QuillAudits

AUDIT REPORT

August 2025

For

kanalabs

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Executive Summary

Project Name	Kanalabs
Protocol Type	Token
Project URL	https://dev.kanalabs.io
Overview	KanaOFT is an omnichain fungible token protocol built on LayerZero's infrastructure that enables seamless cross-chain token transfers while incorporating advanced security and administrative features. The protocol combines LayerZero's Omnichain Fungible Token (OFT) standard with OpenZeppelin's security primitives to create a robust, pausable, and administratively controlled token ecosystem.
Audit Scope	The scope of this Audit was to analyze the KANA Smart Contracts for quality, security, and correctness.
Source Code link	https://github.com/kanalabs/kana-token-contracts/blob/main/evm_token/contracts/KanaOFT.sol
Branch	Main
Contracts in Scope	KanaOFT.sol
Commit Hash	97264111b4414a07988fd97a5f5fa87245ca97f5
Language	Solidity
Blockchain	Binance (BSC)
Method	Manual Analysis, Functional Testing, Automated Testing
Review 1	13th August 2025 - 14th August 2025
Updated Code Received	19th August 2025
Review 2	21st August 2025
Fixed In	525f6337ad263327b6941e18782fdfb49040d655

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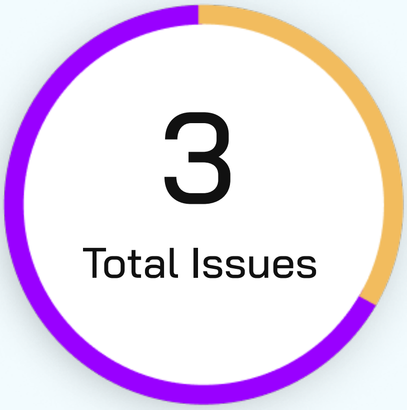
Number of Issues per Severity



Critical	0 (0.0%)
High	0 (0.0%)
Medium	0 (0.0%)
Low	1 (33.3%)
Informational	2 (66.6%)

Severity

Issues	Critical	High	Medium	Low	Informational
Open	0	0	0	0	0
Acknowledged	0	0	0	0	1
Partially Resolved	0	0	0	0	0
Resolved	0	0	0	1	1

Summary of Issues

Issue No.	Issue Title	Severity	Status
1	Floating pragma	Low	Resolved
2	Use Safetransfer	Informational	Resolved
3	Centralization Risks	Informational	Acknowledged

Checked Vulnerabilities

- ✔ Access Management
- ✔ Arbitrary write to storage
- ✔ Centralization of control
- ✔ Ether theft
- ✔ Improper or missing events
- ✔ Logical issues and flaws
- ✔ Arithmetic Computations Correctness
- ✔ Race conditions/front running
- ✔ SWC Registry
- ✔ Re-entrancy
- ✔ Timestamp Dependence
- ✔ Gas Limit and Loops
- ✔ Exception Disorder
- ✔ Gasless Send
- ✔ Use of tx.origin
- ✔ Malicious libraries
- ✔ Compiler version not fixed
- ✔ Address hardcoded
- ✔ Divide before multiply
- ✔ Integer overflow/underflow
- ✔ ERC's conformance
- ✔ Dangerous strict equalities
- ✔ Tautology or contradiction
- ✔ Return values of low-level calls

- ✓ Missing Zero Address Validation
- ✓ Private modifier
- ✓ Revert/require functions
- ✓ Multiple Sends
- ✓ Using suicide
- ✓ Using delegatecall
- ✓ Upgradeable safety
- ✓ Using throw
- ✓ Using inline assembly
- ✓ Style guide violation
- ✓ Unsafe type inference
- ✓ Implicit visibility level

Techniques and Methods

Throughout the audit of smart contracts, care was taken to ensure:

- The overall quality of code
- Use of best practices
- Code documentation and comments, match logic and expected behavior
- Token distribution and calculations are as per the intended behavior mentioned in the whitepaper
- Implementation of ERC standards
- Efficient use of gas
- Code is safe from re-entrancy and other vulnerabilities

The following techniques, methods, and tools were used to review all the smart contracts:

Structural Analysis

In this step, we have analyzed the design patterns and structure of smart contracts. A thorough check was done to ensure the smart contract is structured in a way that will not result in future problems.

Static Analysis

A static Analysis of Smart Contracts was done to identify contract vulnerabilities. In this step, a series of automated tools are used to test the security of smart contracts.

Code Review / Manual Analysis

Manual Analysis or review of code was done to identify new vulnerabilities or verify the vulnerabilities found during the static analysis. Contracts were completely manually analyzed, their logic was checked and compared with the one described in the whitepaper. Besides, the results of the automated analysis were manually verified.

Gas Consumption

In this step, we have checked the behavior of smart contracts in production. Checks were done to know how much gas gets consumed and the possibilities of optimization of code to reduce gas consumption.

Tools and Platforms Used for Audit

Remix IDE, Foundry, Solhint, Mythril, Slither, Solidity Static Analysis.

Types of Severity

Every issue in this report has been assigned to a severity level. There are five levels of severity, and each of them has been explained below.

Critical: Immediate and Catastrophic Impact

Critical issues are the ones that an attacker could exploit with relative ease, potentially leading to an immediate and complete loss of user funds, a total takeover of the protocol's functionality, or other catastrophic failures. Critical vulnerabilities are non-negotiable; they absolutely must be fixed.

High (H): Significant Risk of Major Loss or Compromise

High-severity issues represent serious weaknesses that could result in significant financial losses for users, major malfunctions within the protocol, or substantial compromise of its intended operations. While exploiting these vulnerabilities might require specific conditions to be met or a moderate level of technical skill, the potential damage is considerable. These findings are critical and should be addressed and resolved thoroughly before the contract is put into the Mainnet.

Medium (M): Potential for Moderate Harm Under Specific Circumstances

Medium-severity bugs are loopholes in the protocol that could lead to moderate financial losses or partial disruptions of the protocol's intended behavior. However, exploiting these vulnerabilities typically requires more specific and less common conditions to occur, and the overall impact is generally lower compared to high or critical issues. While not as immediately threatening, it's still highly recommended to address these findings to enhance the contract's robustness and prevent potential problems down the line.

Low (L): Minor Imperfections with Limited Repercussions

Low-severity issues are essentially minor imperfections in the smart contract that have a limited impact on user funds or the core functionality of the protocol. Exploiting these would usually require very specific and unlikely scenarios and would yield minimal gain for an attacker. While these findings don't pose an immediate threat, addressing them when feasible can contribute to a more polished and well-maintained codebase.

Informational (I): Opportunities for Improvement, Not Immediate Risks

Informational findings aren't security vulnerabilities in the traditional sense. Instead, they highlight areas related to the clarity and efficiency of the code, gas optimization, the quality of documentation, or adherence to best development practices. These findings don't represent any immediate risk to the security or functionality of the contract but offer valuable insights for improving its overall quality and maintainability. Addressing these is optional but often beneficial for long-term health and clarity.

Types of Issues

Status	Description
Open	Security vulnerabilities identified that must be resolved and are currently unresolved.
Resolved	These are the issues identified in the initial audit and have been successfully fixed.
Acknowledged	Vulnerabilities which have been acknowledged but are yet to be resolved.
Partially Resolved	Considerable efforts have been invested to reduce the risk/impact of the security issue, but are not completely resolved.

Severity Matrix

Impact

Likelihood	High	Medium	Low
High	Critical	High	Medium
Medium	High	Medium	Low
Low	Medium	Low	Low

Impact

- **High** - leads to a significant material loss of assets in the protocol or significantly harms a group of users.
- **Medium** - only a small amount of funds can be lost (such as leakage of value) or a core functionality of the protocol is affected.
- **Low** - can lead to any kind of unexpected behavior with some of the protocol's functionalities that's not so critical.

Likelihood

- High - attack path is possible with reasonable assumptions that mimic on-chain conditions, and the cost of the attack is relatively low compared to the amount of funds that can be stolen or lost.
- Medium - only a conditionally incentivized attack vector, but still relatively likely.
- Low - has too many or too unlikely assumptions or requires a significant stake by the attacker with little or no incentive.

Low Severity Issues

Floating pragma

Resolved

Path

K anaOFT.sol

Description

Contract is using version **^0.8.22** with a floating pragma instead of locking to a specific version. Floating pragmas allow the contract to be compiled with any version greater than or equal to the specified version for that major version. If the contract wasn't thoroughly tested with that version, this can introduce possible bugs.

Recommendation

Consider using a fixed solidity version

Informational Issues

Use Safetransfer

Resolved

Path

KanaOFT.sol

Description

The contract uses the standard IERC20.transfer() method without checking return values or handling non-standard ERC20 implementations. Some tokens (notably USDT) don't follow the ERC20 standard properly and may not revert on transfer failures, leading to silent failures where the contract assumes successful transfers that never occurred.

Recommendation

Use OpenZeppelin's SafeERC20 library

Centralization Risks

Acknowledged

Path

KanaOFT

Path

`setPaused()` `setBlackList()` `recoverERC20()`

Description

The contract implements excessive centralized control through onlyOwner modifiers on critical functions. A single owner address has unrestricted power to pause the entire contract, blacklist arbitrary addresses, and extract any ERC20 tokens. This creates significant trust assumptions and single points of failure.

Centralized Functions:

`setPaused()` - Can halt all token transfers
`setBlackList()` - Can prevent any address from sending/receiving
`recoverERC20()` - Can drain any ERC20 tokens from contract

Functional Tests

Some of the tests performed are mentioned below:

- ✔ Update the function to correctly blacklist unappreciative users.
- ✔ recoverERC20 function works correctly

Automated Tests

No major issues were found. Some false positive errors were reported by the tools. All the other issues have been categorized above according to their level of severity.

Closing Summary

In this report, we have considered the security of KanaOFT.sol. We performed our audit according to the procedure described above.

Issues of Low and Informational severity were found. Kana Labs team resolved two and acknowledged one of the issues.

Disclaimer

At QuillAudits, we have spent years helping projects strengthen their smart contract security. However, security is not a one-time event—threats evolve, and so do attack vectors. Our audit provides a security assessment based on the best industry practices at the time of review, identifying known vulnerabilities in the received smart contract source code.

This report does not serve as a security guarantee, investment advice, or an endorsement of any platform. It reflects our findings based on the provided code at the time of analysis and may no longer be relevant after any modifications. The presence of an audit does not imply that the contract is free of vulnerabilities or fully secure.

While we have conducted a thorough review, security is an ongoing process. We strongly recommend multiple independent audits, continuous monitoring, and a public bug bounty program to enhance resilience against emerging threats.

Stay proactive. Stay secure.

About QuillAudits

QuillAudits is a leading name in Web3 security, offering top-notch solutions to safeguard projects across DeFi, GameFi, NFT gaming, and all blockchain layers. With seven years of expertise, we’ve secured over 1400 projects globally, averting over $3 billion in losses. Our specialists rigorously audit smart contracts and ensure DApp safety on major platforms like Ethereum, BSC, Arbitrum, Algorand, Tron, Polygon, Polkadot, Fantom, NEAR, Solana, and others, guaranteeing your project’s security with cutting-edge practices.

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7+ Years of Expertise	**1M+** Lines of Code Audited
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