

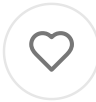
Assembling Freedom #23

From POD256 ep111: Open-Source Overdrive: Mujina Breakthroughs, Public Pool's First Block, and LibreBoard v3



256 FOUNDATION

APR 11, 2026



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April 8, 2026 | Hosted by [@econoalchemist](#), [@skot9000](#), and [@tylerkstevens](#)

Tech enthusiasts, this episode is pure open-source Bitcoin mining catnip. The crew dives headfirst into the “nerd-sniped” joy of rapid hardware iteration, celebrates a massive week for solo miners (4 blocks in a week!), and drops roadmaps for Mujina firmware, HydraPool, and LibreBoard v3. Everything is GPL/CERN-OHL licensed, community-driven, and aimed at making mining more hackable, transparent, and fun.

No proprietary black boxes here—just Rust-powered firmware, custom PCBs, and real blocks hitting public pools.

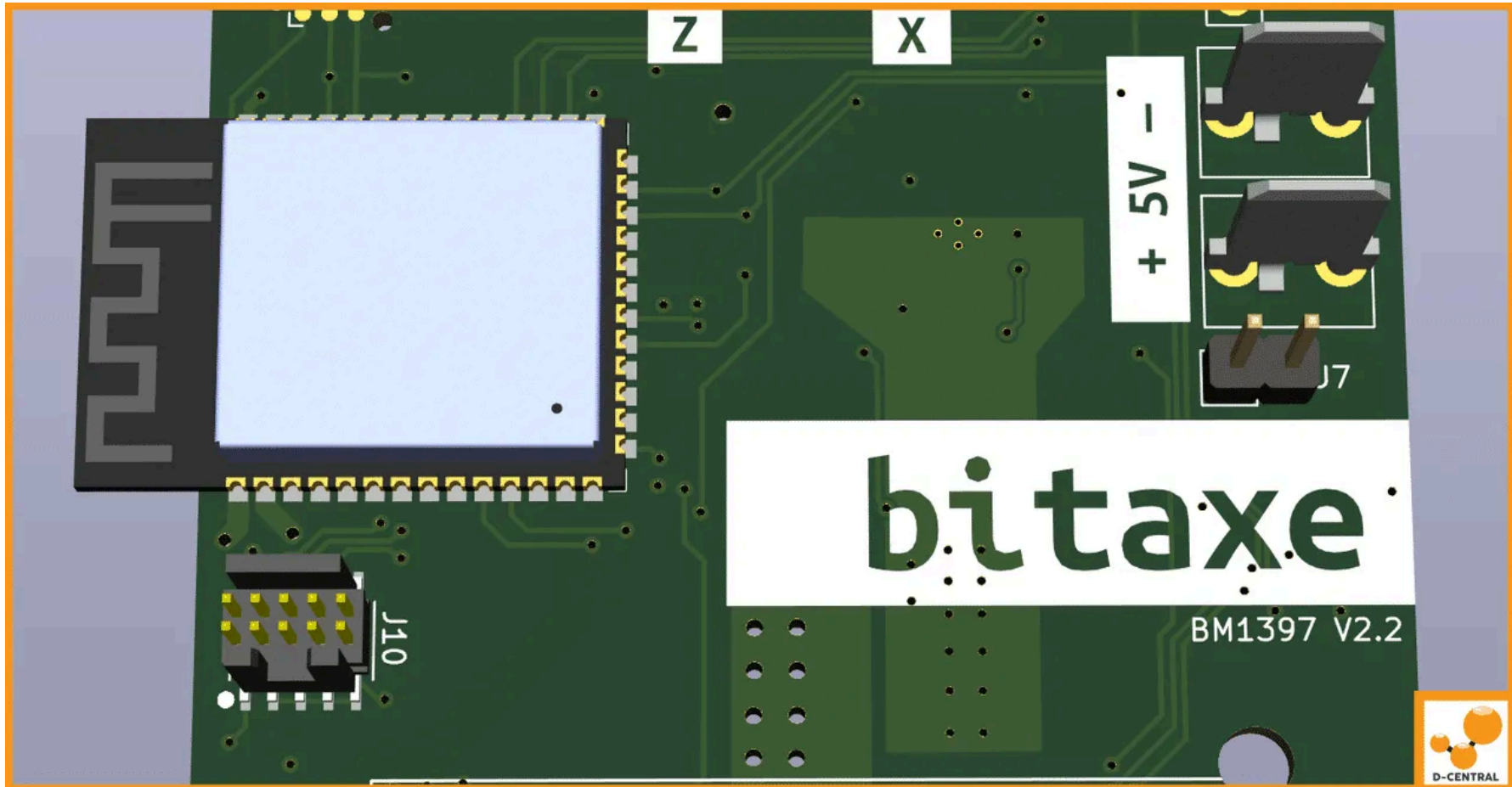
1. Hardware Hacks: From \$20 USB Miner Concepts to Fan Control Boards

The episode opens with the classic open-source trap: one idea leads to another. Hosts sketch the **Bitaxe Latte**—a jokey but plausible ultra-low-cost USB Bitcoin miner concept (~\$20 BOM) that could democratize entry-level solo mining even further. They also unveil a tiny custom adapter board for **AC Infinity** duct fans, letting miners control high-CFM, low-noise fans via standard 4-pin PWM headers on hashboards.

Key Technical Breakdown:

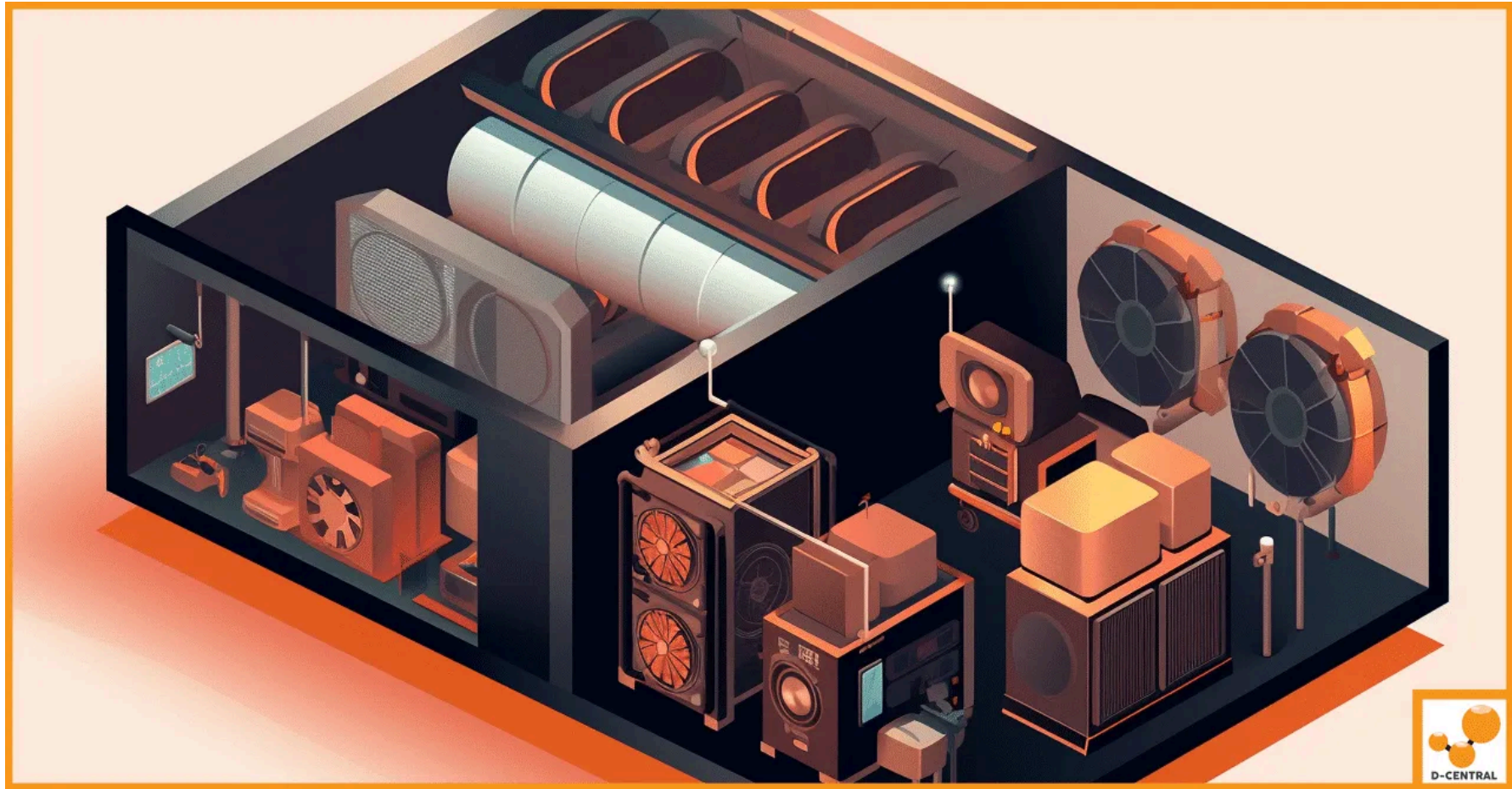
- **Bitaxe Latte concept:** Builds on existing Bitaxe ecosystem (BM1366/BM1370 chips). Focus on minimalism: USB-powered, open KiCad files, plug-and-play for hobbyists.
- **AC Infinity adapter:** Solves noisy stock fans. Uses 4-pin header for PWM speed control + RPM feedback. Pairs perfectly with Ember One or similar open boards.

- **Why it matters:** Open hardware accelerates iteration—community forks and PRs ship faster than closed-source vendors.





(Bitaxe hardware examples—imagine the Latte as an even smaller USB variant.)





(Mining setups with AC Infinity-style fan integration and adapter examples.)

2. Firmware Deep Dive: Mujina Breakthroughs & Open Collaboration

Mujina (Rust-based, async mining software from 256 Foundation) steals the show. It's a modern, multi-chip driver firmware running on Debian-based OS, targeting Bitmain, Whatsminer, Avalon, and more. Recent wins include PWM frequency tweaks for better fan control and RPM reporting workarounds.

In-Depth Bullet Breakdown:

- **PWM frequency tweaks:** Higher/lower frequencies reduce coil whine or improve fan response on hashboards.
- **RPM reporting hack:** Custom logic in Mujina bridges missing sensor data—critical for monitoring and auto-tuning.
- **Universal Bitmain-chip driver roadmap (April):** One driver to rule them all. Community forks already appearing (e.g., BCB100 support).
- **AxeOS protections:** Coinbase verification prevents pool attacks; GPL alignment ensures transparency.

- **Collaboration superpowers:** Open-source stack (firmware + hardware + pool) means PRs ship in days, not quarters.

Mujina vs. Closed Firmware Comparison Table:

Feature	Mujina (Open)	Proprietary Firmware
License	GPL	Closed-source
Chip Support	Expanding (Bitmain + more)	Vendor-locked
Custom PWM/RPM Logic	Community PRs	Fixed by vendor
Auditability	Full source + GitHub	Opaque
April Roadmap	Universal driver	N/A

The image shows the PrismOS dashboard interface. On the left is a dark sidebar with the 'PRISMOS' logo at the top. Below the logo are several menu categories: 'DASHBOARD' (containing 'Overview', 'Mine'), 'PERFORMANCE' (containing 'Tune', 'Lab'), 'DIAGNOSTICS' (containing 'Health'), 'SUPPORT' (containing 'Assistant', 'Learn'), and 'SETTINGS' at the bottom. A status indicator at the bottom left of the sidebar reads '* STABLE CONNECTED'. In the top right corner of the main content area, there is an 'ACCESSIBILITY' button. The main content area features a large 'Welcome to PrismOS' heading, followed by a sub-header: 'Your high-performance mining firmware is ready. Use the navigation to monitor, tune, and configure your hardware.' Below this are four large, dark-colored cards arranged in a 2x2 grid. Each card has an icon, a title, and a brief description: 1. 'Configuration' (gear icon): 'Set up your WiFi, Pool credentials, and global preferences.' 2. 'Mining Dashboard' (monitor icon): 'Monitor your real-time hashrate, temperatures, and hardware status.' 3. 'SNAIL Auto-Tuning' (spark icon): 'Enable our smart tuning algorithm to maximize efficiency safely.' 4. 'AI Assistant' (chat bubble icon): 'Ask questions, set up alerts, and get help with your hardware.'

(Firmware dashboard example—visualizing real-time tuning, hashrate, and temps like Mujina/PrismOS-style interfaces.)

3. Solo Mining Explosion: Public Pool's First Block + 4 Blocks in Days

A banner week for the little guy. Solo miners (using open pools and hardware) found 4 blocks recently—proof that probability + open tools = life-changing wins without KYC or custodial drama.

Blocks Breakdown (as of episode):


- CKPool ×2 (old Antminers, 230 TH/s and 70 TH/s)
- **Public Pool's first hosted-instance block** (~18.5 TH/s NerdQaxe)
- Node Runners pool (~4.8 TH/s NerdQaxe++)

Pool Mechanics Spotlight:




- Public Pool: Fully open-source, no fees, stratum+tcp://public-pool.io:21496 (username = BTC [address.worker](#)).
- Coinbase verification in AxeOS/Mujina protects against malicious pools.
- Odds example: One 18.5 TH/s miner beat 1-in-28,000 daily odds for a full block.

Solo Mining Wins Table:

Block #	Pool	Hashrate	Hardware	Reward (approx.)
943,411	Solo CK	~230 TH/s	Antminer	~3.13 BTC
943,466	Public Pool	~18.5 TH/s	NerdQaxe	~3.13 BTC + fees
944,078	Noderunners	~4.8 TH/s	NerdQaxe++	~3.13 BTC
944,306	Solo CK EU	~70 TH/s	Antminer	~3.13 BTC



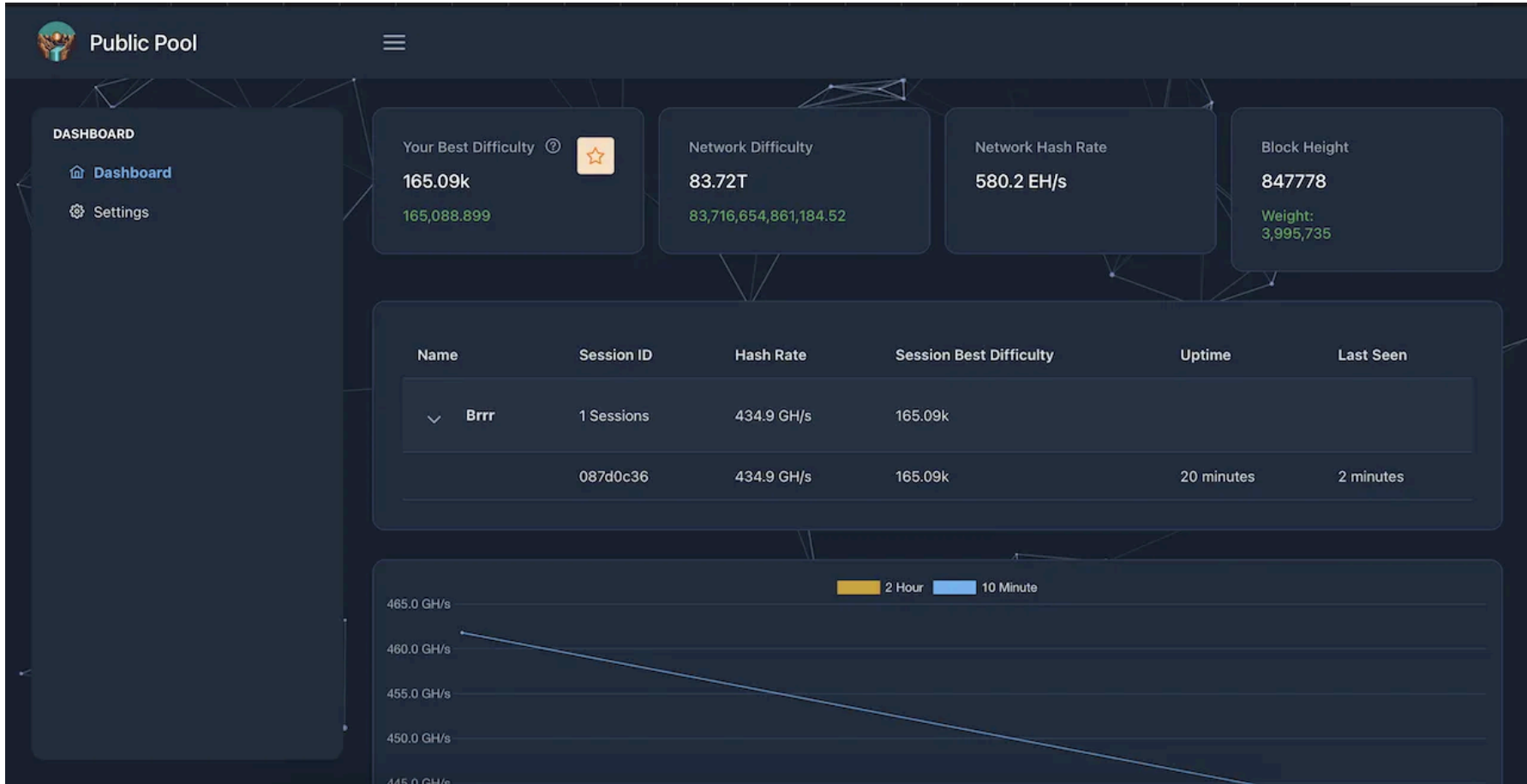
Public Pool

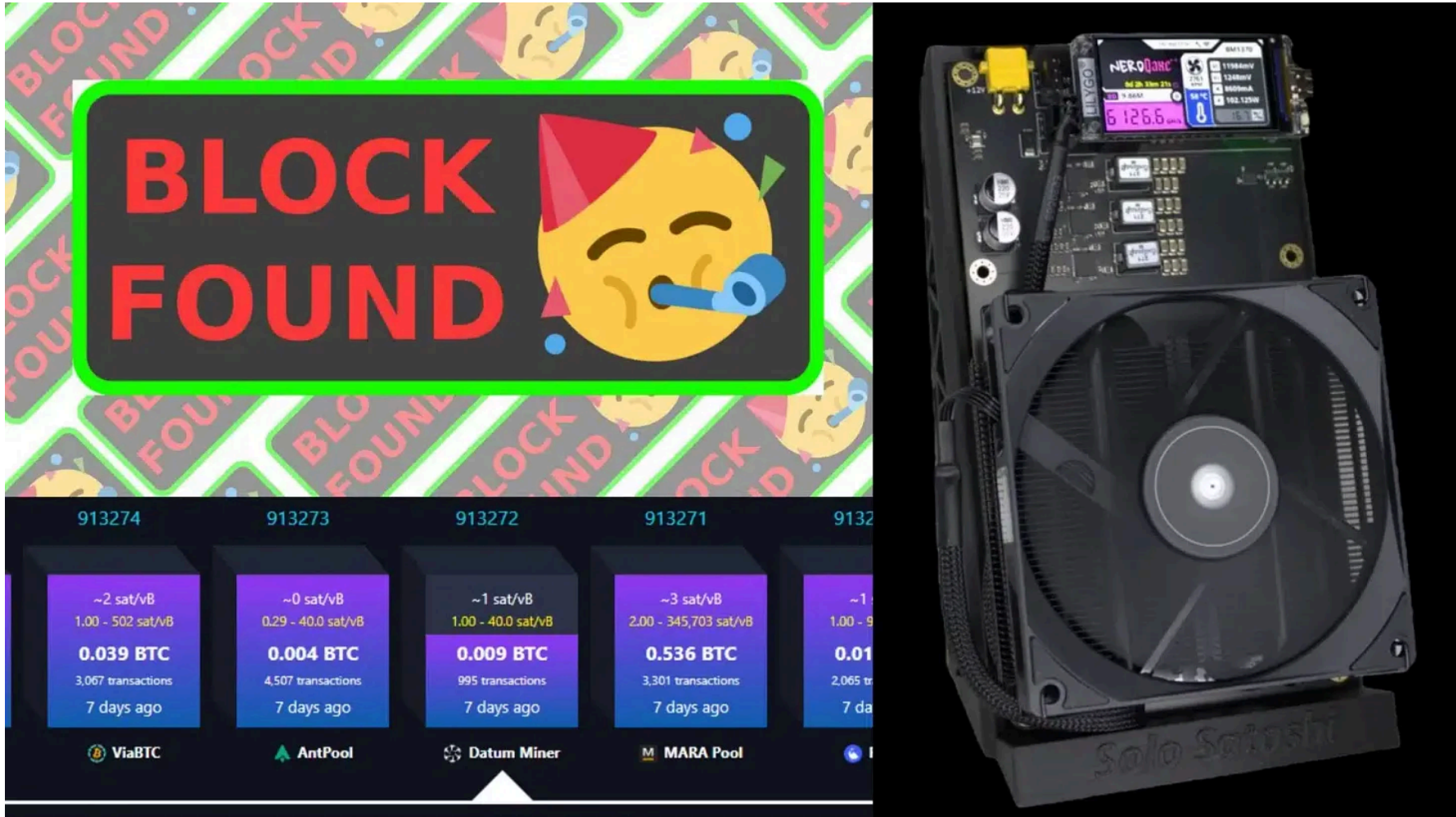
Fully Open Source Solo Bitcoin Mining Pool

```
stratum+tcp://public-pool.io:21496  
username: <your BTC address>.<worker name>, password: x
```

NO FEES
PLUS AFFILIATE REWARDS
No second best.



(Public Pool branding and live dashboard—transparent, open-source solo mining.)

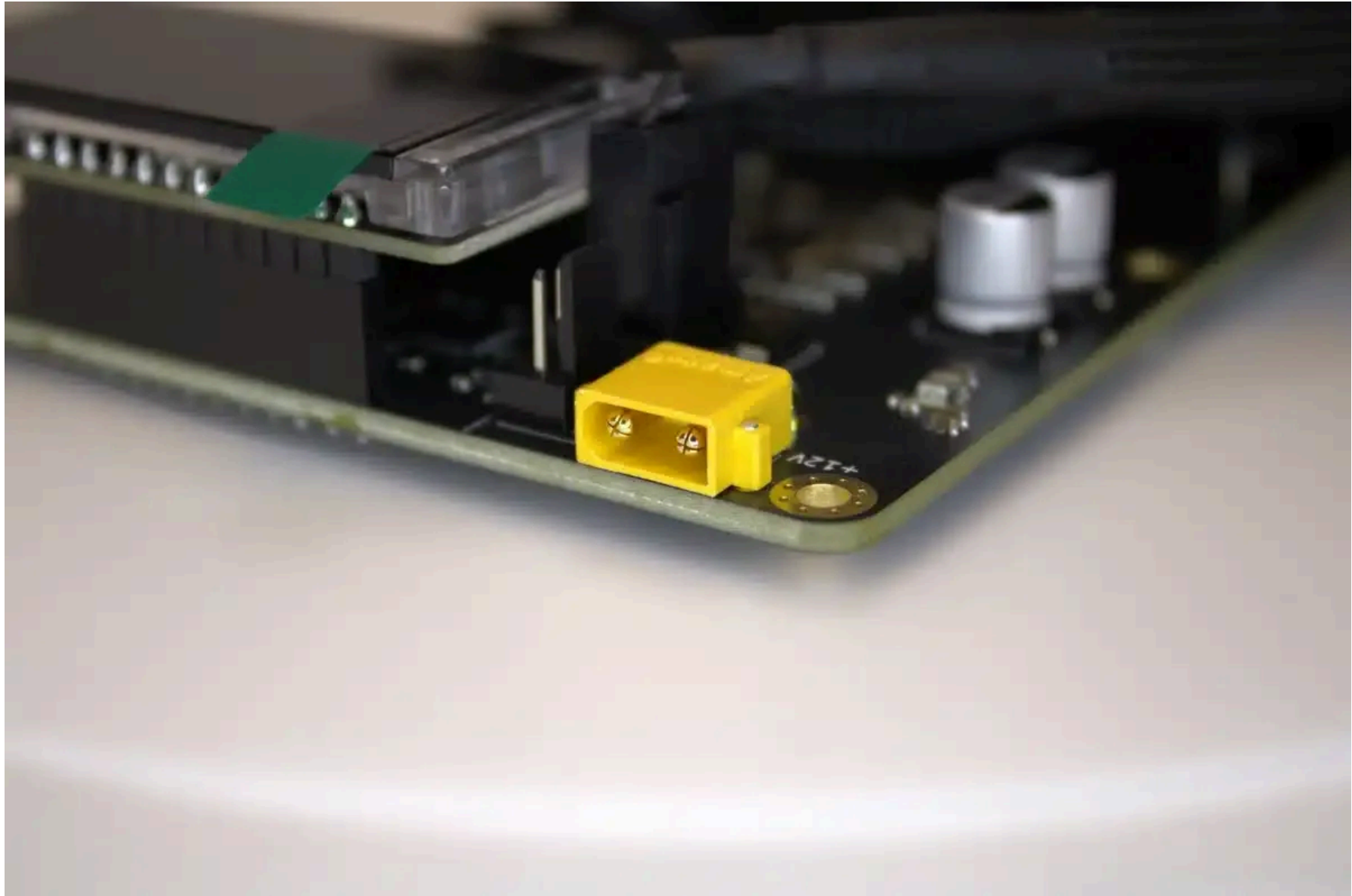


(Block-found celebration visuals—pure open-source mining joy.)

4. April Roadmaps & LibreBoard v3 Power Design

- **HydraPool:** Password-field difficulty/hashrate hints + improved logging for better UX.
- **Mujina:** Push to universal Bitmain driver.
- **LibreBoard v3:** Power delivery upgrades for Ember One hashboards (~100W, 2-4 TH/s per board). Fully open CERN-OHL-S, versatile I/O, compute module options.





(Ember One / LibreBoard-style open hashboards and control boards.)

Additional shop talk: Stencil printer & solder paste tips, Ember One v6.1 reliability, ASIC RS community growth, Telehash/Austin plans, and upcoming events (Vegas + Bitcoin Park Nashville).

5. Related X Buzz from the Community

The open-source mining wave is real—here's what's lighting up X right now:

- **@skot9000** (Bitaxe instigator): “Make no mistake, what you are looking at here is the future of Bitcoin mining firmware; Mujina. Versatile, customizable, open source freedom.” (quoting a BCB100 Mujina fork).



skot
@skot9000



Make no mistake, what you are looking at here is the future of Bitcoin mining firmware; Mujina. Versatile, customizable, open source freedom.



burn the bridge @econoalchemist

Someone forked Mujina & got it to work on the BCB100. Open-source Bitcoin mining firmware FTW.

<https://t.co/8WW8yZfYYx>

6:36 AM · Apr 10, 2026 · 1.71K Views

2 Replies · 5 Reposts · 32 Likes

- **@econoalchemist:** Highlighted the same Mujina fork: “Someone forked Mujina & got it to work on the BCB100. Open-source Bitcoin mining firmware FTW.”



burn the bridge

@econoalchemist




Someone forked Mujina & got it to work on the BCB100. Open-source Bitcoin mining firmware FTW.

github.com/aadhi1014/BCB100


7:43 PM · Apr 9, 2026 · 2.38K Views


4 Replies · 6 Reposts · 15 Likes


- **@mining_central:** “This week #Bitcoin paid out 4 times to solo miners! ... Public Pool - (~18.5 TH/s, NerdQaxe) ... The network doesn’t care how big you are.”





Coin Mining Central
@mining_central



 This week #Bitcoin paid out 4 times to solo miners! No splitting the reward, just 4 solo operators walking away with a combined ~12.5 BTC + fees!

 Block 943,411
Solo CK (~230 TH/s, old Antminer)

 Block 943,466
Public Pool - (~18.5 TH/s, NerdQaxe)

 Block 944,078

6:23 AM · Apr 10, 2026 · 404 Views

1 Reply · 1 Repost · 12 Likes

- **@solo_mining:** Celebrated “The first Public Pool Bitcoin Block was (finally) found.  Congrats ... Open Source wins!”



Solomining
@solo_mining



 The first Public Pool Bitcoin Block was (finally) found. 🎉

Congrats to the lucky miner who found it! Well deserved! Open Source wins!

943466


~2 sat/vB

1.00 - 445 sat/vB

0.023 BTC

2,359 transactions

38 minutes ago

 **Public Pool**

12:54 AM · Apr 3, 2026 · 8.19K Views

6 Replies · 22 Reposts · 296 Likes

Final Call to Action

Tune in at pod256.org. Dive into the repos: [Mujina on GitHub](#), [LibreBoard](#), Public Pool docs. Build, fork, mine—Bitcoin's hashrate gets freer one open PR at a time.

Stay hashin'! 

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