



# Audit Report

## **Equity**

February 2022

Type	ERC20
Network	POLYGON
Address	0xf6A60dCD747284384Cd6aC66F44a8B4127e3Ca82
Audited by	© coinscope

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# Contract Review

<b>Contract Name</b>	Equity
<b>Compiler Version</b>	v0.8.10+commit.fc410830
<b>Optimization</b>	500 runs
<b>Licence</b>	
<b>Explorer</b>	<a href="https://polygonscan.com/token/0xf6A60dCD747284384Cd6aC66F44a8B4127e3Ca82">https://polygonscan.com/token/0xf6A60dCD747284384Cd6aC66F44a8B4127e3Ca82</a>
<b>Symbol</b>	Equity
<b>Decimals</b>	18
<b>Total Supply</b>	1,020,000
<b>Source</b>	Equity.sol ReflectiveToken.sol IReflective.sol IReflectionTracker.sol SharedOwnable.sol IUniswapV2Router02.sol IUniswapV2Router01.sol IUniswapV2Factory.sol draft-EIP712.sol ECDSA.sol Strings.sol Counters.sol Context.sol draft-IERC20Permit.sol draft-ERC20Permit.sol IERC20Metadata.sol IERC20.sol ERC20.sol Ownable.sol

# Audit Updates

<b>Initial Audit</b>	17th February 2022
<b>Corrected</b>	

# 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

# Contract Diagnostics

● Critical    ● Medium    ● Minor

Severity	Code	Description
●	L12	Using Variables before Declaration
●	L14	Uninitialized Variables in Local Scope
●	L13	Divide before Multiply Operation

## L12 - Using Variables before Declaration

<b>Criticality</b>	minor
<b>Location</b>	contract/ReflectiveToken.sol#L336

### Description

The contract is using a variable before the declaration. This is usually happening either if it has not been declared yet or the variable has been declared in a different scope.

```
gasUsed  
lastProcessedIndex  
iterations  
claims
```

### Recommendation

The variables should be declared before any usage of them.

## L14 - Uninitialized Variables in Local Scope

**Criticality**

minor

**Location**

contract/ReflectiveToken.sol#L336

### Description

There are variables that are defined in the local scope and are not initialized.

```
lastProcessedIndex  
claims  
iterations  
gasUsed
```

### Recommendation

All the local scoped variables should be initialized.



## L13 - Divide before Multiply Operation

**Criticality**

minor

**Location**

contract/ReflectiveToken.sol#L302,413

### Description

Performing divisions before multiplications may cause lose of prediction.

```
number = (seed - ((seed / 100) * 100))  
feeAmount = (amount / 100) * feePercentage  
_swapAndSendReflections((_minimumTokenBalanceForSwapAndSendReflections / 100) *  
_getRandomNumber())
```

### Recommendation

The multiplications should be prior to the divisions.

# Contract Functions

Contract	Type	Bases		
	Function Name	Visibility	Mutability	Modifiers
<b>Context</b>	Implementation			
	_msgSender	Internal		
	_msgData	Internal		
<b>Counters</b>	Library			
	current	Internal		
	increment	Internal	✓	
	decrement	Internal	✓	
	reset	Internal	✓	
<b>EIP712</b>	Implementation			
	<Constructor>	Public	✓	-
	_domainSeparatorV4	Internal		
	_buildDomainSeparator	Private		
	_hashTypedDataV4	Internal		
<b>ERC20Permit</b>	Implementation	ERC20, IERC20Per mit, EIP712		
	<Constructor>	Public	✓	EIP712
	permit	Public	✓	-
	nonces	Public		-
	DOMAIN_SEPARATOR	External		-
	_useNonce	Internal	✓	
<b>IERC20Permit</b>	Interface			
	permit	External	✓	-
	nonces	External		-
	DOMAIN_SEPARATOR	External		-

<b>ECDSA</b>	Library			
	_throwError	Private		
	tryRecover	Internal		
	recover	Internal		
	tryRecover	Internal		
	recover	Internal		
	tryRecover	Internal		
	recover	Internal		
	toEthSignedMessageHash	Internal		
	toEthSignedMessageHash	Internal		
	toTypedDataHash	Internal		
<b>Equity</b>	Implementation	ReflectiveToken		
	<Constructor>	Public	✓	ReflectiveToken
<b>ERC20</b>	Implementation	Context, IERC20, IERC20Metadata		
	<Constructor>	Public	✓	-
	name	Public		-
	symbol	Public		-
	decimals	Public		-
	totalSupply	Public		-
	balanceOf	Public		-
	transfer	Public	✓	-
	allowance	Public		-
	approve	Public	✓	-
	transferFrom	Public	✓	-
	increaseAllowance	Public	✓	-
	decreaseAllowance	Public	✓	-
	_transfer	Internal	✓	
	_mint	Internal	✓	
	_burn	Internal	✓	

	_approve	Internal	✓	
	_beforeTokenTransfer	Internal	✓	
	_afterTokenTransfer	Internal	✓	
<b>IERC20</b>	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
<b>IERC20Metadata</b>	Interface	IERC20		
	name	External		-
	symbol	External		-
	decimals	External		-
<b>IReflectionTracker</b>	Interface			
	isBoundTo	External		-
	bindTo	External	✓	-
	getBalanceOf	External		-
	setBalanceOf	External	✓	-
	refreshBalanceOf	External	✓	-
	refreshBalance	External	✓	-
	getUniswapV2Router02Address	External		-
	setUniswapV2Router02Address	External	✓	-
	getDefaultReflectionTokenAddress	External		-
	setDefaultReflectionTokenAddress	External	✓	-
	getClaimCooldown	External		-
	setClaimCooldown	External	✓	-
	getMinimumTokenBalanceForReflections	External		-
	setMinimumTokenBalanceForReflections	External	✓	-
	getExcludedReflectionStateOfBNB	External		-

	setExcludedReflectionStateOfBNB	External	✓	-
	getExcludedReflectionTokenStateOf	External		-
	setExcludedReflectionTokenStateOf	External	✓	-
	getExcludedFromReflectionsOf	External		-
	setExcludedFromReflectionsOf	External	✓	-
	getProcessingGas	External		-
	setProcessingGas	External	✓	-
	getReflectionInBNB	External		-
	setReflectionInBNB	External	✓	-
	getReflectionTokenAddress	External		-
	setReflectionTokenAddress	External	✓	-
	getNumberOfHolders	External		-
	getLastProcessedIndex	External		-
	getTotalReflectionsTransferred	External		-
	getWithdrawnReflectionsOf	External		-
	getWithdrawableReflectionsOf	External		-
	getAccountInfoOf	External		-
	getAccountInfoAtIndex	External		-
	transferReflections	External	Payable	-
	transferReflections	External	✓	-
	process	External	✓	-
	processAll	External	✓	-
	processAll	External	✓	-
	processAll	External	✓	-
<b>IReflective</b>	Interface			
	getBalanceOf	External		-
	getTokenPairOtherTokenAddress	External		-
<b>IUniswapV2Factory</b>	Interface			
	feeTo	External		-
	feeToSetter	External		-
	getPair	External		-
	allPairs	External		-
	allPairsLength	External		-

	createPair	External	✓	-
	setFeeTo	External	✓	-
	setFeeToSetter	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	✓	-

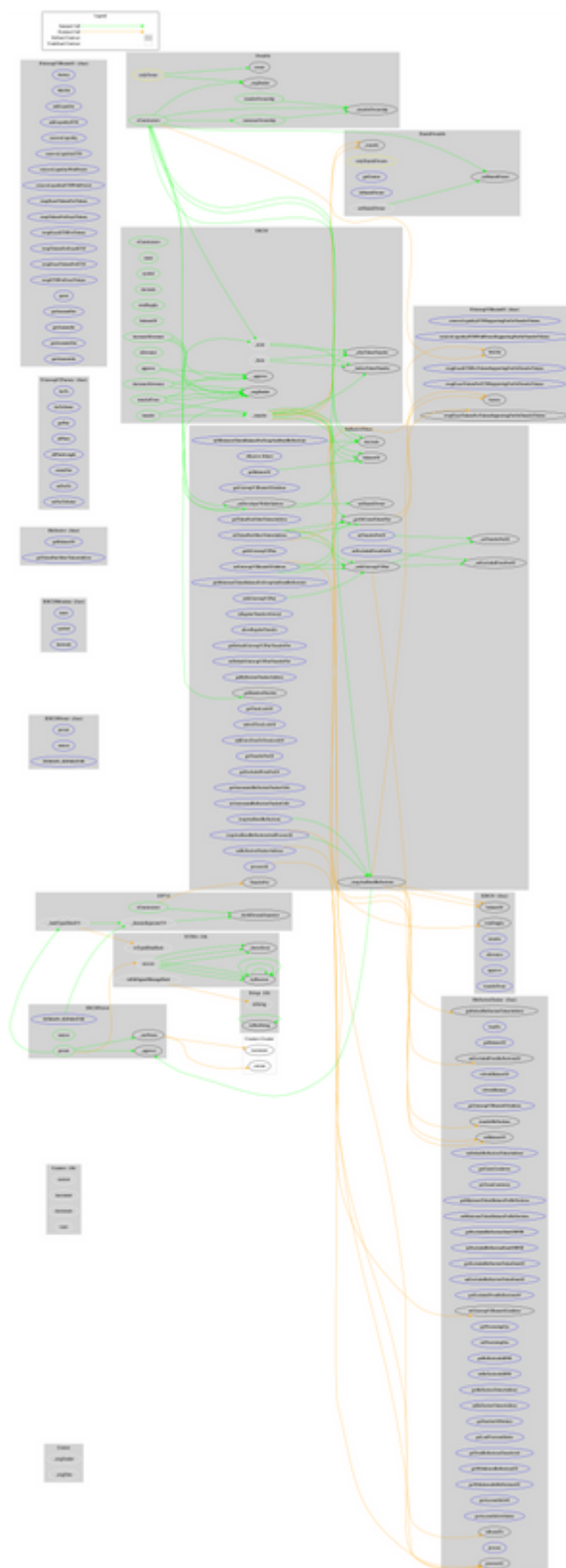
<b>Ownable</b>	Implementation	Context		
	<Constructor>	Public	✓	-
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
	_transferOwnership	Internal	✓	
<b>ReflectiveToken</b>	Implementation	ERC20Permit, IReflective, SharedOwnable		
	<Constructor>	Public	✓	ERC20Permit ERC20
	<Receive Ether>	External	Payable	-
	getBalanceOf	External		-
	getUniswapV2Router02Address	External		-
	setUniswapV2Router02Address	External	✓	onlySharedOwners
	getTokenPairOtherTokenAddress	External		-
	setTokenPairOtherTokenAddress	External	✓	onlySharedOwners
	getIsUniswapV2Pair	External		-
	setIsUniswapV2Pair	External	✓	onlySharedOwners
	_setIsUniswapV2Pair	Private	✓	
	getMinimumTokenBalanceForSwapAndSendReflections	External		-
	setMinimumTokenBalanceForSwapAndSendReflections	External	✓	onlySharedOwners
	isRegularTransferAllowed	External		-
	allowRegularTransfer	External	✓	onlySharedOwners
	getDefaultUniswapV2PairTransferFee	External		-
	setDefaultUniswapV2PairTransferFee	External	✓	onlySharedOwners
	getReflectionTrackerAddress	External		-
	setReflectionTrackerAddress	External	✓	onlySharedOwners

	getTimeLockOf	External		-
	unlockTimeLockOf	External	✓	onlySharedOwners
	addExtraTimeToTimeLockOf	External	✓	onlySharedOwners
	getTransferFeeOf	External		-
	setTransferFeeOf	External	✓	onlySharedOwners
	getExcludedFromFeeOf	External		-
	setExcludedFromFeeOf	External	✓	onlySharedOwners
	getAutomatedReflectionTrackerCalls	External		-
	setAutomatedReflectionTrackerCalls	External	✓	onlySharedOwners
	swapAndSendReflections	External	✓	onlySharedOwners
	processAll	External	✓	onlySharedOwners
	swapAndSendReflectionsAndProcessAll	External	✓	onlySharedOwners
	_transfer	Internal	✓	
	_getOrCreateTokenPair	Private	✓	
	_setDeveloperWalletOptions	Private	✓	
	_setTransferFeeOf	Private	✓	
	_setExcludedFromFeeOf	Private	✓	
	_swapAndSendReflections	Private	✓	
	_getRandomNumber	Private		
<b>SharedOwnable</b>	Implementation	Ownable		
	<Constructor>	Public	✓	Ownable
	getCreator	External		-
	isSharedOwner	External		-
	setSharedOwner	Internal	✓	onlySharedOwners
	_setSharedOwner	Private	✓	
<b>Strings</b>	Library			
	toString	Internal		



	toHexString	Internal		
	toHexString	Internal		

# Contract Flow



## Summary

The Smart Contract analysis reported no compiler error or critical issues. The contract Owner can access some admin functions that can not be used in a malicious way to disturb the users' transactions. There is also a limit of max 25% fees.

The contract contains a built-in time lock functionality for the dev wallets. That means that the amount of the dev wallets cannot be transferred until the locked period elapsed.

The contract also contains a reflection distribution mechanism. When the accumulated amount is more than a specific threshold, the contract swaps a pseudo-random percentage of that amount in order to share it as a distribution.

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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>