



Bitaxe Gamma Turbo 801

2-Chip Open-Source Bitcoin & Bitcoin Cash Solo Miner

Bitaxe GammaTurbo 801



User Manual

Firmware: AxeOS (ESP-Miner) | Document version 1.4
www.smartmining.com | support@smartmining.com

⚠ IMPORTANT SAFETY WARNINGS — READ BEFORE USE

- Use only the included 12V 6A 72W (XT30 connector) power supply. Third-party power supplies may cause permanent hardware damage or fire.
- Keep away from children and pets. Fan blades and PCB surfaces become hot during operation.
- Do not insert fingers, tools, or objects into fan openings while the device is powered.
- If you detect smoke, a burning smell, or unusual noise: disconnect power immediately. Do not use water on electrical fires.
- Ensure adequate ventilation at all times. Never operate in an enclosed space without airflow. Maintain at least 15 cm clearance around the device.
- Do not operate above 40°C (104°F) ambient temperature.
- Do not expose to liquids, moisture, or direct sunlight.
- Do not modify PCB components — this voids the warranty.



Open-Source Acknowledgement: The Bitaxe Gamma Turbo 801 is based on the open-source Bitaxe hardware project. Firmware (AxeOS) is distributed under its open-source licence (ESP-Miner). All schematics, PCB layouts, and firmware source code are publicly available. Smart Mining S.r.l. does not claim ownership of the open-source components.

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1. Product Overview

1.1 Introduction

Bitcoin and Bitcoin Cash operate using a process called proof-of-work mining. Specialised chips called ASICs perform trillions of SHA-256 calculations per second, competing to solve a mathematical puzzle. The first miner in the world to find the answer wins the current block reward — currently 3.125 BTC or 3.125 BCH — paid directly to the winner's wallet. A new block is produced approximately every ten minutes, so a new draw takes place 144 times every day.

Solo mining means competing for the full block reward on your own, without splitting it with anyone. The Bitaxe Gamma Turbo 801 is part of the open-source Bitaxe family, using the same BM1370 ASIC silicon found in Bitmain's industrial Antminer S21 Pro. At ~2.5 TH/s stock hashrate it offers around double the chance of mining a Bitcoin block from your home compared to the standard Bitaxe Gamma single chip version.

This hardware family has a verified track record. Bitaxe devices have confirmed multiple full block wins on-chain, with payouts ranging from approximately €186,000 to over €297,000 at the time of winning. Every entry is permanently recorded on the Bitcoin blockchain and publicly verifiable.

1.2 Technical Specifications

Technical Specifications	
ASIC chip	2× Bitmain BM1370 (5nm)
Hashrate	~2.5 TH/s
Algorithm	SHA-256
Supported coins	Bitcoin (BTC) and Bitcoin Cash (BCH)
Power draw	~49 W
Efficiency	~19.6 J/TH
Connectivity	Wi-Fi 2.4 GHz + USB-C (debug only, not for power)
Display	OLED 0.91" monochrome
Fan configuration	1× 60mm brushless PWM
Noise level	~37 dB
Input voltage	12V DC (XT30 connector)
Power adapter	12V 6A 72W
Dimensions	11.5 x 7 x 13cm
Weight	282g
Dual Mining (BTC + BCH)	No — switch between BTC and BCH via pool configuration
Firmware	AxeOS (open-source, ESP-Miner)
First released	February 2025
Warranty	12 months commercial warranty — Smart Mining S.r.l.

AxeOS provides a browser-based dashboard — no app to install, no account to create. Every setting is accessible from any phone or laptop on your home network. Firmware updates are applied over Wi-Fi in under two minutes.

1.3 Getting to Know Your Device

1.3.1 What Is in the Box

- Bitaxe Gamma Turbo 801 2.5 TH/s device unit (with 2x BM1370 chips, premium heatsink, brushless cooling fan)
- 12V 6A 72W power adapter with XT30 connector
- Power cable with regional adapter
- 3D-printed black desktop stand
- A Quick Start Guide (step-by-step setup instructions in English and Italian)

Use only the included 12V 6A 72W power adapter. Using an incompatible power supply will cause voltage instability and may permanently damage the device.

1.3.2 Device Diagram



1.3.3 Component Identification

The Bitaxe Gamma Turbo 801 contains 2 BM1370 ASIC chips that perform all SHA-256 hashing calculations. Each chip has its own heatsink contact point. A single 60mm PWM silent fan maintains airflow across the chips and heatsink assembly.

A ESP32-S3 microcontroller manages Wi-Fi connectivity, runs the AxeOS firmware, drives the OLED display, and coordinates the ASIC chips. A VRM (Voltage Regulator Module) converts the 12V input to the precise voltage required by the BM1370. The 0.91-inch OLED module on the front face provides at-a-glance statistics without needing a browser.

2. Before You Begin

2.1 What You Will Need

- A Wi-Fi router with 2.4 GHz band enabled (5 GHz is NOT supported)
- A phone, tablet, or laptop with Google Chrome (for initial setup and monitoring)
- A valid Bitcoin (BTC) and/or Bitcoin Cash (BCH) on-chain wallet address

2.2 Your Wallet Addresses

Your wallet address is where the full block reward is sent if your Bitaxe Gamma Turbo 801 finds a block. It also serves as your worker identifier on the mining pool — no account registration is required. The address is public information and safe to share; what must never be shared with anyone is your wallet's seed phrase (the 12 or 24 words generated when you create the wallet).

2.2.1 Creating a Bitcoin (BTC) Wallet Address

Download a self-custody wallet such as Electrum (desktop, electrum.org) or BlueWallet (mobile, bluewallet.io). Create a new wallet, write down the seed phrase and store it securely offline, then copy a receiving address. Use a native SegWit address beginning with `bc1q` — Taproot addresses beginning with `bc1p` may cause compatibility issues with some solo mining pools.

2.2.2 Creating a Bitcoin Cash (BCH) Wallet Address

Download Electron Cash (electroncash.org) for desktop or the Bitcoin.com Wallet for mobile. Create a new wallet, back up the seed phrase offline, and copy a receiving address. BCH addresses in CashAddr format begin with `q` (e.g., `qp3w...`) — this is the correct format for mining pool configuration.

Never use an exchange address (Coinbase, Binance, Kraken, etc.) as your mining address. Exchanges may reject direct mining payouts or restrict accounts that receive them. Always use a self-custody wallet where you control the private keys.

2.3 Device Placement and Ventilation

The Bitaxe Gamma Turbo 801 draws ~49 W at stock settings. Place it on a hard, flat, non-flammable surface using the included stand. Maintain a minimum clearance of 15 cm on all sides, particularly on the fan inlet and exhaust sides. Do not place the device in a drawer, cabinet, or enclosed shelf without dedicated ventilation.

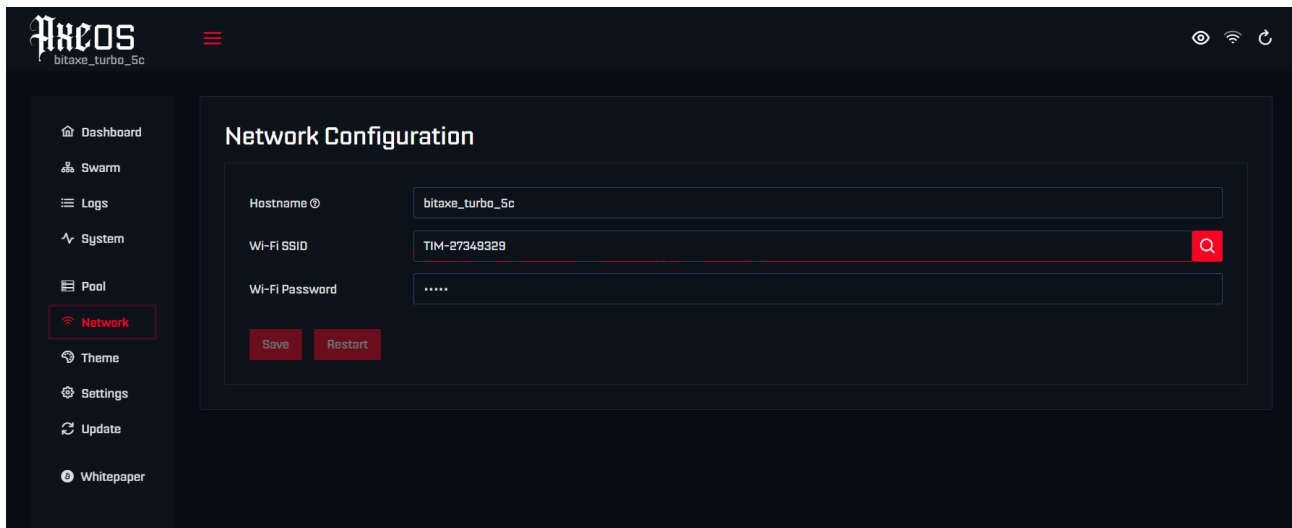
The optimal ambient temperature is 15–30°C (59–86°F). Keep the device away from moisture, direct sunlight, curtains, and other flammable materials. Inspect and clean the fan and heatsink monthly using compressed air.

3. Initial Setup

3.1 First Power-On

Connect the XT30 connector from the power supply to the XT30 connector port of the device. Plug the power supply into a wall outlet. The fan will start and the OLED will light up. Within 30 seconds the device will display its SSID — a network name in the format Bitaxe_XXXX, where XXXX is a unique identifier. The device is now ready for Wi-Fi configuration.

3.2 Connecting to Your Home Wi-Fi



1. On your phone, tablet, or laptop, open Wi-Fi settings and scan for available networks.
2. Connect to the Bitaxe_XXXX network. No password is required for this initial hotspot.
3. A setup page (captive portal) should open automatically in your browser. If it does not, open Chrome and navigate to <http://192.168.4.1>
4. In the setup portal, enter your home Wi-Fi network name (SSID) and password. Remember that only 2.4 GHz networks are supported.
5. Tap Save, then tap Reset / Restart.
6. The device reboots and connects to your home network. After 15–20 seconds, the IP address assigned by your router appears on the OLED display — for example, 192.168.1.45.

Tip: set a static DHCP reservation for the device in your router's admin panel using its MAC address (shown on the System screen). This ensures the IP address never changes.

3.2.1 Wi-Fi Troubleshooting

Problem	Likely Cause	Solution
Hotspot not visible after 60 s	Boot not complete	Unplug and re-plug the power supply; wait 30 s
Cannot connect to Bitaxe_XXXX	Phone auto-connecting to 5 GHz	Manually select the Bitaxe_XXXX network
Captive portal does not open	Browser did not detect portal	Open Chrome and navigate to http://192.168.4.1
Wrong password — device will not connect	Typo in credentials	Unplug power; wait 10 s; re-plug; reconnect to hotspot
ASUS router — device cannot connect	AI Protection blocking connection	Disable AI Protection in router admin panel; retry

3.3 Accessing the Web Interface

Ensure your phone or laptop is connected to your home Wi-Fi — not to the Bitaxe hotspot. Open Google Chrome and type the IP address shown on the OLED screen into the address bar (e.g., <http://192.168.1.45>). The AxeOS dashboard loads immediately and updates in real time. Bookmark this address for future access. Optionally set a static

3.4 Configuring Mining Settings

The screenshot shows the AxeOS web interface for a Bitaxe Turbo 801. The interface has a dark theme and a sidebar on the left with navigation links: Dashboard, Swarm, Logs, System, Pool (highlighted in red), Network, Theme, Settings, Update, and Whitepaper. The main content area is titled 'Pool Configuration' and contains two sections: 'Pool Configuration' and 'Fallback Pool Configuration'. Each section has input fields for Stratum Host, Stratum Port, User, and Password, along with a 'Show Advanced Options' link. At the bottom of the Fallback Pool Configuration section are 'Save' and 'Restart' buttons.

Pool Configuration

Stratum Host	eusolo.ckpool.org
Stratum Port	3333
User	bclq0upv5sxx6t0t2fzrq038vaveffx2hu0lfv0jv.bitaxe_GT_5c
Password	
Show Advanced Options	

Fallback Pool Configuration

Stratum Host	btc.solopool.eu
Stratum Port	3333
User	qqnevl4kqav46tzt8cxmlldzk63wyt5hng760cfssr.bitaxe_GT_5c
Password	
Show Advanced Options	

Save **Restart**

3.4.1 Selecting a Mining Pool

In the AxeOS dashboard, navigate to Settings. Under the Stratum / Pool section, enter the URL and port of your chosen mining pool. The miner is preconfigured to mine Bitcoin (BTC) with the Europe Solo CKPool (in the main Pool Configuration section), and Bitcoin Cash (BCH) with Solopool.eu (in the Fallback Pool section). These are two of the most popular mining pools that offer low latency for users in Europe, low difficulty that is ideal for the Bitaxe Gamma Turbo 801, and no registration requirement. If you want to mine Bitcoin (BTC), nothing needs to be modified. If you want to mine Bitcoin Cash (BCH), in the AxeOS dashboard, navigate to the Pool section and swap the settings of the Fallback Pool Configuration and the Pool Configuration. You can select different mining pools by entering the Stratum Host and Stratum Port of your selected pool in the Pool Configuration and the Fallback Pool sections.

Pool	Stratum URL	Port	Fee	BTC	BCH
Solo CKPool	solo.ckpool.org	3333	2%	✓	—
Solopool.eu	bch.solopool.eu	3333	0.5%	—	✓
Solopool.eu	btc.solopool.eu	3337	1%	✓	—

Solo mining means competing for the complete 3.125 BTC block reward on your own. Pool mining splits rewards across many participants and pays out small, predictable amounts. The vast majority of buyers choose solo mining.

3.4.2 Entering Your Wallet Addresses

In the AxeOS dashboard navigate to the Pool section. In the User field for the Pool Configuration, enter your Bitcoin (BTC) wallet address followed by a period and the name you want to give your miner (if you left the Pool Configuration to mine BTC - if not, enter the BCH wallet address). Leave the Password field blank or enter the letter x. In the Fallback Pool Configuration User field, enter your Bitcoin Cash (BCH) wallet address followed by a period and the name you want to give your miner (if you left the Pool Configuration to mine BCH - if not, enter the BTC wallet address). Leave the Password field blank or enter the letter x. If you are lucky and mine a BTC or BCH block, the full block rewards will be sent to these addresses.

3.4.3 Saving Settings and Starting Mining

Click Save, then Restart. The device reboots and begins mining within 60 seconds. On the dashboard, hashrate fluctuates in the first 5–10 minutes — this is normal. After 10 minutes, expect approximately 2.5 TH/s at the preconfigured settings.

3.4.4 Pool Monitoring

To monitor your Bitcoin (BTC) mining pool, navigate to <https://stats.ckpool.org/> (or your pool URL if you selected a different BTC pool) and enter your BTC wallet address.

To monitor your Bitcoin Cash (BCH) mining pool, navigate to <https://solopool.eu/miner/> (or your pool URL if you selected a different BCH pool) and enter your BCH wallet address.

Pool-side data updates every few minutes — do not expect second-by-second accuracy. Your Best Difficulty score is the most meaningful long-term indicator: the higher it climbs, the closer you are getting to solving a full block.

4. Device Interface

4.1 Physical Buttons

The Bitaxe Gamma Turbo 801 has two buttons: The left button resets the device, and the right button cycles through the display screens.

4.2 The OLED Display

The 0.91-inch monochrome OLED display shows real-time mining statistics across multiple screens. All configuration is performed through the web interface — the display is read-only.

Screen 1 — Mining Summary

Shows the current hashrate in GH/s or TH/s, the operating efficiency in J/TH, your Best Difficulty (the highest-difficulty share your device has ever submitted — your closest approach to finding a full block), and the ASIC chip temperature.

```
Gh/s: 1238.67      ↓  
J/Th: 15.94  
Best: 154.51k/15.98M  
Temp: 52.0°C
```

Screen 2 — Network and Pool Status

Shows the current block, the network difficulty, and details from the mining pool.

```
Block: 949245  
Difficulty: 132.47T  
Scripts: .  
.ckpool.org/ ...j.
```

Screen 3 — Temperature and Power

Shows your home Wi-Fi signal strength and total uptime since the device was last restarted.

```
Wi-Fi Signal  
RSSI: -66 dBm  
Signal: Fair  
Uptime: 2m 19s
```

Screen 4 — System Information

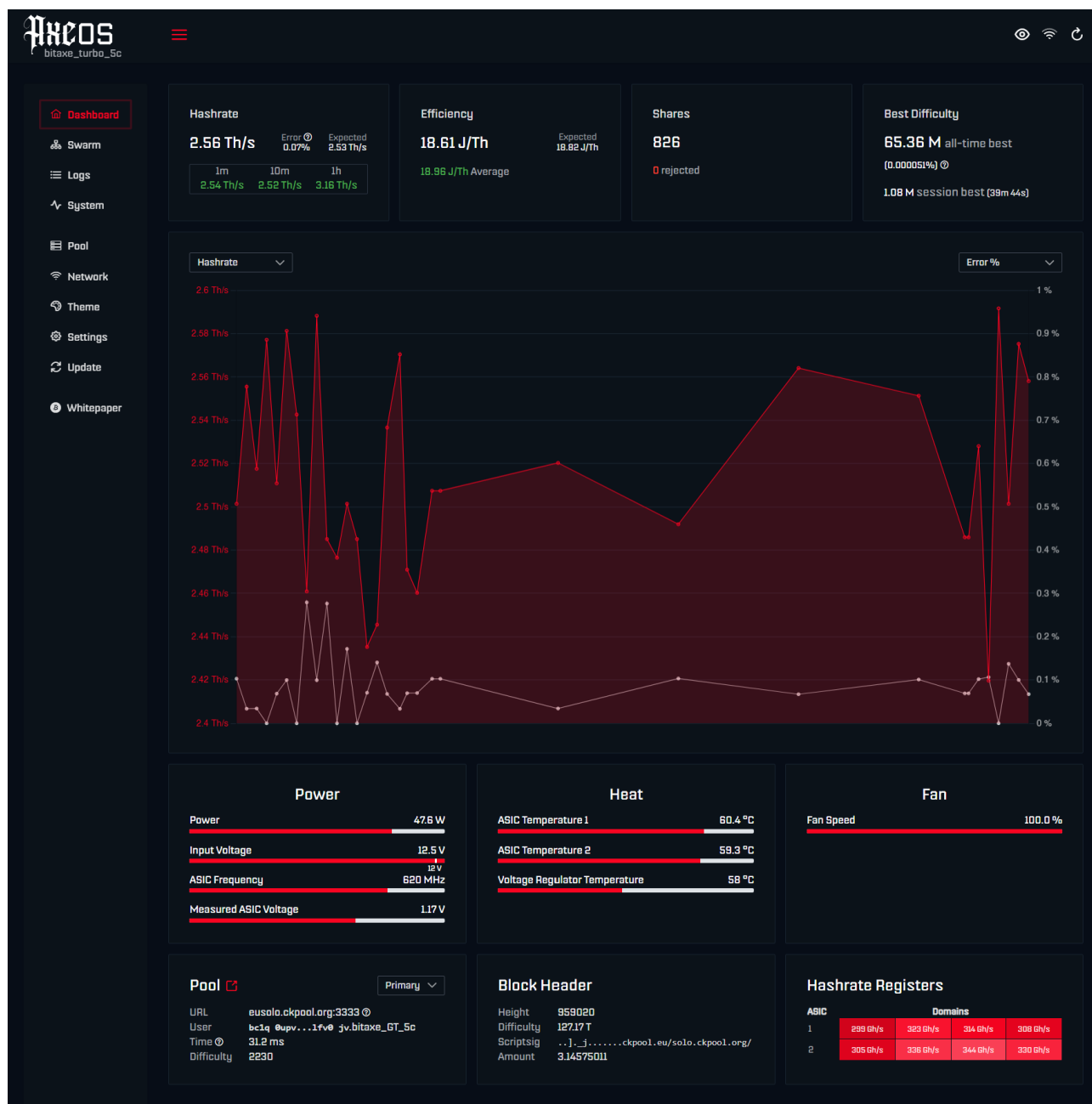
Shows the configured pool Stratum host URL and the device's current IP address.

```
Stratum Host:  
eusolo.ckpool.org  
IP Address:  
192.168.1.15
```

5. Web Interface (AxeOS)

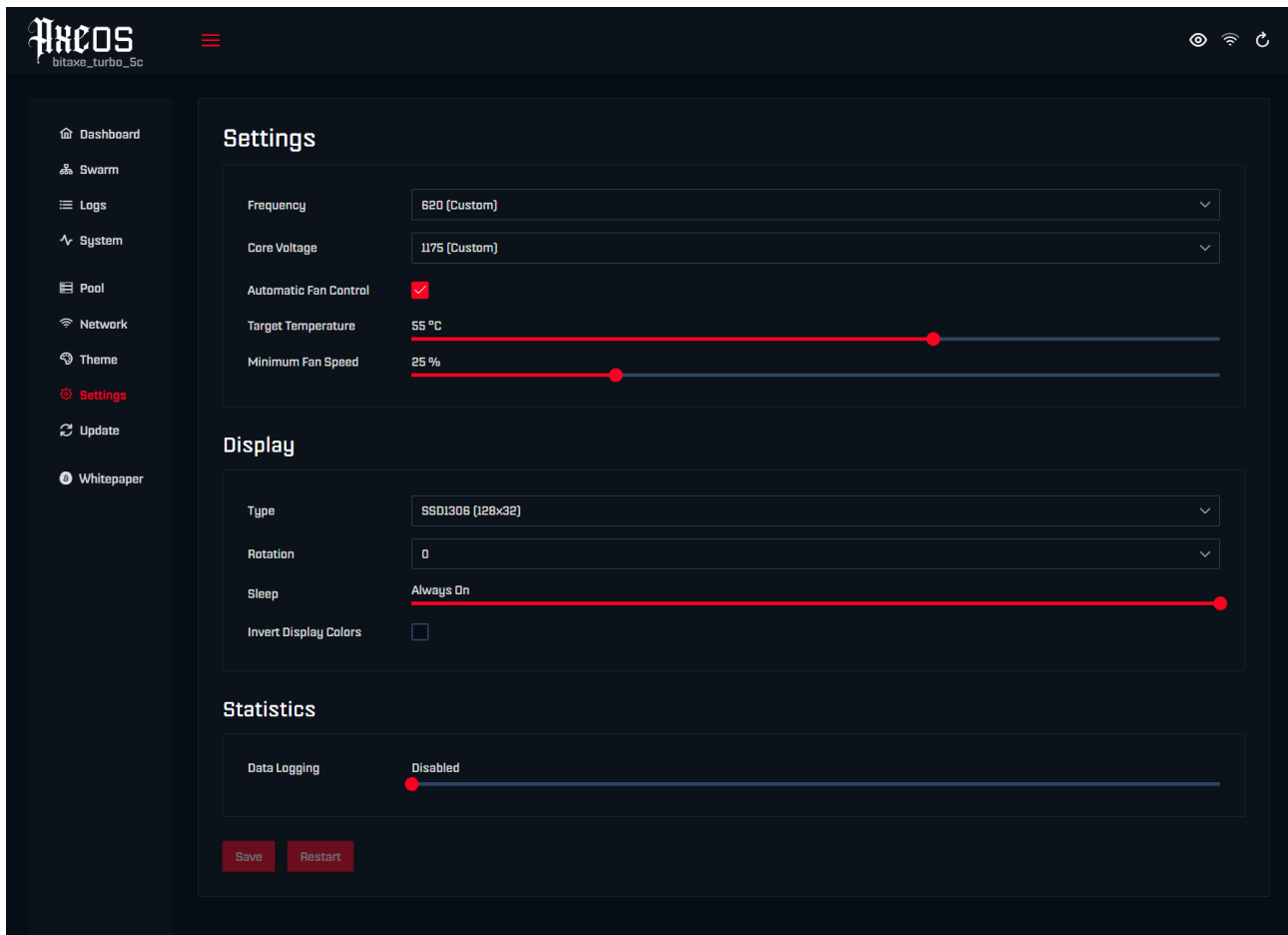
The AxeOS web dashboard is your primary tool for monitoring and configuration. Access it by typing the device's IP address into Chrome on any phone or laptop on the same Wi-Fi network.

5.1 Dashboard — Main View



The main dashboard shows your current hashrate and rolling average, your all-time best difficulty, share counts, uptime, and pool connection status. The error percentage next to the hashrate is a hardware-level chip metric — not the same as rejected shares. A value below 2% is normal; above 5% may indicate thermal stress or an unstable overclock.

5.2 Settings Screen



The Settings screen is where the core frequency (MHz), core voltage (mV), fan mode (Auto or Manual), fan speed percentage, and the target temperature are configured.

6. Performance Tuning

6.1 Understanding Frequency and Voltage

Every BM1370 chip operates at a clock frequency measured in MHz. Higher frequency means more SHA-256 calculations per second — more hashrate. Higher frequency also requires higher core voltage, more power, and produces more heat. The Bitaxe Gamma Turbo 801 ships at ~600 MHz / ~1150 mV — settings that balance hashrate, efficiency, and long-term reliability.

6.2 Underclocking

Underclocking reduces frequency and voltage, trading hashrate for lower power consumption, cooler temperatures, and quieter fans. This is the right choice if the device is running in a warm room (above 30°C ambient) or if you want to reduce electricity consumption. To underclock, navigate to Settings, reduce the frequency in steps of 25–50 MHz, click Save, and Restart.

6.3 Overclocking

Overclocking increases hashrate, heat, power consumption, and component wear. Smart Mining's 12-month guarantee does not cover damage caused by overclocking beyond safe parameters. Run the device at stock settings for at least 24 hours before attempting any tuning.

6.3.1 Step-by-Step Procedure

1. Open AxeOS Settings. Set fan mode to Manual and fan speed to 100%.
2. Note your current frequency and voltage — write them down.
3. Raise frequency by 25 MHz. Click Save, then Restart.
4. Wait 10 minutes. Let the hashrate and temperature stabilise.
5. Check: The maximum power draw is 60W with the supplied power adapter. The power draw must stay below this value. Any higher and you risk damage to the power adapter. Also, chip temperature must stay below 65°C. Error percentage should ideally stay below 2%. Device must not reboot spontaneously.
6. If stable, return to Step 3. If unstable: reduce frequency by 25 MHz and raise voltage by 25 mV before retrying.
7. Run the confirmed stable settings for at least 6 hours before considering them confirmed.

To configure the frequency and voltage to values not present in the dropdown menu (Overclock Mode), enter “?oc” after the URL in the address bar (<http://192.168.1.xx/#/settings?oc>).

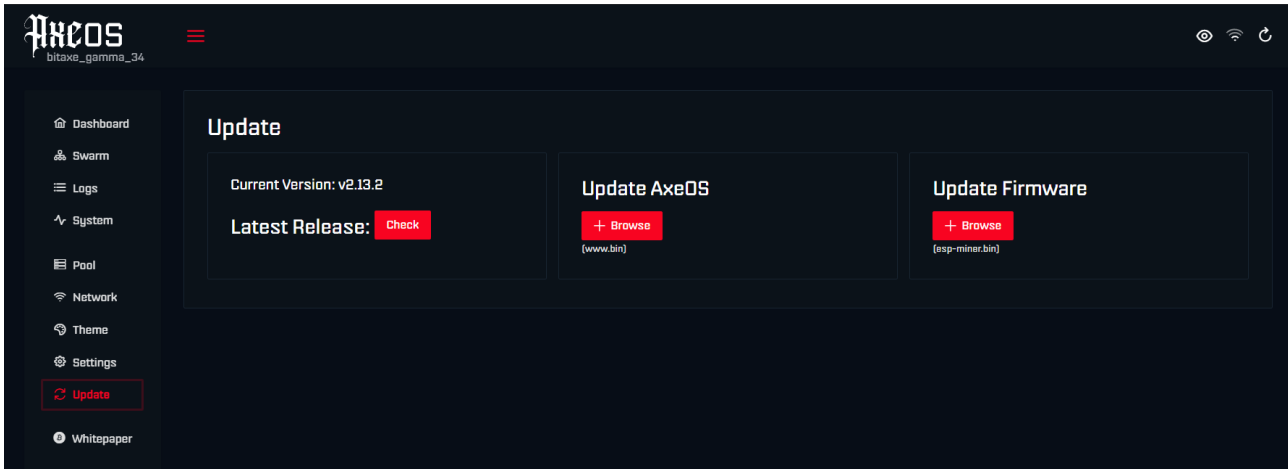
6.3.2 Community-Documented Settings for the Bitaxe Gamma Turbo 801

These are starting points. Every chip is different (the silicon lottery). Your device may be stable at higher or lower settings.

Profile	Frequency	Voltage	Hashrate	Power Draw	Efficiency	Notes
Underclocking	~500 MHz	~1140 mV	~2.0 TH/s	40 W	20.3 J/TH	Eco / silent mode (when ambient above 30°C)
Stock	525 MHz	1150 mV	~2.1 TH/s	42 W	20.0 J/TH	Device default — stable on all units
Overclocking	620 MHz	1175 mV	~2.5 TH/s	49 W	19.6 J/TH	SmartMining.com preconfigured setting
Aggressive OC	760 MHz	1200 mV	~3.1 TH/s	59 W	19.0 J/TH	Maximum advised setting for supplied power adapter

7. Firmware Updates

Keeping AxeOS updated ensures the latest performance improvements, bug fixes, and features including improved pool compatibility and UI enhancements.



7.1 OTA Update via Web Interface

1. In the AxeOS web interface, go to the Update section and click the *Check* button in the Latest Release section. In the Privacy Warning popup, click Continue.
2. If the Latest Release version is higher than the Current Version, 2 files will be displayed. Download both the esp-miner.bin file and the www.bin file (if a security warning is shown in the browser, select Keep in the download menu).
3. For both the Update AxeOS and Update Firmware sections, click *Browse* to select the relevant downloaded files to install the updates (renaming the files to “www.bin” and “esp-miner.bin” if required).
4. The device will restart automatically after updating the firmware.

7.2 Emergency Firmware Recovery

If the device is unresponsive after a failed update, connect it to a PC or Mac via USB-C. Open the ESPHome Web Flasher at <https://web.esphome.io> in Google Chrome, select the correct .bin file for the Bitaxe Gamma Turbo 801, and follow the on-screen instructions. Contact support@smartmining.com before proceeding if you are unsure.

8. Troubleshooting

8.1 Device Does Not Power On

Symptom	Likely Cause	Solution
No display, no fan	Power supply not connected	Check XT30 connection at both ends; verify wall outlet
No display, fan runs	Display connection loose	Power off; contact support@smartmining.com
Display flickers then off	Voltage drop — inadequate PSU	Use only the included 12V 6A 72W supply

8.2 Wi-Fi Issues

See the full Wi-Fi Troubleshooting table in Section 3.2.1.

8.3 Low or Unstable Hashrate

Symptom	Likely Cause	Solution
Hashrate 0 for first 10 minutes	Normal — ASIC initialising	Wait; hashrate stabilises after 5–10 minutes
Hashrate wildly fluctuating	Normal SHA-256 variance	Judge by the 15-minute rolling average
Hashrate consistently below 2 TH/s at stock	Thermal throttling	Check chip temperature; improve airflow
Hashrate drops to 0 after long run	Lost pool connection	Check Wi-Fi signal; restart; check pool status online
High error percentage (above 5%)	Unstable overclock or overheating	Reduce frequency; check temperature

8.4 Overheating

Symptom	Likely Cause	Solution
Chip temp above 65°C at stock	Insufficient airflow or high ambient	Increase clearance; check fan is spinning; reduce ambient temp
Device shuts down automatically	Auto-shutdown threshold reached	Check placement; reduce frequency; clean fan and heatsink
Fan at 100% constantly	High ambient temperature or OC	Reduce frequency; move to cooler location
Temperatures rising over weeks	Thermal paste degradation	Re-apply quality thermal paste; contact support if unsure

8.5 Pool Connection Issues

Symptom	Likely Cause	Solution
Pool shows Disconnected	Wrong URL or port	Verify URL and port in Settings against Appendix A
Shares submitted but pool shows 0 hashrate	Wrong wallet address	Check wallet address — must be a valid on-chain bc1q address for BTC
Rejected shares appearing	Pool config error or stale firmware	Check pool URL; update firmware
Pool dashboard shows miner but 0 hashrate	Pool-side delay	Pool dashboards update slowly — wait 15 minutes

8.6 Display and Interface Issues

Symptom	Likely Cause	Solution
OLED blank after boot	Display issue	Power cycle; if persistent, contact support
Garbled display text	Firmware issue	Update to latest AxeOS firmware
Web interface does not load	Wrong IP or wrong network	Check IP on OLED; ensure device is on home Wi-Fi
Settings do not save	Browser cache or firmware bug	Clear browser cache; try Chrome; update firmware

9. Regulatory Compliance & Environmental Information

9.1 Regulatory Compliance

9.1.1 CE Declaration of Conformity

Smart Mining S.r.l. declares that the Bitaxe Gamma Turbo 801 complies with the following EU Directives: 2014/30/EU (Electromagnetic Compatibility); 2014/35/EU (Low Voltage); 2011/65/EU as amended by 2015/863/EU (RoHS); and 2014/53/EU (Radio Equipment Directive, applicable to the Wi-Fi module). The CE mark affixed to the product confirms this conformity.



9.1.2 FCC Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to: (1) this device may not cause harmful interference; (2) this device must accept any interference received, including interference that may cause undesired operation. Changes not expressly approved by Smart Mining S.r.l. could void the user's authority to operate the equipment.



9.1.3 UKCA Declaration

This product complies with the UK Radio Equipment Regulations 2017, the Electromagnetic Compatibility Regulations 2016, and the Electrical Equipment (Safety) Regulations 2016.



9.2 Environmental Information

9.2.1 WEEE (EU 2012/19/EU)

This product is marked with the crossed-out wheeled bin symbol, indicating that it must not be disposed of with unsorted municipal waste. At the end of its useful life, dispose of this product through an authorised WEEE collection point or return it to Smart Mining S.r.l. for recycling. Incorrect disposal may cause environmental harm due to potentially hazardous substances in electronic components. For WEEE disposal in Italy, contact your local Comune or visit www.cdcreaee.it.



9.2.2 RoHS Compliance

This product complies with EU Directive 2011/65/EU (RoHS) as amended by 2015/863/EU (RoHS 3), restricting the use of hazardous substances including lead, mercury, cadmium, hexavalent chromium, PBBs, and PBDEs in electrical and electronic equipment.



9.2.3 Battery Information

This product contains no user-replaceable batteries.



10. Support and Warranty

10.1 Smart Mining Commercial Guarantee

Your Bitaxe Gamma Turbo 801 is covered by a 12-month commercial guarantee from the date of delivery, in addition to the statutory legal guarantee of conformity under D.Lgs. 206/2005 (Italian Consumer Code). The commercial guarantee covers manufacturing defects and hardware failures under normal operating conditions.

What's Covered:

- Dead-on-arrival (DOA) units that fail to power on or hash correctly out of the box
- Component failures under normal operating conditions (e.g. fan failure, ASIC failure, PCB defects, OLED display issues)
- Firmware issues directly attributable to the pre-installed software
- Power supply failures

What's NOT Covered:

- Physical damage from drops, liquid exposure, or electrical surges
- Damage resulting from overclocking beyond manufacturer specifications
- Modifications to hardware or firmware by the user
- Use of third-party power supplies
- Damage caused by exposing liquids to the device
- Operation outside the specified temperature range
- Normal wear and tear (fan dust over time, fan noise increase over time, thermal paste degradation)

EU consumers have additional statutory warranty rights under EU Directive 2019/771, which may extend or complement the above terms.

To make a claim: email support@smartmining.com with your order number and a description. We respond within 2 business days.

10.2 Open-Source Community

The Bitaxe Gamma Turbo 801 is part of the Bitaxe open-source ecosystem. For firmware discussions, overclock settings, and community support, visit <https://github.com/bitaxeorg> or search #Bitaxe and #OpenSourceMining on Twitter/X. The r/BitcoinMining subreddit is also a helpful resource.

10.3 Contacting Smart Mining S.r.l.

Email:	support@smartmining.com
Webmail:	smartmining.com/contact/
Response:	within 2 business days

Appendix A — Glossary

Term	Definition
ASIC	Application-Specific Integrated Circuit — a chip designed exclusively for SHA-256 hashing
BM1370	Bitmain's 5nm SHA-256 ASIC chip, the same silicon used in the Antminer S21 Pro
SHA-256	Secure Hash Algorithm 256-bit — the mathematical function used for Bitcoin and Bitcoin Cash mining
Hashrate	SHA-256 calculations per second. GH/s = gigahashes; TH/s = terahashes per second
Block reward	The amount of BTC or BCH paid to the miner who solves a block (currently 3.125 BTC / 3.125 BCH)
Solo mining	Competing alone for the full block reward — high variance, potentially life-changing if you win
Pool mining	Mining with others — rewards split proportionally, regular small payments
Stratum	Network protocol for communication between miners and mining pools
Best difficulty	The highest-difficulty share your device has found — your closest approach to a full block win
AxeOS	The open-source firmware for Bitaxe devices, based on ESP-Miner by the Bitaxe project
ESP32-S3	The microcontroller that runs AxeOS and manages Wi-Fi connectivity
VRM	Voltage Regulator Module — converts input voltage to the precise voltage required by the BM1370
OTA update	Over-the-Air firmware update — applied wirelessly through the AxeOS web interface
WEEE	Waste Electrical and Electronic Equipment — EU directive governing e-waste disposal