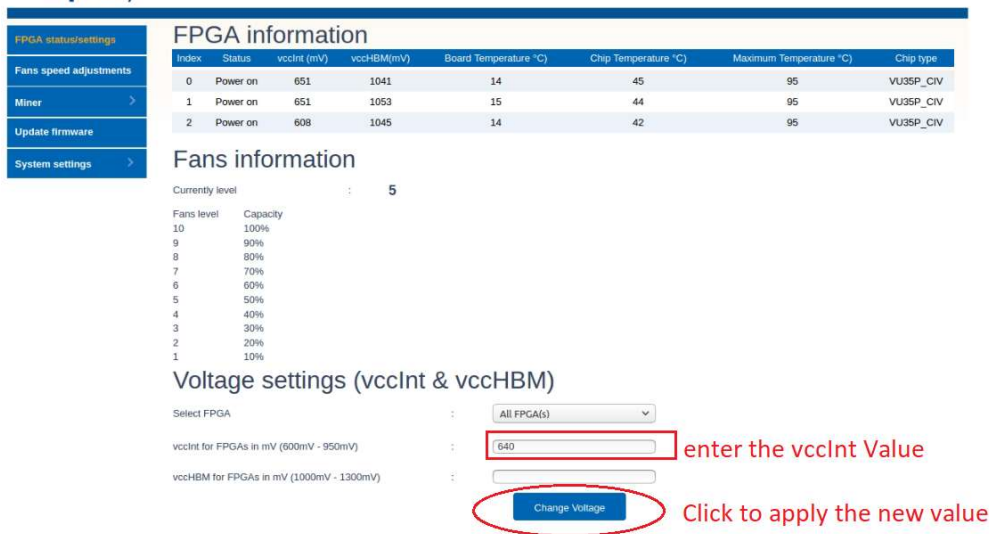
The screenshot shows the OSPREY E300 MINER web interface. The left sidebar contains a menu with options: FPGA status/settings, Fans speed adjustments, Miner, Update firmware, and System settings. The main content area is titled 'FPGA information' and displays a table with columns: Index, Status, vccInt (mV), vccHBM (mV), Board Temperature (°C), Chip Temperature (°C), Maximum Temperature (°C), and Chip type. The table lists three FPGAs, all with a status of 'Power on'. Below the table is a 'Fans information' section showing a 'Currently level' of 5 and a list of fan levels from 1 to 10 with their corresponding capacities. Further down is a 'Voltage settings (vccInt & vccHBM)' section with a 'Select FPGA' dropdown set to 'All FPGA(s)', input fields for 'vccInt for FPGAs in mV (600mV - 950mV)' and 'vccHBM for FPGAs in mV (1000mV - 1300mV)', and a 'Change Voltage' button. At the bottom is a 'Maximum temperature settings' section with 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 .

E300 miner supported to change vccInt/vccHBM of FPGAs

The vccInt/vccHBM influences a lot on total power consumption. Depending on running clock and algorithms, you should set them in difference values. We recommend values as table below

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



The screenshot shows the 'FPGA status/settings' menu on the left. The main content area displays 'FPGA information' with a table of three FPGAs (Index 0, 1, 2) showing their status, voltages, and temperatures. Below this is 'Fans information' showing a fan level slider set to 5. The 'Voltage settings (vccInt & vccHBM)' section shows 'Select FPGA' set to 'All FPGA(s)', 'vccInt for FPGAs in mV (600mV - 950mV)' set to 640, and 'vccHBM for FPGAs in mV (1000mV - 1300mV)' set to 1000. A red box highlights the '640' value, and a red arrow points to it with the text 'enter the vccInt Value'. A red circle highlights the 'Change Voltage' button, and a red arrow points to it with the text 'Click to apply the new value'.

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

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 FPGA(s)

vccInt for FPGAs in mV (600mV - 950mV) : 640

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

Change Voltage

Setting vccInt/vccHBM example image.

2.2.3. Maximum temperature settings.

For safety reason, E300 miner supported automatically shut down FPGAs functions. Clients can go to submenu “FPGA status/settings” -> “Maximum temperature settings” then filling the maximum temperature value.

When FPGA(s) is over maximum temperature value, the controller service will power off FPGAs. Then when the temperatures reduce under maximum, the controller service will power up automatically FPGAs.

Maximum temperature settings



The screenshot shows the 'Maximum temperature settings' page. It has a 'Select FPGA' dropdown menu set to 'All FPGA(s)'. Below it is a text input field for 'Maximum temperature for shutdown FPGAs in (°C) (60 - 95 °C)' with the value '90' entered. A blue 'Apply Temperature' button is at the bottom.

Select FPGA : All FPGA(s)

Maximum temperature for shutdown FPGAs in (°C) (60 - 95 °C) : 90

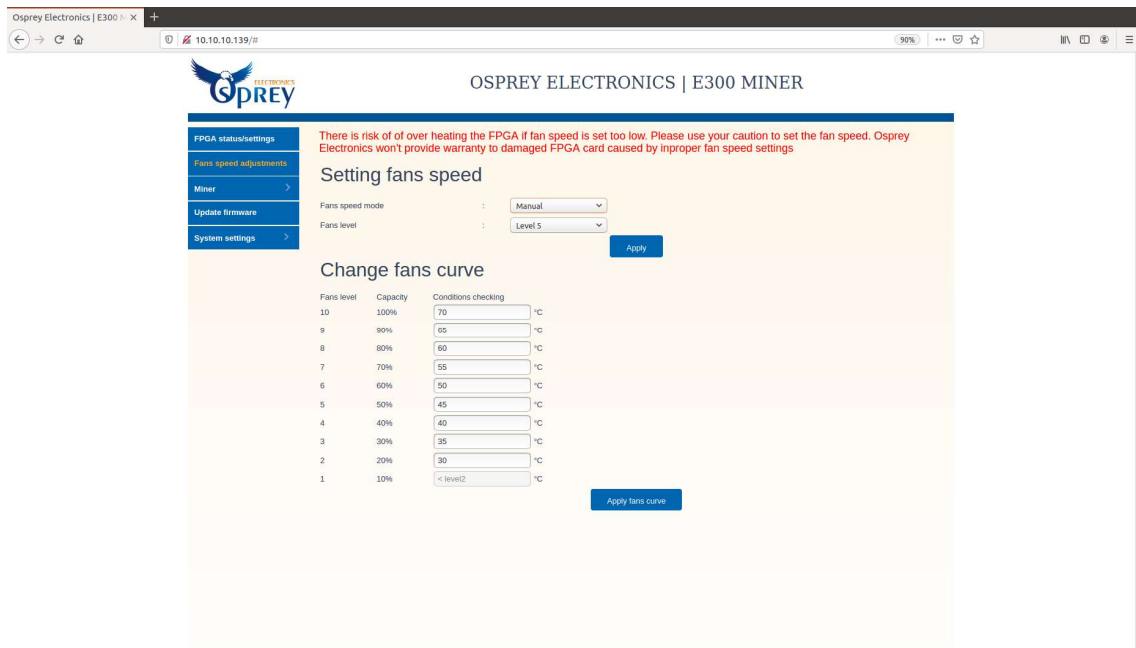
Apply Temperature

2.3. Fans speed adjustments.

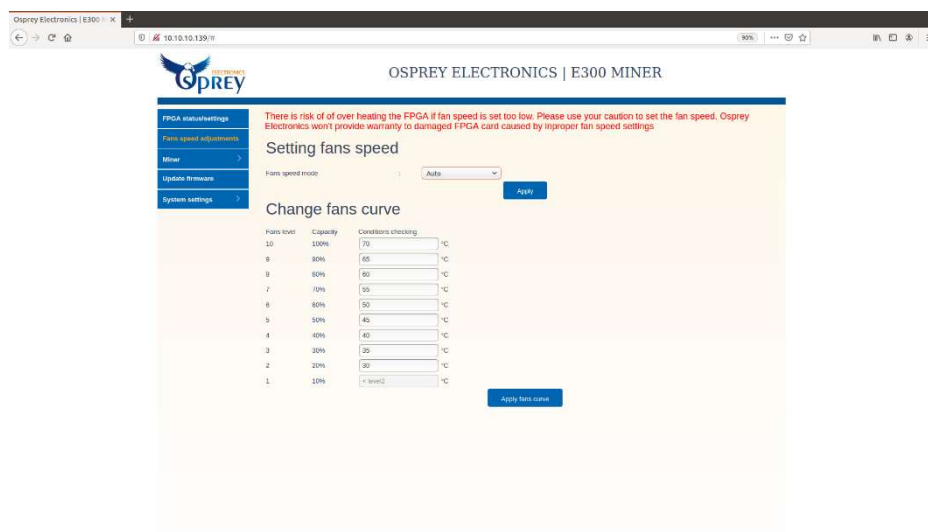
2.3.1. Setting fans speed.

E300 miner supported both manual and auto fan modes

Manual mode: Clients have to choose the fan level, we recommend set fan from level 5



Auto mode: By default, fans are running with auto mode, and depending on fans curve tables, fans will be ran with speeds corresponding

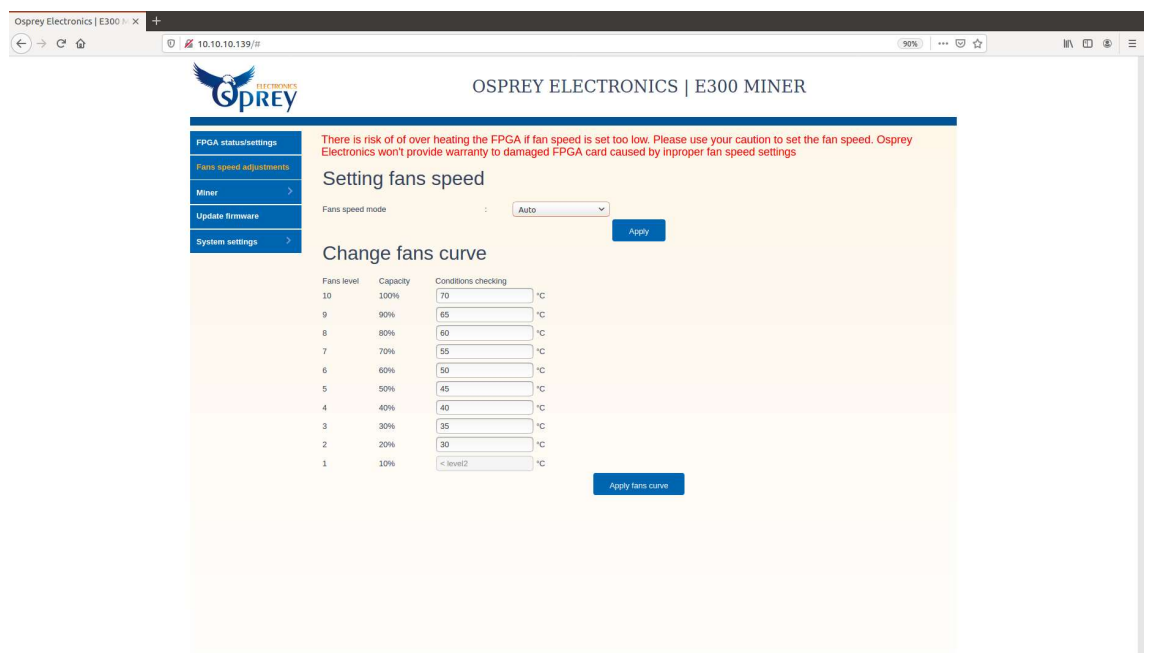


Click “Fans speed adjustments” submenu to configure fans.

2.3.2. *Change fans curve.*

In the fan “auto” mode, the controller service bases on fans curve table and current chip temperature to decide which fan level will be ran for E300 box. Depending on temperature environment, client can set fans curve by yourself.

Goto submenu “Fans speed adjustments” -> “Change fans curve” for configurations.



The screenshot shows the web interface of 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 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 contains a table with three columns: "Fans level", "Capacity", and "Conditions checking". The table lists 10 fan levels, each with a corresponding capacity and a temperature condition 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

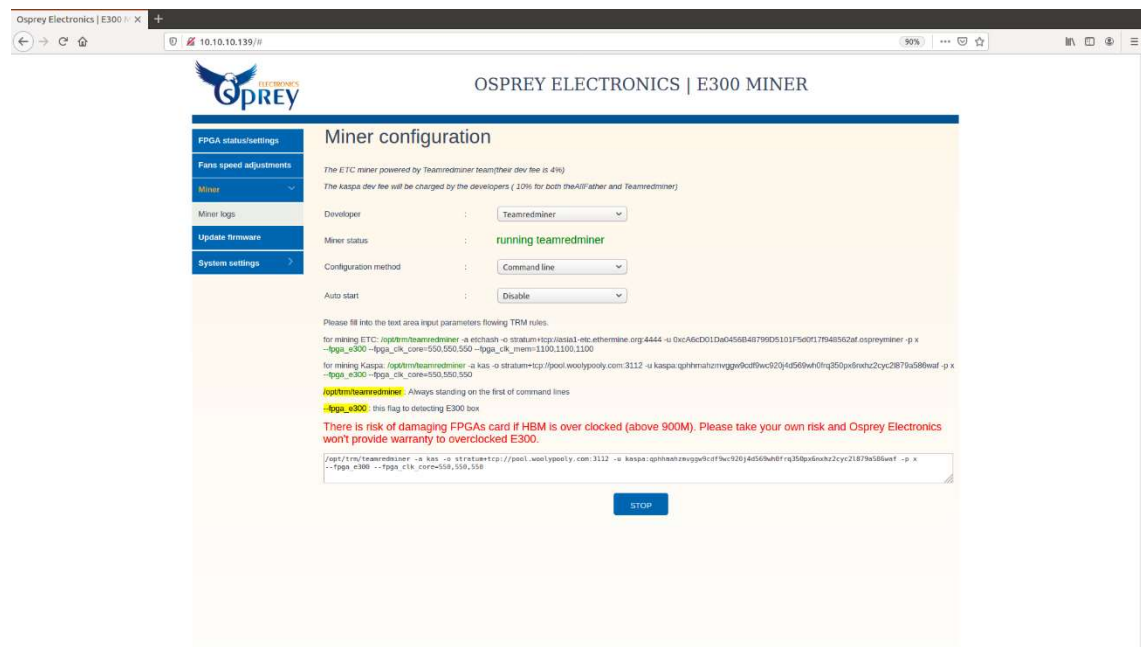
2.4. Miner configuration and miner logs.

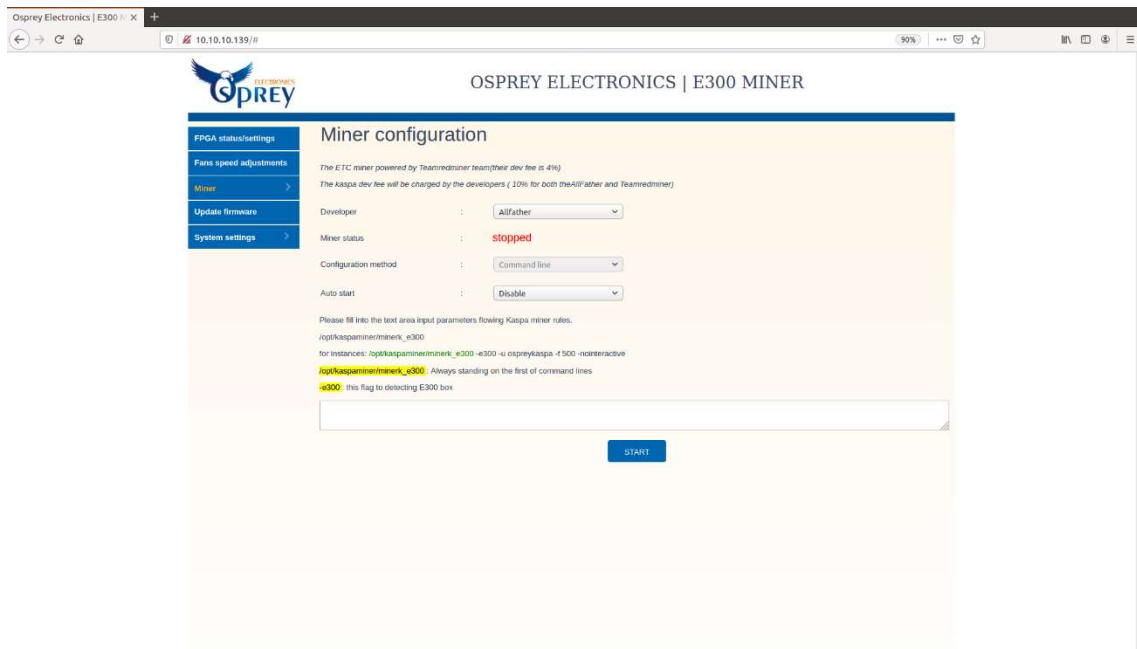
2.4.1. Miner configurations.

For the earlier firmware versions, E300 miners supported ETH (210 MH/s) and TON (24GH/s) coins. However, ETH moved to POS. and the final TON token already mined

From version V.1.0.15, E300 boxes are able to mine Kaspa and ETC.

Go to submenu “Miner” and run the mining command line.

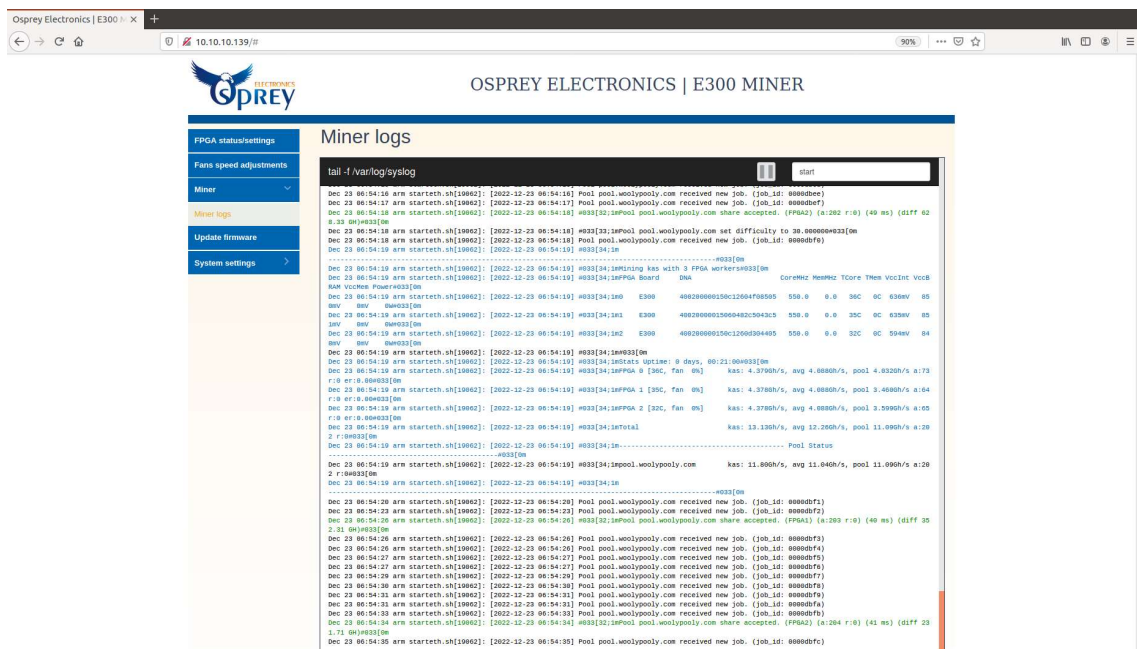




2.4.2. Miner Logs.

Miner log helps users monitor miner via WebGUI. We are streaming all of system log, users also can change the filter and get log of any services on zynq board as well.

Goto submenu “Miner” -> “Miner logs” to checking.



2.5. Firmware update.

2.5.1. Auto update firmware.

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



2.5.2. Manual update firmware.

Beside OTA update, E300 also supported manual firmware update method. To enable manual firmware update, Please go to "Update Firmware" menu and untick "Enable auto update firmware"

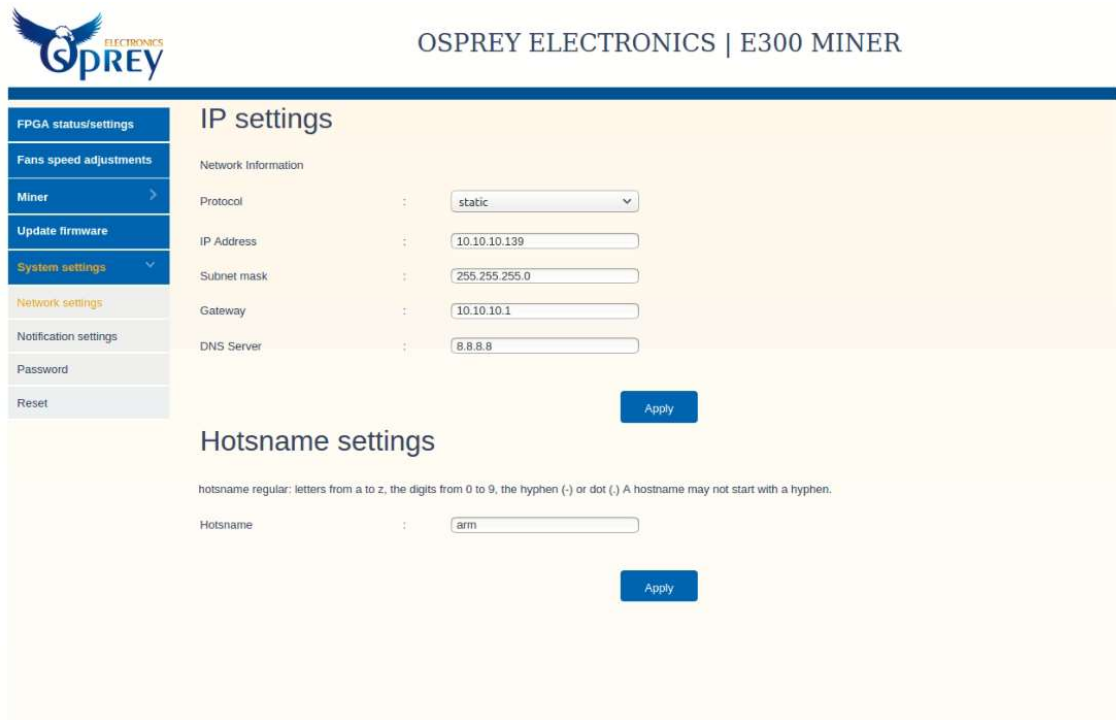


2.6. SYSTEM SETTINGS

2.6.1. IP settings.

E300 miner supported both static and dhcp mode.

Goto submenu “System settings”-> “Network settings” -> “IP settings” to config IP.

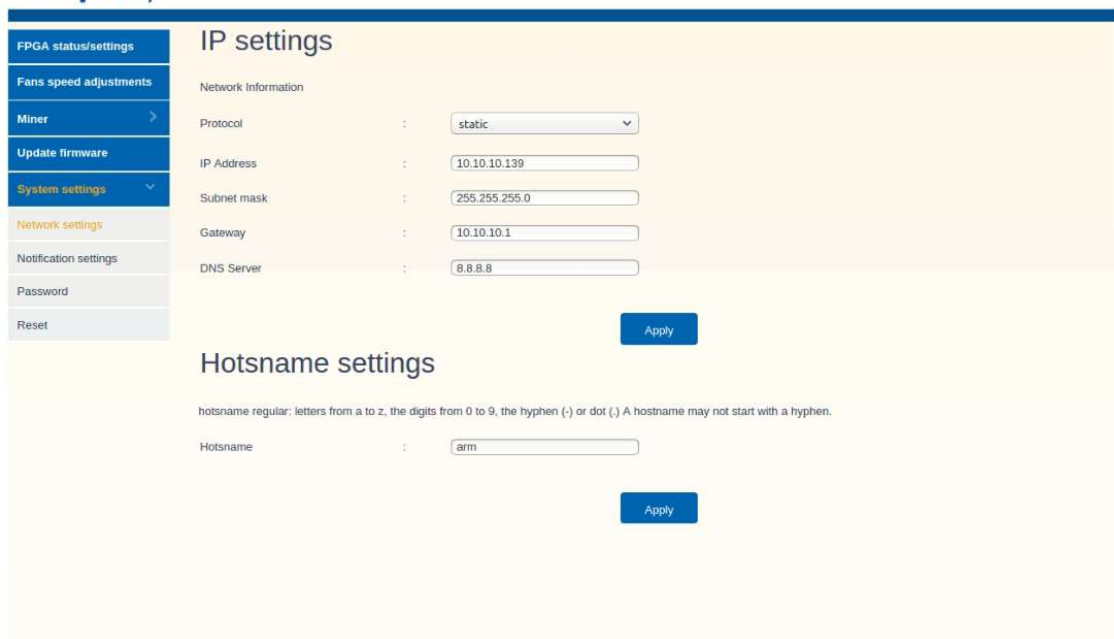


The screenshot displays the OSPREY E300 MINER web interface. On the left is a sidebar menu with options: FPGA status/settings, Fans speed adjustments, Miner, Update firmware, System settings (highlighted), Network settings, Notification settings, Password, and Reset. The main content area is titled 'IP settings' and contains a 'Network Information' section with the following fields: Protocol (static), IP Address (10.10.10.139), Subnet mask (255.255.255.0), Gateway (10.10.10.1), and DNS Server (8.8.8.8). An 'Apply' button is located below these fields. Below the IP settings is a 'Hostname settings' section with 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.' The 'Hostname' field contains the value 'arm'. Another 'Apply' button is located below the hostname field.

2.6.2. Hostname settings.

In the case of you have more than 2 E300 boxes, you can setup hostname for them by go to ““System settings”-> “Network settings” -> “Hostname settings”

This function helps you avoid away from confuse and easy to detect E300 boxes on the local network.

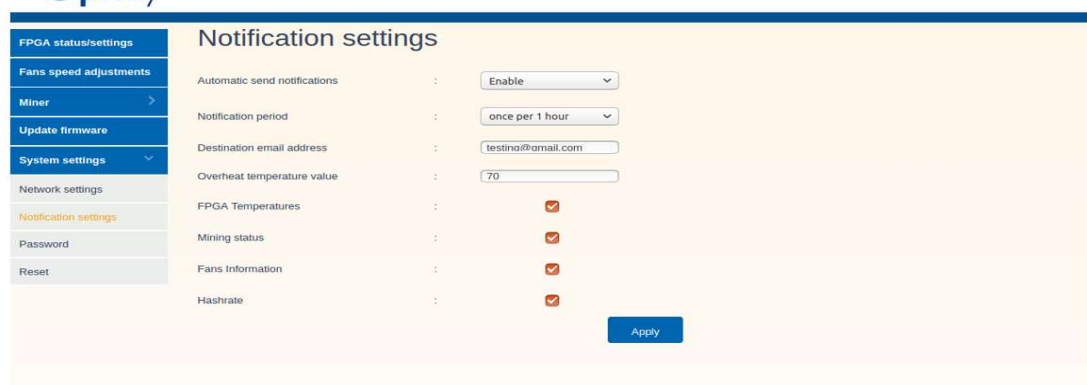


The screenshot shows the 'IP settings' page. On the left is a sidebar menu with options: 'FPGA status/settings', 'Fans speed adjustments', 'Miner', 'Update firmware', 'System settings' (selected), 'Network settings', 'Notification settings', 'Password', and 'Reset'. The main content area is titled 'IP settings' and contains a 'Network Information' section with the following fields: Protocol (static), IP Address (10.10.10.139), Subnet mask (255.255.255.0), Gateway (10.10.10.1), and DNS Server (8.8.8.8). There is an 'Apply' button at the bottom right of this section. Below the IP settings is a 'Hotname settings' section with a text input field containing 'arm' and another 'Apply' button. A note above the hotname field states: '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.'

2.6.3. Notification settings.

E300 miner supported notification functions. Client can choose type of alarms, notification period ... and filling your email address. E300 miner will send alarm in period to your email.

Goto “System settings”-> “Notification settings” for settings type of notifications.



The screenshot shows the 'Notification settings' page. The sidebar menu is the same as in the previous screenshot, with 'System settings' selected. The main content area is titled 'Notification settings' and contains the following fields: 'Automatic send notifications' (Enable), 'Notification period' (once per 1 hour), 'Destination email address' (testind@gmail.com), and 'Overheat temperature value' (70). There are four checkboxes, all of which are checked: 'FPGA Temperatures', 'Mining status', 'Fans Information', and 'Hashrate'. An 'Apply' button is located at the bottom right of the settings area.

2.6.4. Password.

Clients can change the login password by “System settings”-> “password”



FPGA status/settings

Fans speed adjustments

Miner >

Update firmware

System settings v

Network settings

Notification settings

Password

Reset

Password Configuration

Old Password :

New Password :

Confirm New Password :

Update Password

2.6.5. Reset.



FPGA status/settings

Fans speed adjustments

Miner >

Update firmware

System settings v

Network settings

Notification settings

Password

Reset

Reset factory

This function resets FPGAs by default.

Reset

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 – Subject: [E300 support] ..(main issue you facing)..
2. Via website: Please open our website 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>