



Cyberscope

# Audit Report

## **Teddinu**

July 2022

Type       BEP20

Network     BSC

Address     0x53813AC88e5aDF33b74930f37aaE375d375ab3f3

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## Contract Review

<b>Contract Name</b>	Teddi
<b>Compiler Version</b>	v0.8.4+commit.c7e474f2
<b>Optimization</b>	1 runs
<b>Licence</b>	
<b>Explorer</b>	<a href="https://bscscan.com/token/0x53813AC88e5aDF33b74930f37aaE375d375ab3f3">https://bscscan.com/token/0x53813AC88e5aDF33b74930f37aaE375d375ab3f3</a>
<b>Symbol</b>	TED
<b>Decimals</b>	5
<b>Total Supply</b>	800,000
<b>Domain</b>	

## Source Files

<b>Filename</b>	<b>SHA256</b>
<b>contract.sol</b>	ebc029f365ac9006290a6023546f51d3e262aadb5f2a0508551e2d12dc598a1a

## Audit Updates

<b>Initial Audit</b>	25th July 2022
<b>Corrected phase 1</b>	1st August 2022
<b>Corrected phase 2</b>	12th August 2022

# 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

## ST - Stop Transactions

<b>Criticality</b>	critical
<b>Location</b>	contract.sol#L757,L760,L787

### Description

The contract owner has the authority to stop transactions for all users excluding the owner. The owner may take advantage of it by setting the `antiBotAmount` to zero and by setting the `antiBotDuration` to maximum amount.

```
if ((sender == pair) || (recipient == pair)) {  
    if (!isAntiBotEnded())  
    {  
        if (!(addLPAddress[sender] || addLPAddress[recipient]))  
            { require(amount <= antiBotAmount, "antiBot"); }  
    }  
}
```

The contract owner can also turn the contract to honey by setting sell fees to maximum amount with the function `setFee`.

```
if (recipient == pair) {  
    _liquidityFee = sellLiquidityFee;  
    _treasuryFee = sellTreasuryFee;  
    _tedRiskFreeValueFee = sellTedRiskFreeValueFe;  
}
```

### Recommendation

The contract could embody a check for not allowing setting the `antiBotAmount`, `antiBotDuration` and the sell fees less than a reasonable amount. A suggested implementation could check that the maximum amount should be more than a fixed percentage of the total supply. In addition, the anti-bot duration should be restricted to a reasonable amount.

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.

## ELFM - Exceed Limit Fees Manipulation

<b>Criticality</b>	critical
<b>Location</b>	contract.sol#L787

### 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 setFee(
    uint256 firePitFee_,
    uint256 sellLiquidityFee_,
    uint256 sellTreasuryFee_,
    uint256 sellTedRiskFreeValueFee,
    uint256 buyLiquidityFee_,
    uint256 buyTreasuryFee_,
    uint256 buyTedRiskFreeValueFee_
) external onlyOwner {
    firePitFee = firePitFee_;
    sellLiquidityFee = sellLiquidityFee_;
    sellTreasuryFee = sellTreasuryFee_;
    sellTedRiskFreeValueFe = sellTedRiskFreeValueFee;
    buyLiquidityFee = buyLiquidityFee_;
    buyTreasuryFee = buyTreasuryFee_;
    buyTedRiskFreeValueFee = buyTedRiskFreeValueFee_;
}
```

### 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.



## ULTW - Unlimited Liquidity to Team Wallet

<b>Criticality</b>	minor
<b>Location</b>	contract.sol#L928

### Description

The contract owner has the authority to transfer funds without limit to the team wallet. These funds have been accumulated from fees collected from the contract. The owner may take advantage of it by calling the `withdrawAllToTreasury` method.

```
function withdrawAllToTreasury() external swapping onlyOwner {
    uint256 amountToSwap = _gonBalances[address(this)].div(
        _gonsPerFragment
    );
    require(
        amountToSwap > 0,
        "There is no TED token deposited in token contract"
    );
    address[] memory path = new address[](2);
    path[0] = address(this);
    path[1] = router.WETH();
    router.swapExactTokensForETH(
        amountToSwap,
        0,
        path,
        treasuryReceiver,
        block.timestamp
    );
}
```

### Recommendation

The contract could embody a check for the maximum amount of funds that can be swapped. Since a huge amount may volatile the token's price.

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.

# Contract Diagnostics

● Critical    ● Medium    ● Minor

Severity	Code	Description
●	MTS	Manipulate Total Supply
●	L01	Public Function could be Declared External
●	L04	Conformance to Solidity Naming Conventions
●	L05	Unused State Variable
●	L07	Missing Events Arithmetic
●	L09	Dead Code Elimination
●	L13	Divide before Multiply Operation

## MTS - Manipulate Total Supply

**Criticality**

minor

**Location**

contract.sol#L701

### Description

Owner is able to manipulate total supply. This change will have a direct impact on the token price and Market Cap.

```
for (uint256 i = 0; i < times; i++) {  
    _totalSupply = _totalSupply  
        .mul((10**RATE_DECIMALS).add(rebaseRate))  
        .div(10**RATE_DECIMALS);  
}
```

### Recommendation

The contract owner should carefully manage the adjustment of the circulating supply (increases or decreases), according to the token's price fluctuations.

## L01 - Public Function could be Declared External

**Criticality**

minor

**Location**

contract.sol#L534,530,526,495,482,628,500,623

### Description

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

```
setAddLPAddress  
transferOwnership  
setAntiBotAmount  
owner  
renounceOwnership  
name  
symbol  
decimals
```

### Recommendation

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

## L04 - Conformance to Solidity Naming Conventions

<b>Criticality</b>	minor
<b>Location</b>	contract.sol#L608,610,623,977,609,1092,583,1071,566,628,1088,607,160,1069,564,550,565,546,237,606,611,1070,1049,158,191,986,1096,579,547,545

### 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.

```
_name  
_decimals  
feeDenominator  
_address  
_flag  
MINIMUM_LIQUIDITY  
DOMAIN_SEPARATOR  
_addr  
_treasuryReceiver  
...
```

### 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#L7

### Description

There are segments that contain unused state variables.

```
MAX_INT256
```

### Recommendation

Remove unused state variables.

## L07 - Missing Events Arithmetic

**Criticality**

minor

**Location**

contract.sol#L628,787

### 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.

```
firePitFee = firePitFee_  
antiBotDuration = _duration
```

### Recommendation

Emit an event for critical parameter changes.

## L09 - Dead Code Elimination

**Criticality**

minor

**Location**

contract.sol#L35

### Description

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

```
abs
```

### Recommendation

Remove unused functions.



## L13 - Divide before Multiply Operation

**Criticality**

minor

**Location**

contract.sol#L682,1078

### Description

Performing divisions before multiplications may cause lose of prediction.

```
times = deltaTime.div(720)
liquidityBalance = _gonBalances[pair].div(_gonsPerFragment)
```

### Recommendation

The multiplications should be prior to the divisions.

# Contract Functions

Contract	Type	Bases		
	Function Name	Visibility	Mutability	Modifiers
<b>SafeMathInt</b>	Library			
	mul	Internal		
	div	Internal		
	sub	Internal		
	add	Internal		
	abs	Internal		
<b>SafeMath</b>	Library			
	add	Internal		
	sub	Internal		
	sub	Internal		
	mul	Internal		
	div	Internal		
	div	Internal		
	mod	Internal		
<b>IERC20</b>	Interface			
	totalSupply	External		-
	balanceOf	External		-
	allowance	External		-
	transfer	External	✓	-
	approve	External	✓	-
	transferFrom	External	✓	-
<b>IPancakeSwap Pair</b>	Interface			
	name	External		-
	symbol	External		-
	decimals	External		-

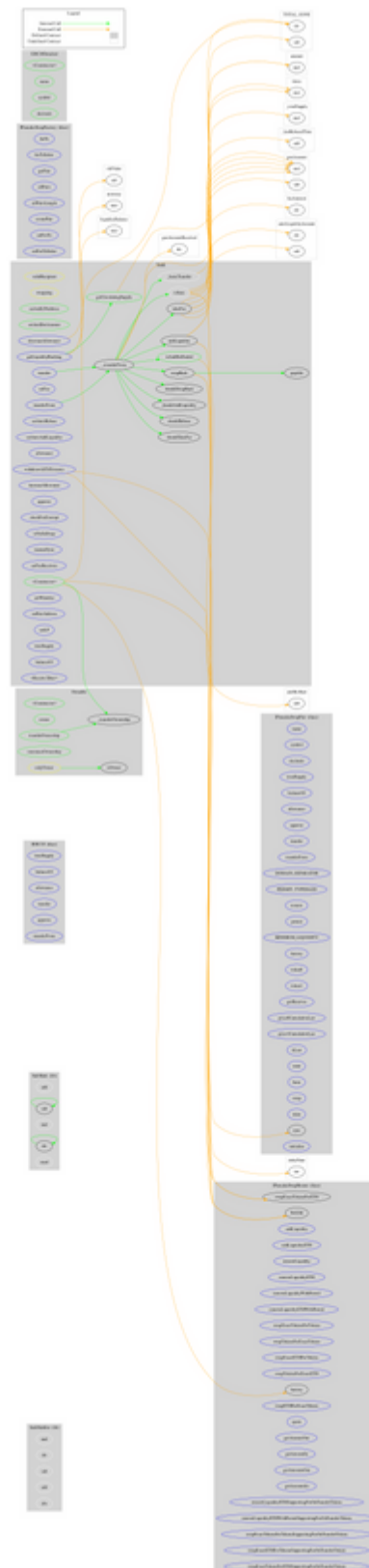
	totalSupply	External		-
	balanceOf	External		-
	allowance	External		-
	approve	External	✓	-
	transfer	External	✓	-
	transferFrom	External	✓	-
	DOMAIN_SEPARATOR	External		-
	PERMIT_TYPEHASH	External		-
	nonces	External		-
	permit	External	✓	-
	MINIMUM_LIQUIDITY	External		-
	factory	External		-
	token0	External		-
	token1	External		-
	getReserves	External		-
	price0CumulativeLast	External		-
	price1CumulativeLast	External		-
	kLast	External		-
	mint	External	✓	-
	burn	External	✓	-
	swap	External	✓	-
	skim	External	✓	-
	sync	External	✓	-
	initialize	External	✓	-
<b>IPancakeSwap Router</b>	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		-
	removeLiquidityETHSupportingFeeOnTransferTokens	External	✓	-
	removeLiquidityETHWithPermitSupportingFeeOnTransferTokens	External	✓	-
	swapExactTokensForTokensSupportingFeeOnTransferTokens	External	✓	-
	swapExactETHForTokensSupportingFeeOnTransferTokens	External	Payable	-
	swapExactTokensForETHSupportingFeeOnTransferTokens	External	✓	-
<b>IPancakeSwapFactory</b>	Interface			
	feeTo	External		-
	feeToSetter	External		-
	getPair	External		-
	allPairs	External		-
	allPairsLength	External		-
	createPair	External	✓	-
	setFeeTo	External	✓	-
	setFeeToSetter	External	✓	-
<b>Ownable</b>	Implementation			
	<Constructor>	Public	✓	-
	owner	Public		-
	isOwner	Public		-

	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
	_transferOwnership	Internal	✓	
<b>ERC20Detailed</b>	Implementation	IERC20		
	<Constructor>	Public	✓	-
	name	Public		-
	symbol	Public		-
	decimals	Public		-
<b>Teddi</b>	Implementation	ERC20Detailed, Ownable		
	setAddLPAddress	Public	✓	onlyOwner
	setAntiBotAmount	Public	✓	onlyOwner
	isAntiBotEnded	Public		-
	<Constructor>	Public	✓	ERC20Detailed Ownable
	rebase	Internal	✓	
	transfer	External	✓	validRecipient
	transferFrom	External	✓	validRecipient
	_basicTransfer	Internal	✓	
	_transferFrom	Internal	✓	
	setFee	External	✓	onlyOwner
	takeFee	Internal	✓	
	addLiquidity	Internal	✓	swapping
	swapBack	Internal	✓	swapping
	withdrawAllToTreasury	External	✓	swapping onlyOwner
	shouldTakeFee	Internal		
	shouldRebase	Internal		
	shouldAddLiquidity	Internal		
	shouldSwapBack	Internal		
	setAutoRebase	External	✓	onlyOwner
	setAutoAddLiquidity	External	✓	onlyOwner

	allowance	External		-
	decreaseAllowance	External	✓	-
	increaseAllowance	External	✓	-
	approve	External	✓	-
	checkFeeExempt	External		-
	getCirculatingSupply	Public		-
	isNotInSwap	External		-
	manualSync	External	✓	-
	setFeeReceivers	External	✓	onlyOwner
	getLiquidityBacking	External		-
	setWhitelist	External	✓	onlyOwner
	setPairAddress	External	✓	onlyOwner
	setLP	External	✓	onlyOwner
	totalSupply	External		-
	balanceOf	External		-
	<Receive Ether>	External	Payable	-

# Contract Flow



## Domain Info

<b>Domain Name</b>	teddinu.com
<b>Registry Domain ID</b>	2707321532_DOMAIN_COM-VRSN
<b>Creation Date</b>	2022-06-29T05:43:48.00Z
<b>Updated Date</b>	0001-01-01T00:00:00.00Z
<b>Registry Expiry Date</b>	2023-06-29T05:43:48.00Z
<b>Registrar WHOIS Server</b>	whois.namecheap.com
<b>Registrar URL</b>	<a href="http://www.namecheap.com">http://www.namecheap.com</a>
<b>Registrar</b>	NAMECHEAP INC
<b>Registrar IANA ID</b>	1068

The domain has been created in 11 months before the creation of the audit.

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



## Summary

There are some functions that can be abused by the owner like stopping transactions, manipulating fees and transferring funds to the team's wallet. The contract can be converted into a honeypot and prevent users from selling if the owner abuses the admin functions. A multi-wallet signing pattern will provide security against potential hacks. Temporarily locking the contract or renouncing ownership will eliminate all the contract threats.

# Disclaimer

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The Cyberscope team disclaims any liability for the resulting losses.

## 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>