



# Smart Contract Security Audit Report

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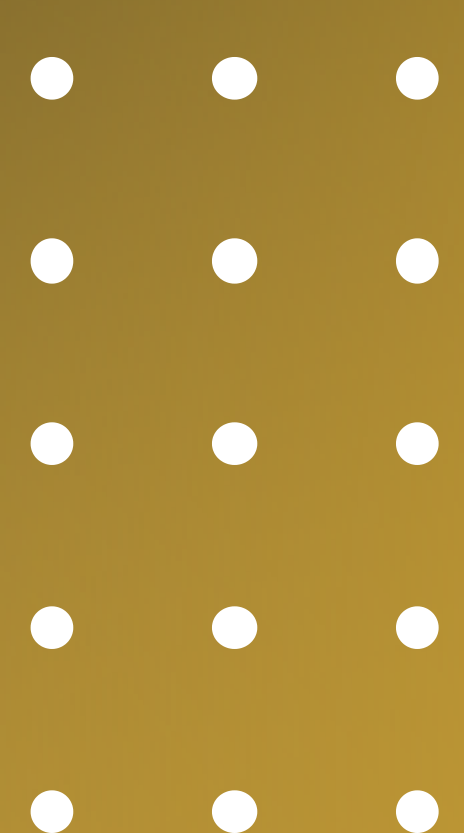
## ShinChan Token

March 2023

Security Status



[www.hacksafe.io](https://www.hacksafe.io)



# Audit Details



## Audited project

ShinChan Token



## Deployer address

0xFA2E8C05D198412156c0C5dcB022129612CbA1FB



## Client contacts

ShinChanToken team



## Blockchain

Ethereum



## Website

Not Provided



# 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.



# Procedure

## **Step 1 - In-Depth Manual Review**

Manual line-by-line code reviews to ensure the logic behind each function is sound and safe from various attack vectors. This is the most important and lengthy portion of the audit process (as automated tools often cannot find the nuances that lead to exploits such as flash loan attacks).

## **Step 2 - Automated Testing**

Simulation of a variety of interactions with your Smart Contract on a test blockchain leveraging a combination of automated test tools and manual testing to determine if any security vulnerabilities exist.

## **Step 3 – Leadership Review**

The engineers assigned to the audit will schedule meetings with our leadership team to review the contracts, any comments or findings, and ask questions to further apply adversarial thinking to discuss less common attack vectors.

## **Step 4 - Resolution of Issues**

Consulting with the team to provide our recommendations to ensure the code's security and optimize its gas efficiency, if possible. We assist project team's in resolving any outstanding issues or implementing our recommendations.

## **Step 5 - Published Audit Report**

Boiling down results and findings into an easy-to-read report tailored to the project. Our audit reports highlight resolved issues and any risks that exist to the project or its users, along with any remaining suggested remediation measures. Diagrams are included at the end of each report to help users understand the interactions which occur within the project.

# Background

HackSafe was commissioned by ShinChan Token to perform an audit of smart contracts:

- <https://etherscan.io/token/0xbaa9af8a83500ac4137c555b9e58ccb3e1f2269d#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 understood 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.

# Contract Details

## Token contract details for 02.03.2023

Token Type	: DEFI
Contract name	: ShinChanToken
Contract address	: 0xBaa9AF8a83500Ac4137C555b9E58CCB3e1f2269D
Total supply	: 1,000,000,000,000,000,000
Token ticker	: Shinnosuke
Decimals	: 9
Token Holders	: 1,683
Top 100 token holder's dominance	: 74.94%
Transactions count	: 6,042
Compiler version	: v0.8.3+commit.8d00100c
Contract deployer address	: 0xFA2E8C05D198412156c0C5dcB022129612CbA1FB
Contract owner address	: 0x00



# Social profiles

Twitter profile	: <a href="https://twitter.com/ShinChanToken">https://twitter.com/ShinChanToken</a>
Telegram profile	: <a href="https://t.me/ShinChanToken">https://t.me/ShinChanToken</a>
Coinmarketcap profile	: <a href="https://coinmarketcap.com/currencies/shinchan-token/">https://coinmarketcap.com/currencies/shinchan-token/</a>
Coingecko profile	: <a href="https://www.coingecko.com/en/coins/shinchan-token">https://www.coingecko.com/en/coins/shinchan-token</a>

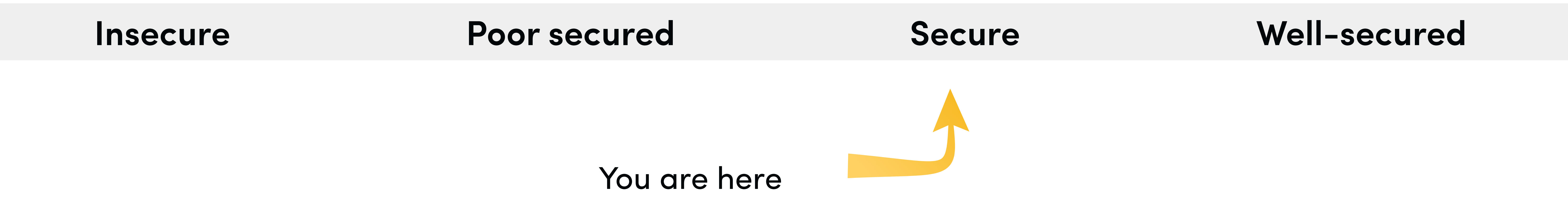
# Claimed Smart Contract Features

Claimed Feature Detail	Our Observation
<p>Tokenomics :</p> <ul style="list-style-type: none"><li>• Name : ShinChan Token</li><li>• Symbol : Shinnosuke</li><li>• Decimals : 9</li><li>• Protocol : ERC20</li><li>• Total supply : 1,000,000,000,000,000,000</li><li>• Contract address : 0xBaa9AF8a83500Ac4137C555b9E58CCB3e1f2269D</li></ul>	<p>YES, this is valid.</p>



# Audit Summary

According to the standard audit assessment, Customer`s solidity smart contracts are **“Secure”**. This token contract does contain owner control, which do not make it fully decentralized as owner does have control over smart contract.



We used various tools like Slither, Mythril and Remix IDE. At the same time this finding is based on critical analysis of the manual audit. All issues found during automated analysis were manually reviewed and applicable vulnerabilities are presented in the issues checking status.

We found 0 critical, 0 high, 1 medium and 0 low and some very low-level issues. These issues are not critical ones.

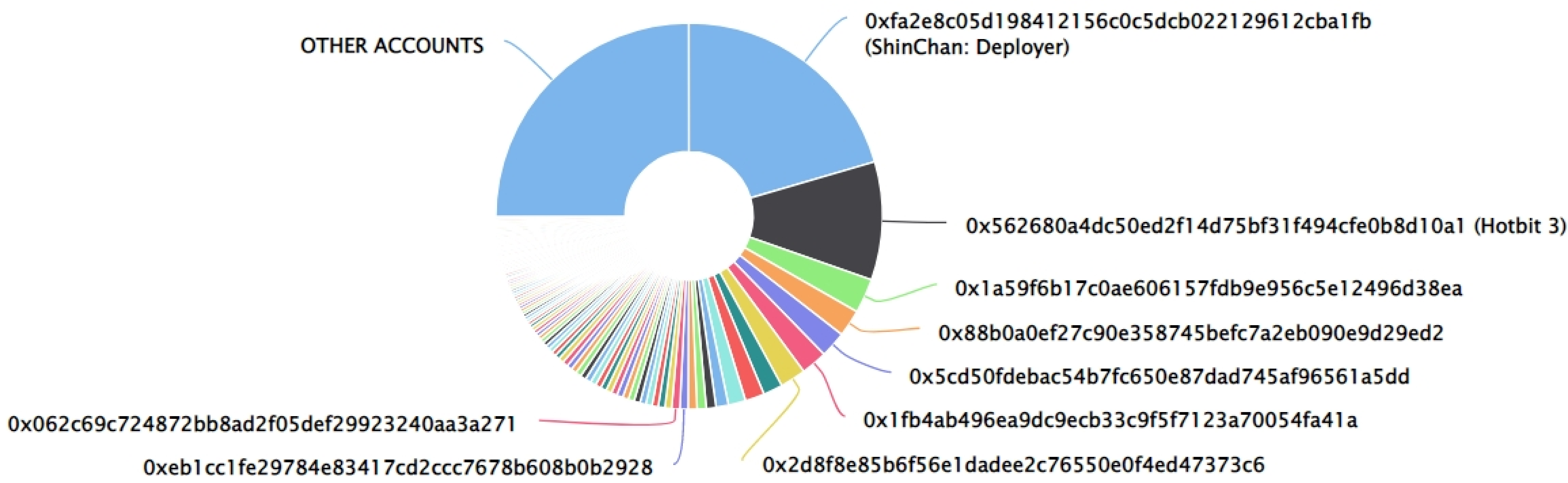
# ShinChan Token Distribution

💡 The top 100 holders collectively own 74.94% (749,408,447,521,199,000.00 Tokens) of ShinChan Token

💡 Token Total Supply: 1,000,000,000,000,000.00 Token | Total Token Holders: 1,683

## ShinChan Token Top 100 Token Holders

Source: Etherscan.io



## ShinChan Top 20 Token Holders

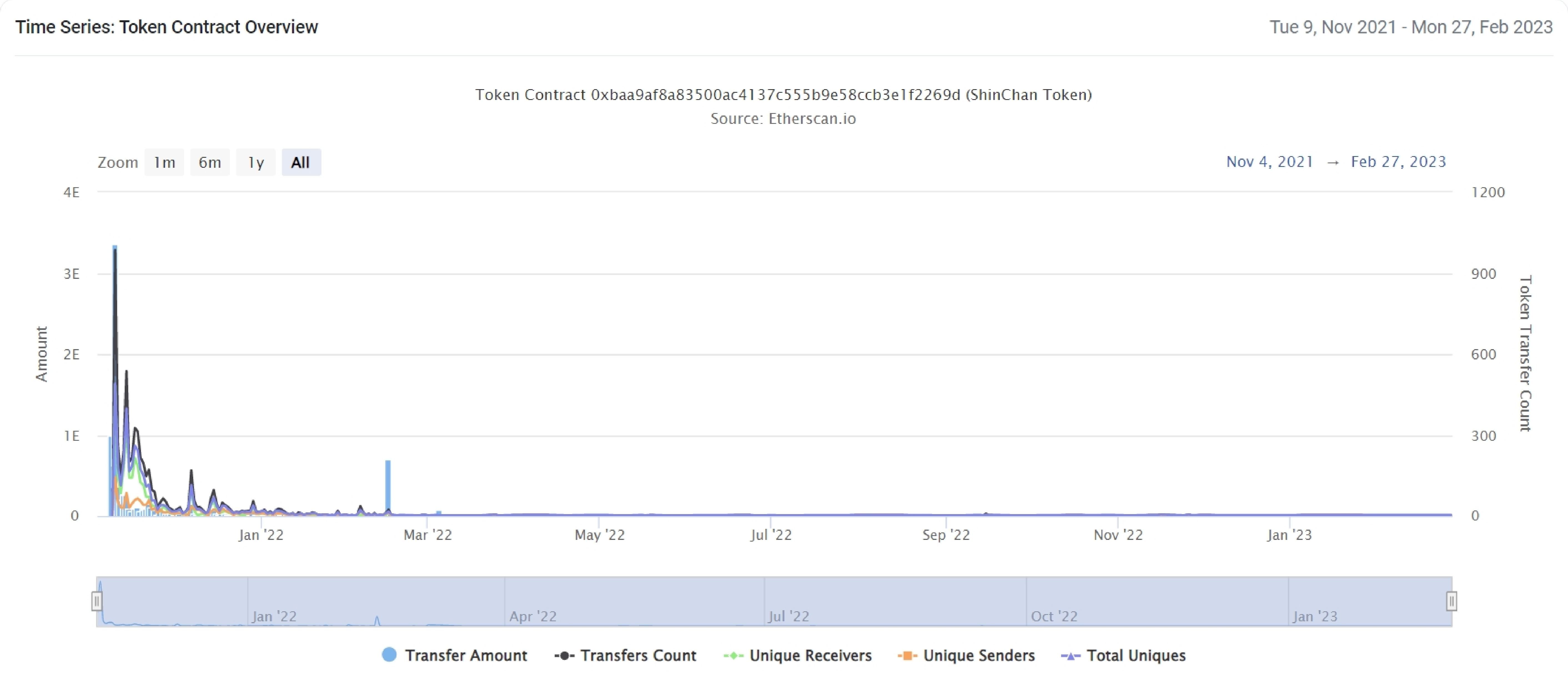
(A total of 749,408,447,521,199,000.00 tokens held by the top 100 accounts from the total supply of 1,000,000,000,000,000.00 token)

Rank	Address	Quantity (Token)	Percentage
1	ShinChan: Deployer <a href="#">🔗</a>	204,906,561,937,564,391.386908757	20.4907%
2	Hotbit 3 <a href="#">🔗</a>	98,832,280,095,904,404.012156536	9.8832%
3	0x1A59F6...496d38EA <a href="#">🔗</a>	28,932,627,680,653,296.826136796	2.8933%
4	0x88b0a0...E9d29ED2 <a href="#">🔗</a>	22,457,747,421,488,482.419679482	2.2458%
5	0x5cd50F...6561a5Dd <a href="#">🔗</a>	21,908,786,175,701,444.936883197	2.1909%
6	0x1fb4aB...054FA41A <a href="#">🔗</a>	21,836,110,979,644,777.980572858	2.1836%
7	0x2D8f8E...D47373C6 <a href="#">🔗</a>	21,520,701,183,967,779.403191043	2.1521%
8	0xbBBa11...3578f13d <a href="#">🔗</a>	16,285,162,067,799,460.621154324	1.6285%
9	0x126195...19CDEa39 <a href="#">🔗</a>	16,089,550,735,233,861.353187925	1.6090%
10	0xAAf6cC...315750dc <a href="#">🔗</a>	14,472,630,357,678,360.735215349	1.4473%
11	<a href="#">📄</a> Uniswap V2: Shinnosuke <a href="#">🔗</a>	10,293,311,606,797,606.759216628	1.0293%
12	0x3C4Ab1...8C99992A <a href="#">🔗</a>	8,201,461,631,169,608.57325264	0.8201%
13	0x7b9Bf6...b439E9Ce <a href="#">🔗</a>	7,579,695,403,757,615.456963954	0.7580%
14	0xf567b5...3110C05c <a href="#">🔗</a>	7,353,911,672,821,268.006036001	0.7354%
15	0xEB1CC1...8B0b2928 <a href="#">🔗</a>	6,897,940,396,173,862.906098461	0.6898%
16	0x062C69...0AA3a271 <a href="#">🔗</a>	6,783,171,853,225,862.715230723	0.6783%
17	0xFACaEf...C0BD4f7F <a href="#">🔗</a>	5,625,953,707,431,977.278141654	0.5626%
18	0x6F18e6...a24227c9 <a href="#">🔗</a>	5,591,179,341,705,258.498826251	0.5591%
19	0x83fbdF...19D48561 <a href="#">🔗</a>	5,272,457,650,150,247.014719665	0.5272%
20	0x7db4cB...B2e271DB <a href="#">🔗</a>	5,258,353,561,344,671.524829231	0.5258%



# ShinChan Token Distribution

## ShinChan Token Contract overview



# Contract functions details

## + [Int] IERC20

- [Ext] totalSupply
- [Ext] balanceOf
- [Ext] transfer #
- [Ext] allowance
- [Ext] approve #
- [Ext] transferFrom #

## + [Lib] SafeMath

- [Int] tryAdd
- [Int] trySub
- [Int] tryMul
- [Int] tryDiv
- [Int] tryMod
- [Int] add
- [Int] sub
- [Int] mul
- [Int] div
- [Int] mod
- [Int] sub
- [Int] div
- [Int] mod

## + Context

- [Int] \_msgSender
- [Int] \_msgData

## + [Lib] Address

- [Int] isContract
- [Int] sendValue #
- [Int] functionCall #
- [Int] functionCall #
- [Int] functionCallWithValue #
- [Int] functionCallWithValue #
- [Int] functionStaticCall
- [Int] functionStaticCall
- [Int] functionDelegateCall #
- [Int] functionDelegateCall #
- [Int] \_verifyCallResult



# Contract functions details

## +Ownable (Context)

- [pub] #
- [pub] owner
- [Pub] renounceOwnership #
  - modifiers: onlyOwner
- [Pub] transferOwnership #
  - modifiers: onlyOwner
- [pub] isAdmin
- [pub] isOwner
- [pub] isAdminOrOwner
- [Pub] setAdmin #
  - modifiers: onlyOwner

## + [Int] IUniswapV2Factory

- [Ext] feeTo
- [Ext] feeToSetter
- [Ext] getPair
- [Ext] allPairs
- [Ext] allPairsLength
- [Ext] createPair #
- [Ext] setFeeTo #
- [Ext] setFeeToSetter #

## + [Int] IUniswapV2Pair

- [Ext] name
- [Ext] symbol
- [Ext] decimals
- [Ext] totalSupply
- [Ext] balanceOf
- [Ext] allowance
- [Ext] approve #
- [Ext] transfer #
- [Ext] transferFrom #
- [Ext] DOMAIN\_SEPARATOR
- [Ext] PERMIT\_TYPEHASH
- [Ext] nonces
- [Ext] permit #
- [Ext] MINIMUM\_LIQUIDITY
- [Ext] factory
- [Ext] token0

# Contract functions details

- [Ext] token1
- [Ext] getReserves
- [Ext] price0CumulativeLast
- [Ext] price1CumulativeLast
- [Ext] kLast
- [Ext] mint #
- [Ext] burn #
- [Ext] swap #
- [Ext] skim #
- [Ext] sync #
- [Ext] initialize #

## + [Int] IUniswapV2Router01

- [Ext] factory
- [Ext] WETH
- [Ext] addLiquidity #
- [Ext] addLiquidityETH (\$)
- [Ext] removeLiquidity #
- [Ext] removeLiquidityETH #
- [Ext] removeLiquidityWithPermit #
- [Ext] removeLiquidityETHWithPermit #
- [Ext] swapExactTokensForTokens #
- [Ext] swapTokensForExactTokens #
- [Ext] swapExactETHForTokens (\$)
- [Ext] swapTokensForExactETH #
- [Ext] swapExactTokensForETH #
- [Ext] swapETHForExactTokens (\$)
- [Ext] quote
- [Ext] getAmountOut
- [Ext] getAmountIn
- [Ext] getAmountsOut
- [Ext] getAmountsIn

## + [Int] IUniswapV2Router02 (IUniswapV2Router01)

- [Ext] removeLiquidityETHSupportingFeeOnTransferTokens #
- [Ext] removeLiquidityETHWithPermitSupportingFeeOnTransferTokens #
- [Ext] swapExactTokensForTokensSupportingFeeOnTransferTokens #
- [Ext] swapExactETHForTokensSupportingFeeOnTransferTokens (\$)
- [Ext] swapExactTokensForETHSupportingFeeOnTransferTokens #



# Contract functions details

+ShinChanToken (Context, IERC20, Ownable)

- [pub] #
- [pub] name
- [Pub] symbol
- [Pub] decimals
- [Pub] totalSupply
- [Pub] balanceOf
- [Pub] transfer #
- [Pub] allowance
- [Pub] approve #
- [Pub] transferFrom #
- [Pub] increaseAllowance #
- [Pub] decreaseAllowance #
- [Pub] isExcludedFromReward
- [Pub] totalFees
- [Pub] reflectionFromToken
- [Pub] tokenFromReflection
- [Pub] excludeFromReward #
  - modifiers: onlyOwner
- [Ext] includeInReward #
  - modifiers: onlyOwner
- [Pub] excludeFromFee #
  - modifiers: onlyAdmins
- [Pub] includeInFee #
  - modifiers: onlyAdmins
- [Pvt] removeAllFee #
- [Pvt] restoreAllFee #
- [Ext] (\$)
- [Ext] \_reflectFee #
- [Ext] addToBlackList #
  - modifiers: onlyOwner
- [Ext] removeFromBlackList #
  - modifiers: onlyOwner
- [Pvt] \_getValues
- [Pvt] \_getTValues
- [Pvt] \_getRValues
- [Pvt] \_getRate
- [Pvt] \_getCurrentSupply
- [Pvt] \_takeMarketing #

# Contract functions details

- [Pvt] calculateTaxFee
- [Pvt] calculateMarketingFee
- [pub] isExcludedFromFee
- [Pvt] \_approve #
- [Pvt] \_transfer #
- [Pvt] setFees #
- [Pvt] SwapAndSend #
  - modifiers: lockTheSwap
- [Pvt] \_tokenTransfer #
- [Pvt] \_transferStandard #
- [Pvt] \_transferToExcluded #
- [Pvt] \_transferFromExcluded #
- [Pvt] \_transferBothExcluded #
- [Ext] setDefaultMarketingFee #
  - modifiers: onlyAdmins
- [Ext] setReflectionFee #
  - modifiers: onlyAdmins
- [Ext] setMarketingFee4Sellers #
  - modifiers: onlyAdmins
- [Pub] setFeesOnSellersAndBuyers #
  - modifiers: onlyAdmins
- [Ext] setLaunchingTime #
  - modifiers: onlyOwner
- [Pub] setSwapAndSendEnabled #
  - modifiers: onlyOwner
- [Pub] setnumTokensToExchangeForMarketing #
  - modifiers: onlyOwner
- [Ext] \_setMarketingWallet #
  - modifiers: onlyAdmins
- [Ext] \_setMaxTxAmount #
  - modifiers: onlyOwner
- [Ext] setMaxTxPercent #
  - modifiers: onlyOwner

(\$) = payable function

# = non-constant function



# Issues Checking Status

No.	Title	Status
1.	Compiler error	Passed
2.	Missing Input Validation	Passed
3.	Race conditions and Reentrancy. Cross-function race conditions.	Passed
4.	Possible delays in data delivery	Passed
5.	Oracle calls.	Passed
6.	Timestamp dependence.	Passed
7.	Integer Overflow and Underflow	Passed
8.	DoS with Revert.	Passed
9.	DoS with block gas limit.	Medium Issue
10.	Methods execution permissions.	Passed
11.	Economy model of the contract.	Passed
12.	Private use data leaks.	Passed
13.	Malicious Event log.	Passed
14.	Scoping and Declarations.	Passed
15.	Uninitialized storage pointers.	Passed
16.	Arithmetic accuracy.	Passed
17.	Design Logic.	Medium Issue
18.	Safe Open Zeppelin contracts implementation and usage.	Passed
19.	Incorrect Naming State Variable	Passed
20.	Too old version	Passed

# Severity Definitions

Risk Level	Description
Critical	Critical vulnerabilities are usually straightforward to exploit and can lead to assets loss or data manipulations.
High	High-level vulnerabilities are difficult to exploit; however, they also have a significant impact on smart contract execution, e.g., public access to crucial functions
Medium	Medium-level vulnerabilities are important to fix; however, they can't lead to assets loss or data manipulations.
Low	Low-level vulnerabilities are mostly related to outdated, unused, etc. code snippets that can't have a significant impact on execution.

# Security Issues

## ✔ Critical Severity Issues

No critical severity issue found.

## ✔ High Severity Issues

No high severity issue found.

## ✔ Medium Severity Issues

Two medium severity issue found.

### 1. Out of gas

- **Issue:**

The function `includeInReward()` uses the loop to find and remove addresses from the `_excluded` list. Function will be aborted with `OUT_OF_GAS` exception if there will be a long excluded addresses list.

The function `_getCurrentSupply` also uses the loop for evaluating total supply. It also could be aborted with `OUT_OF_GAS` exception if there will be a long excluded addresses list.

The function `addToBlackList()` uses the loop to add addresses from function argument to blacklist. It also could be aborted with `OUT_OF_GAS` exception if there will be a long addresses list.

- **Recommendation**

Check that the array length is not too big

## ✔ Low Severity Issues

No low severity issue found.



# Centralization

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

- ShinChan Token Contract:
  - Admins can change fees.
  - Owner can change the maximum transaction amount.
  - Owner can remove addresses from blacklist.
  - Admins can exclude from the fee.
  - Owner can change number of tokens to exchange for marketing.
  - Owner can change marketing wallet.
  - Owner can change launching time.

# Conclusion

Smart contract contains medium severity issues! The further transfer and operations with the fund raised are not related to this particular contract.

HackSafe 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.