



TechRate
AUDIT COMPANY

ThunderCake

Smart Contract Security Audit

Disclaimer

This is a limited report on our findings based on our analysis, in accordance with good industry practice as at the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, the details of which are set out in this report. In order to get a full view of our analysis, it is crucial for you to read the full report. While we have done our best in conducting our analysis and producing this report, it is important to note that you should not rely on this report and cannot claim against us on the basis of what it says or doesn't say, or how we produced it, and it is important for you to conduct your own independent investigations before making any decisions. We go into more detail on this in the below disclaimer below – please make sure to read it in full.

DISCLAIMER: By reading this report or any part of it, you agree to the terms of this disclaimer. If you do not agree to the terms, then please immediately cease reading this report, and delete and destroy any and all copies of this report downloaded and/or printed by you. This report is provided for information purposes only and on a non-reliance basis, and does not constitute investment advice. No one shall have any right to rely on the report or its contents, and TechRate and its affiliates (including holding companies, shareholders, subsidiaries, employees, directors, officers and other representatives) (TechRate) owe no duty of care towards you or any other person, nor does TechRate make any warranty or representation to any person on the accuracy or completeness of the report. The report is provided "as is", without any conditions, warranties or other terms of any kind except as set out in this disclaimer, and TechRate hereby excludes all representations, warranties, conditions and other terms (including, without limitation, the warranties implied by law of satisfactory quality, fitness for purpose and the use of reasonable care and skill) which, but for this clause, might have effect in relation to the report. Except and only to the extent that it is prohibited by law, TechRate hereby excludes all liability and responsibility, and neither you nor any other person shall have any claim against TechRate, for any amount or kind of loss or damage that may result to you or any other person (including without limitation, any direct, indirect, special, punitive, consequential or pure economic loss or damages, or any loss of income, profits, goodwill, data, contracts, use of money, or business interruption, and whether in delict, tort (including without limitation negligence), contract, breach of statutory duty, misrepresentation (whether innocent or negligent) or otherwise under any claim of any nature whatsoever in any jurisdiction) in any way arising from or connected with this report and the use, inability to use or the results of use of this report, and any reliance on this report.

The analysis of the security is purely based on the smart contracts alone. No applications or operations were reviewed for security. No product code has been reviewed.

Background

TechRate was commissioned by ThunderCake to perform an audit of smart contracts:

<https://bscscan.com/address/0xce4A4A15FcCD532eAd67BE3ECf7e6122c61D06bb#code>

The purpose of the audit was to achieve the following:

- Ensure that the smart contract functions as intended.
- Identify potential security issues with the smart contract.

The information in this report should be used to understand the risk exposure of the smart contract, and as a guide to improve the security posture of the smart contract by remediating the issues that were identified.

Issues Checking Status

Issue description		Checking status
1.	Compiler errors.	Passed
2.	Race conditions and Reentrancy. Cross-function race conditions.	Passed
3.	Possible delays in data delivery.	Passed
4.	Oracle calls.	Passed
5.	Front running.	Passed
6.	Timestamp dependence.	Passed
7.	Integer Overflow and Underflow.	Passed
8.	DoS with Revert.	Passed
9.	DoS with block gas limit.	Low issue
10.	Methods execution permissions.	Passed
11.	Economy model of the contract.	Passed
12.	The impact of the exchange rate on the logic.	Passed
13.	Private user data leaks.	Passed
14.	Malicious Event log.	Passed
15.	Scoping and Declarations.	Passed
16.	Uninitialized storage pointers.	Passed
17.	Arithmetic accuracy.	Low issue
18.	Design Logic.	Passed
19.	Cross-function race conditions.	Passed
20.	Safe Open Zeppelin contracts implementation and usage.	Passed
21.	Fallback function security.	Passed

Security Issues

✓ High Severity Issues

No high severity issues found.

✓ Medium Severity Issues

No medium severity issues found.

✓ Low Severity Issues

1. Rounding error

Issue:

- At each calculation with division, it goes first. In Solidity we don't have floating points, but instead we get rounding errors.

Recommendation:

Do division after multiplication.

2. Out of gas

Issue:

- The function `excludeMultipleAccountsFromFees()` uses the loop to exclude multiple accounts from fees. Function will be aborted with `OUT_OF_GAS` exception if there will be a long addresses list.

Recommendation:

Be careful about accounts array length.

Notes:

- Owner can change dividend trackers that could be not audited and some functions may work in different ways.

Owner privileges (In the period when the owner is not renounced)

- Owner can whitelist addresses (exclude from fees and dividends).
- Owner can change max buy and sell transaction amounts and fees.
- Owner can change dividend tokens addresses.
- Owner can change sendThoreumInTx and sendCakeInTx values.
- Owner can change Cake dividends priority.
- Owner can change min value to send dividends.
- Owner can change marketing address.
- Owner can change max wallet token number.
- Owner can change swapTokensAtAmount.
- Owner can change sell transaction multiplier.
- Owner can enable after presale mode.
- Owner can enable and disable trading.
- Owner can enable buyback mode.
- Owner can change minimumBalanceRequired, minimumSellOrderAmount, buyBackUpperLimit values.
- Owner can enable and disable buyback and liquify.
- Owner can enable and disable CAKE and Thoreum dividends.
- Owner can enable and disable marketing fee.
- Owner can change CAKE and Thoreum dividendTrackers.
- Owner can change CAKE and Thoreum dividends rewards fee, marketing buyback and liquidity fee.
- Owner can change Uniswap router.
- Owner can exclude from fees and dividends.
- Owner can exclude and include addresses in automatedMarketMakerPairs array.
- Owner can change gas for processing.
- Owner can change minimum token balance for dividends.
- Owner can update claimWait value.
- Owner can manually buyback and burn.

Conclusion

Smart contracts contain low severity issues! Liquidity pair contract's security is not checked due to out of scope.

Liquidity locking details provided by the team:

https://dxsale.app/app/v2_9/dxlockview?id=0&add=0x8cA23deA974781c94D961950230FB1Ffdb61bB60&type=lplock&chain=BSC

TechRate note:

Please check the disclaimer above and note, the audit makes no statements or warranties on business model, investment attractiveness or code sustainability. The report is provided for the only contract mentioned in the report and does not include any other potential contracts deployed by Owner.