



TechRate
AUDIT COMPANY

Smart Contract Security Audit

Audit Details



Audited project

AvaxBank



Deployer address

0x2e4ab122447ce38ff9717f5dae9f615f8a1f0068



Client contacts:

AvaxBank team



Blockchain

Binance Smart Chain



Project website:

<https://www.avaxbank.net/>

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 AvaxBank to perform an audit of smart contracts:

<https://bscscan.com/address/0x4e57809c76e07491Be1B8022a7DAeF7251eAd9aF#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.

Contracts Details

Token contract details for 13.11.2021

Contract name	AvaxBank
Contract address	0x4e57809c76e07491Be1B8022a7DAeF7251eAd9aF
Total supply	1,000,000,000,000,000
Token ticker	AVB
Decimals	9
Token holders	115
Transactions count	386
Top 100 holders dominance	99.96%
Reflection	0x1ce0c2827e2ef14d5c4f29a091d735a204794041
Total fees	15
Reflection rewards fee	8
Uniswap V2 pair	0x961d1017ba0bf88bcff7ee4643264e28a77cda8e
Contract deployer address	0x2e4ab122447ce38ff9717f5dae9f615f8a1f0068
Contract's current owner address	0x2e4ab122447ce38ff9717f5dae9f615f8a1f0068

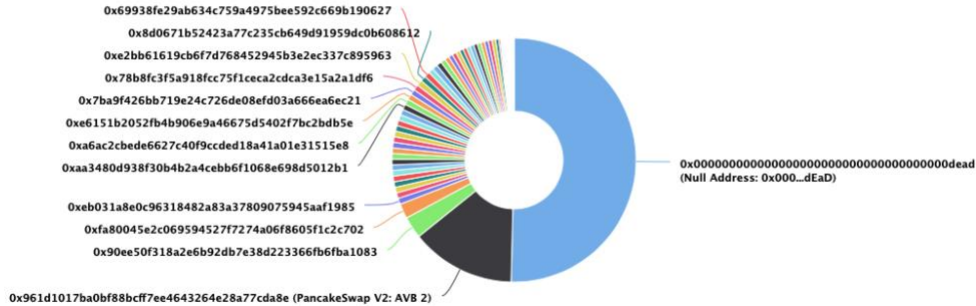
AvaxBank Token Distribution

The top 100 holders collectively own 99.96% (999,636,523,418,273.00 Tokens) of AvaxBank

Token Total Supply: 1,000,000,000,000.00 Token | Total Token Holders: 115

AvaxBank Top 100 Token Holders

Source: BscScan.com



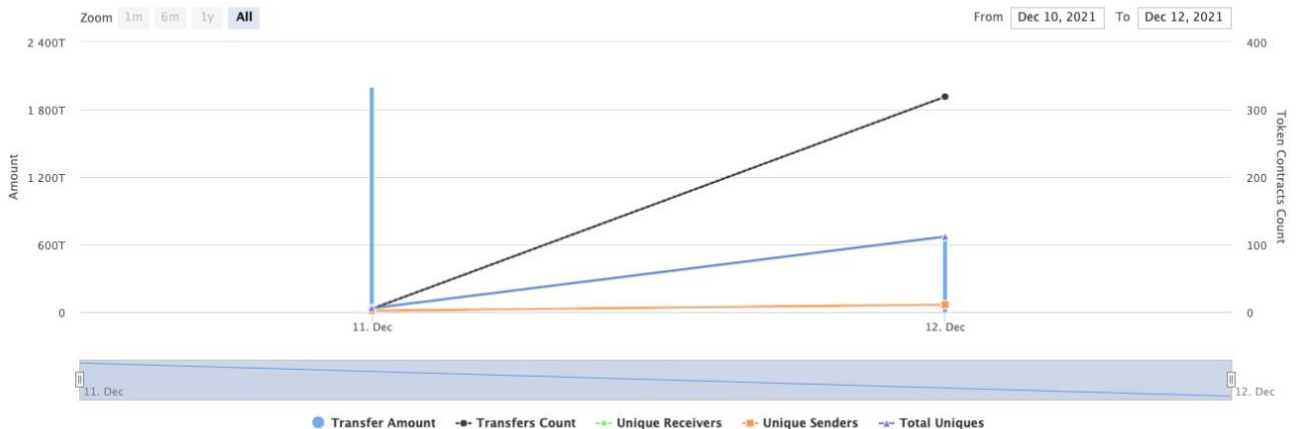
(A total of 999,636,523,418,273.00 tokens held by the top 100 accounts from the total supply of 1,000,000,000,000.00 token)

AvaxBank Contract Interaction Details


Time Series: Token Contract Overview

Sat 11, Dec 2021 - Sun 12, Dec 2021

Token Contract 0x4e57809c76e074918e188022a7DAeF7251eAd9aF (AvaxBank)
Source: BscScan.com



AvaxBank Top 10 Token Holders

Rank	Address	Quantity (Token)	Percentage
1	Null Address: 0x000...dEaD	503,800,000,000,000	50.3800%
2	 PancakeSwap V2: AVB 2	138,601,076,211,614.598846491	13.8601%
3	0x90ee50f318a2e6b92db7e38d223366fb6fba1083	29,000,000,000,000	2.9000%
4	0xfa80045e2c069594527f7274a06f8605f1c2c702	19,700,999,999,999	1.9701%
5	0xeb031a8e0c96318482a83a37809075945aaf1985	8,078,335,113,343.578189441	0.8078%
6	0x0d4c39d4be6918457179ea95770e4065d5f57120	7,425,000,000,000	0.7425%
7	0x731226ea5c06877614680961e9ee882013781401	7,425,000,000,000	0.7425%
8	0xd4dded2b2ff189d19a85eb0cfe2797484ade860	7,425,000,000,000	0.7425%
9	0xe036ad2a1c68ceb2f3ac16f7a5699a903bd5ffe	7,425,000,000,000	0.7425%
10	0x0594bc7b4fc456e0dccf77023dbc76dedc18d4e6	7,425,000,000,000	0.7425%



Contract functions details

+ Context

- [Int] _msgSender
- [Int] _msgData

+ [Int] IERC20

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

+ [Int] IERC20Metadata (IERC20)

- [Ext] name
- [Ext] symbol
- [Ext] decimals

+ [Lib] SafeMath

- [Int] add
- [Int] sub
- [Int] sub
- [Int] mul
- [Int] div
- [Int] div
- [Int] mod
- [Int] mod

+ [Lib] SafeMathInt

- [Int] mul
- [Int] div
- [Int] sub
- [Int] add
- [Int] abs
- [Int] toUint256Safe

+ [Lib] SafeMathUint

- [Int] toInt256Safe

+ Ownable (Context)

- [Pub] <Constructor> #
- [Pub] owner
- [Pub] renounceOwnership #
 - modifiers: onlyOwner
- [Pub] transferOwnership #
 - modifiers: onlyOwner

+ ERC20 (Context, IERC20, IERC20Metadata)

- [Pub] <Constructor> #
- [Pub] name
- [Pub] symbol
- [Pub] decimals
- [Pub] totalSupply

- [Pub] balanceOf
- [Pub] transfer #
- [Pub] allowance
- [Pub] approve #
- [Pub] transferFrom #
- [Pub] increaseAllowance #
- [Pub] decreaseAllowance #
- [Int] _transfer #
- [Int] _mint #
- [Int] _burn #
- [Int] _approve #
- [Int] _beforeTokenTransfer #

+ [Lib] IterableMapping

- [Pub] get
- [Pub] getIndexOfKey
- [Pub] getKeyAtIndex
- [Pub] size
- [Pub] set #
- [Pub] remove #

+ [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
- [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 #

+ [Int] DividendPayingTokenInterface

- [Ext] dividendOf
- [Ext] withdrawDividend #

+ [Int] DividendPayingTokenOptionalInterface

- [Ext] withdrawableDividendOf
- [Ext] withdrawnDividendOf
- [Ext] accumulativeDividendOf

+ DividendPayingToken (ERC20, Ownable, DividendPayingTokenInterface, DividendPayingTokenOptionalInterface)

- [Pub] <Constructor> #
 - modifiers: ERC20
- [Pub] distributeReflectionDividends #
 - modifiers: onlyOwner
- [Pub] withdrawDividend #
- [Int] _withdrawDividendOfUser #
- [Pub] dividendOf
- [Pub] withdrawableDividendOf
- [Pub] withdrawnDividendOf
- [Pub] accumulativeDividendOf
- [Int] _transfer #

- [Int] _mint #
- [Int] _burn #
- [Int] _setBalance #
- + AvaxBank (ERC20, Ownable)
 - [Pub] <Constructor> #
 - modifiers: ERC20
 - [Ext] <Fallback> (\$)
 - [Pub] updateDividendTracker #
 - modifiers: onlyOwner
 - [Pub] updateUniswapV2Router #
 - modifiers: onlyOwner
 - [Pub] excludeFromFees #
 - modifiers: onlyOwner
 - [Pub] excludeMultipleAccountsFromFees #
 - modifiers: onlyOwner
 - [Ext] setBuyBackWallet #
 - modifiers: onlyOwner
 - [Ext] setReflectionRewardsFee #
 - modifiers: onlyOwner
 - [Ext] setLiquiditFee #
 - modifiers: onlyOwner
 - [Ext] setBuyBackFee #
 - modifiers: onlyOwner
 - [Pub] setAutomatedMarketMakerPair #
 - modifiers: onlyOwner
 - [Prv] _setAutomatedMarketMakerPair #
 - [Pub] updateGasForProcessing #
 - modifiers: onlyOwner
 - [Ext] updateClaimWait #
 - modifiers: onlyOwner
 - [Ext] getClaimWait
 - [Ext] getTotalDividendsDistributed
 - [Pub] isExcludedFromFees
 - [Pub] withdrawableDividendOf
 - [Pub] dividendTokenBalanceOf
 - [Ext] excludeFromDividends #
 - modifiers: onlyOwner
 - [Ext] getAccountDividendsInfo
 - [Ext] getAccountDividendsInfoAtIndex
 - [Ext] processDividendTracker #
 - [Ext] claim #
 - [Ext] getLastProcessedIndex
 - [Ext] getNumberOfDividendTokenHolders
 - [Int] _transfer #
 - [Prv] swapAndSendToFee #
 - [Prv] swapAndLiquify #
 - [Prv] swapTokensForEth #
 - [Prv] swapTokensForReflection #
 - [Prv] addLiquidity #
 - [Prv] swapAndSendDividends #
- + AvaxBankDividendTracker (Ownable, DividendPayingToken)
 - [Pub] <Constructor> #
 - modifiers: DividendPayingToken

- [Int] _transfer #
- [Pub] withdrawDividend #
- [Ext] excludeFromDividends #
 - modifiers: onlyOwner
- [Ext] updateClaimWait #
 - modifiers: onlyOwner
- [Ext] getLastProcessedIndex
- [Ext] getNumberOfTokenHolders
- [Pub] getAccount
- [Pub] getAccountAtIndex
- [Prv] canAutoClaim
- [Ext] setBalance #
 - modifiers: onlyOwner
- [Pub] process #
- [Pub] processAccount #
 - modifiers: onlyOwner

(\$) = payable function

= non-constant function

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
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. 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 tracker 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 change dividend tracker.
- Owner can change Uniswap router address.
- Owner can exclude from the fees.
- Owner can change liquidity, buyback and reflection reward fees.
- Owner can exclude and include addresses in `automatedMarketMakerPairs` array.
- Owner can exclude from dividends.
- Owner can change buyback wallet.
- Owner can change gas for processing.
- Owner can update `claimWait` value.

Conclusion

Smart contracts contain low 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 provided by the team:

<https://dxsale.app/app/v3/dxlplocksearch?id=0&add=0x4e57809c76e07491Be1B8022a7DAeF7251eAd9aF&type=lpdefi&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.