

# RigRunner User Guide

## ePIC UMC OS

Last updated: May 2026

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## Introduction

**ePIC UMC OS** enables users to install ePIC firmware directly onto an **Amlogic and BeagleBone** stock control board, offering a flexible alternative to using ePIC UMC boards. This approach offers easy remote installation, compatibility with most Antminer stock firmware, and seamless integration with existing infrastructure.

**UMC OS** can be simply installed through **RigRunner** application:

- **RigRunner:** A user-friendly application designed for efficient fleet installation. RigRunner allows users to **scan, install, and uninstall UMC OS** across multiple rigs with ease, just like ePIC Dashboard, making it a convenient option for managing large deployments without needing command-line expertise.

Users can choose between purchasing a license key or opting for the **1.5%** dev fee option—whichever best aligns with their operational strategy and preferences.

## Setup

### Requirement

- Compatible stock firmware versions are as follows:

#### Works

- **February 2024 or prior**
- **Newer than September 2025**

#### Does NOT work

- **March - June 2024**
- **FR-1.39(260318-S21-Pro+)**

We recommend upgrading it to a later stock version.

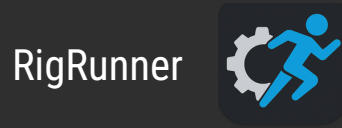
Contact [support@epicblockchain.io](mailto:support@epicblockchain.io) for more information.

Click the model below to find the stock firmware if needed.

[S21x firmware](#)

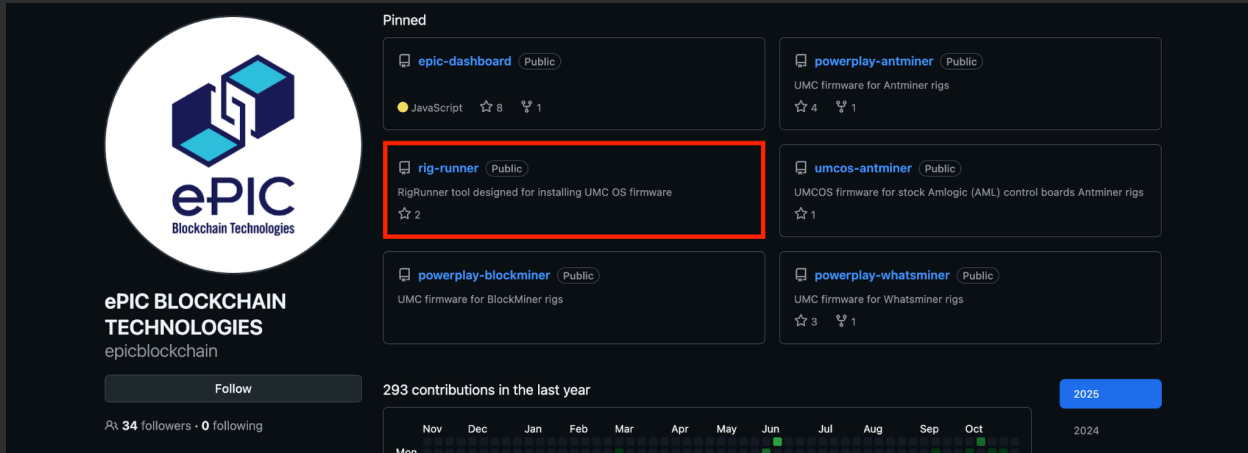
[S19x firmware](#)

- Miner's IP address
- **RigRunner** installed
  - Download **RigRunner** here: <https://github.com/epicblockchain/rig-runner>
- **UMCOS** firmware downloaded
  - Download UMC OS here: <https://github.com/epicblockchain/umcos-antminer>



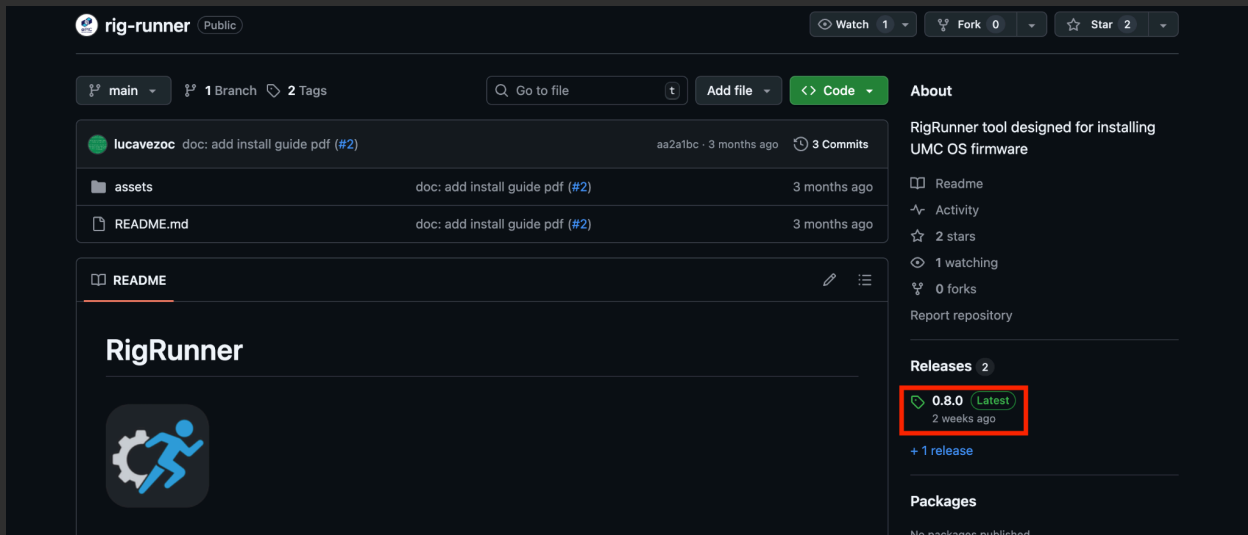
## Installation

1. Go to ePIC Github page and click **rig-runner**.



The screenshot shows the GitHub profile for ePIC Blockchain Technologies. The profile includes a circular logo with the ePIC logo and the text "ePIC BLOCKCHAIN TECHNOLOGIES" and "epicblockchain". Below the logo is a "Follow" button and a bar showing "34 followers · 0 following". A "Pinned" section displays several repositories: "epic-dashboard", "rig-runner" (highlighted with a red box), "powerplay-antminer", "umcos-antminer", "powerplay-blockminer", and "powerplay-whatsminer". The "rig-runner" repository is described as "RigRunner tool designed for installing UMC OS firmware" and has 2 stars. A contribution graph shows 293 contributions in the last year, with a bar for the year 2025.

2. Click the latest release on the right-hand panel.



The screenshot shows the GitHub repository page for "rig-runner". The repository is public and has 1 watch, 0 forks, and 2 stars. The main content area shows a list of commits and files, including "assets" and "README.md". The "README" file is open, showing the "RigRunner" logo and the text "RigRunner tool designed for installing UMC OS firmware". On the right-hand panel, the "Releases" section shows two releases, with the latest release "0.8.0" (Latest) highlighted with a red box. The release is dated "2 weeks ago" and has "+ 1 release" below it.

3. Select the installer for your operating system and follow the instructions.







Releases / 0.8.0

**0.8.0** Latest Compare

epicblockchain released this 2 weeks ago 0.8.0 aa2a1bc

doc: add install guide pdf (#2)

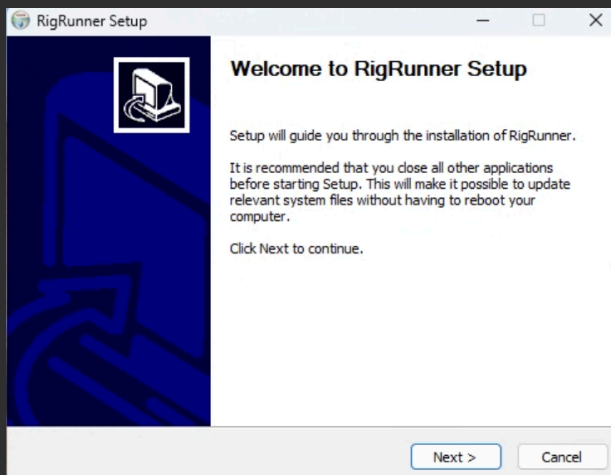
▼ **Assets** 6

 RigRunner_0.8.0_amd64.deb	sha256:6e6cbb9f9f51dee3480b741877...	10.2 MB	2 weeks ago
 RigRunner_0.8.0_x64-setup.exe	sha256:ed2e72a30eb0687b55855da632...	6.46 MB	2 weeks ago
 RigRunner_0.8.0_x64.dmg	sha256:fec80654dfe81046f3713e0902...	11.2 MB	2 weeks ago
 RigRunner_0.8.0_x64_en-US.msi	sha256:c8946de755de70473475945c01...	9.09 MB	2 weeks ago
 Source code (zip)			Nov 3, 2025
 Source code (tar.gz)			Nov 3, 2025

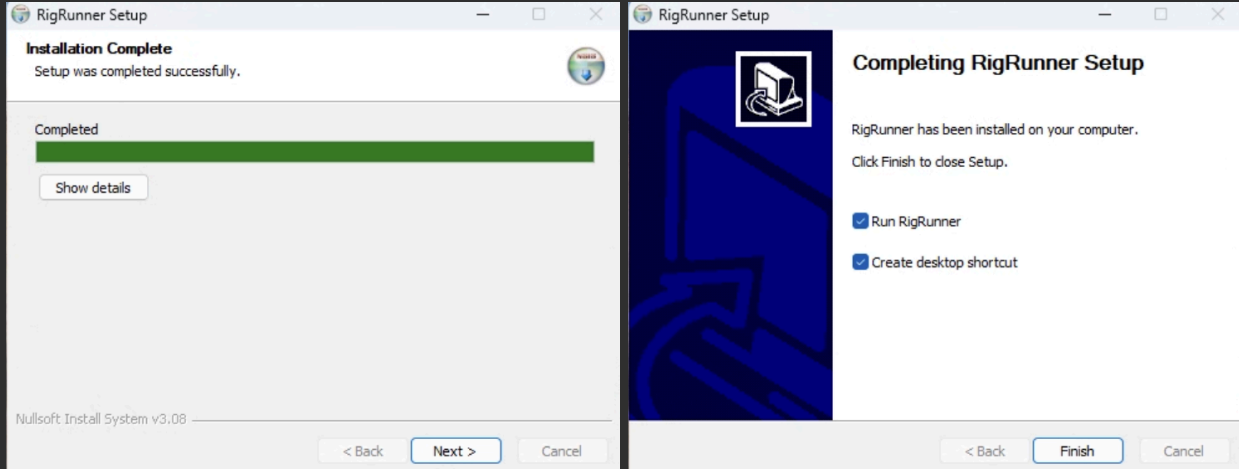
## For Windows

RigRunner\_<version>\_<arch>-setup.exe

1. Click to download the .exe file and run the installer.



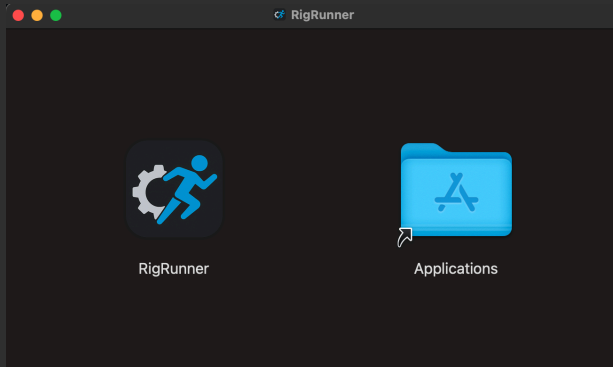
2. Follow the instructions to complete RigRunner setup.



## For MacOS

RigRunner\_<version>\_<arch>.dmg

1. Click to download the .dmg file and drag it to the Applications folder.

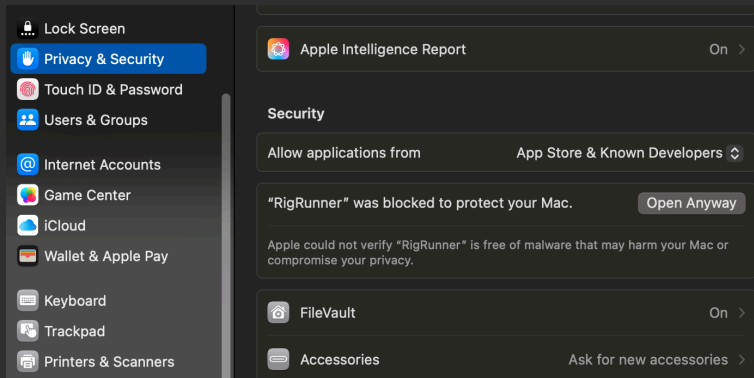


2. Follow the below instructions.

Click "Done"



Navigate to System Settings > Privacy & Security > Scroll down and click **“Allow Anyway”**

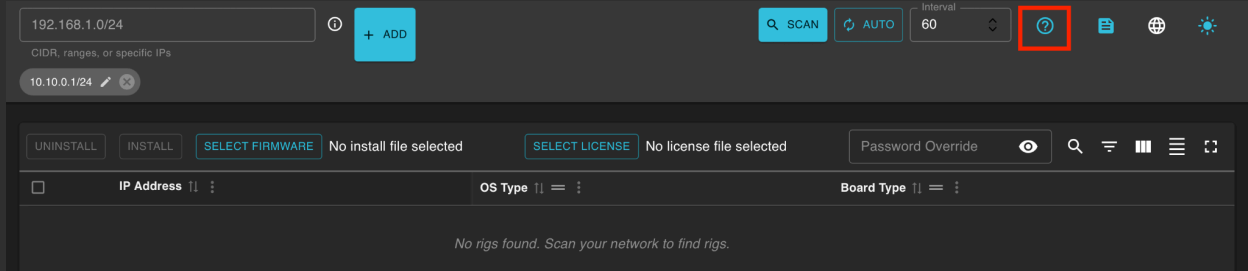


Open the app again and click **“Open Anyway”**



## Instruction

1. Open the **RigRunner** application. Refer to the interactive user guide for more details.



2. Enter your IP address(s) to detect miners on your network.

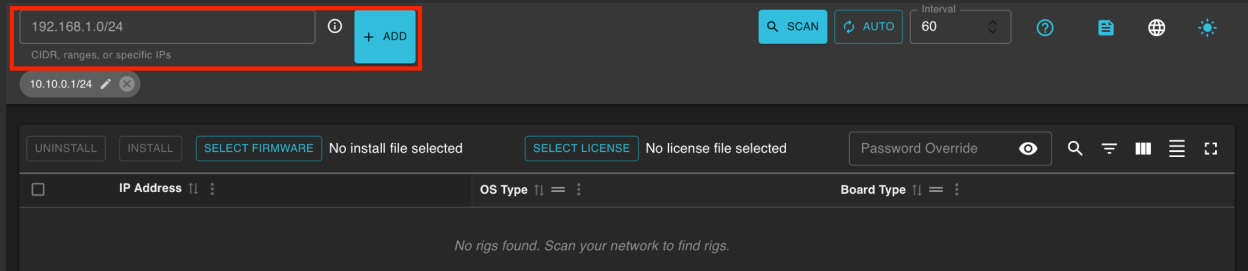
### For example

All 256 addresses: 192.168.1.0/24

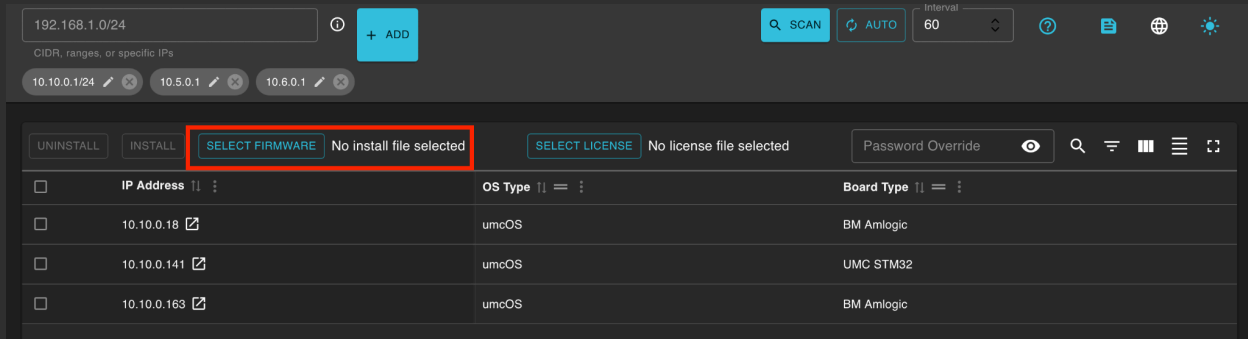
Specific range: 192.168.1.1-254

Multiple IPs: 192.168.1.10,20,30

Single IP: 192.168.1.100



4. Once your miners are detected, click “SELECT FILE” to load the firmware.



192.168.1.0/24 + ADD SCAN AUTO Interval 60

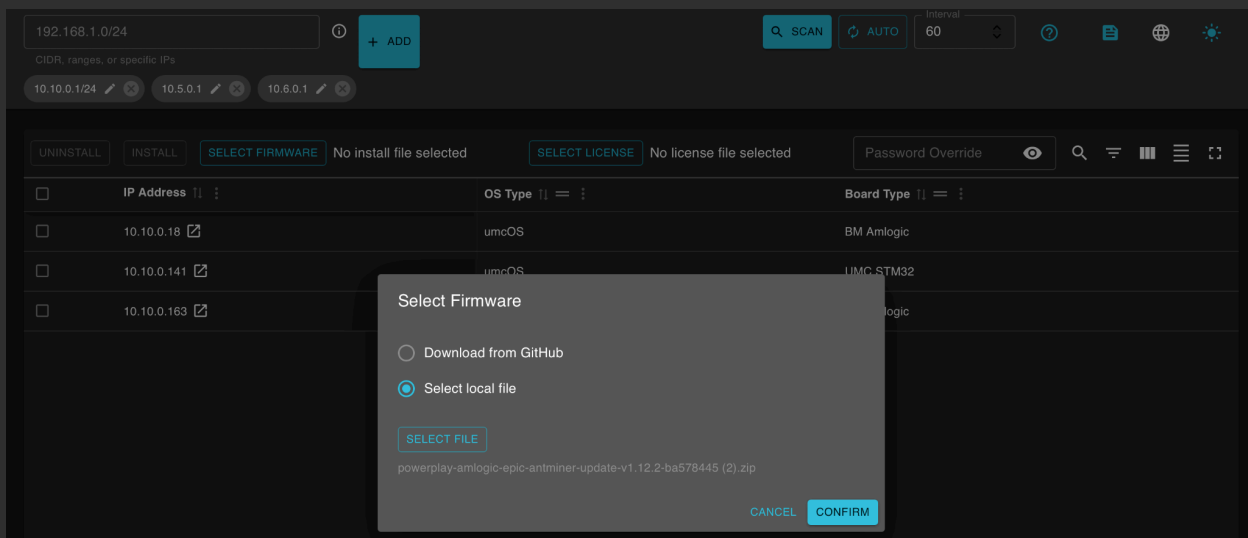
CIDR, ranges, or specific IPs

10.10.0.1/24 10.5.0.1 10.6.0.1

UNINSTALL INSTALL **SELECT FIRMWARE** No install file selected SELECT LICENSE No license file selected Password Override

IP Address	OS Type	Board Type
10.10.0.18	umcOS	BM Amlogic
10.10.0.141	umcOS	UMC STM32
10.10.0.163	umcOS	BM Amlogic

5. Load the **UMC OS** firmware directly from ePIC Github or select the .zip from your local folder.  
<https://github.com/epicblockchain/umcos-antminer/releases>



192.168.1.0/24 + ADD SCAN AUTO Interval 60

CIDR, ranges, or specific IPs

10.10.0.1/24 10.5.0.1 10.6.0.1

UNINSTALL INSTALL SELECT FIRMWARE No install file selected SELECT LICENSE No license file selected Password Override

IP Address	OS Type	Board Type
10.10.0.18	umcOS	BM Amlogic
10.10.0.141	umcOS	UMC STM32
10.10.0.163	umcOS	BM Amlogic

Select Firmware

Download from GitHub

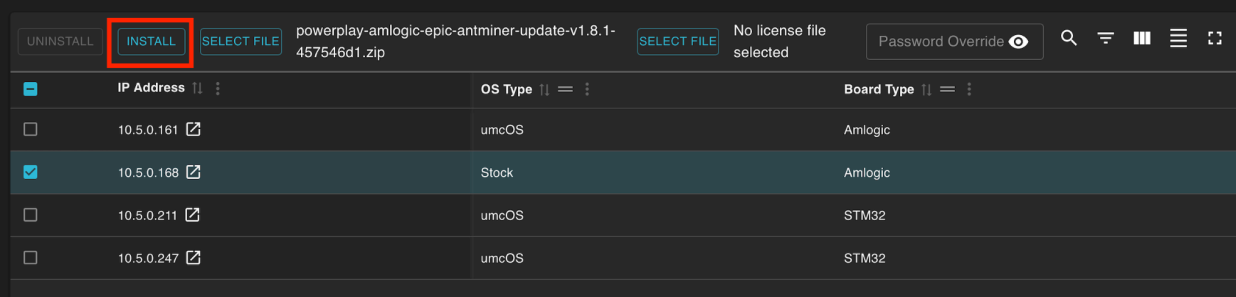
Select local file

SELECT FILE

powerplay-amlogic-epic-antminer-update-v1.12.2-ba578445 (2).zip

CANCEL CONFIRM

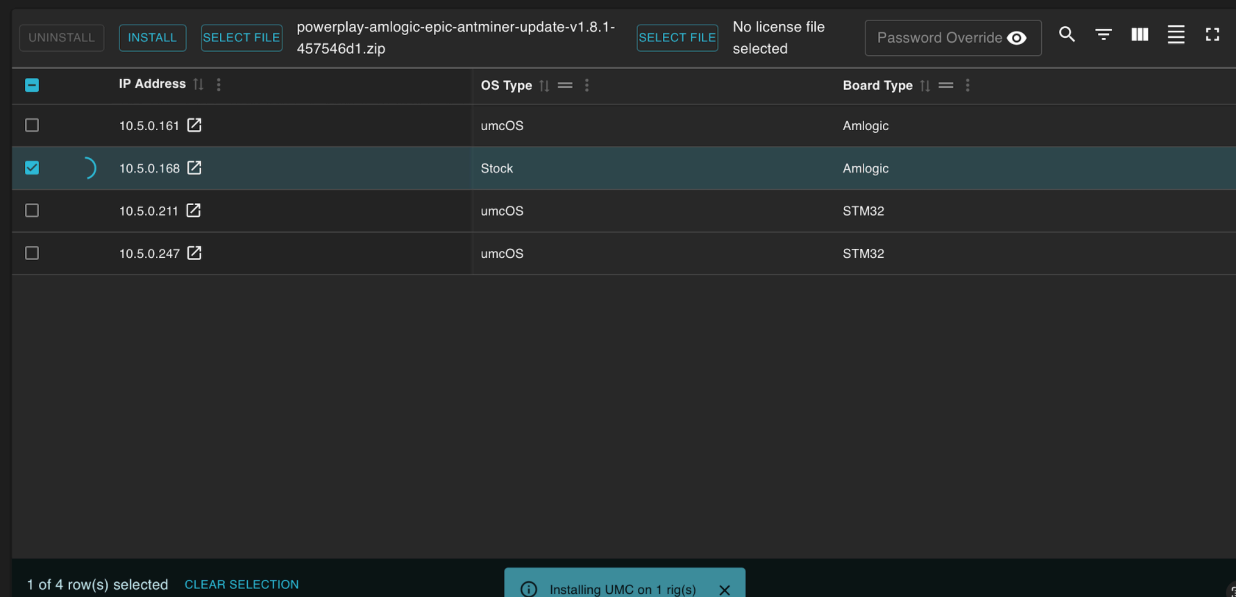
- Select the miner(s) with Amlogic and Beagle Bone board type that you wish to install **UMC OS** on, then click "INSTALL"



UNINSTALL **INSTALL** SELECT FILE powerplay-amlogic-epic-antminer-update-v1.8.1-457546d1.zip SELECT FILE No license file selected Password Override 🔍 🏠 ☰ ☰ 🗑️

	IP Address	OS Type	Board Type
<input type="checkbox"/>	10.5.0.161	umcOS	Amlogic
<input checked="" type="checkbox"/>	10.5.0.168	Stock	Amlogic
<input type="checkbox"/>	10.5.0.211	umcOS	STM32
<input type="checkbox"/>	10.5.0.247	umcOS	STM32

- Do not close the application during installation. After the installation is complete, refresh the web page to ensure everything is running properly.



UNINSTALL **INSTALL** SELECT FILE powerplay-amlogic-epic-antminer-update-v1.8.1-457546d1.zip SELECT FILE No license file selected Password Override 🔍 🏠 ☰ ☰ 🗑️

	IP Address	OS Type	Board Type
<input type="checkbox"/>	10.5.0.161	umcOS	Amlogic
<input checked="" type="checkbox"/>	10.5.0.168	Stock	Amlogic
<input type="checkbox"/>	10.5.0.211	umcOS	STM32
<input type="checkbox"/>	10.5.0.247	umcOS	STM32

1 of 4 row(s) selected CLEAR SELECTION







Installing UMC on 1 rig(s)

## Demo

Click [here](#) to watch our demo video on ePIC Github.

## ePIC Webdash

### Control Panel

	Sets the machine back to stock mode with reinstallation of the system
 	Stops/starts the miner
	Restarts mining software without rebooting the miner
	Shuts down the miner and turns back on
	Locks/unlocks the Webdash for security

**Unlocking Miner:** To access Webdash, the default password is *letmein*

## Dashboard

View the status of a miner in real-time



**Configuration options**

**Real-time mining status**

**Pool status**

**Fan status**

**Hasboard information**

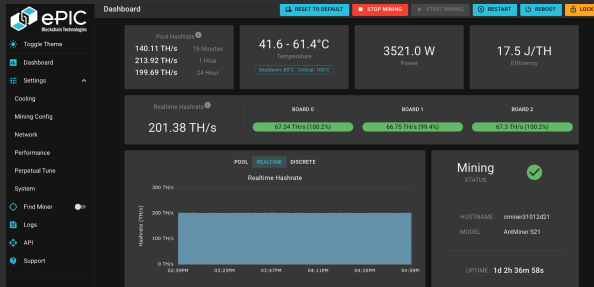
**PSU status**

**Dashboard Data:**

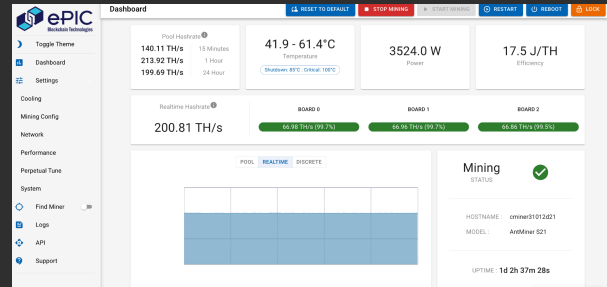
- Pool Hashrate: 145.12 TH/s (15 Minutes), 185.15 TH/s (1 Hour), 198.49 TH/s (24 Hour)
- Temperature: 41.9 - 61.4 °C
- Power: 3519.0 W
- Efficiency: 17.5 J/TH
- Realtime Hashrate: 201.45 TH/s
- Pool: **CONNECTED**
- Fan Speed: 54% (Target: 60°C, 100% speed)
- PSU Stats: Input Voltage (V): 0.0, Output Voltage (V): 14.11, Input Current (A): 0.0, Output Current (A): 0.0, Board Power (W): 3519.00, Output Power (W): 0.0
- Board 0: Temperature: 42.6 - 61.4 °C, Average Clock: 487.5 MHz
- Board 1: Temperature: 41.9 - 58.9 °C, Average Clock: 487.5 MHz
- Board 2: Temperature: 43.6 - 59.6 °C, Average Clock: 487.5 MHz

## Toggle Theme

Customize Webdash colour scheme to your preference



Dark Mode



Light Mode

## Settings

Configure cooling, tuning and, networking options

## Cooling

**TEMPERATURE**    FANS

---

**Temperature Guards**

Manually set the temperature guards. Shutdown temperature is the temperature at which the miner will shutdown and can self restart to check if temperature has cooled. Critical temperature is the temperature at which the miner stay idle.

33°C

110°C

85°C

Shutdown

100°C

Critical

[APPLY](#)

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**Pre-Init Cooldown Max Duration**

Sets the maximum time (in seconds) the miner can spend in Pre-Init Cooldown. If the max duration is reached, the miner will skip the initialization temperature checks and start mining. Default is 300 seconds. Setting to 0 means the Pre-Init Cooldown state will last for at most 0 seconds.

0 seconds

300 seconds

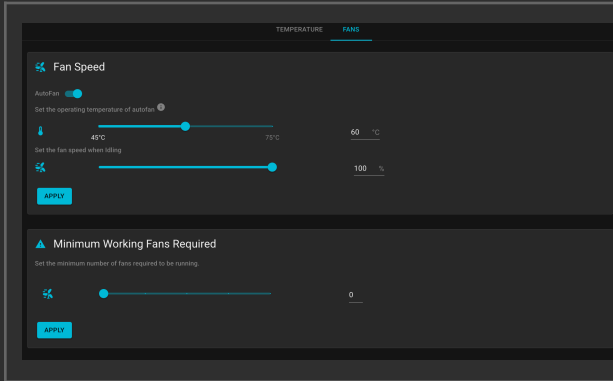
300

[APPLY](#)

### TEMPERATURE

Temperature Guards define thermal safety limits. Reaching the shutdown temperature stops mining until the hardware cools and can safely restart. If the critical temperature is reached, the miner stays idle until temperatures stabilize.

Pre-init Cooldown Max Duration limits how long the miner waits for safe temperatures during startup (Default: 300s). If the timer expires, the miner bypasses checks and begins initializing. Set to 0 to skip the wait entirely.

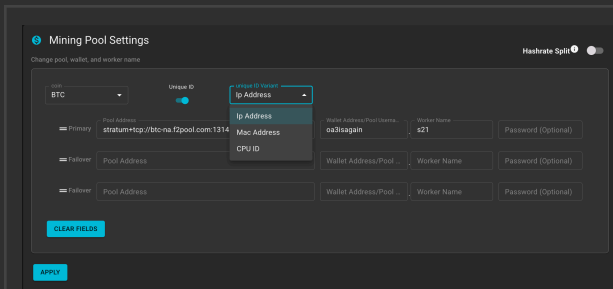


## FANS

Manually adjust the fan speed or enable **AutoFan**. The operating temperature can be set for AutoFan and specify the fan speed when idle.

Note: Enabling AutoFan is recommended for better efficiency and safety.

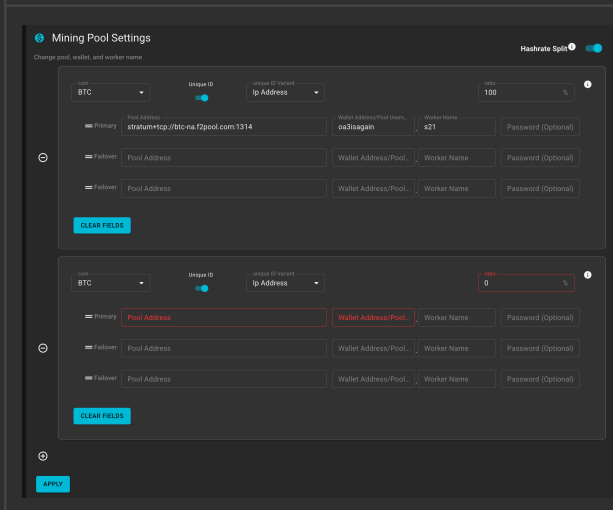
## Mining Config



## Mining Pool Settings

Fill in the main pool information along with 1-2 backup pools in case of disconnection from the pool. Then click "Apply".

"**Unique ID**" will append a unique miner ID to the end of the worker name if enabled, in the format: *Worker\_address.Worker\_name-unique\_ID*

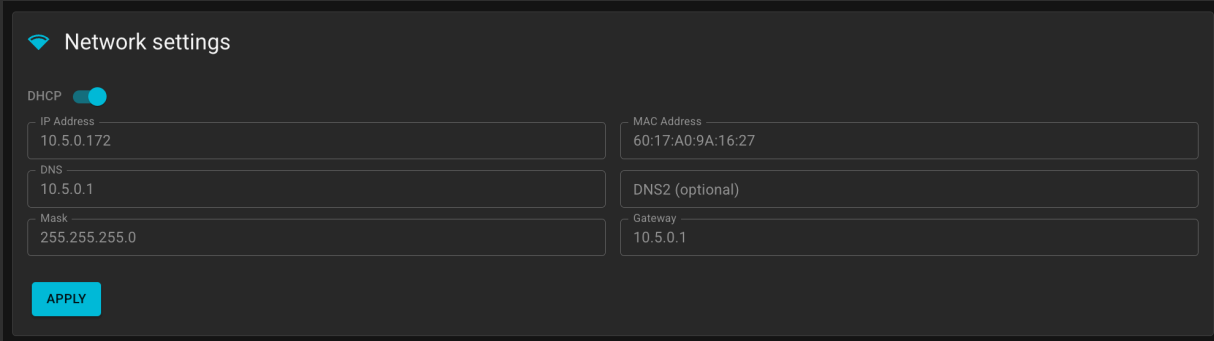


## Hashrate Split

Fill in the pool information along with 1-2 backup pools. Set up to four groups, ensuring the total ratio equals **100**.

Note: If you split three groups equally as 33:33:33, the first group will receive the remainder, making the final distribution 34:33:33 instead.

## Network



**Network settings**

DHCP

IP Address: 10.5.0.172

DNS: 10.5.0.1

Mask: 255.255.255.0

MAC Address: 60:17:A0:9A:16:27

DNS2 (optional):

Gateway: 10.5.0.1

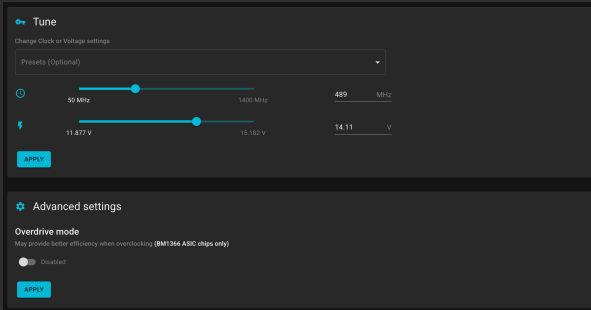
APPLY

**DHCP** is enabled by default.

To set a **Static IP**, disable the DHCP toggle and enter the IP address, DNS, Mask and Gateway, then hit "APPLY".

Note: ePIC dashboard(management tool) does NOT support setting static IPs across multiple miners.

## Performance



**Tune**

Change Clock or Voltage settings

Presets (Optional)

50 MHz 1800 MHz 489 MHz

11.577 V 15.182 V 14.11 V

APPLY

**Advanced settings**

**Overdrive mode**  
May provide better efficiency when overclocking (BM1366 ASIC chips only)

Disabled

APPLY

### Tune

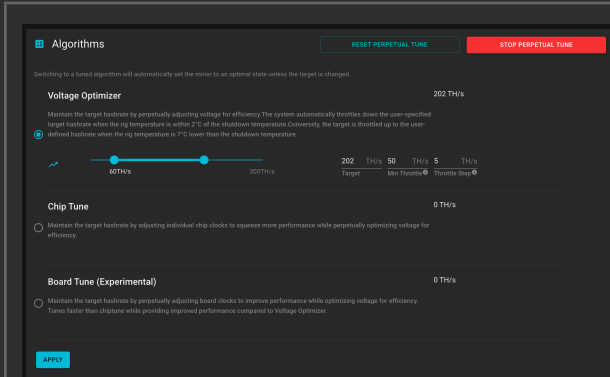
Manually change the clock or **voltage** of the miner. Presets are only available in S19J, S19J Pro, S19J Pro+, S19 XP, S19K Pro, S21, S21 Pro, S21 XP and T21

### Advanced Settings

**Overdrive Mode** provides the advantage of overclocking during Voltage Optimizer.

Only available in S19K Pro and S19 XP

## Perpetual Tune



**Algorithms** [RESET PERPETUAL TUNE] [STOP PERPETUAL TUNE]

Switching to a tuned algorithm will automatically set the miner to an optimal state unless the target is changed.

**Voltage Optimizer** 202 TH/s

Maintain the target hashrate by perpetually adjusting voltage for efficiency. The system automatically throttles down the user-specified target hashrate when the rig temperature is within 2°C of the shutdown temperature. Conversely, the target is throttled up to the user-defined hashrate when the rig temperature is 7°C lower than the shutdown temperature.

Voltage Optimizer

0 TH/s 300 TH/s

202 TH/s 50 TH/s 5 TH/s

Target Min Throttle Throttle Step

**Chip Tune** 0 TH/s

Maintain the target hashrate by adjusting individual chip clocks to squeeze more performance while perpetually optimizing voltage for efficiency.

**Board Tune (Experimental)** 0 TH/s

Maintain the target hashrate by perpetually adjusting board clocks to improve performance while optimizing voltage for efficiency. Tunes faster than chip tune while providing improved performance compared to Voltage Optimizer.

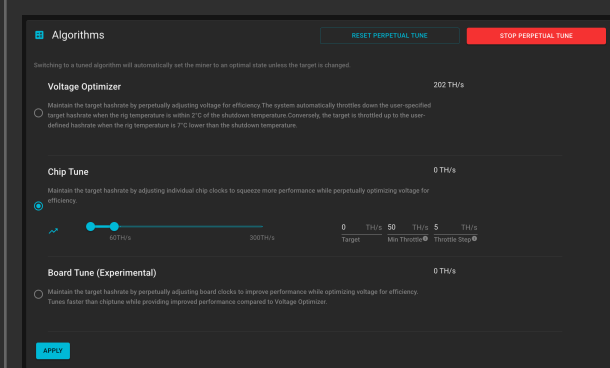
[APPLY]

### Voltage Optimizer

Set the target hashrate, minimum throttle and throttle steps.

Voltage Optimizer maintains the target hashrate by adjusting **voltage**.  
< 30 minutes to tune.

Note: When the miner's temperature is within 2°C of the shutdown temperature, it will throttle down. It will throttle back up once the miner's temperature drops 7°C below the shutdown temperature.



**Algorithms** [RESET PERPETUAL TUNE] [STOP PERPETUAL TUNE]

Switching to a tuned algorithm will automatically set the miner to an optimal state unless the target is changed.

**Voltage Optimizer** 202 TH/s

Maintain the target hashrate by perpetually adjusting voltage for efficiency. The system automatically throttles down the user-specified target hashrate when the rig temperature is within 2°C of the shutdown temperature. Conversely, the target is throttled up to the user-defined hashrate when the rig temperature is 7°C lower than the shutdown temperature.

Chip Tune

Maintain the target hashrate by adjusting individual chip clocks to squeeze more performance while perpetually optimizing voltage for efficiency.

0 TH/s 300 TH/s

0 TH/s 50 TH/s 5 TH/s

Target Min Throttle Throttle Step

**Board Tune (Experimental)** 0 TH/s

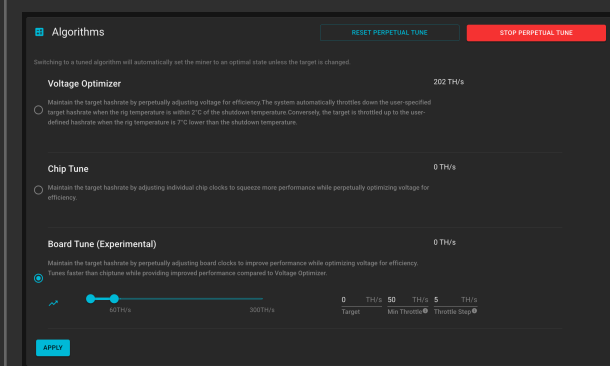
Maintain the target hashrate by perpetually adjusting board clocks to improve performance while optimizing voltage for efficiency. Tunes faster than chip tune while providing improved performance compared to Voltage Optimizer.

[APPLY]

### Chip Tune

Set the target hashrate, minimum throttle and throttle steps. Please note that the hashrate on the dashboard will be ~10TH.

ChipTune maintains the target hashrate by adjusting **individual chip clocks** while perpetually optimizing voltage.  
< 60 minutes to tune.



**Algorithms** [RESET PERPETUAL TUNE] [STOP PERPETUAL TUNE]

Switching to a tuned algorithm will automatically set the miner to an optimal state unless the target is changed.

**Voltage Optimizer** 202 TH/s

Maintain the target hashrate by perpetually adjusting voltage for efficiency. The system automatically throttles down the user-specified target hashrate when the rig temperature is within 2°C of the shutdown temperature. Conversely, the target is throttled up to the user-defined hashrate when the rig temperature is 7°C lower than the shutdown temperature.

Chip Tune

Maintain the target hashrate by adjusting individual chip clocks to squeeze more performance while perpetually optimizing voltage for efficiency.

0 TH/s 300 TH/s

0 TH/s 50 TH/s 5 TH/s

Target Min Throttle Throttle Step

Board Tune (Experimental)

Maintain the target hashrate by perpetually adjusting board clocks to improve performance while optimizing voltage for efficiency. Tunes faster than chip tune while providing improved performance compared to Voltage Optimizer.

0 TH/s 300 TH/s

0 TH/s 50 TH/s 5 TH/s

Target Min Throttle Throttle Step

[APPLY]

### Board Tune

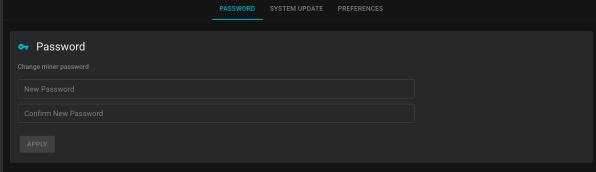
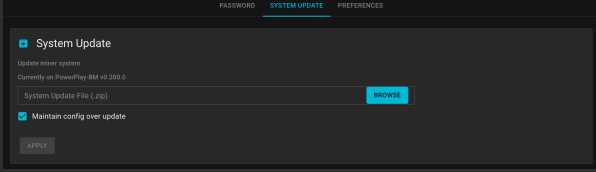
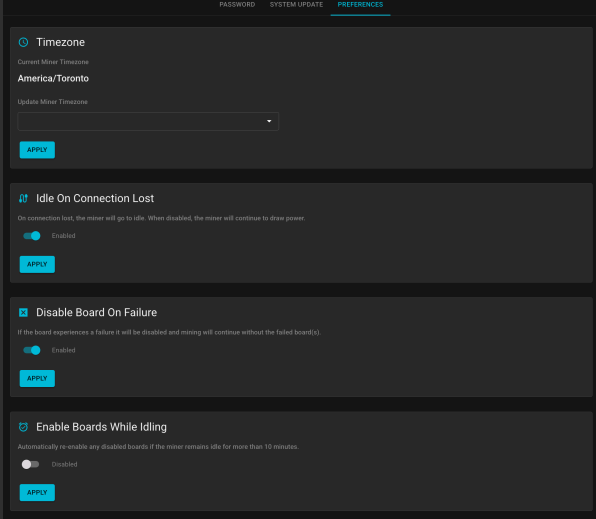
Set the target hashrate, minimum throttle and throttle steps.

Board Tune maintains the target hashrate by adjusting **board clocks** while optimizing voltage  
< 45 minutes to tune.

Note: When the miner's temperature is within 2°C of the shutdown temperature, it will throttle down. It will throttle back up once the miner's temperature drops 7°C below the shutdown temperature.

	Voltage Optimizer	ChipTune	Board Tune
<b>Adjusting Variable</b>	Voltage	Individual chip clocks	Board clocks
<b>Duration</b>	< 30min	< 60min	< 45min
<b>Use Case</b>	If you have multiple miners and want long-term stability	If you have a few miners and want to maximize performance in a short period of time	If you have an S21 with mixed hashboards and want to optimize performance

## System

	<h3>PASSWORD</h3> <p>Enter your new password, confirm it then click “APPLY”</p>
	<h3>SYSTEM UPDATE</h3> <ol style="list-style-type: none"> <li>1. Download the latest release of the UMC OS firmware from <a href="#">ePIC Github</a></li> <li>2. Download the .zip file <code>powerplay-&lt;board_type&gt;-epic-antminer-update-vxxxxx.x.zip</code></li> <li>3. Upload it, then click “APPLY”</li> </ol> <p>Note: The “Maintain config over update” will save your settings across the update. Your miner will take a few minutes to reboot and recalibrate.</p>
	<h3>Idle On Connection Lost</h3> <p>Enabled means the miner will be stopped and be put in an idle state until network connection is re-established. Disable if consistent power draw is required.</p> <h3>Disable Board On Failure</h3> <p>If the board experiences a failure, it will be disabled and mining will continue without the failed board(s).</p> <h3>Enable Boards While Idling</h3> <p>If the miner remains idle for more than 10 minutes, it will automatically re-enable any disabled boards.</p>

## Find Miner

Turn on the "Find Miner" toggle. Your miner will be flashing red light



Indicates that your miner will be flashing red light

## Logs

Turn "Logs" toggle on



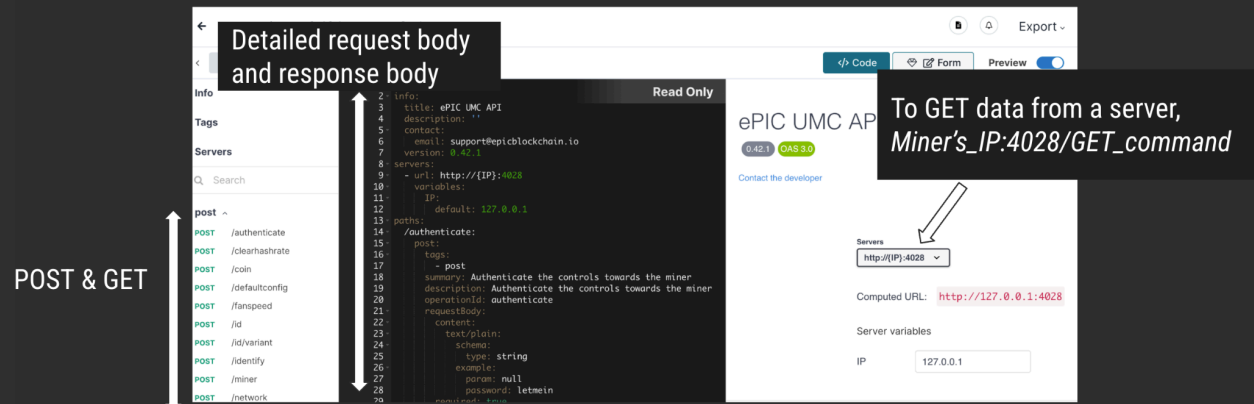
Real-time log

Download the logs

Scroll to bottom

Close the logs

# API



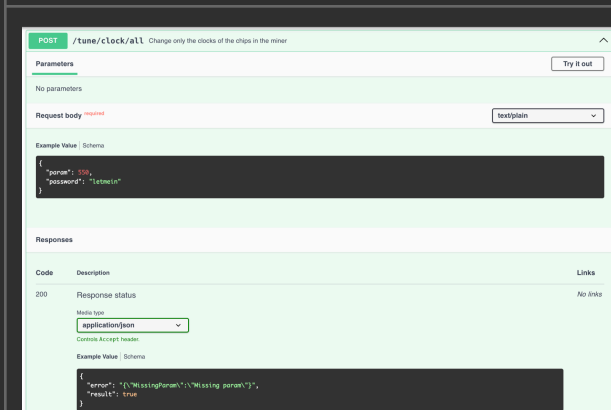
**Detailed request body and response body**

**POST & GET**

**To GET data from a server, Miner's\_IP:4028/GET\_command**

Click [here](#) for ePIC API Documentation

## Example



**POST /tune/clock/all** Change only the clocks of the chips in the miner

Parameters: No parameters

Request body:  text/plain

Example Value | Schema

```
{
  "password": "1234",
  "password": "letmein"
}
```

Responses

Code	Description	Links
200	Response status	No links

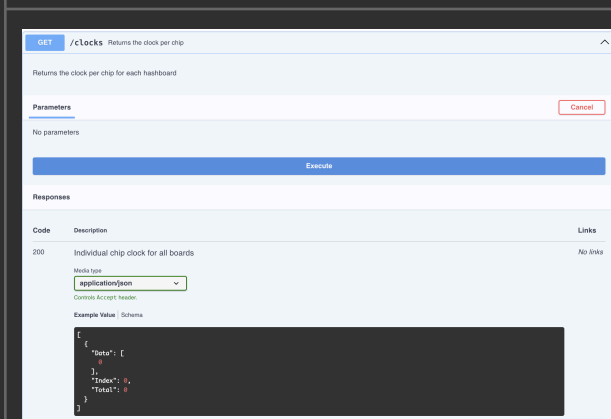
Media type:  application/json

Example Value | Schema

```
{
  "error": [{"message": "Missing param"}],
  "result": true
}
```

**POST: /tune/clock/all**  
Changing the clocks of the chips in the miner

1. Click "Try it out"
2. Enter the desired value in the Request Body
3. Click "Execute"
4. Check the Response Body



**GET /clocks** Returns the clock per chip

Parameters: No parameters

Execute

Responses

Code	Description	Links
200	Individual chip clock for all boards	No links

Media type:  application/json

Example Value | Schema

```
{
  "data": [
    {}
  ],
  "index": 0,
  "total": 0
}
```

**GET: /clocks**  
Returning the clock per chip

1. Click "Try it out"
2. Click "Execute"
3. Check the Response Body

OR

1. Miner's\_IP:4028/clocks
2. Click "Pretty-print" at the top left corner

## FAQ

1. Where can I obtain a license key?
  - a. Contact [license@epicblockchain.io](mailto:license@epicblockchain.io) for licensing options.
  
2. What happens when the license expires?
  - a. Mining will automatically default to a set dev fee.

# Have a question?

## Website

<https://epicblockchain.io/support/>

## Email

[Support@epicblockchain.io](mailto:Support@epicblockchain.io)

## Github

<https://github.com/epicblockchain>

## Twitter

<https://twitter.com/ePICBlockchain>

## Telegram

[https://t.me/epic\\_umc](https://t.me/epic_umc)