



Smart Contract Audit

FOR

Spare Inu

DATED : 3 May 23'



AUDIT SUMMARY

Project name - Spare Inu

Date: 3 May, 2023

Scope of Audit- Audit Ace was consulted to conduct the smart contract audit of the solidity source codes.

Audit Status: Passed with Critical risk

Issues Found

Status	Critical	High	Medium	Low	Suggestion
Open	2	2	2	0	0
Acknowledged	0	0	0	0	0
Resolved	0	0	0	0	0



USED TOOLS

Tools:

1- Manual Review:

A line by line code review has been performed by audit ace team.

2- BSC Test Network: All tests were conducted on the BSC Test network, and each test has a corresponding transaction attached to it. These tests can be found in the "Functional Tests" section of the report.

3- Slither :

The code has undergone static analysis using Slither.

Testnet version:

The tests were performed using the contract deployed on the BSC Testnet, which can be found at the following address:

<https://testnet.bscscan.com/token/0x7Be0e001a20b5D863B95e14F6CBBFdB240FCB06c>



Token Information

Token Name: Spare Inu

Token Symbol: Spare Inu

Decimals: 18

Token Supply: 1,000,000,000

Token Address:

0x1eb0Df45ea658c2d532D6F41eCEE42a45E1CeF2a

Checksum:

36552580df187046a7c9f54d1f604aee2936f4e8

Owner:

0x86339114E164aC1fCf114a4B9A2D17Aea4f14076

(at time of writing the audit)

Deployer:

0x86339114E164aC1fCf114a4B9A2D17Aea4f14076



TOKEN OVERVIEW

Fees:

Buy Fees: up to 100%

Sell Fees: up to 100%

Transfer Fees: up to 100%

Fees Privilege: Owner

Ownership: Owned

Minting: No mint function

Max Tx Amount/ Max Wallet Amount: Yes

Blacklist: No

Other Privileges: updating fee - updating max sell





AUDIT METHODOLOGY

The auditing process will follow a routine as special considerations by Auditace:

- Review of the specifications, sources, and instructions provided to Auditace to make sure the contract logic meets the intentions of the client without exposing the user's funds to risk.
- Manual review of the entire codebase by our experts, which is the process of reading source code line-by-line in an attempt to identify potential vulnerabilities.
- Specification comparison is the process of checking whether the code does what the specifications, sources, and instructions provided to Auditace describe.
- Test coverage analysis determines whether the test cases are covering the code and how much code is exercised when we run the test cases.
- Symbolic execution is analysing a program to determine what inputs cause each part of a program to execute.
- Reviewing the codebase to improve maintainability, security, and control based on the established industry and academic practices.

VULNERABILITY CHECKLIST



Return values of low-level calls



Gasless Send



Private modifier



Using block.timestamp



Multiple Sends



Re-entrancy



Using Suicide



Tautology or contradiction



Gas Limit and Loops



Timestamp Dependence



Address hardcoded



Revert/require functions



Exception Disorder



Use of tx.origin



Using inline assembly



Integer overflow/underflow



Divide before multiply



Dangerous strict equalities



Missing Zero Address Validation



Using SHA3



Compiler version not fixed



Using throw



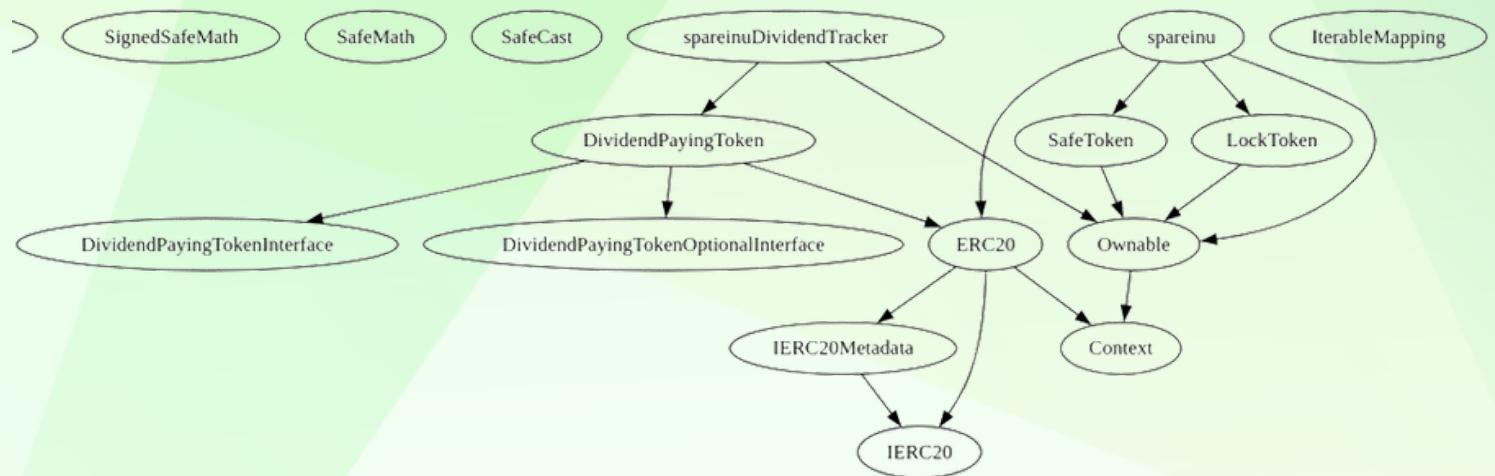
CLASSIFICATION OF RISK

Severity	Description
◆ Critical	These vulnerabilities could be exploited easily and can lead to asset loss, data loss, asset, or data manipulation. They should be fixed right away.
◆ High-Risk	A vulnerability that affects the desired outcome when using a contract, or provides the opportunity to use a contract in an unintended way.
◆ Medium-Risk	A vulnerability that could affect the desired outcome of executing the contract in a specific scenario.
◆ Low-Risk	A vulnerability that does not have a significant impact on possible scenarios for the use of the contract and is probably subjective.
◆ Gas Optimization / Suggestion	A vulnerability that has an informational character but is not affecting any of the code.

Findings

Severity	Found
◆ Critical	2
◆ High-Risk	2
◆ Medium-Risk	2
◆ Low-Risk	0
◆ Gas Optimization / Suggestions	0

INHERITANCE TREE





POINTS TO NOTE

- Owner is able to set buy/sell/transfer fees up to 100%
- Owner is able to set max sell amounts to 0, disabling sells
- Owner is not able to set a max buy/transfer/wallet amount
- Owner is able to blacklist an arbitrary wallet
- Owner is able to disable trades
- Owner is not able to mint new tokens



CONTRACT ASSESSMENT

Contract	Type	Bases			
	L	**Function Name**	**Visibility**	**Mutability**	**Modifiers**
IUniswapV2Router01	Interface				
factory	External !	NO !			
WETH	External !	NO !			
addLiquidity	External !	● NO !			
addLiquidityETH	External !	S NO !			
removeLiquidity	External !	● NO !			
removeLiquidityETH	External !	● NO !			
removeLiquidityWithPermit	External !	● NO !			
removeLiquidityETHWithPermit	External !	● NO !			
swapExactTokensForTokens	External !	● NO !			
swapTokensForExactTokens	External !	● NO !			
swapExactETHForTokens	External !	S NO !			
swapTokensForExactETH	External !	● NO !			
swapExactTokensForETH	External !	● NO !			
swapETHForExactTokens	External !	S NO !			
quote	External !	NO !			
getAmountOut	External !	NO !			
getAmountIn	External !	NO !			
getAmountsOut	External !	NO !			
getAmountsIn	External !	NO !			
IUniswapV2Router02	Interface	IUniswapV2Router01			
removeLiquidityETHSupportingFeeOnTransferTokens	External !	● NO !			
removeLiquidityETHWithPermitSupportingFeeOnTransferTokens	External !	● NO !			
swapExactTokensForTokensSupportingFeeOnTransferTokens	External !	● NO !			
swapExactETHForTokensSupportingFeeOnTransferTokens	External !	S NO !			
swapExactTokensForETHSupportingFeeOnTransferTokens	External !	● NO !			
IUniswapV2Factory	Interface				
feeTo	External !	NO !			
feeToSetter	External !	NO !			
getPair	External !	NO !			
allPairs	External !	NO !			
allPairsLength	External !	NO !			
createPair	External !	● NO !			
setFeeTo	External !	● NO !			
setFeeToSetter	External !	● NO !			
SignedSafeMath	Library				



CONTRACT ASSESSMENT

```
| L | mul | Internal | 🔒 | |||  
| L | div | Internal | 🔒 | |||  
| L | sub | Internal | 🔒 | |||  
| L | add | Internal | 🔒 | |||  
|||||  
| **SafeMath** | Library | ||||  
| L | tryAdd | Internal | 🔒 | |||  
| L | trySub | Internal | 🔒 | |||  
| L | tryMul | Internal | 🔒 | |||  
| L | tryDiv | Internal | 🔒 | |||  
| L | tryMod | Internal | 🔒 | |||  
| L | add | Internal | 🔒 | |||  
| L | sub | Internal | 🔒 | |||  
| L | mul | Internal | 🔒 | |||  
| L | div | Internal | 🔒 | |||  
| L | mod | Internal | 🔒 | |||  
| L | sub | Internal | 🔒 | |||  
| L | div | Internal | 🔒 | |||  
| L | mod | Internal | 🔒 | |||  
|||||  
| **SafeCast** | Library | ||||  
| L | toUint224 | Internal | 🔒 | |||  
| L | toUint128 | Internal | 🔒 | |||  
| L | toUint96 | Internal | 🔒 | |||  
| L | toUint64 | Internal | 🔒 | |||  
| L | toUint32 | Internal | 🔒 | |||  
| L | toUint16 | Internal | 🔒 | |||  
| L | toUint8 | Internal | 🔒 | |||  
| L | toUint256 | Internal | 🔒 | |||  
| L |.toInt128 | Internal | 🔒 | |||  
| L |ToInt64 | Internal | 🔒 | |||  
| L |ToInt32 | Internal | 🔒 | |||  
| L |ToInt16 | Internal | 🔒 | |||  
| L |ToInt8 | Internal | 🔒 | |||  
| L |ToInt256 | Internal | 🔒 | |||  
|||||  
| **Context** | Implementation | ||||  
| L | _msgSender | Internal | 🔒 | |||  
| L | _msgData | Internal | 🔒 | |||  
|||||  
| **IERC20** | Interface | ||||  
| L | totalSupply | External | ! | |NO| ! |  
| L | balanceOf | External | ! | |NO| ! |
```



CONTRACT ASSESSMENT

L transfer External !	● NO !
L allowance External !	NO !
L approve External !	● NO !
L transferFrom External !	● NO !
IERC20Metadata Interface IERC20	
L name External !	NO !
L symbol External !	NO !
L decimals External !	NO !
ERC20 Implementation Context, IERC20, IERC20Metadata	
L <Constructor> Public !	● NO !
L name Public !	NO !
L symbol Public !	NO !
L decimals Public !	NO !
L totalSupply Public !	NO !
L balanceOf Public !	NO !
L transfer Public !	● NO !
L allowance Public !	NO !
L approve Public !	● NO !
L transferFrom Public !	● NO !
L increaseAllowance Public !	● NO !
L decreaseAllowance Public !	● NO !
L _transfer Internal 🔒	●
L _mint Internal 🔒	●
L _burn Internal 🔒	●
L _approve Internal 🔒	●
L _beforeTokenTransfer Internal 🔒	●
L _afterTokenTransfer Internal 🔒	●
Ownable Implementation Context	
L <Constructor> Public !	● NO !
L owner Public !	NO !
L renounceOwnership Public !	● onlyOwner
L transferOwnership Public !	● onlyOwner
L _setOwner Private 🔒	●
IterableMapping Library	
L get Public !	NO !
L getIndexOfKey Public !	NO !
L getKeyAtIndex Public !	NO !
L size Public !	NO !
L set Public !	● NO !

CONTRACT ASSESSMENT

```
| L | remove | Public ! | ● | NO ! | |
|||||  
| **DividendPayingTokenOptionalInterface** | Interface | |||  
| L | withdrawableDividendOf | External ! | | NO ! |  
| L | withdrawnDividendOf | External ! | | NO ! |  
| L | accumulativeDividendOf | External ! | | NO ! |  
|||||  
| **DividendPayingTokenInterface** | Interface | |||  
| L | dividendOf | External ! | | NO ! |  
| L | distributeDividends | External ! | | S | NO ! |  
| L | withdrawDividend | External ! | ● | NO ! |  
|||||  
| **DividendPayingToken** | Implementation | ERC20, DividendPayingTokenInterface,  
DividendPayingTokenOptionalInterface |||  
| L | <Constructor> | Public ! | ● | ERC20 | | |
| L | <Receive Ether> | External ! | | S | NO ! |  
| L | distributeDividends | Public ! | | S | NO ! |  
| L | withdrawDividend | Public ! | ● | NO ! |  
| L | _withdrawDividendOfUser | Internal 🔒 | | ● | ||  
| L | dividendOf | Public ! | | NO ! |  
| L | withdrawableDividendOf | Public ! | | NO ! |  
| L | withdrawnDividendOf | Public ! | | NO ! |  
| L | accumulativeDividendOf | Public ! | | NO ! |  
| L | _transfer | Internal 🔒 | | ● | ||  
| L | mint | Internal 🔒 | | ● | ||  
| L | _burn | Internal 🔒 | | ● | ||  
| L | _setBalance | Internal 🔒 | | ● | ||  
|||||  
| **spareinuDividendTracker** | Implementation | DividendPayingToken, Ownable |||  
| L | <Constructor> | Public ! | ● | DividendPayingToken |  
| L | _transfer | Internal 🔒 | | ||  
| L | withdrawDividend | Public ! | | NO ! |  
| L | excludeFromDividends | External ! | | ● | onlyOwner |  
| L | updateClaimWait | External ! | | ● | onlyOwner |  
| L | getLastProcessedIndex | External ! | | NO ! |  
| L | getNumberOfTokenHolders | External ! | | NO ! |  
| L | getAccount | Public ! | | NO ! |  
| L | getAccountAtIndex | Public ! | | NO ! |  
| L | canAutoClaim | Private 🔒 | | ||  
| L | setBalance | External ! | | ● | onlyOwner |  
| L | process | Public ! | | ● | NO ! |  
| L | processAccount | Public ! | | ● | onlyOwner |  
|||||
```



CONTRACT ASSESSMENT

```
| **SafeToken** | Implementation | Ownable ||| |
| L |<Constructor> | Public ! | ● | NO ! |
| L | setSafeManager | Public ! | ● | onlyOwner |
| L | withdraw | External ! | ● | NO ! |
| L | withdrawBNB | External ! | ● | NO ! |
|||||||
| **LockToken** | Implementation | Ownable |||
| L |<Constructor> | Public ! | ● | NO ! |
| L | openTrade | External ! | ● | onlyOwner |
| L | includeToWhiteList | External ! | ● | onlyOwner |
|||||||
| **spareinu** | Implementation | ERC20, Ownable, SafeToken, LockToken |||
| L | setFee | Public ! | ● | onlyOwner |
| L | setExtraFeeOnSell | Public ! | ● | onlyOwner |
| L | setMaxSelltx | Public ! | ● | onlyOwner |
| L | blacklistAddress | External ! | ● | onlyOwner |
| L | setMarketingWallet | Public ! | ● | onlyOwner |
| L |<Constructor> | Public ! | ● | ERC20 |
| L |<Receive Ether> | External ! | ● | NO ! |
| L | updateUniswapV2Router | Public ! | ● | onlyOwner |
| L | excludeFromFees | Public ! | ● | onlyOwner |
| L | setExcludeFromMaxTx | Public ! | ● | onlyOwner |
| L | setExcludeFromAll | Public ! | ● | onlyOwner |
| L | excludeMultipleAccountsFromFees | Public ! | ● | onlyOwner |
| L | setAutomatedMarketMakerPair | Public ! | ● | onlyOwner |
| L | setSWapTokensAtAmount | Public ! | ● | onlyOwner |
| L | _setAutomatedMarketMakerPair | Private 🔒 | ● |||
| L | updateGasForProcessing | Public ! | ● | onlyOwner |
| L | updateClaimWait | External ! | ● | onlyOwner |
| L | getClaimWait | External ! | | NO ! |
| L | getTotalDividendsDistributed | External ! | | NO ! |
| L | isExcludedFromFees | Public ! | | NO ! |
| L | isExcludedFromMaxTx | Public ! | | NO ! |
| L | withdrawableDividendOf | Public ! | | NO ! |
| L | dividendTokenBalanceOf | Public ! | | NO ! |
| L | getAccountDividendsInfo | External ! | | NO ! |
| L | getAccountDividendsInfoAtIndex | External ! | | NO ! |
| L | processDividendTracker | External ! | ● | NO ! |
| L | claim | External ! | ● | NO ! |
| L | getLastProcessedIndex | External ! | | NO ! |
| L | getNumberOfDividendTokenHolders | External ! | | NO ! |
| L | excludeFromDividends | External ! | ● | onlyOwner |
```



CONTRACT ASSESSMENT

```
| L | setSwapAndLiquifyEnabled | Public ! | ● | onlyOwner | |
| L | _transfer | Internal 🔒 | ● | open |
| L | swapAndLiquify | Private 🔒 | ● | lockTheSwap |
| L | swapTokensForBnb | Private 🔒 | ● |||
| L | swapAndSendBNBToMarketing | Private 🔒 | ● |||
| L | addLiquidity | Private 🔒 | ● |||
|||||
| **ERC20** | Implementation | Context, IERC20, IERC20Metadata ||
| L | <Constructor> | Public ! | ● | NO !
| L | name | Public ! | | NO !
| L | symbol | Public ! | | NO !
| L | decimals | Public ! | | NO !
| L | totalSupply | Public ! | | NO !
| L | balanceOf | Public ! | | NO !
| L | transfer | Public ! | ● | NO !
| L | allowance | Public ! | | NO !
| L | approve | Public ! | ● | NO !
| L | transferFrom | Public ! | ● | NO !
| L | increaseAllowance | Public ! | | ● | NO !
| L | decreaseAllowance | Public ! | | ● | NO !
| L | _transfer | Internal 🔒 | ● |||
| L | _mint | Internal 🔒 | ● |||
| L | _burn | Internal 🔒 | ● |||
| L | _approve | Internal 🔒 | ● |||
| L | _spendAllowance | Internal 🔒 | | ● | |
| L | _beforeTokenTransfer | Internal 🔒 | | ● | |
| L | _afterTokenTransfer | Internal 🔒 | | ● | |
|||||
| **IERC20** | Interface | ||
| L | totalSupply | External ! | | NO !
| L | balanceOf | External ! | | NO !
| L | transfer | External ! | | ● | NO !
| L | allowance | External ! | | NO !
| L | approve | External ! | | ● | NO !
| L | transferFrom | External ! | | ● | NO !
|||||
| **IERC20Metadata** | Interface | IERC20 ||
| L | name | External ! | | NO !
| L | symbol | External ! | | NO !
| L | decimals | External ! | | NO !
||||| |
| **Context** | Implementation | ||
| L | _msgSender | Internal 🔒 | | |
```

CONTRACT ASSESSMENT

|  | _msgData | Internal  | | |

Legend

Symbol	Meaning
	Function can modify state
	Function is payable



STATIC ANALYSIS

```
External calls:
- swapAndLiquify(contractTokenBalance) (contracts/GPT.sol#2082)
  - marketingWallet.transfer(marketingAmount) (contracts/GPT.sol#2140)
External calls sending eth:
- swapAndLiquify(contractTokenBalance) (contracts/GPT.sol#2082)
  - uniswapV2Router.addLiquidityETH(value: ethAmount)(address(this),tokenAmount,0,0,owner(),block.timestamp) (contracts/GPT.sol#2183-2190)
  - marketingWallet.transfer(marketingAmount) (contracts/GPT.sol#2140)
  - (success) = address(dividendTracker).call(value: dividends)() (contracts/GPT.sol#2143)
State variables written after the call(s):
- super._transfer(from,address(this),fees) (contracts/GPT.sol#2095)
  - balances[sender] = senderBalance - amount (contracts/GPT.sol#1023)
  - balances[recipient] += amount (contracts/GPT.sol#1025)
- super._transfer(from,to,amount) (contracts/GPT.sol#2098)
  - balances[sender] = senderBalance - amount (contracts/GPT.sol#1023)
  - balances[recipient] += amount (contracts/GPT.sol#1025)
Event emitted after the call(s):
- ProcessedDividendTracker(iterations,claims,lastProcessedIndex,true,gas,tx.origin) (contracts/GPT.sol#2107)
- Transfer(sender,recipient,amount) (contracts/GPT.sol#1027)
  - super._transfer(from,to,amount) (contracts/GPT.sol#2098)
- Transfer(sender,recipient,amount) (contracts/GPT.sol#1027)
  - super._transfer(from,address(this),fees) (contracts/GPT.sol#2095)
Reentrancy in spareinu.swapAndLiquify(uint256) (contracts/GPT.sol#2115-2150):
External calls:
- marketingWallet.transfer(marketingAmount) (contracts/GPT.sol#2140)
External calls sending eth:
- addLiquidity(tokensToAddLiquidityWith,bnbToAddLiquidityWith) (contracts/GPT.sol#2137)
  - uniswapV2Router.addLiquidityETH(value: ethAmount)(address(this),tokenAmount,0,0,owner(),block.timestamp) (contracts/GPT.sol#2183-2190)
- marketingWallet.transfer(marketingAmount) (contracts/GPT.sol#2140)
  - (success) = address(dividendTracker).call(value: dividends)() (contracts/GPT.sol#2143)
Event emitted after the call(s):
- SendDividends(toSwap - tokensToAddLiquidityWith,dividends) (contracts/GPT.sol#2146)
- SwapAndLiquify(tokensToAddLiquidityWith,deltaBalance) (contracts/GPT.sol#2149)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-vulnerabilities-4

Variable IUniswapV2Router01.addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256).amountADesired (contracts/GPT.sol#12) is too similar to IUniswapV2Router01.addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256).amountBDesired (contracts/GPT.sol#13)
Variable DividendPayingToken._withdrawnDividendOfUser(address)._withdrawableDividend (contracts/GPT.sol#1413) is too similar to spareinu.DividendTracker.getAccount(address).withdrawableDividends (contracts/GPT.sol#1575)
Variable spareinu.BNBRewardsFee (contracts/GPT.sol#1780) is too similar to spareinu.setFee(uint256,uint256,uint256),_bnbRewardFee (contracts/GPT.sol#1837)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-too-similar

spareinu.constructor() (contracts/GPT.sol#1861-1908) uses literals with too many digits:
- _mint(owner(),1000000000 * (10 ** 18)) (contracts/GPT.sol#1907)
spareinu.updateGasForProcessing(uint256) (contracts/GPT.sol#1966-1971) uses literals with too many digits:
- require(bool,string)(newValue >= 200000 && newValue <= 500000,spareinu: gasForProcessing must be between 200,000 and 500,000) (contracts/GPT.sol#1967)
spareinu.slitherConstructorVariables() (contracts/GPT.sol#1765-2194) uses literals with too many digits:
- maxSellTransactionAmount = 100000000 * (10 ** 18) (contracts/GPT.sol#1777)
spareinu.slitherConstructorVariables() (contracts/GPT.sol#1765-2194) uses literals with too many digits:
- gasForProcessing = 300000 (contracts/GPT.sol#1788)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#too-many-digits

spareinu.dividendTracker (contracts/GPT.sol#1775) should be immutable
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-immutable
```

**Result => A static analysis of contract's source code has been performed using slither,
No major issues were found in the output**



FUNCTIONAL TESTING

Router (PCS V2):

0xD99D1c33F9fC3444f8101754aBC46c52416550D1

All the functionalities have been tested, no issues were found

1- Adding liquidity (**passed**):

<https://testnet.bscscan.com/tx/0xdae9ddf32e607b1d9cf558ece9641127aeaac30194ca0e002385b4f497d2b256>

2- Buying when excluded (0% tax) (**passed**):

<https://testnet.bscscan.com/tx/0x2137eb8d47c016980ee3f3c5a3602ba06bda86ea45f28c2d0d28ac6ca5bffd9b>

3- Selling when excluded (0% tax) (**passed**):

<https://testnet.bscscan.com/tx/0x5f9f9b77ac84cc2fda60c5edc64b5e55ccd379f9cee3a782bae90dbd56e7265e>

4- Transferring when excluded from fees (0% tax) (**passed**):

<https://testnet.bscscan.com/tx/0x59530856e088f7d51ddb031b33dc285cf39f5173104fa2f577871cb02cad2234>

5- Buying when not excluded from fees (up to 100% tax) (**passed**):

<https://testnet.bscscan.com/tx/0x9934e80450224b711e064146b4637ea27ab76dd552127fcce2ab02643672f099>

6- Selling when not excluded from fees (up to 100% tax) (**passed**):

<https://testnet.bscscan.com/tx/0x6db0238506fae4c70ecbe1e7931743143271c933aef738c72c7a7ad5ca6c950f>



FUNCTIONAL TESTING

7- Transferring when not excluded from fees (up to 100% tax)(passed):

<https://testnet.bscscan.com/tx/0x303077fae913c9f8025f5d2428a7b99c1a956cb2a143986bb1512623ee547b31>

8- Internal swap (passed):

Auto-liquidity & Reflections & fee wallets receiving BNB

<https://testnet.bscscan.com/tx/0xe8e15600504999e4e53031cbf77c877a17f6fcf534d97ab4db37ff4efa99f1b9>



MANUAL TESTING

Centralization – Disabling sells

Severity: Critical

Function: setMaxSelltx

Status: Not Resolved

Overview:

The contract owner can set the maximum sell amount to 0, effectively disabling all sales for everyone except whitelisted (allowed) wallets.

```
function setMaxSelltx(uint256 _maxSellTxAmount) public onlyOwner {  
    maxSellTransactionAmount = _maxSellTxAmount;  
}
```

Recommendation:

To address this issue, consider the following options:

- Ensure that the maximum sell amount always remains above a reasonable minimum amount. According to PinkSale Safu criteria, this minimum safeguard is 0.1% of the total supply.
- Renounce ownership of the contract.



MANUAL TESTING

Centralization – Excessive buy/sell/trasfer fees

Severity: Critical

Function: setFee - setExtraFeeOnSell

Lines: 1837-1845

Status: Not Resolved

Overview:

The contract owner can set buy, sell, and transfer fees up to 100%, effectively rendering trading unreasonable.

```
function setFee(uint256 _bnbRewardFee, uint256 _liquidityFee, uint256      _marketingFee) public onlyOwner {  
    BNBRewardsFee = _bnbRewardFee;  
    liquidityFee = _liquidityFee;  
    marketingFee = _marketingFee;  
  
    totalFees = BNBRewardsFee.add(liquidityFee).add(marketingFee); // total          fee transfer and buy  
}  
  
function setExtraFeeOnSell(uint256 _extraFeeOnSell) public onlyOwner {  
    extraFeeOnSell = _extraFeeOnSell; // extra fee on sell  
}
```

Recommendation:

To mitigate this issue, consider the following options:

- Ensure that the total buy/sell/transfer fee cannot exceed a reasonable limit. According to PinkSale Safu criteria, these limits are 25% for (buy + sell in total) and a maximum of 25% for transfers.
- Renounce ownership of the contract.



MANUAL TESTING

Centralization – Owner must enable trades

Severity: High

Function: openTrade

Status: Not Resolved

Overview:

The contract owner is required to enable trades for investors. If trading remains disabled, token holders will be unable to buy, sell, or transfer tokens.

```
function openTrade() external onlyOwner {  
    isOpen = true;  
}
```

Recommendation:

To address this issue, consider the following options:

- Ensure that trade activation is guaranteed by temporarily transferring contract ownership to a trusted third party, such as a certified PinkSale Safu developer.
- Remove this function and allow investors to trade their tokens immediately after adding liquidity.



MANUAL TESTING

Logical – changing router to an invalid contract can disable sell/transfer

Severity: High

Function: updateUniswapV2Router

Status: Not Resolved

Overview:

Setting the router address (PCS v2 by default) to an invalid address (e.g., a dead wallet) can disable sell/transfer operations, as any attempt to swap the contract's internal balance to BNB will fail.

```
function swapTokensForBnb(uint256 tokenAmount, address _to) private {
    // generate the uniswap pair path of token -> weth
    address[] memory path = new address[](2);
    path[0] = address(this);
    path[1] = uniswapV2Router.WETH();

    if(allowance(address(this), address(uniswapV2Router)) < tokenAmount) {
        _approve(address(this), address(uniswapV2Router), ~uint256(0));
    }

    // make the swap
    uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(
        tokenAmount,
        0, // accept any amount of ETH
        path,
        _to,
        block.timestamp
    );
}

function updateUniswapV2Router(address newAddress) public onlyOwner {
    require(newAddress != address(uniswapV2Router), "spareinu: The router already has that address");
    emit UpdateUniswapV2Router(newAddress, address(uniswapV2Router));
    uniswapV2Router = IUniswapV2Router02(newAddress);
}
```

Recommendation:

To address this issue, consider the following options:

- Ensure that the new router is a valid contract that supports the PCS v2 interface.
- Make the router address immutable and unable to be changed later.
- Renounce ownership of the contract.



MANUAL TESTING

Centralization – LP tokens sent to an EOA

Severity: Medium

Function: addLiquidity

Status: Not Resolved

Overview:

The contract owner's wallet (an EOA or Externally Owned Account) receives auto-generated liquidity pool share tokens. Over time, these tokens will accumulate and could potentially be used to remove a significant portion of liquidity, negatively impacting the token's liquidity and price.

```
function addLiquidity(uint256 tokenAmount, uint256 ethAmount) private {  
    // add the liquidity  
    uniswapV2Router.addLiquidityETH{value: ethAmount}(  
        address(this),  
        tokenAmount,  
        0, // slippage is unavoidable  
        0, // slippage is unavoidable  
        owner(),  
        block.timestamp  
    );  
}
```

Recommendation:

To mitigate this issue, consider the following options:

- Burn new LP tokens.
- Lock new LP tokens.
- Renounce ownership of the contract, which would result in LP tokens being burned automatically.



MANUAL TESTING

Logical – 0 Swap threshold can disable some sells and transfers or increase slippage if is set to a high value

Severity: Medium

Function: setSWapTokensAtAmount - swapAndLiquify

Lines: 2188

Status: Not Resolved

Overview:

Setting the **swapTokensAtAmount** to 0 can disable some sell/transfer operations if the contract's token balance is 0. This is because swapAndLiquify does not check whether the contract token balance is greater than 0 and attempts to swap 0 tokens for BNB. Additionally, setting the swap threshold to a very high value can increase slippage on sell/transfer operations, potentially exposing traders' tokens to front-runner bots.

```
function setSWapTokensAtAmount(uint256 _newAmount) public onlyOwner {  
    swapTokensAtAmount = _newAmount;  
}
```

Recommendation:

there are several ways to mitigate this issue

- Ensure that the new swap threshold cannot be set to an unreasonably low or high value.
- Renounce ownership of the contract, which would prevent the swap threshold from being changed arbitrarily.



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