

TechRate
March, 2024



SMART CONTRACTS SECURITY AUDIT REPORT



Techrate_audits



Techrate



Techrate1

Audit Details



Audited project

Matscoin



Deployer address

0x6E0eF49A72d99153Fa1f746dd92B3a1DB783D407



Client contacts:

Matscoin team



Blockchain

Binance Smart Chain



Project website:

<https://matscoin.xyz>

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 disclaimer below – please make sure to read it in full.

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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 Matscoin to perform an audit of smart contracts:

<https://bscscan.com/address/0xd8b934ea8e6FC11AB563276dda236B9FEaf5fF87#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 issues
10. Methods execution permissions.	Passed
11. Economy model of the contract.	High issue
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.	Passed
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

1. Balance mismatch

Issue:

- The function `transfer()` has wrong taking of deadFees. Tokens are sent from "from" balance to "dead" address but total supply are also decreased by this amount. So sum of the all balances will be higher than total supply

Recommendation:

Revise logic of taking dead fees.

✓ Medium Severity Issues

No medium severity issues found.

✓ Low Severity Issues

No low severity issues found.

Notes:

- Staking bonus automatically removes only in transferring method.
- There is function include `FromDividends()`.
- Old admin is not included back in exclusions.

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

MatscoinDividendTracker:

- Owner can exclude from autoClaim.
- Owner can change values for allowCustomTokens, allowAutoReinvest.
- Owner can include/exlude from dividends.
- Owner can change values in autoReinvest array.
- Owner can change minimumTokenBalanceForAutoDividends and minimumTokenBalanceForDividends.
- Owner can toggle dividendsPaused.
- Owner can set balance.
- Owner can run dividend processing.
- Owner can change router and paying token.

Matscoin:

- Owner can change staking bonus for duration.
- Owner can enable trading.
- Owner can add addresses in multiple exclusions.
- Owner can add addresses in canTransferBeforeTradingIsEnabled.
- Owner can toggle limitsInEffect.
- Owner can change gasPriceLimit.
- Owner can change cooldowntimer.
- Owner can change max wallet setting.
- Owner can enable/disable staking.
- Owner can change swapTokensAtAmount.
- Owner can enable/disable swap and liquify.
- Owner can exclude and include addresses in automatedMarketMakerPairs array.
- Owner can allow custom tokens and allow reinvest.
- Owner can change gas for processing.
- Owner can change owner address.
- Owner can change fees.
- Owner can pause dividends.
- Owner can change minimumTokenBalanceForAutoDividends and minimumTokenBalanceForDividends.
- Owner can change paying token.
- Owner can manually run dividend distribution.
- Owner can multisend tokens.

Conclusion

Smart contracts contain high severity issues! Liquidity pair contract's security is not checked due to out of scope. The further transfers and operations with the funds raise are not related to this particular contract.

Liquidity locking details are provided by the team:

<https://www.pinksale.finance/pinklock/record/1186629?chain=BSC>

Security score: 70.

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.