Cyberscope

Audit Report

RelaxN

June 2022

Type	BEP20
Network	BSC TESTNET
Address	0x23d39ef9d7e3f180813cc32f48232e82acda0bbe
Audited by	© cyberscope

Table of Contents

Contract Review

Contract Name	RTE
Compiler Version	v0.6.12+commit.27d51765
Optimization	200 runs
Licence	None
Explorer	https://testnet.bscscan.com/token/0x23d39ef9d7e3f180813cc32f48232e82acda0bbe
Symbol	RTE
Decimals	9
Total Supply	1,000,000,000
Domain	relaxn.app

Source Files

Filename	**SHA256**
contract.sol	911520650506408dbc4fb6d03513b8ab8d1999ee379041ed4c4732fd88c9122b

Audit Updates

Initial Audit	19th June 2022
Corrected	

Contract Analysis

Critical Medium Minor Pass

Severity	Code	Description
●	ST	Contract Owner is not able to stop or pause transactions
●	OCTD	Contract Owner is not able to transfer tokens from specific address
●	OTUT	Owner Transfer User's Tokens
●	ELFM	Contract Owner is not able to increase fees more than a reasonable percent (25%)
●	ULTW	Contract Owner is not able to increase the amount of liquidity taken by dev wallet more than a reasonable percent
●	MT	Contract Owner is not able to mint new tokens
●	BT	Contract Owner is not able to burn tokens from specific wallet
●	BC	Contract Owner is not able to blacklist wallets from selling

ELFM - Exceed Limit Fees Manipulation

Criticality	critical
Location	contract.sol#L792

Description

The contract owner has the authority to increase over the allowed limit of 25%. The owner may take advantage of it by calling the `setTaxFeePercent` function with a high percentage value.

```
 function setTaxFeePercent(uint256 taxFee) external onlyOwner() {
    _taxFee = taxFee;
}
```

Recommendation

The contract could embody a check for the maximum acceptable value.

The team should carefully manage the private keys of the owner's account. We strongly recommend a powerful security mechanism that will prevent a single user from accessing the contract admin functions. That risk can be prevented by temporarily locking the contract or renouncing ownership.

MT - Mint Tokens

Criticality	critical
Location	contract.sol#L857

Description

The contract owner has the authority to mint tokens. The owner may take advantage of it by setting the `_taxFee` to a very high value and then making a transfer. As a result the transfer transaction will overflow taking into account that the the sAmount variable is the **ONLY** variable in the source code not implementing SafeMath library.

```
 function _transferWithFee(address sender, address recipient, uint256 tAmount)
private {
        uint256 feeAmount = tAmount.mul(_taxFee).div(100);
        uint256 sAmount = tAmount - feeAmount;
```

Recommendation

The sAmount variable should be calculated using safeMath exactly like the rest of the calculations.

The owner should carefully manage the credentials of the owner's account. We advised considering an extra-strong security mechanism that the actions may be quarantined by many users instead of one. The owner could also renounce the contract ownership for a period of time or pass the access to the zero address.

Contract Diagnostics

Critical Medium Minor

Severity	Code	Description
	L01	Public Function could be Declared External
	L02	State Variables could be Declared Constant
	L04	Conformance to Solidity Naming Conventions
	L05	Unused State Variable
	L07	Missing Events Arithmetic
	L09	Dead Code Elimination

L01 - Public Function could be Declared External

Criticality	minor
Location	contract.sol#L416,435,444,707,711,715,719,723,727,732,736,741,747,752,757,761,767,771,775,779,784,788,796

Description

Public functions that are never called by the contract should be declared external to save gas.

```
_getCurrentSupply
includeInFee
excludeFromFee
unlockRte
getWaitForGameTokenLocked
getTimeTokenLocked
getTeamTokenLocked
unlockDev
setDevAdd
...
```

Recommendation

Use the external attribute for functions never called from the contract.

L02 - State Variables could be Declared Constant

Criticality	minor
Location	contract.sol#L400,399,678,676,677,674

Description

Constant state variables should be declared constant to save gas.

```
_totalSupply
_symbol
_name
_decimals
_previousOwner
_lockTime
```

Recommendation

Add the constant attribute to state variables that never change.

L04 - Conformance to Solidity Naming Conventions

Criticality	minor
Location	contract.sol#L487,488,505,527,796,679

Description

Solidity defines a naming convention that should be followed. Rule exceptions:

- Allow constant variable name/symbol/decimals to be lowercase.
- Allow _ at the beginning of the mixed_case match for private variables and unused parameters.

```
_taxFee
_getCurrentSupply
WETH
MINIMUM_LIQUIDITY
PERMIT_TYPEHASH
DOMAIN_SEPARATOR
```

Recommendation

Follow the Solidity naming convention.
https://docs.soliditylang.org/en/v0.4.25/style-guide.html#naming-conventions.

L05 - Unused State Variable

Criticality	minor
Location	contract.sol#L399,400,671,673

Description

There are segments that contain unused state variables.

```
_excluded
_isPairAdd
_lockTime
_previousOwner
```

Recommendation

Remove unused state variables.

L07 - Missing Events Arithmetic

Criticality	minor
Location	contract.sol#L792

Description

Detected missing events for critical arithmetic parameters. There are functions that have no event emitted, so it is difficult to track off-chain changes.

```
_taxFee = taxFee
```

Recommendation

Emit an event for critical parameter changes.

L09 - Dead Code Elimination

Criticality	minor
Location	contract.sol#L361,321,331,346,356,268,295

Description

Functions that are not used in the contract, and make the code's size bigger.

```
sendValue
isContract
functionCallWithValue
functionCall
_functionCallWithValue
```

Recommendation

Remove unused functions.

Contract Functions

Contract	Type	Bases		
	Function Name	Visibility	Mutability	Modifiers
IERC20	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
SafeMath	Library			
	add	Internal		
	sub	Internal		
	sub	Internal		
	mul	Internal		
	div	Internal		
	div	Internal		
	mod	Internal		
	mod	Internal		
Context	Implementation			
	_msgSender	Internal		
	_msgData	Internal		
Address	Library			
	isContract	Internal		
	sendValue	Internal	✓	
	functionCall	Internal	✓	
	functionCall	Internal	✓	
	functionCallWithValue	Internal	✓	
	functionCallWithValue	Internal	✓	

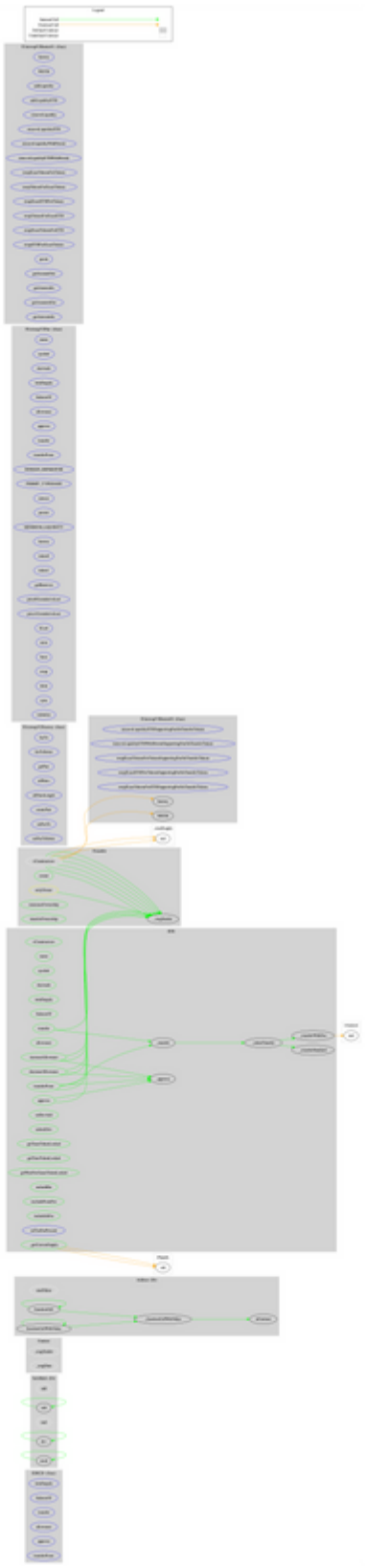
	_functionCallWithValue	Private	✓	
Ownable	Implementation	Context		
	<Constructor>	Internal	✓	
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
IUniswapV2Factory	Interface			
	feeTo	External		-
	feeToSetter	External		-
	getPair	External		-
	allPairs	External		-
	allPairsLength	External		-
	createPair	External	✓	-
	setFeeTo	External	✓	-
	setFeeToSetter	External	✓	-
IUniswapV2Pair	Interface			
	name	External		-
	symbol	External		-
	decimals	External		-
	totalSupply	External		-
	balanceOf	External		-
	allowance	External		-
	approve	External	✓	-
	transfer	External	✓	-
	transferFrom	External	✓	-
	DOMAIN_SEPARATOR	External		-
	PERMIT_TYPEHASH	External		-
	nonces	External		-
	permit	External	✓	-
	MINIMUM_LIQUIDITY	External		-
	factory	External		-

	token0	External		-
	token1	External		-
	getReserves	External		-
	price0CumulativeLast	External		-
	price1CumulativeLast	External		-
	kLast	External		-
	mint	External	✓	-
	burn	External	✓	-
	swap	External	✓	-
	skim	External	✓	-
	sync	External	✓	-
	initialize	External	✓	-
IUniswapV2Router01	Interface			
	factory	External		-
	WETH	External		-
	addLiquidity	External	✓	-
	addLiquidityETH	External	Payable	-
	removeLiquidity	External	✓	-
	removeLiquidityETH	External	✓	-
	removeLiquidityWithPermit	External	✓	-
	removeLiquidityETHWithPermit	External	✓	-
	swapExactTokensForTokens	External	✓	-
	swapTokensForExactTokens	External	✓	-
	swapExactETHForTokens	External	Payable	-
	swapTokensForExactETH	External	✓	-
	swapExactTokensForETH	External	✓	-
	swapETHForExactTokens	External	Payable	-
	quote	External		-
	getAmountOut	External		-
	getAmountIn	External		-
	getAmountsOut	External		-
	getAmountsIn	External		-

IUniswapV2Router02	Interface	IUniswapV2Router01		
	removeLiquidityETHSupportingFeeOnTransferTokens	External	✓	-
	removeLiquidityETHWithPermitSupportingFeeOnTransferTokens	External	✓	-
	swapExactTokensForTokensSupportingFeeOnTransferTokens	External	✓	-
	swapExactETHForTokensSupportingFeeOnTransferTokens	External	Payable	-
	swapExactTokensForETHSupportingFeeOnTransferTokens	External	✓	-
RTE	Implementation	Context, IERC20, Ownable		
	<Constructor>	Public	✓	-
	name	Public		-
	symbol	Public		-
	decimals	Public		-
	totalSupply	Public		-
	balanceOf	Public		-
	transfer	Public	✓	-
	allowance	Public		-
	approve	Public	✓	-
	transferFrom	Public	✓	-
	increaseAllowance	Public	✓	-
	decreaseAllowance	Public	✓	-
	setDevAdd	Public	✓	onlyOwner
	unlockDev	Public	✓	onlyOwner
	getTeamTokenLocked	Public		-
	getTimeTokenLocked	Public		-
	getWaitForGameTokenLocked	Public		-
	unlockRte	Public	✓	onlyOwner
	excludeFromFee	Public	✓	onlyOwner
	includeInFee	Public	✓	onlyOwner
	setTaxFeePercent	External	✓	onlyOwner
	_getCurrentSupply	Public		-

	_transfer	Private	✓	
	_approve	Private	✓	
	_tokenTransfer	Private	✓	
	_transferStandard	Private	✓	
	_transferWithFee	Private	✓	

Contract Flow



Domain Info

Domain Name	relaxn.app
Registry Domain ID	4911D3663-APP
Creation Date	2022-06-04T14:03:00Z
Updated Date	2022-06-09T14:03:00Z
Registry Expiry Date	2023-06-04T14:03:00Z
Registrar WHOIS Server	whois.nic.google
Registrar URL	https://www.onlinenic.com/
Registrar	OnlineNIC, Inc.
Registrar IANA ID	82

The domain has been created in 12 months before the creation of the audit.

There is no public billing information, the creator is protected by the privacy settings.

Summary

The Smart Contract analysis reported one critical severity issue. The contract owner has the authority to manipulate the fees up to 100% and also abuse this functionality to mint new tokens. A multi-wallet signing pattern will provide security against potential hacks. Temporarily locking the contract or renouncing ownership will eliminate all the contract threats.

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About Cyberscope

Coinscope audit and K.Y.C. service has been rebranded to Cyberscope.

Coinscope is the leading early coin listing, voting and auditing authority firm. The audit process is analyzing and monitoring many aspects of the project. That way, it gives the community a good sense of security using an informative report and a generic score.

Cyberscope and Coinscope are aiming to make crypto discoverable and efficient globally. They provide all the essential tools to assist users draw their own conclusions.

The Cyberscope team

https://www.cyberscope.io