TECH RATE

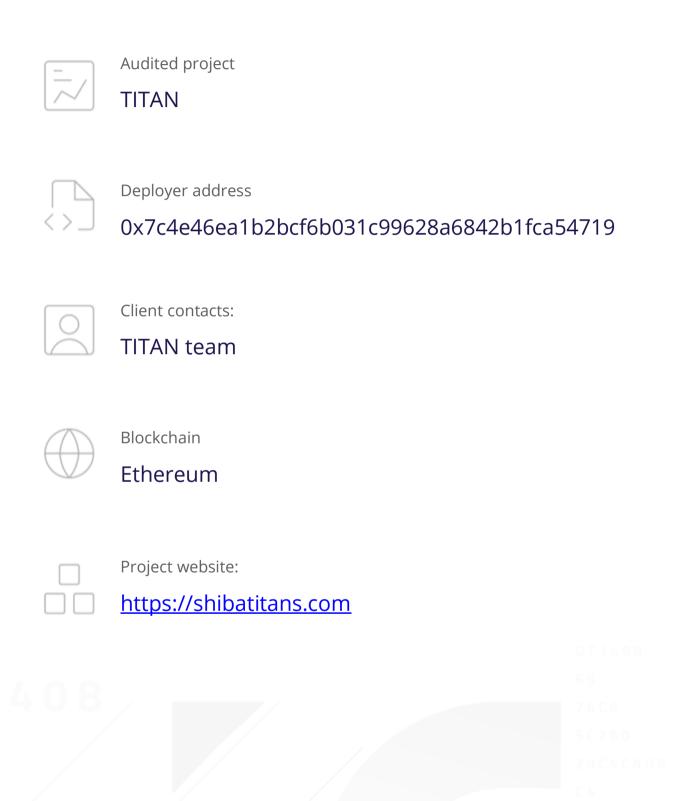
SMART CONTRACTS SECURITY **AUDIT REPORT**







Audit Details





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.

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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 TITAN to perform an audit of smart contracts:

https://etherscan.io/address/0x9d224282d67932f1c23e7adc79251f371dbe8631#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.	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.	Passed
18.	Design Logic.	Passed
19.	Cross-function race conditions.	Passed 0780
20.	Safe Open Zeppelin contracts implementation and usage.	Passed
21.	Fallback function security.	Passed

Security Issues

High Severity Issues

No high severity issues found.

No medium severity issues found.

- Low Severity Issues
 - 1. Out of gas

Issue:

- The function includeToWhiteList() uses the loop for whitelisting addresses. It also could be aborted with OUT_OF_GAS exception if there will be a long addresses list.
- The function setLimits(), addPrivateSalers(), removePrivateSalers(), addExcludedFromLimits(), removeExcludedFromLimits() uses the loop to iterate through the list from the function argument. Functions will be aborted with OUT_OF_GAS exception if there will be a long list provided.
- The function multiSendTokens() uses the loop multisend tokens. It also could be aborted with OUT_OF_GAS exception if there will be a long addresses list.
- The function multiSendTokens() do not check addresses array and amounts array to be equal.

Recommendation:

Check that the arrays length is not too big.

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

- Owner can enable/disable trading.
- Owner can change fee receivers addresses.
- Owner can change fees.
- Owner can change AMM status of addresses.
- Owner can change transferTaxEnabled value.
- Owner can change maxBuyAmountActive, maxSellAmountActive and maxWalletLimitActive statuses.
- Owner can exclude from the fee.
- Owner can change maxSellAmount, buybackDivisor and maxBuyAmount.
- Owner can enable/disable swapAndLiquifyEnabled.
- Owner can change numTokensSellToAddToLiquidity.
- Owner can change buyBackLowerLimit and buyBackUpperLimit.
- Owner can enable/disable buyback.
- Owner can manually buyback tokens.
- Owner can blacklist addresses.
- Owner can change contractsAllowed status and exclude addresses from contract restriction.
- Owner can change maxWalletLimit and exclude addresses from maxWallet restriction.
- Owner can change privateSaleGlobalLimit and privateSaleGlobalLimitPeriod.
- Owner can enable/disable globalLimitsPrivateSaleActive and globalLimitsActive.
- Owner can withdraw contract ERC20 tokens and ETHs.
- Owner can lock and unlock. By the way, using these functions the owner could retake privileges even after the ownership was renounced.



Conclusion

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

Liquidity locking details provided by the team:

https://app.unicrypt.network/amm/univ2/pair/0xeb6b9b0455d247ed80696deecd99680ea7eeba9e

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.

