RUGFREECOINS

CatX Token

RugfreeCoins Verified on August 22nd, 2023

Overview

✅ No mint function found, the owner cannot mint tokens after initial deployment.

✅ The owner can't set a max transaction limit

✅ The owner can't pause trading once it's enabled

❌ The owner must enable trade for the holders, if trading remains disabled, no one would be able to buy and sell.

✅ The owner can't change fees.

✅ The owner can't blacklist wallets.

✅ The owner can't set a max wallet limit

✅ The owner can't claim the contract's balance of its own token.

❗ HIGH SEVERITY ISSUES

The owner must enable trade for the holders, if trading remains disabled, no one would be able to buy and sell.

```
function enableTrading() external onlyOwner {
    require(tradingEnabled == false, "Trading is already enabled");
    tradingEnabled = true;
}
```

Contents

Audit details

Audited project

CatX Token

Contract Address

0xF432b092D360dB2bd43fb55Ab3447bb7ef2AD579

Client contact

CatX Token Team

Blockchain

Binance Smart chain

Project website

https://www.catx.live/

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 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

RugfreeCoins was commissioned by the **CatX Token Team** to perform an audit of the smart contract.

https://bscscan.com/token/0xF432b092D360dB2bd43fb55Ab3447bb7ef2AD579

This audit focuses on verifying that the smart contract is secure, resilient, and working according to the specifications.

The information in this report should be used to understand the risk exposure of the smart contract, project feasibility, and long-term sustainability, and as a guide to improving the smart contract's security posture by remediating the identified issues.

Tokenomics

▲ 5% tax when buying & selling

5% of trade goes to the marketing wallet in BNB

Target market and the concept

- Anyone who’s interested in the Crypto space with long-term investment plans.
- Anyone who’s ready to earn a passive income by holding tokens.
- Anyone who’s interested in trading tokens.
- Anyone who’s interested in taking part in the CatX token ecosystem.
- Anyone who’s interested in taking part in the future plans of CatX Token.
- Anyone who’s interested in making financial transactions with any other party using CatX Token as the currency.

Potential to grow with score points

⚡ Project efficiency	8 / 10
🌟 Project uniqueness	7 / 10
📊 Information quality	8 / 10
👌 Service quality	8 / 10
💻 System quality	8 / 10
🌍 Impact on the community	8 / 10
💼 Impact on the business	9 / 10
🔮 Preparing for the future	8 / 10
🔒 Smart contract security	9 / 10
🛠️ Smart contract functionality assessment	9 / 10
🏆 **Total Score**	**8.2**/ 10

Contract details

Token contract details for 22nd of August 2023

Contract name	**CatX**
Contract address	**0xF432b092D360dB2bd43fb55Ab3447bb7ef2AD579**
Token supply	**1,000,000,000**
Token ticker	**CatX**
Decimals	**9**
Token holders	**2**
Transaction count	**2**
Contract deployer address	**0x23e36F43D059cDC71A79383051e033Be21E5daa6**
Contract's current owner address	**0x23e36F43D059cDC71A79383051e033Be21E5daa6**
Marketing wallet	**0xc6C77A3995B629447146B327Aa1d7E7AC5Ac1710**

Contract code function details

№	Category	Item	Result
1	Coding conventions	BRC20 Token standards	PASS
		Compile errors	PASS
		Compiler version security	PASS
		Visibility specifiers	PASS
		Gas consumption	PASS
		SafeMath features	PASS
		Fallback usage	PASS
		tx.origin usage	PASS
		Deprecated items	PASS
		Redundant code	MEDIUM
		Overriding variables	PASS
2	Function call audit	Authorization of function call	PASS
		Low level function (call/delegate call) security	PASS
		Returned value security	PASS
		Self destruct function security	PASS
3	Business security & centralisation	Access control of owners	HIGH
		Business logics	PASS
		Business implementation	PASS
4	Integer overflow/underflow		PASS
5	Reentrancy		PASS
6	Exceptional reachable state		PASS
7	Transaction ordering dependence		PASS
8	Block properties dependence		PASS
9	Pseudo random number generator (PRNG)		PASS
10	DoS (Denial of Service)		PASS
11	Token vesting implementation		PASS
12	Fake deposit		PASS
13	Event security		PASS

Contract description table

The below table represents the summary of the contracts and methods in the token contract. We scanned the whole contract and listed down all the Interfaces, functions, and implementations with their visibility and mutability.

Contract	**Type**	**Bases**		
L	Function Name	Visibility	Mutability	Modifiers
Context	**Implementation**			
L	_msgSender	Internal 🔒		
L	_msgData	Internal 🔒		
Ownable	**Implementation**	**Context**		
L		Public ❗	🛑	NO ❗
L	owner	Public ❗		NO ❗
L	renounceOwnership	Public ❗	🛑	onlyOwner
L	transferOwnership	Public ❗	🛑	onlyOwner
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 ❗
Address	**Library**			
L	isContract	Internal 🔒		
L	sendValue	Internal 🔒	🛑	

L	functionCall	Internal 🔒	🛑	
L	functionCall	Internal 🔒	🛑	
L	functionCallWithValue	Internal 🔒	🛑	
L	functionCallWithValue	Internal 🔒	🛑	
L	_functionCallWithValue	Private 🔐	🛑	
IUniswapV2 Factory	**Interface**			
L	feeTo	External ❗		NO ❗
L	feeToSetter	External ❗		NO ❗
L	getPair	External ❗		NO ❗
L	allPairs	External ❗		NO ❗
L	allPairsLength	External ❗		NO ❗
L	createPair	External ❗	🛑	NO ❗
L	setFeeTo	External ❗	🛑	NO ❗
L	setFeeToSetter	External ❗	🛑	NO ❗
IUniswapV2 Pair	**Interface**			
L	name	External ❗		NO ❗
L	symbol	External ❗		NO ❗
L	decimals	External ❗		NO ❗
L	totalSupply	External ❗		NO ❗
L	balanceOf	External ❗		NO ❗
L	allowance	External ❗		NO ❗
L	approve	External ❗	🛑	NO ❗
L	transfer	External ❗	🛑	NO ❗
L	transferFrom	External ❗	🛑	NO ❗
L	DOMAIN_SEPARATOR	External ❗		NO ❗
L	PERMIT_TYPEHASH	External ❗		NO ❗

L	nonces	External ❗		NO ❗
L	permit	External ❗	🛑	NO ❗
L	MINIMUM_LIQUIDITY	External ❗		NO ❗
L	factory	External ❗		NO ❗
L	token0	External ❗		NO ❗
L	token1	External ❗		NO ❗
L	getReserves	External ❗		NO ❗
L	price0CumulativeLast	External ❗		NO ❗
L	price1CumulativeLast	External ❗		NO ❗
L	kLast	External ❗		NO ❗
L	burn	External ❗	🛑	NO ❗
L	swap	External ❗	🛑	NO ❗
L	skim	External ❗	🛑	NO ❗
L	sync	External ❗	🛑	NO ❗
L	initialize	External ❗	🛑	NO ❗
IUniswapV2 Router01	**Interface**			
L	factory	External ❗		NO ❗
L	WETH	External ❗		NO ❗
L	addLiquidity	External ❗	🛑	NO ❗
L	addLiquidityETH	External ❗	💵	NO ❗
L	removeLiquidity	External ❗	🛑	NO ❗
L	removeLiquidityETH	External ❗	🛑	NO ❗
L	removeLiquidityWithPermit	External ❗	🛑	NO ❗
L	removeLiquidityETHWithPermit	External ❗	🛑	NO ❗
L	swapExactTokensForTokens	External ❗	🛑	NO ❗
L	swapTokensForExactTokens	External ❗	🛑	NO ❗
L	swapExactETHForTokens	External ❗	💵	NO ❗
L	swapTokensForExactETH	External ❗	🛑	NO ❗

L	swapExactTokensForETH	External ❗	🛑	NO ❗
L	swapETHForExactTokens	External ❗	💵	NO ❗
L	quote	External ❗		NO ❗
L	getAmountOut	External ❗		NO ❗
L	getAmountIn	External ❗		NO ❗
L	getAmountsOut	External ❗		NO ❗
L	getAmountsIn	External ❗		NO ❗
IUniswapV2 Router02	**Interface**	**IUniswapV2 Router01**		
L	removeLiquidityETHSupportingFeeOnTransferTokens	External ❗	🛑	NO ❗
L	removeLiquidityETHWithPermitSupportingFeeOnTransferTokens	External ❗	🛑	NO ❗
L	swapExactTokensForTokensSupportingFeeOnTransferTokens	External ❗	🛑	NO ❗
L	swapExactETHForTokensSupportingFeeOnTransferTokens	External ❗	💵	NO ❗
L	swapExactTokensForETHSupportingFeeOnTransferTokens	External ❗	🛑	NO ❗
CatX	**Implementation**	**Context, IERC20, Ownable**		
L		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 ❗

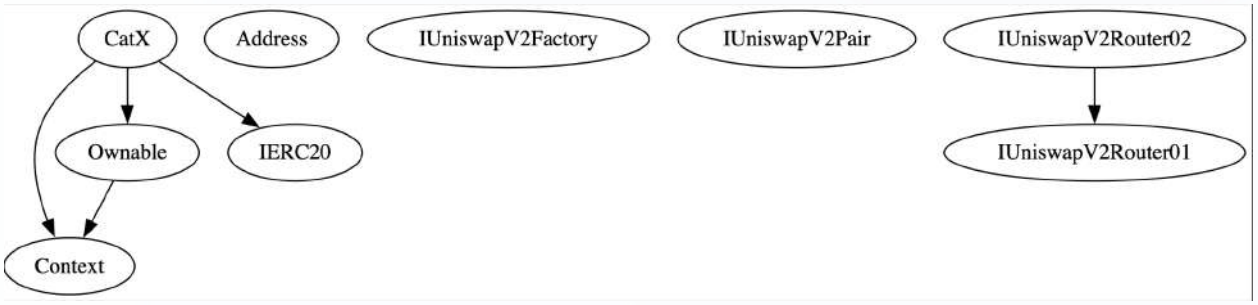
L	increaseAllowance	Public ❗	🛑	NO ❗
L	decreaseAllowance	Public ❗	🛑	NO ❗
L	isExcludedFromReward	Public ❗		NO ❗
L	totalReflectionDistributed	Public ❗		NO ❗
L	deliver	Public ❗	🛑	NO ❗
L	reflectionFromToken	Public ❗		NO ❗
L	tokenFromReflection	Public ❗		NO ❗
L	excludeFromReward	Public ❗	🛑	onlyOwner
L	includeInReward	External ❗	🛑	onlyOwner
L		External ❗	💵	NO ❗
L	claimStuckTokens	External ❗	🛑	onlyOwner
L	_reflectFee	Private 🔐	🛑	
L	_getValues	Private 🔐		
L	_getTValues	Private 🔐		
L	_getRValues	Private 🔐		
L	_getRate	Private 🔐		
L	_getCurrentSupply	Private 🔐		
L	_takeLiquidity	Private 🔐	🛑	
L	_takeMarketing	Private 🔐	🛑	
L	calculateTaxFee	Private 🔐		
L	calculateLiquidityFee	Private 🔐		
L	calculateMarketingFee	Private 🔐		
L	removeAllFee	Private 🔐	🛑	
L	setBuyFee	Private 🔐	🛑	
L	setSellFee	Private 🔐	🛑	
L	isExcludedFromFee	Public ❗		NO ❗
L	_approve	Private 🔐	🛑	
L	enableTrading	External ❗	🛑	onlyOwner
L	_transfer	Private 🔐	🛑	

L	swapAndLiquify	Private 🔐	🛑	
L	swapAndSendMarketing	Private 🔐	🛑	
L	setSwapTokensAtAmount	External ❗	🛑	onlyOwner
L	setSwapEnabled	External ❗	🛑	onlyOwner
L	_tokenTransfer	Private 🔐	🛑	
L	_transferStandard	Private 🔐	🛑	
L	_transferToExcluded	Private 🔐	🛑	
L	_transferFromExcluded	Private 🔐	🛑	
L	_transferBothExcluded	Private 🔐	🛑	
L	excludeFromFees	External ❗	🛑	onlyOwner
L	changeMarketingWallet	External ❗	🛑	onlyOwner

Legend

Symbol	Meaning
🛑	Function can modify state
💵	Function is payable

Inheritance Hierarchy



Security issue checking status

❖ High severity issues

The owner must enable trade for the holders, if trading remains disabled, no one would be able to buy and sell.

```
function enableTrading() external onlyOwner {
    require(tradingEnabled == false, "Trading is already enabled");
    tradingEnabled = true;
}
```

❖ Medium severity issues

The reward fee and liquidity fees are initially set to 0, and the owner does not have a function to change these fees later. Therefore, all functions related to rewards and liquidity are redundant, aiming to save on gas fees and eliminate unnecessary processes.

```
taxFeeonBuy = 0;
taxFeeonSell = 0;

liquidityFeeonBuy = 0;
liquidityFeeonSell = 0;

marketingFeeonBuy = 5;
marketingFeeonSell = 5;
```

❖ Low severity issues

No low-severity issues found

Owner privileges

- Owner can include/exclude wallets from rewards (since contract is not accumulating any rewards this function is redundant)

```
function excludeFromReward(address account) public onlyOwner {
    require(!_isExcluded[account], "Account is already excluded");
    if (_rOwned[account] > 0) {
        _tOwned[account] = tokenFromReflection(_rOwned[account]);
    }
    _isExcluded[account] = true;
    _excluded.push(account);
}

function includeInReward(address account) external onlyOwner {
    require(_isExcluded[account], "Account is already included");
    for (uint256 i = 0; i < _excluded.length; i++) {
        if (_excluded[i] == account) {
            _excluded[i] = _excluded[_excluded.length - 1];
            _tOwned[account] = 0;
            _isExcluded[account] = false;
            _excluded.pop();
            break;
        }
    }
}
```

❖ Owner can get any BEP20 tokens from the contract (can not get native tokens)

```
function claimStuckTokens(address token) external onlyOwner {
    require(token != address(this), "Owner cannot claim native tokens");
    if (token == address(0x0)) {
        payable(msg.sender).sendValue(address(this).balance);
        return;
    }
    IERC20 ERC20token = IERC20(token);
    uint256 balance = ERC20token.balanceOf(address(this));
    ERC20token.transfer(msg.sender, balance);
}
```

❖ Owner can enable trading,once enabled can not disable again

```
function enableTrading() external onlyOwner {
    require(tradingEnabled == false, "Trading is already enabled");
    tradingEnabled = true;
}
```

❖ Owner can change swap point minimum up to 0.001%

```
function setSwapTokensAtAmount(uint256 newAmount) external onlyOwner {
    require(
        newAmount > totalSupply() / 1e5,
        "SwapTokensAtAmount must be greater than 0.001% of total supply"
    );
    swapTokensAtAmount = newAmount;
    emit SwapTokensAtAmountUpdated(newAmount);
}
```

❖ Owner can enable/disable swapping

```
function setSwapEnabled(bool _enabled) external onlyOwner {
    swapEnabled = _enabled;
    emit SwapEnabledUpdated(_enabled);
}
```

❖ Owner can include/exclude wallets from fees

```
function excludeFromFees(
    address account,
    bool excluded
) external onlyOwner {
    require(
        _isExcludedFromFees[account] != excluded,
        "Account is already the value of 'excluded'"
    );
    _isExcludedFromFees[account] = excluded;

    emit ExcludeFromFees(account, excluded);
}
```

❖ Owner can change marketing wallet

```
function changeMarketingWallet(
    address _marketingWallet
) external onlyOwner {
    require(
        _marketingWallet != marketingWallet,
        "Marketing wallet is already that address"
    );
    require(
        _marketingWallet != address(0),
        "Marketing wallet is the zero address"
    );
    marketingWallet = _marketingWallet;
    emit MarketingWalletChanged(marketingWallet);
}
```

Audit conclusion

RugFreeCoins team has performed in-depth testing, line-by-line manual code review, and automated audit of the smart contract. The smart contract was analyzed mainly for common smart contract vulnerabilities, exploits, manipulations, and hacks. According to the smart contract audit.

Smart contract functional Status:	PASS
Number of risk issues:	2
Solidity code functional issue level:	PASS
Number of owner privileges:	7
Centralization risk correlated to the active owner:	HIGH
Smart contract active ownership:	ACTIVE