SIGMA NETWORK

Technical Whitepaper

A Privacy-Focused, GPU-Mineable Cryptocurrency

Pre-Mainnet Specification

Version 1.1 — August 2026

Development Status

Sigma Network is currently in its Proof-of-Engagement (POE) development phase. The Proof-of-Work blockchain described in this document has not yet been launched.

The technical parameters, consensus rules, emission schedule, and other specifications described here represent the current design of Sigma Network and may be subject to changes during development, testing, optimization, and security review before mainnet activation.

This document is therefore a pre-mainnet technical specification, not a description of an already operational Proof-of-Work blockchain.

Current status: POE phase active • POW blockchain under development • Mainnet not yet launched

Abstract

Sigma Network is a privacy-focused cryptocurrency designed to combine strong financial privacy, decentralized Proof-of-Work security, and accessible GPU mining.

Sigma is derived from the Monero codebase and privacy-oriented protocol architecture. It uses Monero-style privacy principles while developing an independent blockchain, monetary policy, network configuration, and Proof-of-Work strategy.

Sigma plans to use Autolykos v2 Proof-of-Work, with support intended for both NVIDIA and AMD GPUs. The planned blockchain targets a 60-second block interval and adjusts mining difficulty every 100 blocks.

1. Introduction

Sigma Network is designed as a privacy-first cryptocurrency where transaction privacy is integrated directly into the protocol.

The project combines a Monero-derived privacy architecture with GPU-oriented Proof-of-Work. Sigma is an independent project and is not affiliated with, endorsed by, or operated by the Monero Project.

2. Relationship to Monero

SigmaNetwork is derived from the Monero codebase and privacy-oriented protocol architecture.

The project uses Monero-style concepts including stealth addresses, ring signatures, confidential transactions, private wallet keys, and key-image-based double-spend protection.

Sigma develops its own blockchain, consensus parameters, monetary policy, roadmap, and Proof-of-Work strategy. Applicable upstream licenses and notices will be preserved where required.

3. Design Objectives

Privacy by default

Decentralized network security

Accessible NVIDIA and AMD GPU mining

Predictable block production

Permissionless participation Transparent

monetary policy

Long-term network sustainability

4. Privacy Architecture

Sigma follows a Monero-style privacy architecture. Ring signatures provide sender privacy; stealth addresses provide recipient privacy; RingCT provides amount privacy; and key images provide double-spend protection. Privacy is intended to be a fundamental property of normal transactions.

5. Proof-of-Work

Sigma plans to use Autolykos v2 as its Proof-of-Work algorithm. Mining support is intended for NVIDIA and AMD GPUs, with the goal of enabling broad participation without requiring specialized ASIC hardware.

6. Block Time

Sigma plans a 60-second target block interval. This is a target average rather than a guarantee for every individual block.

7. Difficulty Adjustment

Sigma plans to adjust mining difficulty every 100 blocks. At a 60-second target, this represents approximately 100 minutes per adjustment period. The final implementation should include safeguards against extreme difficulty changes and abnormal timestamps.

8. Consensus and Chain Security

Sigma plans to use Proof-of-Work as its long-term blockchain security mechanism. Nodes will independently validate blocks, transactions, cryptographic proofs, difficulty, and reward rules according to the finalized consensus specification.

9. Monetary Policy and Emission Reduction

Sigma Network has a planned maximum supply of 21,000,000,000 SIGMA.

The planned emission policy reduces the block reward by 20% every two years; each cycle therefore pays 80% of the previous cycle's reward.

This is a gradual reduction rather than a traditional 50% halving, intended to reduce new issuance while maintaining long-term mining incentives.

A two-year period at 60-second blocks contains approximately 1,051,200 blocks. The exact initial reward and complete emission curve will be finalized before mainnet.

10. Proof-of-Engagement and Initial Allocation

Sigma is currently operating through a Proof-of-Engagement (POE) phase before the planned transition to GPU Proof-of-Work.

The final POE allocation is not fixed in advance. Current expectations are approximately 5 billion SIGMA or potentially lower, depending on participation and the final duration of POE.

Finalized POE balances are planned to be incorporated into the blockchain at the POE-to-POW transition according to published transition rules.

The Sigma development team also participates in POE through the same POE mechanism available to participants. Team participation and resulting rewards will be included in the final POE accounting. The final POE allocation will be publicly documented when the POE phase concludes.

11. POE Launch and Transition

Sigma's initial POE phase began on 1 June 2026.

The POE phase is intended to establish the early community and ecosystem before the transition to GPU-based Proof-of-Work.

The long-term security model is planned to be Proof-of-Work using Autolykos v2.

12. Address Format

During development, Sigma may retain the Monero-compatible numeric address-prefix scheme: standard 18, integrated 19, and subaddress 42. A Sigma-specific address namespace may be introduced before mainnet.

13. Wallet Architecture

Sigma wallets are planned around a privacy-oriented key architecture derived from the Monero model, including private spend keys, private view keys, public addresses, transaction scanning, transaction signing, recovery, and encrypted wallet storage.

14. Blockchain Growth

Once Proof-of-Work is active, a 60-second target corresponds to approximately 1,440 blocks per day and 525,600 blocks per year. Actual production fluctuates because Proof-of-Work is probabilistic.

15. Network Nodes

Anyone should be able to operate a Sigma node. Nodes will maintain blockchain data, validate transactions and blocks, enforce consensus rules, and participate in peer-to-peer propagation.

16. Network-Layer Privacy

Blockchain privacy and network-layer privacy are separate concerns. Future development may include additional network-layer privacy mechanisms.

17. Mining Decentralization

Sigma's GPU-mining strategy is intended to lower the barrier to network participation. Supporting NVIDIA and AMD hardware increases potential hardware diversity, while actual decentralization will depend on miner distribution, pool concentration, hardware availability, geography, and other factors.

18. Development Roadmap

Phase I — POE: Operate POE and build the early community.

Phase II — Protocol Development: Implement Sigma consensus changes, Autolykos v2, GPU mining, difficulty, genesis/network configuration, wallets, and daemon.

Phase III — Testnet: Test block production, difficulty, transactions, wallets, mining, synchronization, and security.

Phase IV — Mainnet Preparation: Finalize consensus, emission, addresses, network identifiers, software, nodes, and pools.

Phase V — Proof-of-Work: Activate GPU mining and transition network security to Proof-of-Work.

19. Core Network Parameters

Project: Sigma Network

Ticker: SIGMA

Foundation: Monero-derived

Privacy model: Monero-style

Planned PoW: Autolykos v2

Planned mining: NVIDIA + AMD GPUs

Target block time: 60 seconds

Difficulty adjustment: Every 100 blocks

Maximum planned supply: 21,000,000,000 SIGMA

Emission reduction: 20% every 2 years

POE launch: 1 June 2026

Expected POE allocation: ~5B SIGMA or lower; final amount variable

Status: Pre-mainnet

20. Long-Term Vision

Sigma Network aims to develop into a decentralized digital currency where privacy, accessibility, and network security are fundamental properties of the protocol.

The project combines privacy, decentralization, and accessible GPU participation.

21. Conclusion

Sigma Network combines a Monero-derived privacy architecture with a planned Autolykos v2 GPU Proof-of-Work system.

The planned network targets 60-second blocks, difficulty adjustment every 100 blocks, NVIDIA and AMD GPU mining, and a planned maximum supply of 21 billion SIGMA.

The project is currently in its POE phase; the Proof-of-Work blockchain has not yet launched. Technical parameters remain subject to development, testing, and security review until the mainnet consensus specification is formally locked.