Accretion

SECURITY ASSESSMENT

Provided by Accretion Labs Pte Ltd. for Light Protocol
January 21, 2025
A24LIG1

Light Protocol

AUDITORS

Role	Name
Lead	Robert Reith (robert@accretion.xyz)

CLIENT

Light Protocol (https://lightprotocol.com) engaged Accretion to conduct a security assessment of two pull requests that extend the functionality of the Light ZK compression protocol. The first PR adds a new wrapper instruction to the token compression program. The second PR adds Token22 support to the same program.

ENGAGEMENT SCOPE

New Wrapper Compression Instruction

Link: https://github.com/Lightprotocol/light-protocol/pull/1361
Commit: 6be1bda2cb538db69f34efdd0feca40997194b5f
ProgramID: cTokenmWW8bLPjZEBAUgYy3zKxQZW6VKi7bqNFEVv3m

Added Token22 Support

Link: https://github.com/Lightprotocol/light-protocol/pull/1344
Commit: cdbfbd8cc518e76714c0eaff224dee7c229d8ca3
ProgramID: cTokenmWW8bLPjZEBAUgYy3zKxQZW6VKi7bqNFEVv3m

ENGAGEMENT TIMELINE

04 Dec — Project Kickoff
Initial planning and scope definition

09 Dec — Assessment Begins
Security review and testing phase

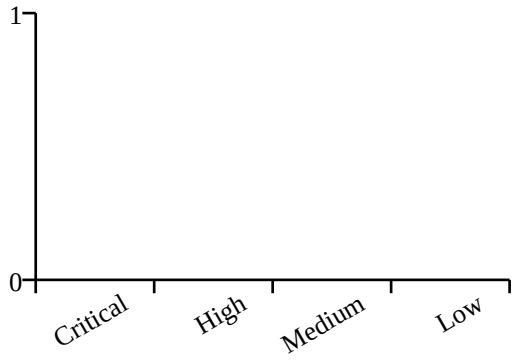
11 Dec — Final Analysis
Comprehensive security evaluation

12 Dec — Project Completion
Report delivery and recommendations

ASSESSMENT

The security assessment of Light Protocol's two pull requests revealed a well-structured update with robust security measures in place. The PRs, which were relatively small in size, **did not yield any new security vulnerabilities**. Overall, the Light Protocol team demonstrated strong adherence to best practices in protocol development. A few minor recommendations were identified and promptly addressed during the review period.

SEVERITY DISTRIBUTION



VERIFIED ON-CHAIN CODE

Program 1

ProgramID: cTokenmWW8bLPjZEBAUgYy3zKxQZW6VKi7bqNFEVv3m
Repository: https://github.com/Lightprotocol/light-protocol
Build Hash: d7c58e2f97e8d192f8480de1bc23f9f6e19ca0d969369a46e8ad565fa4df1d81
Commit: 0a42c44b0f6aaf7c9f793c970455c188f5f7f103

APPENDIX

Vulnerability Classification

We rate our issues according to the following scale. Informational issues are reported informally to the developers and are not included in this report.

Severity	Description
Critical	Vulnerabilities that can be easily exploited and result in loss of user funds, or directly violate the protocol's integrity. Immediate action is required.
High	Vulnerabilities that can lead to loss of user funds under non-trivial preconditions, loss of fees, or permanent denial of service that requires a program upgrade. These issues require attention and should be resolved in the short term.
Medium	Vulnerabilities that may be more difficult to exploit but could still lead to some compromise of the system's functionality. For example, partial denial of service attacks, or such attacks that do not require a program upgrade to resolve, but may require manual intervention. These issues should be addressed as part of the normal development cycle.
Low	Vulnerabilities that have a minimal impact on the system's operations and can be fixed over time. These issues may include inconsistencies in state, or require such high capital investments that they are not exploitable profitably.
Informational	Findings that do not pose an immediate risk but could affect the system's efficiency, maintainability, or best practices.

Audit Methodology

Accretion is a boutique security auditor specializing in Solana's ecosystem. We employ a customized approach for each client, strategically allocating our resources to maximize code review effectiveness. Our auditors dedicate substantial time to developing a comprehensive understanding of each program under review, examining design decisions, expected and edge-case behaviors, invariants, optimizations, and data structures, while meticulously verifying mathematical correctness—all within the context of the developers' intentions.

Our audit scope extends beyond on-chain components to include associated infrastructure, such as user interfaces and supporting systems. Every audit encompasses both a holistic protocol design review and detailed line-by-line code analysis.

During our assessment, we focus on identifying:
• Solana-specific vulnerabilities
• Access control issues
• Arithmetic errors and precision loss
• Race conditions and MEV opportunities
• Logic errors and edge cases
• Performance optimization opportunities
• Invariant violations
• Account confusion vulnerabilities
• Authority check omissions
• Token22 implementation risks and SPL-related pitfalls
• Deviations from best practices

Our approach transcends conventional vulnerability classifications. We continuously conduct ecosystem-wide security research to identify and mitigate emerging threat vectors, ensuring our audits remain at the forefront of Solana security practices.