VEXTA PROJECT

VEXTA

A transparent proof-of-work digital currency

WHITEPAPER

Version 0.1 July 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 the SHA-256d mining algorithm and a UTXO-based transaction model, with a native currency identified by the ticker VTX.

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. The first public implementation prioritises reliability, auditability and operational clarity rather than experimental complexity.

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	SHA-256d proof of work provides an established and widely understood security mechanism.
Simplicity	The initial network deliberately favours a single mining algorithm and conventional UTXO design.

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.

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 SHA-256d proof of work.
Consensus	Defines valid blocks, difficulty, 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	SHA-256d
Target block interval	10 minutes
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 miners repeatedly hash block headers using double SHA-256. A block is valid only when its hash is below the target encoded by the network difficulty.

3.1 Proof-of-work process

A miner selects valid transactions, creates a coinbase transaction, calculates the Merkle root and searches for a nonce that satisfies the current target. The first valid block propagated to the network may extend the best chain. Nodes verify every block independently; miners do not have authority to change consensus rules.

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SHA256d(block header) <= target
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3.2 Difficulty adjustment

The network uses a moving difficulty adjustment design intended to respond to changes in available hash rate while targeting an average interval of ten minutes. Difficulty is a consensus-critical parameter: nodes reject blocks that declare an incorrect target.

3.3 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 work accumulates above it. Users and services should select confirmation requirements according to transaction value and current network conditions.

3.4 Coinbase maturity

Newly mined rewards cannot be spent immediately. Under the current rules, coinbase outputs mature after 100 blocks. This delay reduces certain chain-reorganisation risks and prevents miners from immediately spending rewards that could disappear during a reorganisation.

4. Monetary Policy

VTX issuance is produced through block rewards. There was 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	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. 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 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, 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	Hash-rate security, confirmation depth and coinbase maturity.
Network isolation	Multiple peers, diverse infrastructure and independent seed services.
Software defects	Open review, testing, reproducible release practices and staged deployment.

6.2 Early-network risk

A newly launched proof-of-work network may initially have low total hash rate and a small node population. During this period, the cost of reorganising the chain may be materially lower than on mature networks. Exchanges, merchants and users should apply conservative confirmation policies until mining and node participation become sufficiently distributed.

6.3 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, branding, 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 Initial infrastructure

The initial deployment includes a public Vexta seed node and a project-operated mining pool. These services are bootstrap infrastructure rather than trusted consensus authorities. The long-term objective is to add geographically and operationally independent seed nodes, explorers, pools and archival nodes.

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	Planned

7.3 Mining decentralisation

SHA-256d allows participation using established mining hardware and software. However, compatibility with specialised hardware can concentrate hash rate among operators with access to efficient equipment. Vexta therefore treats transparent pool statistics, additional pools and solo-mining capability as important components of 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 broad 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 the 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 and consensus review, Linux and Windows builds, wallet branding and initial seed node.
Public readiness	Website, whitepaper, explorer, release documentation and wider node distribution.
Network growth	Additional pools and 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
Website: vextaproject.org
Document: Vexta Whitepaper, Version 0.1, July 2026

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