

ePIC UMC for Antminers

Complete User Guide

Last updated: May 2026

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Troubleshooting

Control Board Form Factor

UMC V4.x

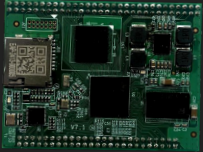

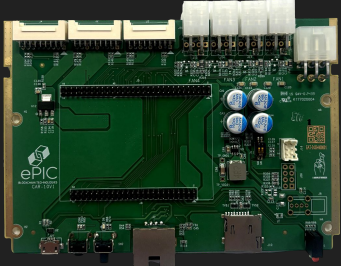
Compatible with Antminer S19 and S21 series



	V4.1	V4.2	V4.3	V4.5
Image	A green printed circuit board (PCB) for the UMC V4.1 model. It features a central chip, various capacitors, and connectors. A blue cable is connected to the top edge, and a yellow and red cable is connected to the bottom edge.	A green PCB for the UMC V4.2 model, showing a different component layout and connector configuration compared to V4.1.	A green PCB for the UMC V4.3 model, featuring enhanced components and a modified layout.	A green PCB for the UMC V4.5 model, showing square fan connectors and a modified layout.
Release Year	2022	2022	2023	2024
Compatible Models	S19 series and S19K Pro & S21 with square fan connectors			S19K Pro & S21
Note	PSU 4-pin connector is required	PSU 4-pin connector no longer required	J16 enhanced IP report button configured *works on supported 3rd management tools & ePIC Dashboard Modified and enhanced	Square fan female connectors implemented

SOM (System on Module)

UMC V7 Module & Carrier Boards

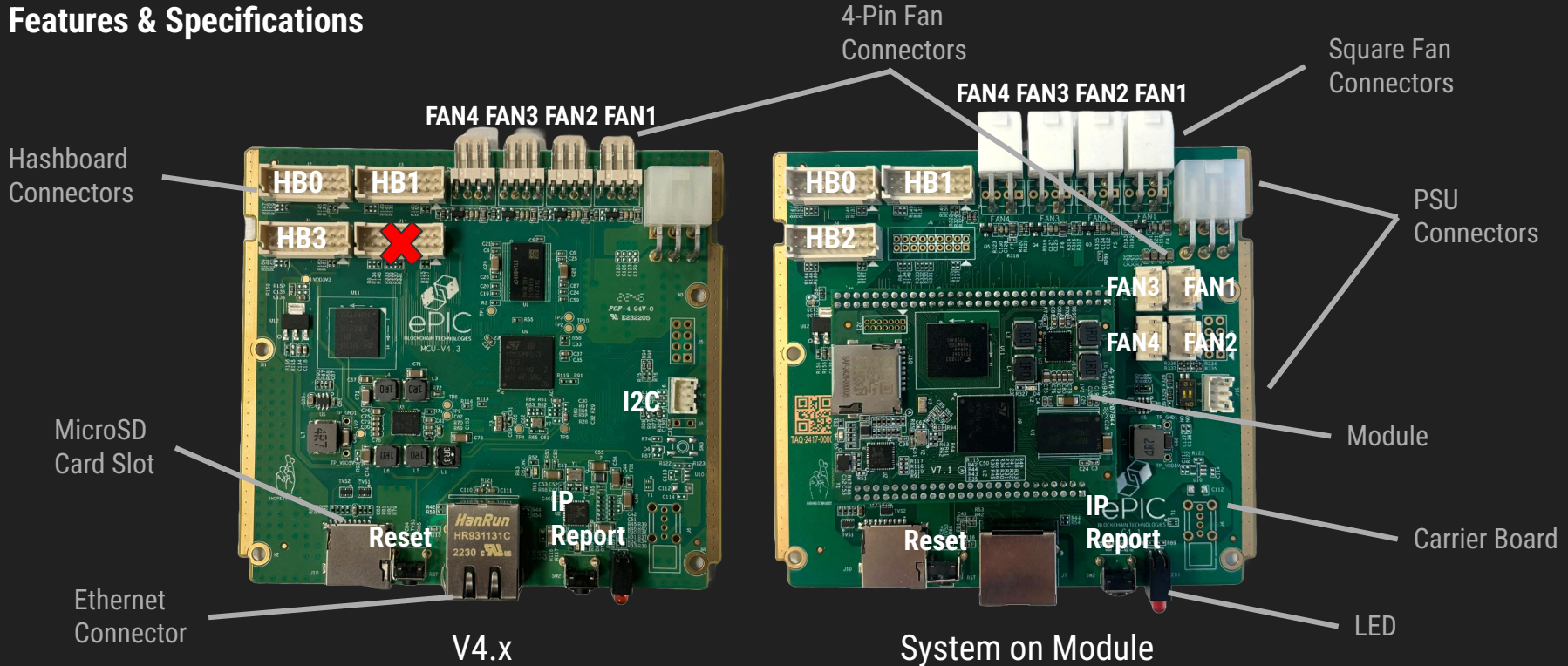
	V7 (Module)	C4	C10
Image			
Release Date	2024	2024	2025
Compatible Models	On any carrier boards	S19 series S19K Pro & S21	S21 Pro, S21 XP, S21 +
Note	Cannot be used alone		Does not support built-in display

Installing ePIC UMC Control Board

ePIC Control Board for Antminer Overview

Compatible with Antminer S19 and S21 series

Features & Specifications




*The J1 port is DISABLED by default, and the S21 Pro, S21 XP and S21 + models require a different carrier board.

ePIC Control Board for Antminer Overview

Compatible with Antminer S19 and S21 series

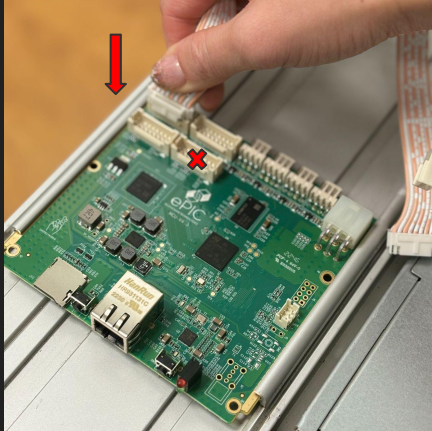


Components

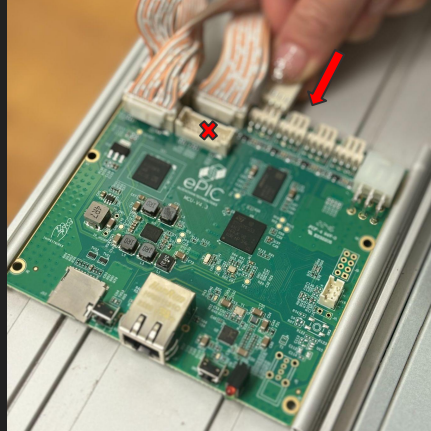
Included	Not Included
ePIC UMC Control Board	MicroSD Card SD card to USB adapter Power Cords Ethernet Cable
Required Tool : Screwdriver 	

Installation Guide

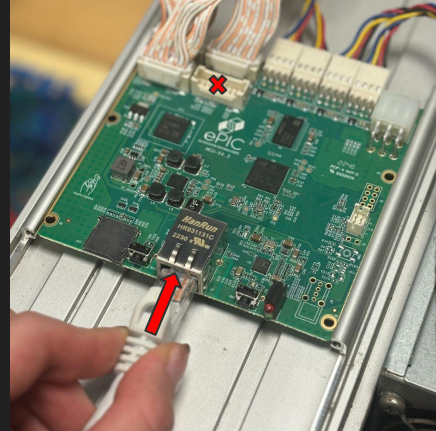
Connect the hashboard, fan, Ethernet and PSU connectors in the direction as shown



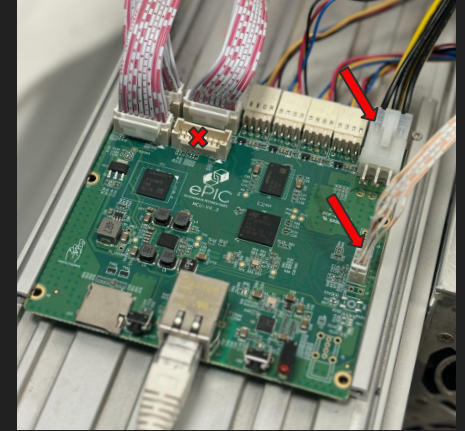
1. Data cable for hashboards



2. Fan connectors



3. Ethernet cable



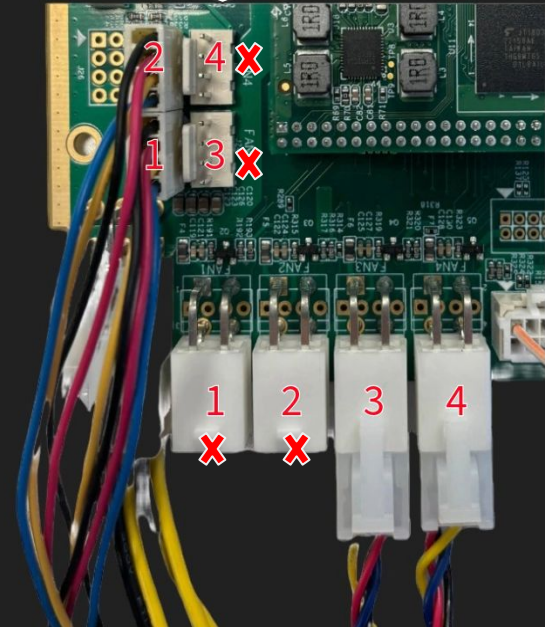
4. PCIe power cable and I2C 4-pin cable

*J1 port is DISABLED by default. S19K Pro may have different fan configuration. Please see the page 10.

How to Connect Two Different Fan Cables for S19K Pro

1. Read the fan numbers labeled on the UMC, as shown
2. Connect the 4-pin fan connectors to **FAN1** and **FAN2**
3. Connect the square fan connectors to **FAN3** and **FAN4**

Make sure NOT to connect fans to the same fan number.



DO NOT CONNECT TO THE SAME FAN NUMBERS

Example: Connecting both square and the 4-pin fans to FAN1 and FAN2, this will cause the software to detect only two fan.

Pre-Flashing Requirements

1. Select the correct image

Download the appropriate .zip file based on your hardware:

Hardware Model	Required Firmware Image
S19 and S19 Pro (chiptype BM1398 ONLY)	powerplay-antminer- legacy -s19
All other miners	powerplay-antminer

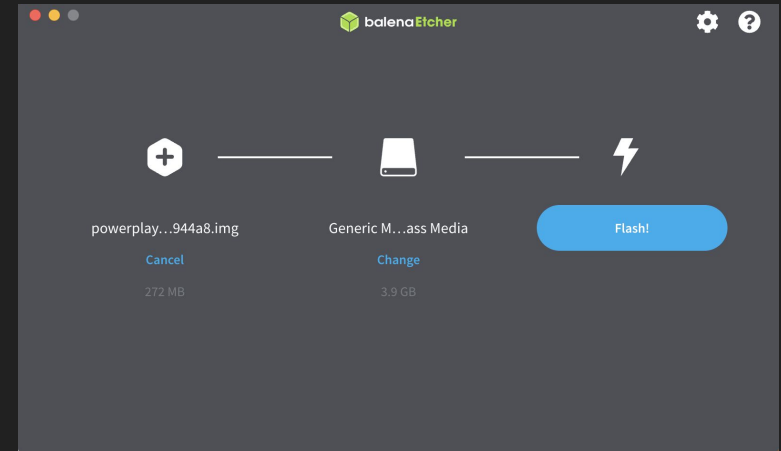
2. Upgrade path for older versions (v0.56.3 or older)

If your miner is currently running v0.56.3 or older, you must choose one of the following methods:

- **System Update:** update to version v0.100.3 first then update to the latest release
- **SD recovery:** flash the latest version directly using the SD card instructions below

Flashing the microSD card

1. Download and install a flashing tool, such as [balenaEtcher](#)
2. Visit [ePIC Github](#) and download the correct sdrecovery .zip file for your miner based on the guide above
3. Plug your microSD card into your PC
4. Open your flashing application
5. Select the downloaded file and target device
6. Click **Flash!** and wait for the process to finish
7. Once complete, safely eject the microSD card from your PC

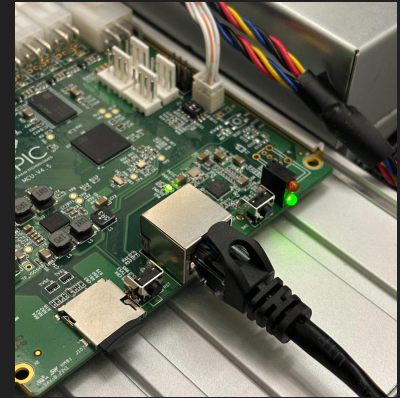


balenaEtcher

Flashing the Miner

1. Insert the **flashed microSD card** into the powered-off miner, then **power it on**
2. The LED will **blink green** for about 30 to 60 seconds
3. Wait for the LED to turn **solid green**, then **power off the miner**
4. **Remove the microSD card** and power the miner back on
5. The LED will **blink green** for another 30 to 60 seconds to boot up, then **alternate red and green** to calibrate
6. Once the LED turns **solid green**, the calibration is complete and the miner will start mining

Wait for the solid green light before power off!



Step 3

*You can use any available microSD slot on either the module or the carrier board

Using the ePIC Dashboard

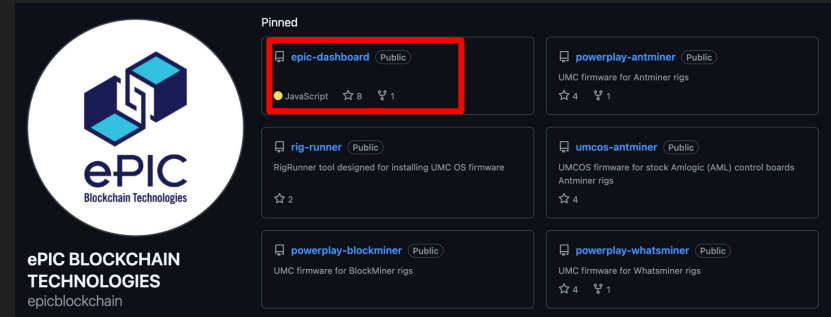
A powerful solution for managing miner fleet

Downloading the ePIC Dashboard

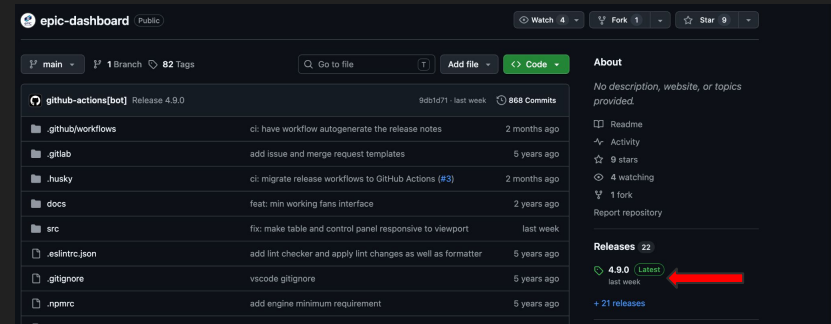
Install fleet management tool to scan for miner IP addresses and manage mining operation from a single interface

Installation Steps

1. Go to [ePIC Github](#) and click on **epic-dashboard**
2. Download the package that matches your operating system (Windows, macOS, or Linux) from the latest release
3. Extract the downloaded .zip file
4. Open the extracted folder and run the ePIC Dashboard application



epic-dashboard on Github



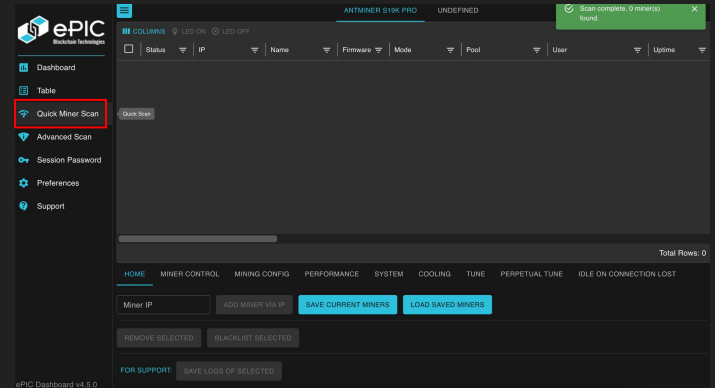
Download the latest release

Finding Miner's IP Address

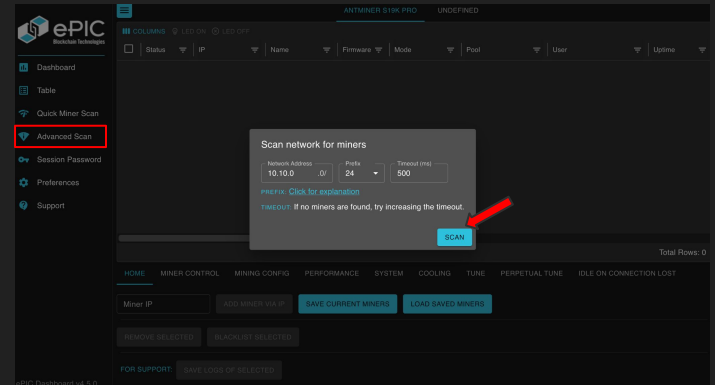
Locate your miner on your local network

The default password for all miner is **letmein**

1. Open the **ePIC Dashboard** application
2. Choose your preferred scan method:
 - **Quick Miner Scan** to automatically scan your computer's current network,
 - **Advanced Scan** to manually enter a custom network range
3. Once the scan completes, navigate to the **Table** tab
4. Locate your miner's IP address under the **IP** column



Quick Miner Scan



Advanced Scan

ePIC Dashboard - Table

Manage multiple miners from a single interface



Options

The screenshot displays the ePIC dashboard interface. On the left is a sidebar with navigation options: Dashboard, Table, Quick Miner Scan, Advanced Scan, Session Password, Preferences, and Support. The main area features a table of miners, with the first row highlighted in green. Above the table, there are sorting options: 'ANTMINER S19K PRO' and 'UNDEFINED'. A vertical arrow labeled 'Sorted by model' points to these options. Below the table is a control panel with buttons for 'Miner IP', 'ADD MINER VIA IP', 'SAVE CURRENT MINERS', 'LOAD SAVED MINERS', 'REMOVE SELECTED', and 'BLACKLIST SELECTED'. A horizontal arrow labeled 'Control Panel' points to these buttons. A white arrow labeled 'Miner's information' points to the first row of the table.

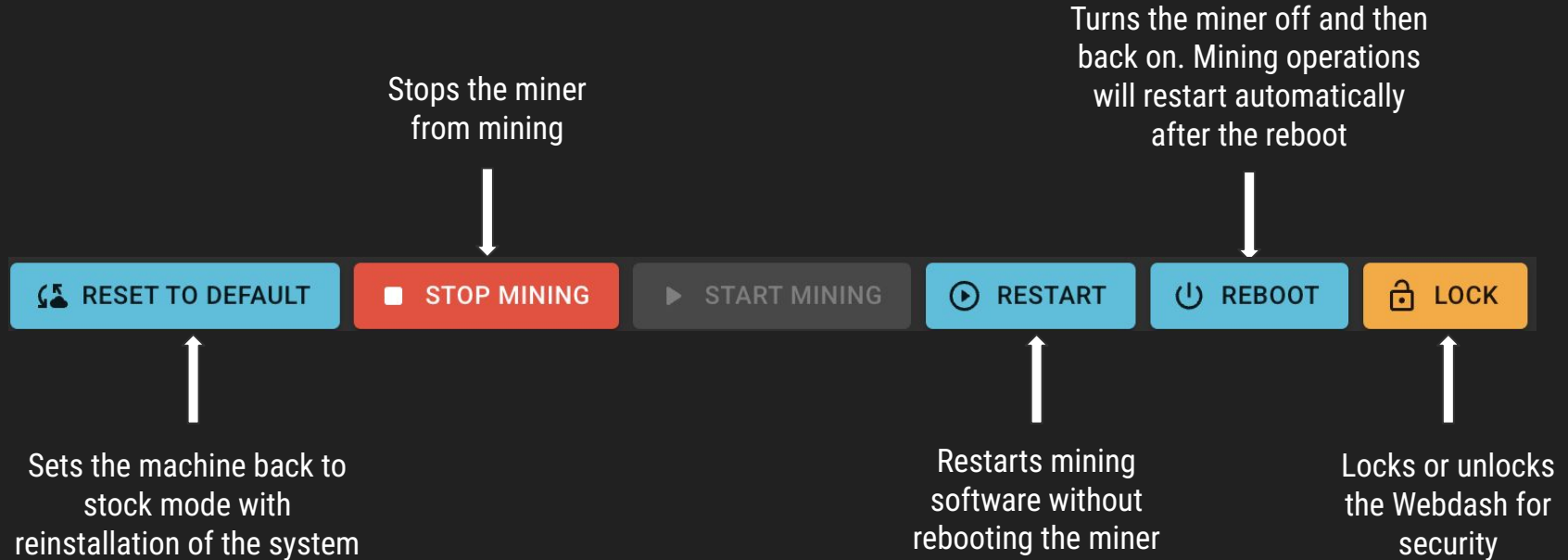
Status	IP	Name	Firmware	Mode	Pool	User
AdjustingClock\	10.10.0.61	cminer32034626	v1.0.1	undefined @ 3000W	btc-na.f2pool.com:1314	partywagon.defaultworker

Using the ePIC Webdash

Full Ownership of a Single Miner

Control Panel

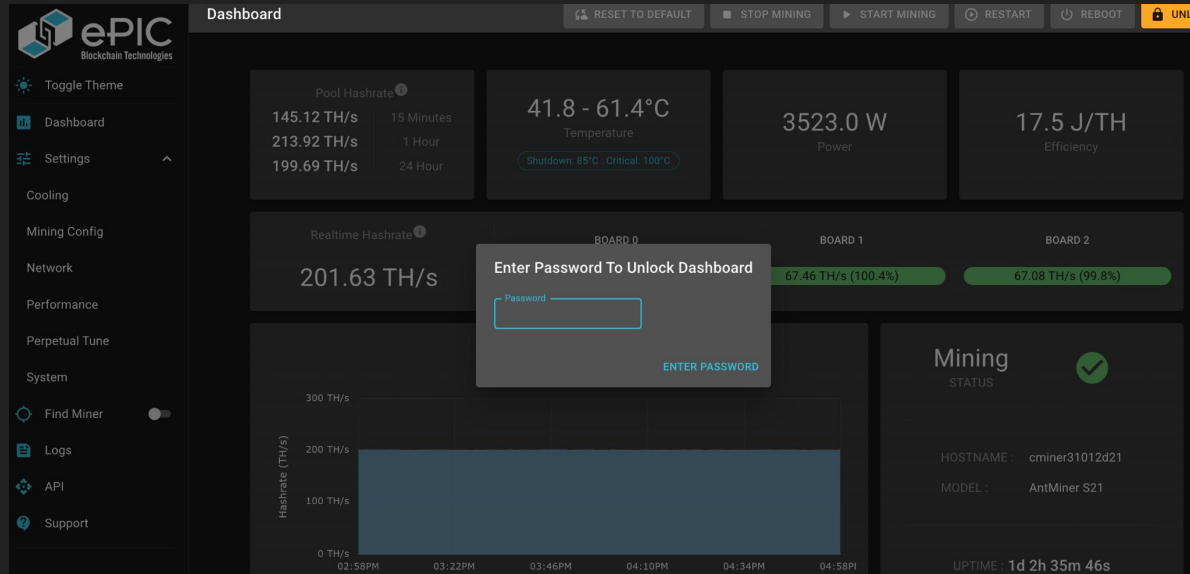
To execute desired commands



Note: your miner may take a few minutes to reboot but it will keep mining

Unlocking Miner


To access Webdash, the default password is *letmein*



The screenshot shows the ePIC miner dashboard interface. At the top right, there are control buttons: RESET TO DEFAULT, STOP MINING, START MINING, RESTART, REBOOT, and UNLOCK. The dashboard displays various metrics:

- Pool Hashrate:** 145.12 TH/s (15 Minutes), 213.92 TH/s (1 Hour), 199.69 TH/s (24 Hour)
- Temperature:** 41.8 - 61.4°C (Shutdown: 85°C, Critical: 100°C)
- Power:** 3523.0 W
- Efficiency:** 17.5 J/TH
- Realtime Hashrate:** 201.63 TH/s
- Board Performance:** BOARD 0 (67.46 TH/s, 100.4%), BOARD 1 (67.08 TH/s, 99.8%)
- Mining Status:** Mining is active (indicated by a green checkmark). Hostname: eminer31012d21, Model: AntMiner S21, Uptime: 1d 2h 35m 46s.

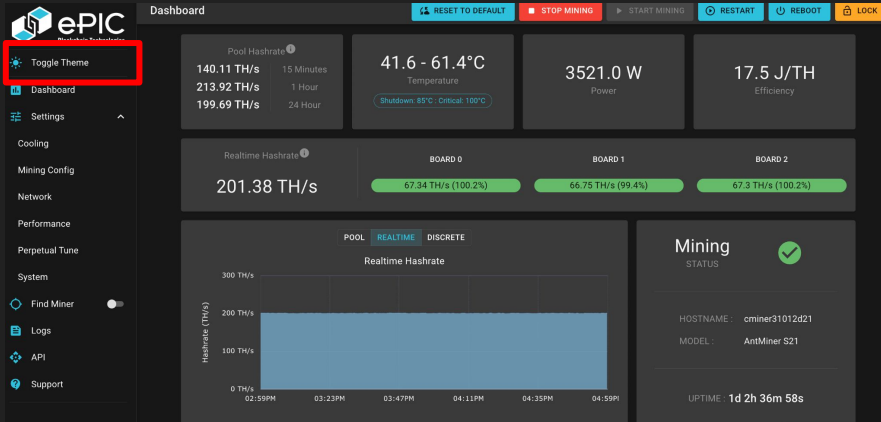
A central pop-up box titled "Enter Password To Unlock Dashboard" is overlaid on the dashboard. It contains a text input field labeled "Password" and a blue button labeled "ENTER PASSWORD".

Enter the password in the pop-up box or click the  button in the top right corner and enter the password.

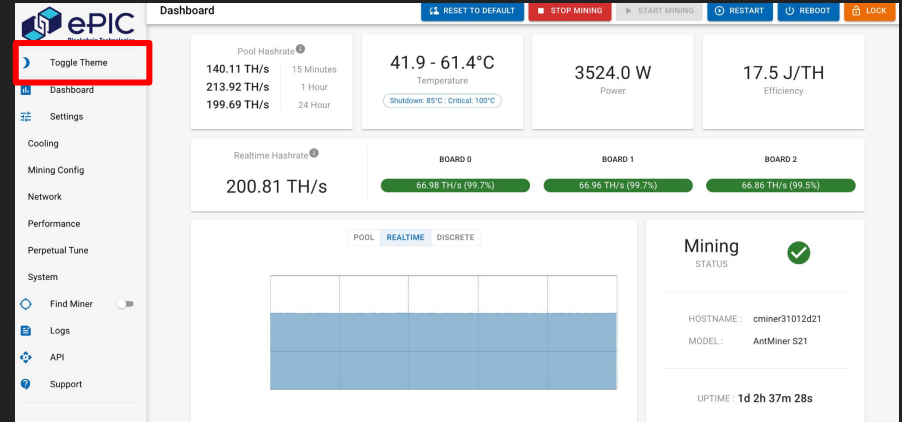
Default password : *letmein*

Toggle Theme

Customize Webdash colour scheme to your preference



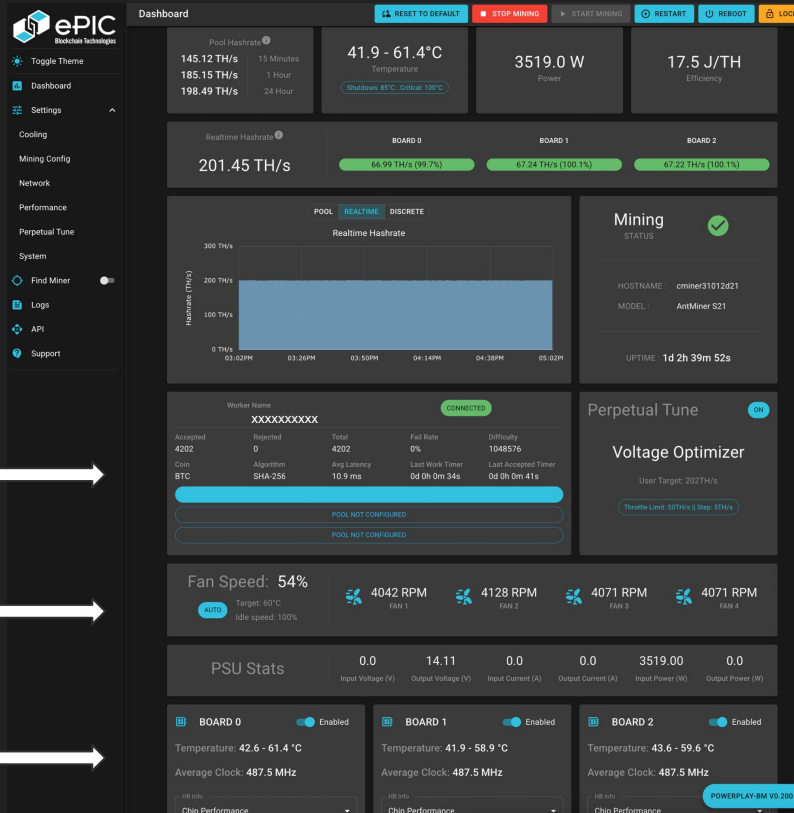
Dark Mode



Light Mode

Dashboard

To view status of a miner



Configuration options



Real-time mining status



Pool status



Tuning status



Fan status



PSU status

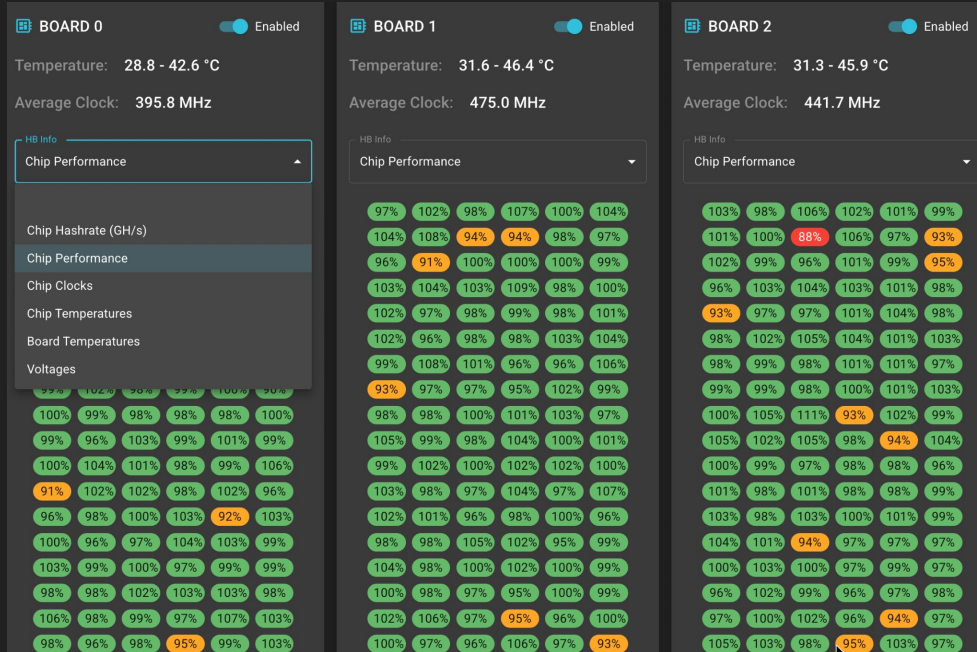


Hasboard information



Dashboard

Dashboard Information



← Enable/Disable Board(s)

Chip Performance
Green 97% <
Yellow 95% < & > 97%
Red < 95%

Settings - Cooling

Manage temperature guards

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.

55°C 110°C 85 °C 100 °C
Shutdown Critical

APPLY

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 600 seconds 300

APPLY

Note: It is recommended to keep the shutdown temperature below 95° C for safety

Temperature Guards

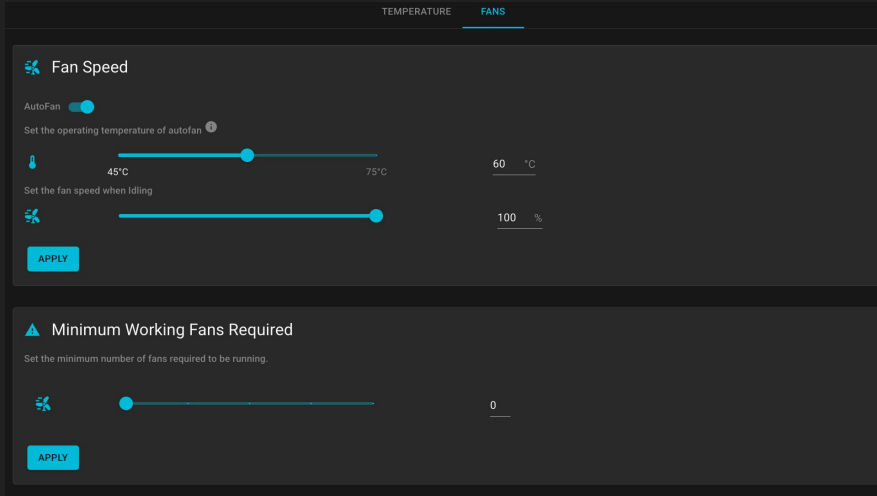
Sets the miner's thermal protection limits. When the shutdown temperature is reached, mining stops to protect the hardware and the miner can try to start again after it cools. When the critical temperature is reached, the miner remains idle until the temperature drops.

Pre-init Cooldown Max Duration

Sets the maximum time the miner can stay in Pre-Init Cooldown during startup while waiting for temperatures to reach a safe level. If the limit is reached, the miner skips the startup temperature checks and continues initializing. Default: 300 seconds. A value of 0 means no cooldown wait.

Settings - Cooling

Manage temperature guards and Autofan settings

A screenshot of a software settings interface for cooling. At the top, there are two tabs: "TEMPERATURE" and "FANS", with "FANS" being the active tab. The main section is titled "Fan Speed" and contains three settings: 1. "AutoFan" is a toggle switch that is turned on. 2. "Set the operating temperature of autofan" is a slider with a blue handle positioned between 45°C and 75°C, with a current value of 60°C. 3. "Set the fan speed when idling" is a slider with a blue handle positioned at the far right, with a current value of 100%. Below these settings is a blue "APPLY" button. A second section is titled "Minimum Working Fans Required" and contains a slider with a blue handle positioned at the far left, with a current value of 0. Below this slider is another blue "APPLY" button.

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

Fan Speed

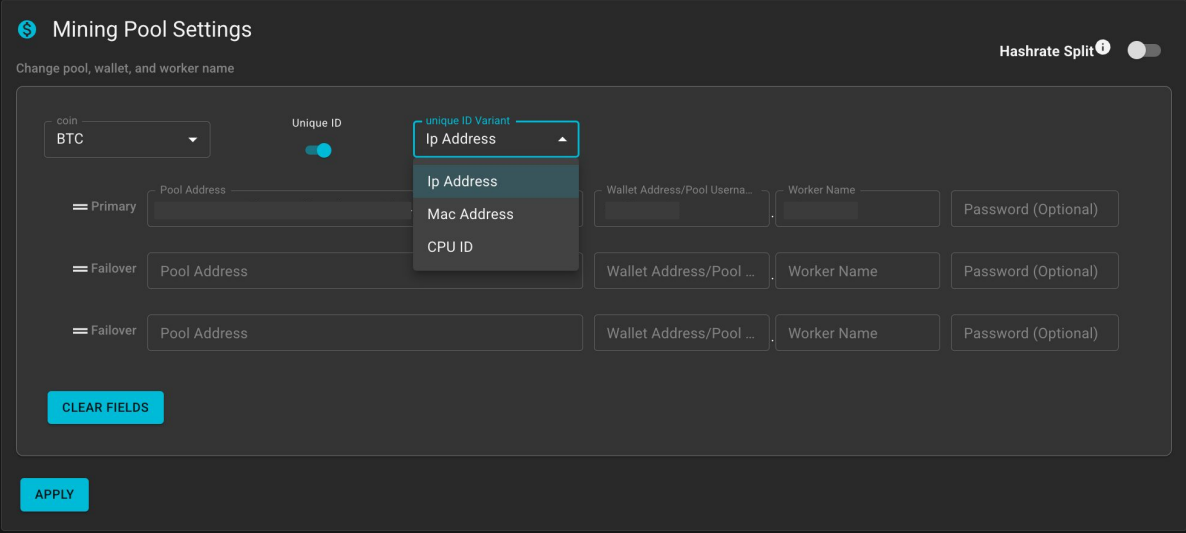
Manually set a fixed fan speed or enable AutoFan. AutoFan adjusts fan speed to maintain the target temperature and lets you set the idle fan speed. The maximum target temperature is limited to 10°C below the current shutdown temperature.

Min. Working Fans Required

Sets the minimum number of fans that must be working. If fewer working fans are detected than required, the miner stops to protect the hardware. Setting this to 0 disables the check.

Settings - Mining Config

Add pool information



The screenshot shows the 'Mining Pool Settings' interface. At the top, there's a title 'Mining Pool Settings' and a subtitle 'Change pool, wallet, and worker name'. A 'Hashrate Split' toggle is visible on the right. The main area contains a 'coin' dropdown set to 'BTC', a 'Unique ID' toggle, and a 'unique ID Variant' dropdown menu with options: 'Ip Address', 'Mac Address', and 'CPU ID'. Below these are three rows of pool configuration, each with a 'Pool Address' field, a 'Wallet Address/Pool Username' field, a 'Worker Name' field, and a 'Password (Optional)' field. A 'CLEAR FIELDS' button is at the bottom left, and an 'APPLY' button is at the bottom center.

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

Distribute shares across multiple pools based on a set percentage

Mining Pool Settings Hashrate Split

Change pool, wallet, and worker name

coin: BTC Unique ID: unique ID Variant: Ip Address ratio: 100 %

Primary Pool Address: Wallet Address/Pool User: Worker Name: Password (Optional)

Fallover Pool Address: Wallet Address/Pool... Worker Name: Password (Optional)

Fallover Pool Address: Wallet Address/Pool... Worker Name: Password (Optional)

CLEAR FIELDS

coin: BTC Unique ID: unique ID Variant: Ip Address ratio: 0 %

Primary Pool Address: Wallet Address/Pool... Worker Name: Password (Optional)

Fallover Pool Address: Wallet Address/Pool... Worker Name: Password (Optional)

Fallover Pool Address: Wallet Address/Pool... Worker Name: Password (Optional)

CLEAR FIELDS

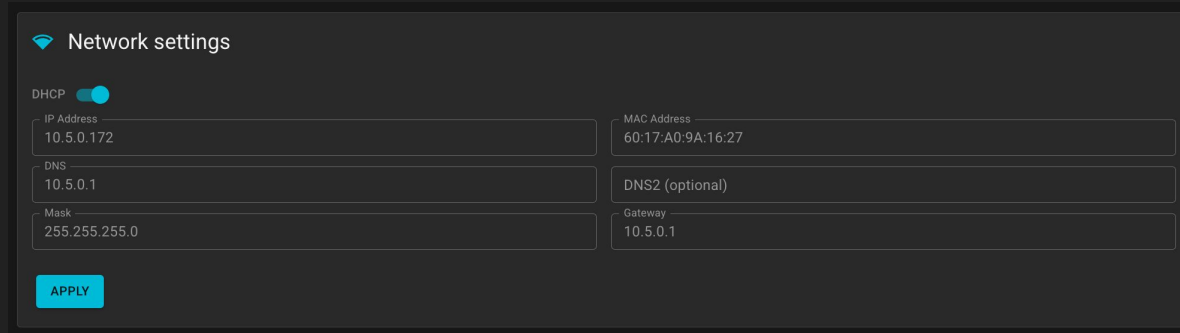
APPLY

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.

Setting - Network

Choose your own IP assignment

A screenshot of a network settings interface. At the top, it says "Network settings" with a Wi-Fi icon. Below that, a "DHCP" toggle switch is turned on. There are five input fields: "IP Address" (10.5.0.172), "MAC Address" (60:17:A0:9A:16:27), "DNS" (10.5.0.1), "DNS2 (optional)" (empty), "Mask" (255.255.255.0), and "Gateway" (10.5.0.1). An "APPLY" button is at the bottom left.

Network settings	
DHCP <input checked="" type="checkbox"/>	
IP Address	MAC Address
10.5.0.172	60:17:A0:9A:16:27
DNS	DNS2 (optional)
10.5.0.1	
Mask	Gateway
255.255.255.0	10.5.0.1
APPLY	

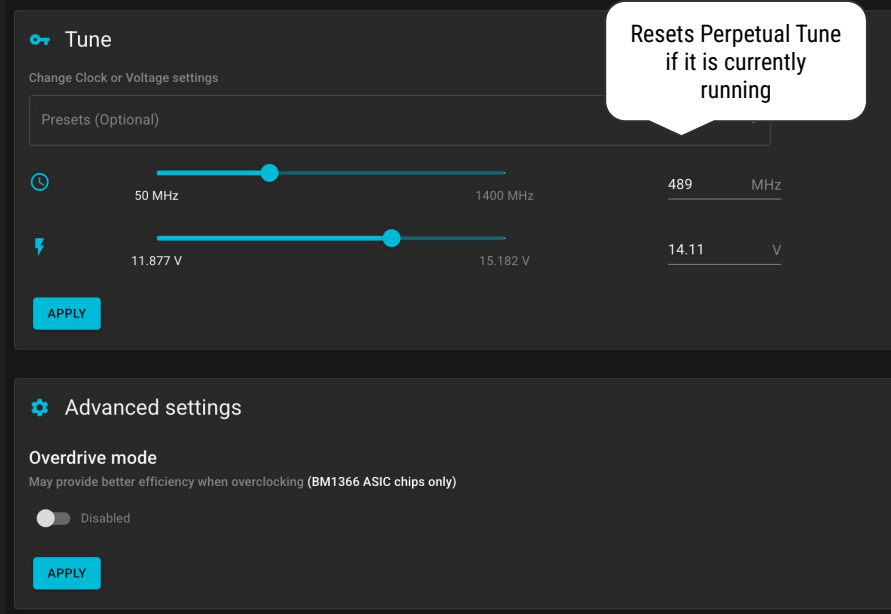
DHCP is enabled by default.

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

Note: ePIC dashboard does NOT support setting static IPs across multiple miners.

Setting - Performance

To manually adjust performance of your miner by adjusting the variables



The screenshot shows the 'Tune' settings page. At the top, there is a 'Tune' header with a key icon. Below it, the text 'Change Clock or Voltage settings' is displayed. A 'Presets (Optional)' dropdown menu is visible. Two sliders are present: the first for clock speed, ranging from 50 MHz to 1400 MHz, with a current value of 489 MHz; the second for voltage, ranging from 11.877 V to 15.182 V, with a current value of 14.11 V. An 'APPLY' button is located below the sliders. A white callout box with a speech bubble icon contains the text: 'Resets Perpetual Tune if it is currently running'. Below the 'Tune' section, there is an 'Advanced settings' section with a gear icon. Under 'Advanced settings', there is an 'Overdrive mode' section with the text 'May provide better efficiency when overclocking (BM1366 ASIC chips only)'. A toggle switch is currently in the 'Disabled' position. An 'APPLY' button is located below the 'Overdrive mode' section.

Tune

Manually change **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, S21+ and T21

Advanced Settings

Overdrive Mode provides advantage of overclocking during Voltage Optimizer.

Only available in S19K Pro and S19 XP

Perpetual Tune & Survival Mode

Configuration

- Required User Inputs:
 - **Target Hashrate:** The desired performance output in TH/s
 - **Minimum Throttle:** The lowest throttled hashrate target Survival Mode can reduce to before it stops trying to recovery automatically. (Default: 50TH/s)
 - **Throttle Steps:** The amount by which the target hashrate is reduced or increased during Survival Mode adjustments. (Default: 5TH/s)
- Survival Mode
 - Survival Mode automatically lowers the target hashrate when the miner temperature gets close to the shutdown threshold. If the miner stops due to high temperature, it can reduce the target further and attempt to restart automatically.

Manual Intervention Required

If the minimum throttle target is reached, automatic recovery stops. If the critical temperature is reached, the miner remains idle until it cools. Some error conditions may also require manual intervention.

Perpetual Tune - Summary

	Voltage Optimizer	ChipTune	Board Tune (Recommended)
Adjusting Variable	Voltage	Individual chip clocks	Board clocks
Duration	~ 30min	> 60min	~ 45min
Survival Mode	Yes	No	Yes
Use Case	You operate multiple miners in an unstable environment and prioritize long-term stability	You have a few miners in a highly stable environment and want to extract maximum performance	You want the best balance of speed and optimization. Ideal for S21 miners with mixed hashboards

Perpetual Tune

For better efficiency and stability



Perpetual Tune

The screenshot shows a software interface titled "Algorithms" with two buttons: "RESET PERPETUAL TUNE" and "STOP PERPETUAL TUNE". Below the buttons is a note: "Switching to a tuned algorithm will automatically set the miner to an optimal state unless the target is changed." Three algorithms are listed, each with a radio button and a current hashrate of 0 TH/s:

- Voltage Optimizer**: 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.
- Board Tune** (selected): Maintain the target hashrate by perpetually adjusting board clocks to improve performance while optimizing 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. Tunes faster than chiptune while providing improved performance compared to Voltage Optimizer.

At the bottom, there is a slider for "Board Tune" with a blue bar and a blue dot. The slider is labeled with "60TH/s" on the left and "300TH/s" on the right. To the right of the slider are three numerical settings: "238 TH/s Target", "50 TH/s Min Throttle", and "5 TH/s Throttle Step". An "APPLY" button is located at the bottom left of the interface.

Voltage Optimizer

optimizes voltage to maintain the target hashrate. Throttles down near the shutdown temp and throttles back up after cooling.

Chip Tune

adjusting individual chip clocks to maintain the target hashrate while optimizing voltage

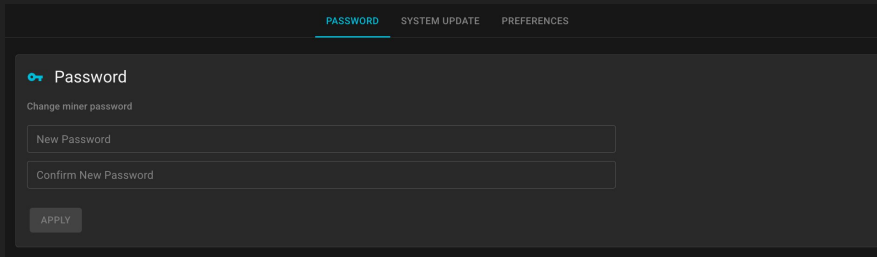
Board Tune

adjusts board clock to maintain the target hashrate while optimizing voltage. Throttles down near the shutdown temp and back up after cooling. Tunes faster than ChipTune

Note: Perpetual Tuning is only available in firmware version 0.26.0 or later

Setting - System

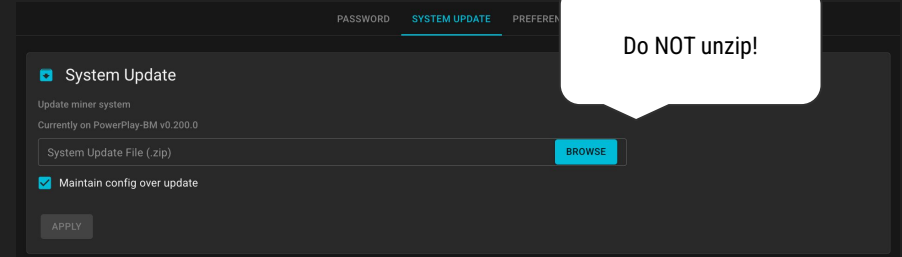
Manage system settings, including password changes and firmware updates



The screenshot shows the 'Password' settings page. At the top, there are three tabs: 'PASSWORD' (selected), 'SYSTEM UPDATE', and 'PREFERENCES'. Below the tabs, the page title is 'Password'. Underneath, it says 'Change miner password'. There are two input fields: 'New Password' and 'Confirm New Password'. At the bottom left, there is an 'APPLY' button.

Password

Enter your new password, confirm it then click “APPLY”



The screenshot shows the 'System Update' settings page. At the top, there are three tabs: 'PASSWORD', 'SYSTEM UPDATE' (selected), and 'PREFERENCES'. Below the tabs, the page title is 'System Update'. Underneath, it says 'Update miner system' and 'Currently on PowerPlay-BM v0.200.0'. There is a 'System Update File (.zip)' field with a 'BROWSE' button. Below that, there is a checked checkbox for 'Maintain config over update'. At the bottom left, there is an 'APPLY' button. A white callout box with a speech bubble shape contains the text 'Do NOT unzip!'.

System Update

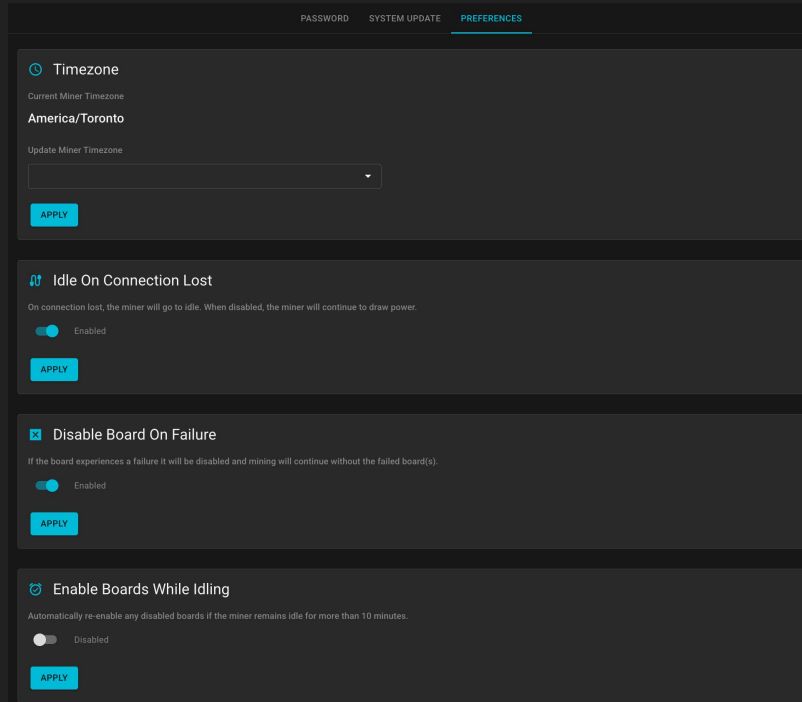
1. Download the latest release of the firmware from [ePIC Github](#)
2. Download the .zip file *powerplay-xxxx-update-vxxxxxxx.zip*
3. Upload it, then click “APPLY”

Note: The “Maintain config over update” will save your settings across the update.

Your miner will take a few minutes to reboot and recalibrate.

System - Preferences

Configure miner behaviour for network loss, board failures, and idle states.

A screenshot of the "System - Preferences" interface. The top navigation bar includes "PASSWORD", "SYSTEM UPDATE", and "PREFERENCES" (which is highlighted). The main content area is divided into four sections, each with a title, a description, a toggle switch, and an "APPLY" button. 1. "Timezone": Shows "Current Miner Timezone" as "America/Toronto" and "Update Miner Timezone" with a dropdown menu. 2. "Idle On Connection Lost": Description: "On connection lost, the miner will go to idle. When disabled, the miner will continue to draw power." Toggle: "Enabled" (checked). 3. "Disable Board On Failure": Description: "If the board experiences a failure it will be disabled and mining will continue without the failed board(s)." Toggle: "Enabled" (checked). 4. "Enable Boards While Idling": Description: "Automatically re-enable any disabled boards if the miner remains idle for more than 10 minutes." Toggle: "Disabled" (unchecked).

Idle On Connection Lost

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.

Disable Board On Failure

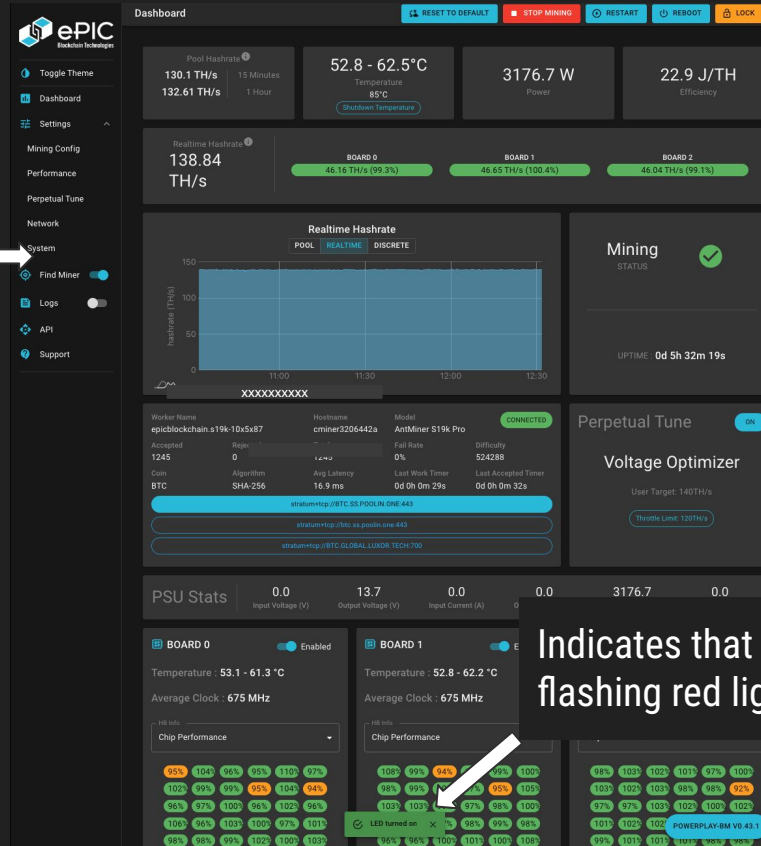
If the board experience a failure, it will be disabled and mining will continue without the failed board(s).

Enable Boards While Idling

If the miner remains idle for more than 10 minutes, it will automatically re-enable any disabled boards.

11. Find Miner

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



The screenshot shows the ePIC dashboard with the following sections:

- Dashboard:** Pool Hashrate (130.1 TH/s), Temperature (52.8 - 62.5°C), Power (3176.7 W), Efficiency (22.9 J/TH).
- Realtime Hashrate:** 138.84 TH/s, with BOARD 0 (46.16 TH/s), BOARD 1 (46.65 TH/s), and BOARD 2 (46.04 TH/s).
- Realtime Hashrate Graph:** A line graph showing hashrate over time from 11:00 to 12:30.
- Mining Status:** Mining is active (green checkmark), with an uptime of 0d 5h 32m 19s.
- Perpetual Tune:** Voltage Optimizer is set to 20%.
- PSU Stats:** Input Voltage (0.0), Output Voltage (13.7), Input Current (0.0), and Power (3176.7).
- Miner Details:** Worker Name (epicblockchain.s19k-10x5x87), Hostname (cmminer2206442a), Model (AntMiner S19k Pro), and various performance metrics.
- Board Performance:** BOARD 0 and BOARD 1 are shown with temperature, average clock, and chip performance metrics.

Indicates that your miner will be
flashing red light

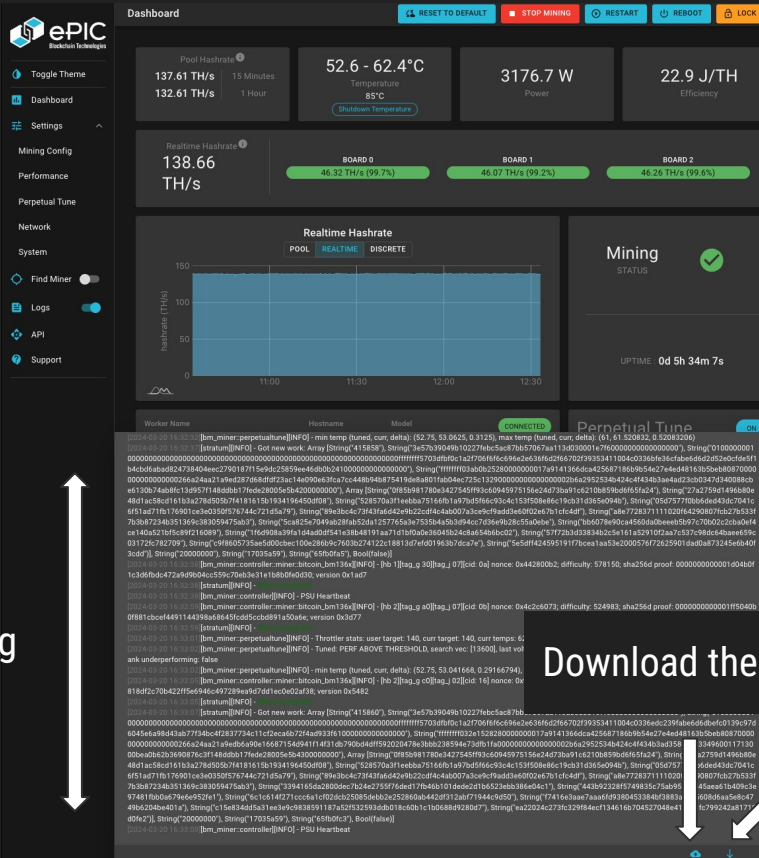


12. Logs

Turn "Logs" toggle on



Real-time log

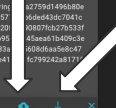


The screenshot shows the ePIC Dashboard interface. At the top, there are control buttons: RESET TO DEFAULT, STOP MINING, RESTART, REBOOT, and LOCK. The main dashboard displays key metrics: Pool Hashrate (137.61 TH/s), Temperature (52.6 - 62.4°C), Power (3176.7 W), and Efficiency (22.9 J/TH). Below these are three boards with their respective hashrates: BOARD 0 (46.32 TH/s, 99.7%), BOARD 1 (46.07 TH/s, 99.2%), and BOARD 2 (46.26 TH/s, 99.6%). A Realtime Hashrate graph shows a fluctuating line over time. The Mining status is shown as 'ON' with a green checkmark. At the bottom, a log window displays system messages, including 'Got new work' and 'Throttled' events. The log window has a scroll bar on the right side.

Download the logs

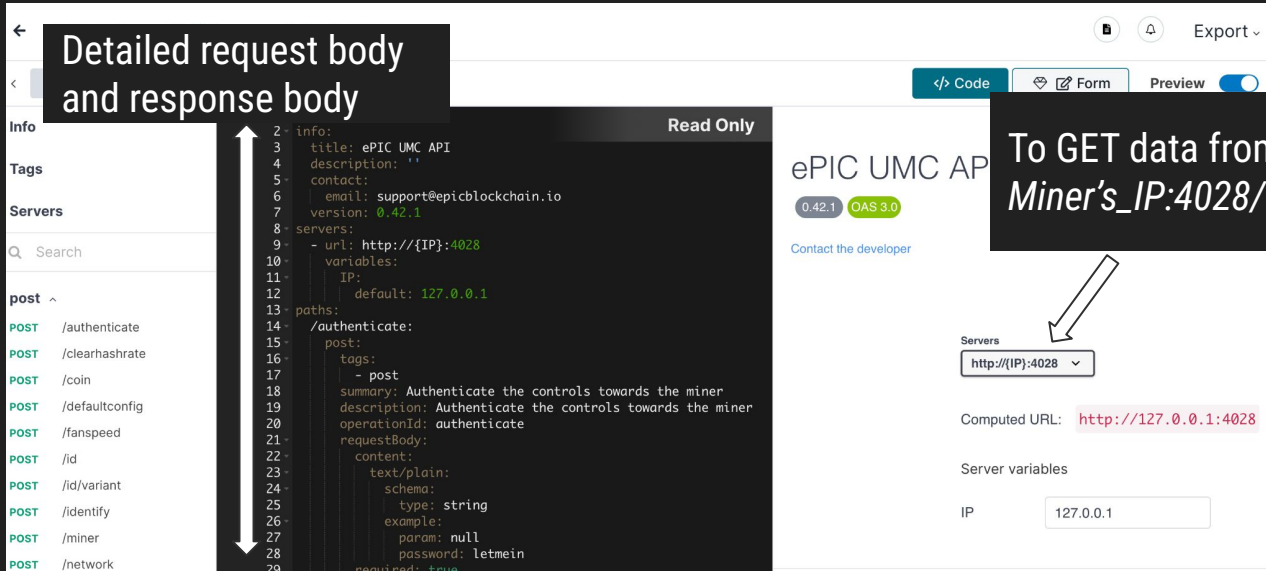
Scroll to bottom

Close the logs



13. API

To manually send (POST) or retrieve (GET) data



The screenshot shows an API documentation interface for the ePIC UMC API. On the left, a sidebar lists endpoints under the 'post' category, including /authenticate, /clearhashrate, /coin, /defaultconfig, /fanspeed, /id, /id/variant, /identify, /miner, and /network. The main area displays the OpenAPI specification for the /authenticate endpoint, showing a POST method with a request body containing 'text/plain' content. A 'Read Only' overlay is present on the code. On the right, a preview shows the 'Servers' section with a dropdown menu set to 'http://{IP}:4028', a 'Computed URL' field showing 'http://127.0.0.1:4028', and a 'Server variables' section with 'IP' set to '127.0.0.1'. A callout box points to the dropdown menu.

Detailed request body and response body

To GET data from a server, Miner's_IP:4028/GET_command

POST & GET

API documentation: [here](#)

13. API

POST example

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

Parameters Try it out

No parameters

Request body required text/plain

Example Value | Schema

```
{
  "param": 550,
  "password": "letmein"
}
```

Responses

Code	Description	Links
200	Response status	No links

Media type: application/json

Controls Accept header.

Example Value | Schema

```
{
  "error": "{\\"MissingParam\\":\\"Missing param\\"}",
  "result": true
}
```

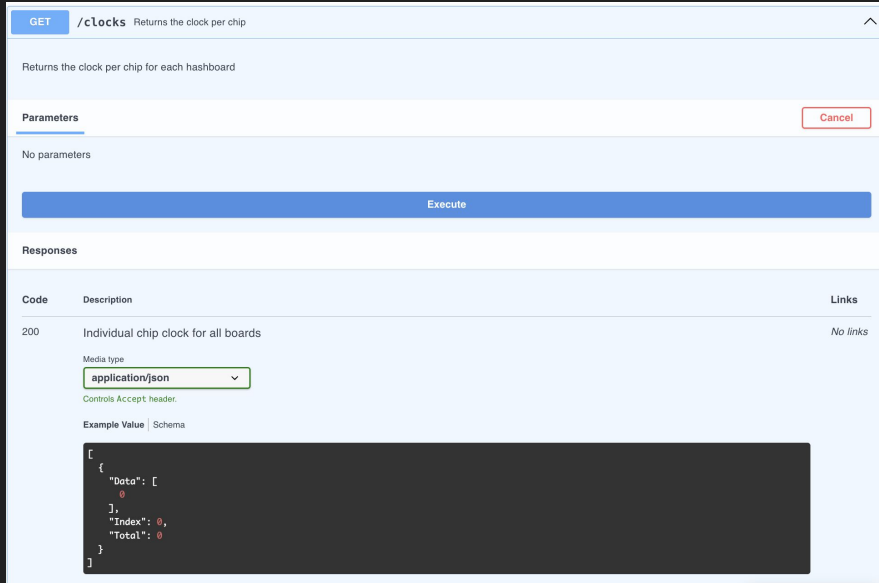
POST: /tune/clock/all

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

13. API

GET example



GET /clocks Returns the clock per chip

Returns the clock per chip for each hashboard

Parameters Cancel

No parameters

Execute

Responses

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

Media type: application/json

Controls Accept header.

Example Value | Schema

```
[
  {
    "Data": [
      0
    ],
    "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

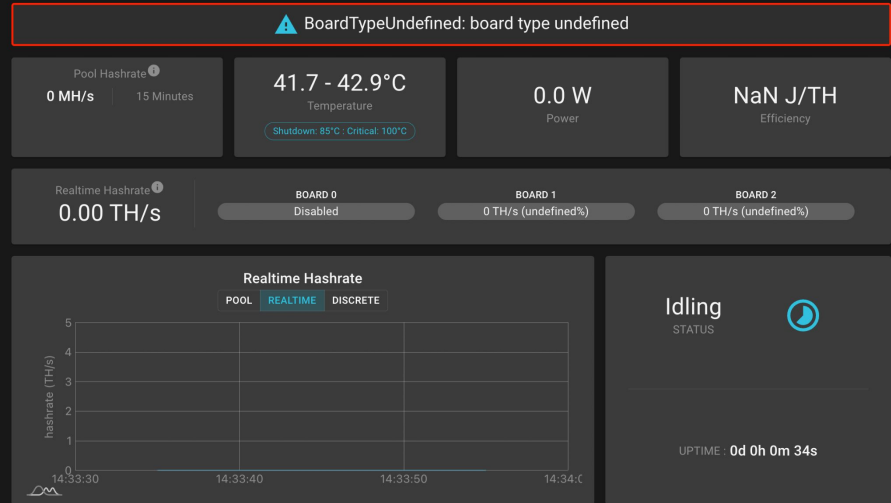
Troubleshooting

a. BoardTypeUndefined

Board type undefined

This error indicates that the board type might be a different variant that hasn't been added to the ePIC firmware.

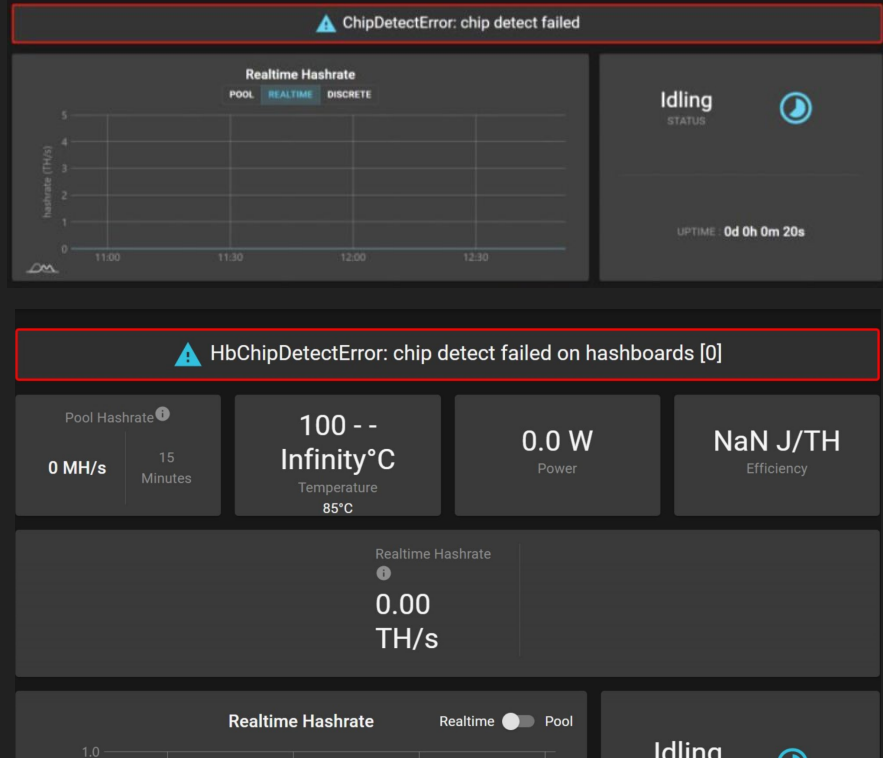
Please contact support@ePICblockchain.io and include information about the model type and configuration you have the UMC installed on.



b. ChipDetectError & HbChipDetectError

Chip detect failed & Chip detect failed on hashboards [x]

This error indicates there is no communication from the chip on either a specific hashboard or from all hashboards. This can be due to various reasons, such as PSU overheating, loose connections, or hardware malfunction.



b. ChipDetectError & HbChipDetectError

Troubleshooting Steps

1. **Disable individual Hashboards:**
 - a. Inspect the logs or disable hashboards and enable them one by one to identify the malfunctioning hashboard and replace it.
2. **Perform SD card Recovery:**
 - a. If the problem continues, perform SD recovery to force update the firmware image,
3. **Swap to Stock Control Board:**
 - a. If the issue persists, replace the UMC board with the stock control board to verify the functionality of all hashboards.

If the rig is able to detect all hashboards on Stock FW and unable to on the ePIC UMC, contact support@epicblockchain.io

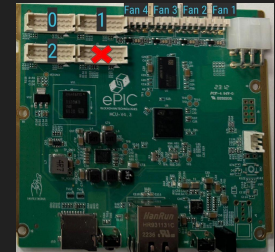
Inspecting the log, the Board and Number of Chips detected is printed

```

2023-11-20 16:44:13 [bm_miner:controller][INFO] - found chip id 1362
2023-11-20 16:44:13 [bm_miner:controller][INFO] - found chip id 1362
2023-11-20 16:44:13 [bm_miner:controller][INFO] - chip detect type results: [(0, Some(Bm1362)), (1, Some(Bm1362)), (2, Some(Bm1362))]
2023-11-20 16:44:13 [bm_miner:minerctl][INFO] - all boards detected as: Bm1362
2023-11-20 16:44:13 [bm_miner:controller][INFO] - Detecting chip count
2023-11-20 16:44:13 [bm_miner:controller][INFO] - Setting m4 settings to 115200, 8, 9
2023-11-20 16:44:13 [bm_miner:controller][INFO] - Setting m6 settings to 115200, 8, 9
2023-11-20 16:44:13 [bm_miner:controller][INFO] - Setting m6 settings to 115200, 8, 9
2023-11-20 16:44:13 [bm_miner:controller][INFO] - found 104 chips
2023-11-20 16:44:13 [bm_miner:controller][INFO] - found 108 chips
2023-11-20 16:44:13 [bm_miner:controller][INFO] - found 108 chips
2023-11-20 16:44:13 [bm_miner:controller][INFO] - chip detect count results: [(0, Some(104)), (1, Some(108)), (2, Some(108))]
2023-11-20 16:44:13 [bm_miner:controller:miner][WARN] - dropping GenericMiner
2023-11-20 16:44:13 [miner_utils][WARN] - miner start failed with error: chip detect failed
2023-11-20 16:44:13 [miner_utils][WARN] - sleeping 30sec
2023-11-20 16:44:27 [bm_miner:perpetualtune][WARN] - initialize perpetualtune: miner model in capabilities is detected as undefined
2023-11-20 16:44:43 [miner_utils][INFO] - Starting miner
2023-11-20 16:44:43 [miner_utils:config][INFO] - Using input file: /root/config.toml
2023-11-20 16:44:44 [miner_utils:config][INFO] - path in GlobalConfig "/root/config.toml"
2023-11-20 16:44:44 [miner_utils:config][INFO] - loading file hw_config
2023-11-20 16:44:45 [bm_miner:controller:identifier][INFO] - Detecting board type
2023-11-20 16:44:45 [bm_miner:controller:identifier][WARN] - dropping GenericIdentifier
2023-11-20 16:44:45 [bm_miner:minerctl][INFO] - board type detected: BmSerialBC
  
```

In this case, only board 0 has 104 of chip counts when both board 1 and board 2 have 108 chip counts, causing chip detect failed

Board ID and Fans are mapped to the connectors as shown



c. ChipDetectTimeout

Chip detect timed out because of uart

When all HBs are timing out it usually indicates the hasboards are not receiving power from the PSU.

1. Check the ambient temperature. It should NOT exceed 40 degrees, the PSU has a internal shut off when overheating
2. Reseat all the Hasboard Connectors
3. If the issue persists, replace the PSU with a working one
4. If the PSU is known working, and HBs are still not detected, all 3 HBs may need repair

 ChipDetectTimeout: chip detect timed out because of uart

In the log, you may see

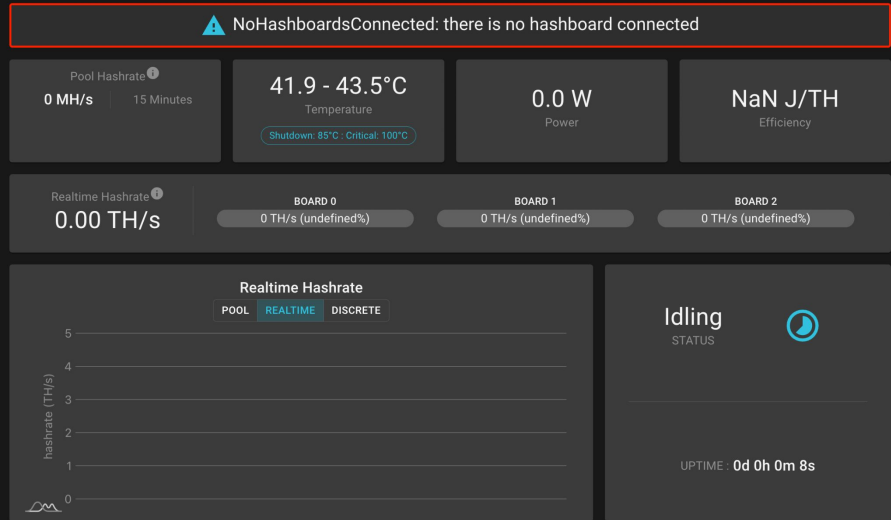
```
2023-09-10 22:26:45][bm_miner::controller][INFO] - Set voltage to 15182mV count 0
[2023-09-10 22:26:46][bm_miner::controller][INFO] - psu.set_voltage: - waiting 0ms for voltage to settle
[2023-09-10 22:26:47][bm_miner::controller][INFO] - psu.enable: Ok(()) - waiting 3000ms for voltage to settle
[2023-09-10 22:26:51][bm_miner::controller][INFO] - is board id 0 detected?: true
[2023-09-10 22:26:51][bm_miner::controller][INFO] - is board id 1 detected?: true
[2023-09-10 22:26:52][bm_miner::controller][INFO] - is board id 2 detected?: true
[2023-09-10 22:26:52][bm_miner::controller][INFO] - Detecting chip type
[2023-09-10 22:26:52][bm_miner::controller][INFO] - Setting m4 settings to 115200, 8, 9
[2023-09-10 22:26:52][bm_miner::controller][INFO] - Setting m4 settings to 115200, 8, 9
[2023-09-10 22:26:52][bm_miner::controller][INFO] - Setting m4 settings to 115200, 8, 9
[2023-09-10 22:26:53][bm_miner::controller][ERROR] - run_uart_and_read_one: uart return timed out
[2023-09-10 22:26:53][bm_miner::controller][ERROR] - run_uart_and_read_one: uart return timed out
[2023-09-10 22:26:53][bm_miner::controller][ERROR] - run_uart_and_read_one: uart return timed out
[2023-09-10 22:26:53][bm_miner::controller][INFO] - chip detect type results: [(0, None), (1, None), (2, None)]
[2023-09-10 22:26:53][miner_utils][WARN] - miner start failed with error: chip detect failed
[2023-09-10 22:26:53][miner_utils][WARN] - sleeping 30sec
```

d. NoHashboardConnected

There is no hashboard connected

There are no HBs connected to the PSU.

Check and Connect the hashboard cables to the J2, J3, and J4 ports



15. General Solutions for Hashboard Errors

1. Ensure all Hashboards are Connected as well as the PSU
2. Reset to Default to ensure FW is in a good state
3. If all HBs are not responding, replace PSU to ensure HBs are getting power
4. Disable HBs based on log to isolate which HB may need repair
5. If confident that PSU is working and HBs are good, use stock control board to confirm that there are no chip issues and isolate the UMC

Have a question?

Website

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

Email

Support@epicblockchain.io

Github

<https://github.com/epicblockchain>

Twitter

<https://twitter.com/ePICBlockchain>

Telegram

https://t.me/epic_umc