VEXTA PROJECT

VEXTA

A transparent proof-of-work digital currency

WHITEPAPER

Version 0.2 September 2026 Ticker: VTX

Open-source software. Experimental network. Not investment advice.

Executive Summary

Vexta is an open-source, peer-to-peer digital currency designed around a simple principle: a public monetary network should be independently verifiable, permissionless to use and secured by transparent proof-of-work rules.

Vexta uses a multi-algorithm proof-of-work design combining SHA256D and RandomX on a single blockchain. Both algorithms produce blocks for the same network, use the same transaction system, share the same monetary rules and contribute to one common chain.

The project builds on the mature foundations of Bitcoin Core and DigiByte Core while defining its own network identity, genesis block, address formats, ports and consensus parameters. Vexta prioritises reliability, auditability, open development and long-term network resilience.

The network also includes post-quantum cryptographic protection introduced as part of Vexta's long-term security development.

This document describes the current design of the Vexta network. The source code remains the authoritative specification. Where this paper and the software differ, independently validated consensus code takes precedence.

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1. Purpose and Design Principles

Digital currencies are most useful when their rules can be verified without relying on a central operator. Vexta is designed as a public ledger in which network participants independently validate blocks and transactions according to the same open-source consensus rules.

1.1 Core objectives

Principle	Implementation direction
Transparency	The protocol, wallet software and development history are publicly inspectable.
Predictability	Consensus rules and monetary issuance are defined in code rather than discretionary policy.
Accessibility	Users can hold and transfer VTX without requiring permission from a central service.
Security	Proof of work combines SHA256D and RandomX with independent difficulty control and shared chain security.
Resilience	Multiple mining algorithms reduce dependence on a single class of mining hardware.

1.2 What Vexta is not

Vexta is not a company-issued account balance, a claim on reserves or a promise of profit. VTX exists as ledger entries created and transferred under network consensus.

Participation is voluntary, and users remain responsible for wallet security, backups, legal compliance and the risks associated with experimental software.

2. Network Architecture

Vexta operates as a decentralised peer-to-peer network. Full nodes exchange transactions and blocks, verify consensus rules and maintain a local copy of the blockchain. Miners construct candidate blocks from valid transactions and compete to produce proof of work using either SHA256D or RandomX.

2.1 Layered view

Layer	Role
Wallet	Creates keys, addresses and signed transactions; displays balances and history.
Node	Validates transactions and blocks, maintains the UTXO set and relays network data.
Mining	Packages transactions into blocks and performs SHA256D or RandomX proof of work.
Consensus	Defines valid blocks, algorithm selection, difficulty, accumulated work, issuance and transaction verification rules.

2.2 UTXO accounting

Vexta uses the unspent transaction output (UTXO) model. A transaction consumes one or more existing outputs and creates new outputs. Ownership is demonstrated by digital signatures. Nodes reject any transaction that attempts to spend a non-existent or already-spent output, fails script validation or violates consensus limits.

2.3 Current mainnet identifiers

Parameter	Current value
Currency name	Vexta
Ticker	VTX
Proof-of-work	SHA256D + RandomX
Target block interval	Approximately 10 minutes globally
Mainnet P2P port	19333
Native Bech32 prefix	vtx
Reference implementation	Vexta Core

3. Consensus and Mining

Consensus determines which chain is valid and how participants agree on a single transaction history.

Vexta uses a multi-algorithm proof-of-work system. SHA256D and RandomX miners compete to extend the same blockchain. A block is valid only when its proof of work satisfies the target for the algorithm used to mine that block.

3.1 Multi-algorithm proof of work

SHA256D remains fully supported as Vexta's original proof-of-work algorithm. RandomX is introduced as a second proof-of-work algorithm, providing a CPU-oriented mining path alongside SHA256D hardware mining.

RandomX activation: Block 8,099

- Both algorithms mine the same VTX currency.
- Both use the same transactions and address system.
- Both follow the same reward schedule.
- Both extend the same blockchain.

3.2 Independent difficulty

SHA256D and RandomX maintain separate mining difficulty. This allows each algorithm to respond to changes in its own available mining power without directly forcing the other algorithm to operate at the same difficulty level. The network targets an average block interval of approximately ten minutes across the combined chain.

3.3 Shared chainwork

Because SHA256D and RandomX operate with fundamentally different performance characteristics, raw difficulty values are not directly comparable. Vexta therefore normalises proof-of-work contribution before it is added to cumulative chainwork. This allows blocks produced by both algorithms to contribute fairly to the selection of the best valid chain.

3.4 Confirmations and finality

A transaction receives its first confirmation when included in a valid block. Each subsequent block adds another confirmation. Proof-of-work finality is probabilistic rather than absolute: the cost of reversing a transaction generally rises as more valid work accumulates above it.

3.5 Coinbase maturity

Newly mined rewards cannot be spent immediately. Under the current rules, coinbase outputs mature after 100 blocks.

4. Monetary Policy

VTX issuance is produced through block rewards. There is no requirement for a central issuer to create user balances: miners receive newly issued VTX only by producing blocks accepted under the same public rules enforced by every validating node.

4.1 Initial subsidy and halving

Parameter	Current consensus setting
Initial block subsidy	50 VTX
Halving interval	210,000 blocks
Target interval	Approximately 10 minutes
Approximate time per era	About four years
Coinbase maturity	100 blocks
Estimated maximum supply	Approximately 21 million VTX

The estimated maximum supply assumes the current Bitcoin-style subsidy schedule. The subsidy halves after each 210,000-block era and eventually rounds to zero. Exact issuance at every height is determined by the implementation and integer arithmetic in the consensus code.

4.2 Fees

Transactions may include a fee equal to the difference between total inputs and outputs. Fees compensate miners for block space and provide a long-term security incentive as block subsidies decline. Wallet fee policy and network relay policy are not identical to consensus rules and may evolve between software versions without changing historical validity.

4.3 No guaranteed market value

The protocol defines units and issuance, not price. VTX may have no market value, limited liquidity or high volatility. The project makes no representation that mining, holding or using VTX will generate financial returns.

5. Transactions and Wallets

A wallet manages private keys and constructs signed transactions. The blockchain does not store coins inside a wallet file; it records spendable outputs. Control of the corresponding private keys determines the ability to spend those outputs.

5.1 Address formats

Vexta supports modern Segregated Witness transaction formats. Native SegWit addresses use the human-readable prefix vtx, making them visually distinguishable from addresses on other networks. The network also includes post-quantum cryptographic protection introduced as part of Vexta's long-term security development. Users should always verify the complete destination address and network before sending funds.

5.2 Wallet responsibility

- Back up wallet data and recovery information before receiving significant funds.
- Encrypt wallets with a strong, unique passphrase where supported.
- Keep private keys and seed material offline and never disclose them to support staff.
- Verify software downloads and release checksums.
- Test new workflows with a small amount before transferring larger balances.

5.3 Transaction lifecycle

Creation: the wallet selects inputs, defines outputs and signs the transaction.

Relay: the transaction is submitted to a node and propagated if it meets validation and policy rules.

Mining: a SHA256D or RandomX miner may include it in a candidate block.

Confirmation: once the block is accepted, the transaction becomes part of the best chain.

5.4 Irreversibility

There is no central administrator able to cancel a valid confirmed transfer or restore lost keys. This property supports censorship resistance but also places operational responsibility on the user.

6. Security Model

Vexta security depends on several independent components: cryptographic signatures, full-node validation, multi-algorithm proof-of-work expenditure, software correctness, network connectivity and responsible key management.

6.1 Threats considered

Threat	Primary mitigation
Double spending	Confirmations and accumulated proof of work.
Invalid inflation	Every full node independently verifies subsidy and transaction rules.
Key theft	Local key encryption, backups and secure operational practices.
Chain reorganisation	Multi-algorithm proof of work, confirmation depth and coinbase maturity.
Mining concentration	SHA256D and RandomX provide access to different mining hardware classes.
Network isolation	Multiple peers, diverse infrastructure and independent seed services.
Software defects	Open review, testing, release verification and staged deployment.

6.2 Multi-algorithm resilience

Using more than one proof-of-work algorithm reduces reliance on a single mining hardware ecosystem. SHA256D allows participation using established specialised mining hardware, while RandomX provides a CPU-oriented mining path. Both remain subject to the same full-node validation rules and contribute to the same blockchain.

6.3 Post-quantum development

Vexta includes post-quantum cryptographic protection activated at block 6,000. Post-quantum development is intended to strengthen long-term resistance to future cryptographic threats while maintaining compatibility with the network's broader consensus architecture.

6.4 Code inheritance and independent review

Vexta inherits substantial code from established open-source cryptocurrency projects. Inheritance can reduce implementation risk, but it does not eliminate the need for project-specific review. Changed network parameters, mining logic, cryptography, wallet behaviour and release packaging must be tested independently.

7. Network Infrastructure

A healthy peer-to-peer network requires multiple independently operated nodes. Seed nodes help new clients discover peers, but they do not control consensus. Once connected, a node learns additional addresses from the network and validates all received data itself.

7.1 Infrastructure

The Vexta network includes public nodes, mining services, a block explorer and community-operated infrastructure. These services assist network participation but do not act as trusted consensus authorities.

7.2 Public services

Service	Location
Source code and releases	github.com/VextaProject/Vexta
Mining pool	vexta-pool.co.uk
Project website	vextaproject.org
Block explorer	vextaproject.org/explorer/

7.3 Mining decentralisation

Vexta supports two proof-of-work algorithms designed for different mining environments.

SHA256D supports established specialised mining hardware. RandomX provides a CPU-oriented alternative intended to broaden participation beyond SHA256D hardware operators.

Additional pools, solo mining, transparent statistics and independent infrastructure remain important components of long-term mining decentralisation.

8. Open Development and Governance

Vexta does not rely on a protocol-level foundation, administrator key or central database. Development coordination occurs through public source code, releases and community review. Software maintainers can publish proposals, but they cannot force independently operated nodes to accept incompatible consensus rules.

8.1 Change process

- A change is proposed and documented.
- Implementation is reviewed and tested.
- Release binaries and checksums are published.
- Node operators independently decide whether to upgrade.
- Consensus changes require network coordination and careful activation planning.

8.2 Licensing and attribution

Vexta Core is distributed under an open-source licence and retains required historical attribution to Bitcoin Core and DigiByte Core contributors whose work forms part of the codebase. Project branding does not remove or replace upstream authorship.

9. Roadmap

The roadmap is operational rather than a promise of future value. Priorities may change in response to security findings, testing results, contributor availability and community needs.

Stage	Objectives
Foundation	Genesis, consensus review, wallet software and initial network infrastructure.
Public network	Website, explorer, documentation, releases and wider node distribution.
Network evolution	Multi-algorithm mining, post-quantum security development and broader mining participation.
Network growth	Additional pools, seeds, monitoring, mining guides and community tooling.
Long-term maintenance	Security updates, upstream review, testing, reproducible builds and governance documentation.

10. Risks, Limitations and Disclaimer

Vexta is experimental software and an early-stage network. It may contain defects, experience outages, undergo chain reorganisations or fail to achieve meaningful adoption. Wallets can be lost, compromised or used incorrectly. Mining equipment may be unprofitable. Regulatory treatment may differ by jurisdiction and may change over time.

Nothing in this document constitutes financial, investment, legal or tax advice. No statement is a promise of price, liquidity, exchange listing, profitability or continued development. Users should review the source code, test the software, consider independent professional advice where appropriate and never commit funds they cannot afford to lose.

Authoritative specification

This whitepaper is explanatory. The Vexta Core source code and the consensus rules enforced by compatible nodes are authoritative. Parameters described here may be updated in later document versions to reflect audited software releases.

Project references

Source: github.com/VextaProject/Vexta

Pool: vexta-pool.co.uk

Explorer: vextaproject.org/explorer/

Website: vextaproject.org

Document: Vexta Whitepaper, Version 0.2, September 2026

Built openly. Verified independently. Secured by proof of work.