



# Audit Report

# **Chameleon**

January 2022

Type	BEP20
Network	BSC
Address	0x7D07a3b0CA2BccEB75bcc447D0BD53699290E467
Audited by	© coinscope

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## Contract Review

<b>Contract Name</b>	Chameleon
<b>Compiler Version</b>	v0.8.11+commit.d7f03943
<b>Optimization</b>	200 runs
<b>Licence</b>	None
<b>Explorer</b>	<a href="https://bscscan.com/token/0x7D07a3b0CA2BccEB75bcc447D0BD53699290E467">https://bscscan.com/token/0x7D07a3b0CA2BccEB75bcc447D0BD53699290E467</a>
<b>Symbol</b>	CAMO
<b>Decimals</b>	9
<b>Total Supply</b>	1,000,000,000
<b>Source</b>	contract.sol
<b>Domain</b>	chameleontoken.app

## Audit Updates

<b>Initial Audit</b>	27th January 2022
<b>Corrected</b>	

# Contract Analysis

● Critical
 ● Medium
 ● Minor
 ● Pass

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

## ST - Stop Transactions

Criticality	critical
Location	contract.sol#L910

### Description

The contract owner has the authority to stop the sales for all users excluding the owner. The owner may take advantage of it by setting the `_maxSaleAmount` to zero.

The contract owner has also the authority to stop the buys for all users excluding the owner. The owner may take advantage of it by setting the `_maxBuyAmount` or `maxLimit` to zero

```
if(recipient==uniswapV2Pair)
{
    require(amount <= _maxSaleAmount, "Transfer amount exceeds the
maxTxAmount.");
    setSaleFee();
}
else
{
    require(amount <= _maxBuyAmount, "Transfer amount exceeds the
maxTxAmount.");
}
```

```
require(newBalance <= maxLimit, "Exceeding max tokens limit in the
wallet");
```

### Recommendation

The contract could embody a check for not allowing setting the `_maxSaleAmount`, `_maxBuyAmount` and `maxLimit` 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.

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

**Criticality**

medium

**Location**

contract.sol#L1100,1106

### Description

The contract owner has the authority to transfer funds without limit to the team wallet. The owner may take advantage by calling the *manualBuyback* and *recoverTokensFromContract* sequentially.

- `manualBuyback()` Swaps the contract's tokens for BNB. These tokens has been accumulated to the contract by the liquidity fee.
- `recoverETHfromContract()` Thtransfer the BNB to an address.

### Recommendation

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

## L01 - Public Function could be Declared External

<b>Criticality</b>	minor
<b>Location</b>	contract.sol#L1111,L1106,L1095 and 31 more

### Description

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

```
recoverTokensFromContract  
recoverETHfromContract  
setBuyBackEnabled  
...
```

### Recommendation

Use the external attribute for functions never called from the contract

## L02 - State Variables could be Declared Constant

**Criticality**

minor

**Location**

contract.sol#L494,L457,L462 and 2 more

### Description

Constant state variables should be declared constant to save gas.

```
deadWallet  
_tTotal  
_symbol  
...
```

### Recommendation

Add the constant attribute to state variables that never change.

## L04 - Conformance to Solidity Naming Conventions

**Criticality**

minor

**Location**

contract.sol#L506,L505,L493 and 24 more

### 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.

```
_maxBuyAmount  
_maxSaleAmount  
BuyBackWallet  
...
```

### Recommendation

Follow the Solidity naming convention.

<https://docs.soliditylang.org/en/v0.4.25/style-guide.html#naming-conventions>

## L09 - Dead Code Elimination

**Criticality**

minor

**Location**

contract.sol#L63,L59,L74 and 8 more

### Description

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

```
mod
_msgData
_beforeTokenTransfer
...
```

### Recommendation

Remove unused functions.

## L07 - Missing Events Arithmetic

**Criticality**

minor

**Location**

contract.sol#L1091,L1041,L1026 and 4 more

### 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.

```
buyBackUpperLimit = buyBackLimit * 10 ** 18
maxLimit = amount
_maxBuyAmount = amount
...
```

### Recommendation

Emit an event for critical parameter changes.

# Contract Functions

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

	_functionCallWithValue	Private	✓	
<b>Ownable</b>	Implementation	Context		
	<Constructor>	Public	✓	-
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
	geUnlockTime	Public		-
	lock	Public	✓	onlyOwner
	unlock	Public	✓	-
<b>IUniswapV2Factory</b>	Interface			
	feeTo	External		-
	feeToSetter	External		-
	getPair	External		-
	allPairs	External		-
	allPairsLength	External		-
	createPair	External	✓	-
	setFeeTo	External	✓	-
	setFeeToSetter	External	✓	-
<b>IUniswapV2Pair</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		-



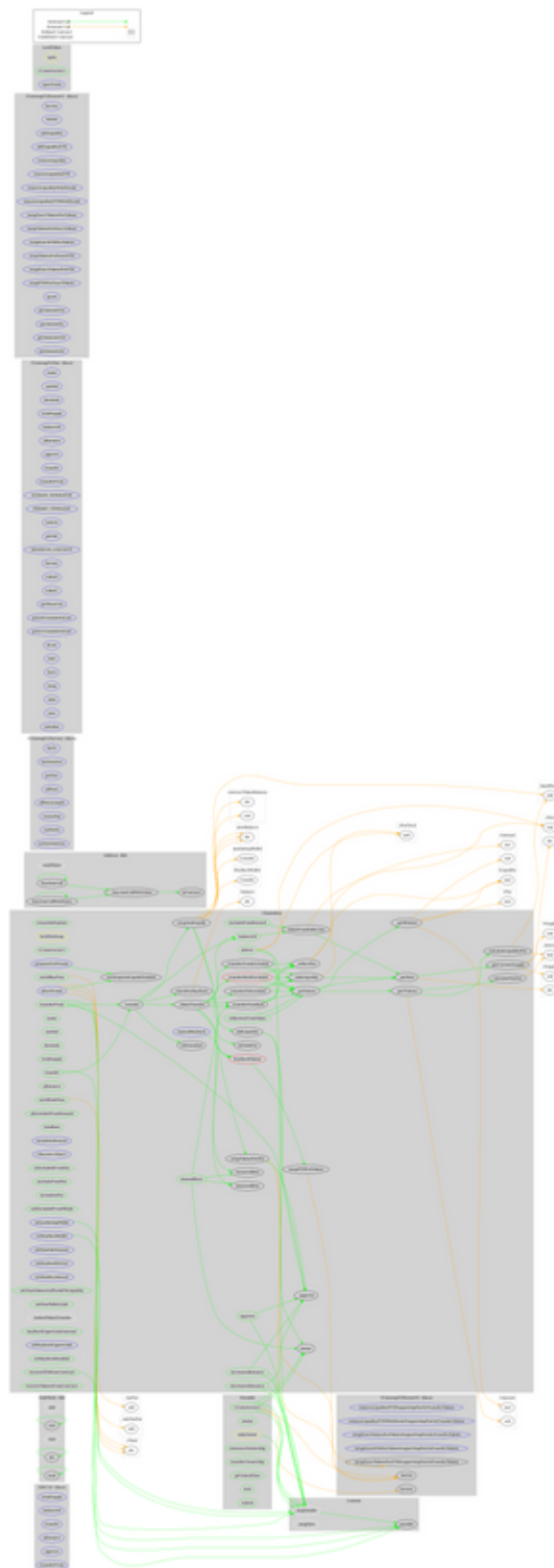
	permit	External	✓	-
	MINIMUM_LIQUIDITY	External		-
	factory	External		-
	token0	External		-
	token1	External		-
	getReserves	External		-
	price0CumulativeLast	External		-
	price1CumulativeLast	External		-
	kLast	External		-
	mint	External	✓	-
	burn	External	✓	-
	swap	External	✓	-
	skim	External	✓	-
	sync	External	✓	-
	initialize	External	✓	-
<b>IUniswapV2Router01</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		-
<b>IUniswapV2Router02</b>	Interface	IUniswapV2Router01		
	removeLiquidityETHSupportingFeeOnTransferTokens	External	✓	-
	removeLiquidityETHWithPermitSupportingFeeOnTransferTokens	External	✓	-
	swapExactTokensForTokensSupportingFeeOnTransferTokens	External	✓	-
	swapExactETHForTokensSupportingFeeOnTransferTokens	External	Payable	-
	swapExactTokensForETHSupportingFeeOnTransferTokens	External	✓	-
<b>LockToken</b>	Implementation	Ownable		
	<Constructor>	Public	✓	-
	openTrade	External	✓	onlyOwner
<b>Chameleon</b>	Implementation	Context, IERC20, Ownable, LockToken		
	isRewarded	Public		-
	rewardedUpdate	Public	✓	onlyOwner
	<Constructor>	Public	✓	-
	removeAllFee	Private	✓	
	setSaleFee	Private	✓	
	restoreAllFee	Private	✓	
	setAllBuyFees	Public	✓	onlyOwner
	setAllSaleFees	Public	✓	onlyOwner
	prepareForPresale	External	✓	onlyOwner
	afterPresale	External	✓	onlyOwner
	name	Public		-
	symbol	Public		-
	decimals	Public		-
	totalSupply	Public		-
	balanceOf	Public		-

	transfer	Public	✓	-
	allowance	Public		-
	approve	Public	✓	-
	transferFrom	Public	✓	-
	increaseAllowance	Public	✓	-
	decreaseAllowance	Public	✓	-
	isExcludedFromReward	Public		-
	totalFees	Public		-
	deliver	Public	✓	-
	reflectionFromToken	Public		-
	tokenFromReflection	Public		-
	excludeFromReward	Public	✓	onlyOwner
	includeInReward	External	✓	onlyOwner
	_transferBothExcluded	Private	✓	
	<Receive Ether>	External	Payable	-
	_reflectFee	Private	✓	
	_getValues	Private		
	_getTValues	Private		
	_getRValues	Private		
	_getRate	Private		
	_getCurrentSupply	Private		
	_takeLiquidity	Private	✓	
	calculateTaxFee	Private		
	calculateLiquidityFee	Private		
	isExcludedFromFee	Public		-
	_approve	Private	✓	
	_transfer	Private	✓	open
	swapAndLiquify	Private	✓	lockTheSwap
	swapTokensForEth	Private	✓	
	addLiquidity	Private	✓	
	_tokenTransfer	Private	✓	
	manualBurn	Public	✓	onlyOwner
	_transferStandard	Private	✓	
	_transferToExcluded	Private	✓	
	_transferFromExcluded	Private	✓	

	excludeFromFee	Public	✓	onlyOwner
	includeInFee	Public	✓	onlyOwner
	setExcludedFromWhale	Public	✓	onlyOwner
	setmarketingWallet	External	✓	onlyOwner
	setBuyBackWallet	External	✓	onlyOwner
	setMaxSaleAmount	External	✓	onlyOwner
	setBuybackDivisor	External	✓	onlyOwner
	setMaxBuyAmount	External	✓	onlyOwner
	setSwapAndLiquifyEnabled	Public	✓	onlyOwner
	setNumTokensSellToAddToLiquidity	Public	✓	onlyOwner
	setMaxWalletLimit	Public	✓	onlyOwner
	_beforeTokenTransfer	Internal	✓	
	buyBackUpperLimitAmount	Public		-
	buyBackTokens	Private	✓	lockTheSwap
	checkForBuyBack	Private	✓	lockTheSwap
	swapETHForTokens	Private	✓	
	setBuybackUpperLimit	External	✓	onlyOwner
	setBuyBackEnabled	Public	✓	onlyOwner
	manualBuyback	External	✓	onlyOwner
	recoverETHfromContract	Public	✓	onlyOwner
	recoverTokensFromContract	Public	✓	onlyOwner

# Contract Flow



## Domain Info

<b>Domain Name</b>	chameleontoken.app
<b>Registry Domain ID</b>	4851F6721-APP
<b>Creation Date</b>	2022-01-17T17:17:03Z
<b>Updated Date</b>	2022-01-22T17:17:03Z
<b>Registry Expiry Date</b>	2023-01-17T17:17:03Z
<b>Registrar WHOIS Server</b>	whois.nic.google
<b>Registrar URL</b>	<a href="https://www.godaddy.com/">https://www.godaddy.com/</a>
<b>Registrar</b>	GoDaddy.com, LLC
<b>Registrar IANA ID</b>	146

The domain has been created 10 days before the creation of the audit. It will expire in 12 months.

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

## Summary

Chameleon is aiming to bring crowdfunding to the crypto space. The Project has a friendly and growing community. There are some functions that can be abused by the owner, like stopping transactions and transferring funds to the team's wallet. The contract can also operate as a honeypot if the contract owner misuse the configuration. 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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Coinscope team provides no guarantees against the sale of team tokens or the removal of liquidity by the project audited in this document. Always Do your own research and protect yourselves from being scammed.

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## About Coinscope

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.

Coinscope is aiming to make crypto discoverable and efficient globally. It provides all the essential tools to assist users draw their own conclusions.



The Coinscope.co team

<https://www.coinscope.co>