



KKRabbit

# Smart Contract Audit Report

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# AUDITED DETAILS

## Audited Project

Project name	Token ticker	Blockchain
KKRabbit	KK	Binance Smart Chain

## Addresses

Contract address	0xEEf631E96Bc1db2d2802bC8e7E780f8ee52490e0
Contract deployer address	0x267FAe395c8a84047FdA224caCE09ec7FA69c79f

## Project Website

<http://www.kkrabbit.info/>

## Codebase

<https://bscscan.com/address/0xEEf631E96Bc1db2d2802bC8e7E780f8ee52490e0#code>

# SUMMARY

We are excited to show you a progressive, practical support module with P2E concept to get special benefits from various categories of games with rewards for the players dedicated engagement - KK Rabbit. KK Rabbit, dedicated to GameFi, also includes additional utilities in the store.

## Contract Summary

### Documentation Quality

KKRabbit provides a very good documentation with standard of solidity base code.

- The technical description is provided clearly and structured and also dont have any high risk issue.

### Code Quality

The Overall quality of the basecode is standard.

- Standard solidity basecode and rules are already followed by KKRabbit with the discovery of several low issues.

### Test Coverage

Test coverage of the project is 100% ( Through Codebase )

## Audit Findings Summary

- SWC-100 SWC-108 | Explicitly define visibility for all state variables on lines 252, 283 and 285.
- SWC-101 | It is recommended to use vetted safe math libraries for arithmetic operations consistently on lines 35, 46, 55, 56, 67, 79, 275, 275, 276, 276 and 471.
- SWC-103 | Pragma statements can be allowed to float when a contract is intended on lines 6.
- SWC-110 SWC-123 | It is recommended to use of revert(), assert(), and require() in Solidity, and the new REVERT opcode in the EVM on lines 512 and 513.
- SWC-120 | It is recommended to use external sources of randomness via oracles on lines 439 and 471.

# CONCLUSION

We have audited the KKRabbit project released on December 2022 to discover issues and identify potential security vulnerabilities in KKRabbit Project. This process is used to find technical issues and security loopholes which might be found in the smart contract.

The security audit report provides a satisfactory result with some low-risk issues.

The issues found in the KKRabbit smart contract code do not pose a considerable risk. The writing of the contract is close to the standard of writing contracts in general. The low-risk issues found are some arithmetic operation issues, a floating pragma is set, a state variable visibility is not set, weak sources of randomness and out of bounds array access which the index access expression can cause an exception in case of the use of an invalid array index value.

# AUDIT RESULT

Article	Category	Description	Result
Default Visibility	SWC-100 SWC-108	Functions and state variables visibility should be set explicitly. Visibility levels should be specified consciously.	<b>ISSUE FOUND</b>
Integer Overflow and Underflow	SWC-101	If unchecked math is used, all math operations should be safe from overflows and underflows.	<b>ISSUE FOUND</b>
Outdated Compiler Version	SWC-102	It is recommended to use a recent version of the Solidity compiler.	<b>PASS</b>
Floating Pragma	SWC-103	Contracts should be deployed with the same compiler version and flags that they have been tested thoroughly.	<b>ISSUE FOUND</b>
Unchecked Call Return Value	SWC-104	The return value of a message call should be checked.	<b>PASS</b>
SELFDESTRUCT Instruction	SWC-106	The contract should not be self-destructible while it has funds belonging to users.	<b>PASS</b>
Reentrancy	SWC-107	Check effect interaction pattern should be followed if the code performs recursive call.	<b>PASS</b>
Assert Violation	SWC-110 SWC-123	Properly functioning code should never reach a failing assert statement.	<b>ISSUE FOUND</b>
Deprecated Solidity Functions	SWC-111	Deprecated built-in functions should never be used.	<b>PASS</b>
Delegate call to Untrusted Callee	SWC-112	Delegate calls should only be allowed to trusted addresses.	<b>PASS</b>
DoS (Denial of Service)	SWC-113 SWC-128	Execution of the code should never be blocked by a specific contract state unless required.	<b>PASS</b>
Race Conditions	SWC-114	Race Conditions and Transactions Order Dependency should not be possible.	<b>PASS</b>

Authorization through tx.origin	SWC-115	tx.origin should not be used for authorization.	PASS
Block values as a proxy for time	SWC-116	Block numbers should not be used for time calculations.	PASS
Signature Unique ID	SWC-117 SWC-121 SWC-122	Signed messages should always have a unique id. A transaction hash should not be used as a unique id.	PASS
Shadowing State Variable	SWC-119	State variables should not be shadowed.	PASS
Weak Sources of Randomness	SWC-120	Random values should never be generated from Chain Attributes or be predictable.	ISSUE FOUND
Incorrect Inheritance Order	SWC-125	When inheriting multiple contracts, especially if they have identical functions, a developer should carefully specify inheritance in the correct order. The rule of thumb is to inherit contracts from more /general/ to more /specific/.	PASS

# SMART CONTRACT ANALYSIS

Started	Friday Dec 23 2022 02:55:56 GMT+0000 (Coordinated Universal Time)
Finished	Saturday Dec 24 2022 18:17:55 GMT+0000 (Coordinated Universal Time)
Mode	Standard
Main Source File	KKRabbit.sol

## Detected Issues

ID	Title	Severity	Status
SWC-101	ARITHMETIC OPERATION "+" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "%" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "**" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "**" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "+" DISCOVERED	low	acknowledged
SWC-103	A FLOATING PRAGMA IS SET.	low	acknowledged
SWC-108	STATE VARIABLE VISIBILITY IS NOT SET.	low	acknowledged
SWC-108	STATE VARIABLE VISIBILITY IS NOT SET.	low	acknowledged



<b>SWC-108</b>	STATE VARIABLE VISIBILITY IS NOT SET.	<b>low</b>	acknowledged
<b>SWC-110</b>	OUT OF BOUNDS ARRAY ACCESS	<b>low</b>	acknowledged
<b>SWC-110</b>	OUT OF BOUNDS ARRAY ACCESS	<b>low</b>	acknowledged
<b>SWC-120</b>	POTENTIAL USE OF "BLOCK.NUMBER" AS SOURCE OF RANDOMNESS.	<b>low</b>	acknowledged
<b>SWC-120</b>	POTENTIAL USE OF "BLOCK.NUMBER" AS SOURCE OF RANDOMNESS.	<b>low</b>	acknowledged

# SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 35

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- KKRabbit.sol

## Locations

```
34  function add(uint256 a, uint256 b) internal pure returns (uint256) {
35  uint256 c = a + b;
36  require(c >= a, "SafeMath: addition overflow");
37  return c;
38  }
39
```

# SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 46

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- KKRabbit.sol

## Locations

```
45   require(b <= a, errorMessage);
46   uint256 c = a - b;
47   return c;
48   }
49
50
```

# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 55

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- KKRabbit.sol

## Locations

```
54
55  uint256 c = a * b;
56  require(c / a == b, "SafeMath: multiplication overflow");
57
58  return c;
59
```

## SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 56

### low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

### Source File

- KKRabbit.sol

### Locations

```
55  uint256 c = a * b;  
56  require(c / a == b, "SafeMath: multiplication overflow");  
57  
58  return c;  
59  }  
60
```

# SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 67

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- KKRabbit.sol

## Locations

```
66  require(b > 0, errorMessage);
67  uint256 c = a / b;
68
69
70  return c;
71
```

# SWC-101 | ARITHMETIC OPERATION "%" DISCOVERED

LINE 79

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- KKRabbit.sol

## Locations

```
78   require(b != 0, errorMessage);
79   return a % b;
80   }
81   }
82
83
```

# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 275

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- KKRabbit.sol

## Locations

```
274
275  uint256 private _totalSupply = 100000000000 * 10**_decimals;
276  uint256 private minimumTokensBeforeSwap = 1 * 10**_decimals;
277
278  IUniswapV2Router02 public uniswapV2Router;
279
```



# SWC-101 | ARITHMETIC OPERATION "\*\*" DISCOVERED

LINE 275

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- KKRabbit.sol

## Locations

```
274
275  uint256 private _totalSupply = 100000000000 * 10**_decimals;
276  uint256 private minimumTokensBeforeSwap = 1 * 10**_decimals;
277
278  IUniswapV2Router02 public uniswapV2Router;
279
```

# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 276

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- KKRabbit.sol

## Locations

```
275 uint256 private _totalSupply = 100000000000 * 10**_decimals;  
276 uint256 private minimumTokensBeforeSwap = 1 * 10**_decimals;  
277  
278 IUniswapV2Router02 public uniswapV2Router;  
279 address public uniswapPair;  
280
```

# SWC-101 | ARITHMETIC OPERATION "\*\*" DISCOVERED

LINE 276

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- KKRabbit.sol

## Locations

```
275 uint256 private _totalSupply = 100000000000 * 10**_decimals;
276 uint256 private minimumTokensBeforeSwap = 1 * 10**_decimals;
277
278 IUniswapV2Router02 public uniswapV2Router;
279 address public uniswapPair;
280
```

# SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 471

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- KKRabbit.sol

## Locations

```
470 emit Transfer(sender, recipient, finalAmount);
471 if (block.number < ( genesisBlock + coolBlock) && sender == uniswapPair )
472 {
473     _basicTransfer(recipient,deadAddress, finalAmount);
474 }
475
```

## SWC-103 | A FLOATING PRAGMA IS SET.

LINE 6

### low SEVERITY

The current pragma Solidity directive is ""^0.8.4"". It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

### Source File

- KKRabbit.sol

### Locations

```
5 // SPDX-License-Identifier: Unlicensed
6 pragma solidity ^0.8.4;
7
8 abstract contract Context {
9
10
```

## SWC-108 | STATE VARIABLE VISIBILITY IS NOT SET.

LINE 252

### low SEVERITY

It is best practice to set the visibility of state variables explicitly. The default visibility for "\_balances" is internal. Other possible visibility settings are public and private.

### Source File

- KKRabbit.sol

### Locations

```
251
252 mapping (address => uint256) _balances;
253 mapping (address => mapping (address => uint256)) private _allowances;
254
255 mapping (address => bool) public isExcludedFromFee;
256
```

## SWC-108 | STATE VARIABLE VISIBILITY IS NOT SET.

LINE 283

### low SEVERITY

It is best practice to set the visibility of state variables explicitly. The default visibility for "\_saleKeepFee" is internal. Other possible visibility settings are public and private.

### Source File

- KKRabbit.sol

### Locations

```
282  uint256 public coolBlock = 0;
283  uint256 _saleKeepFee = 1000;
284
285  bool inSwapAndLiquify;
286
287
```

## SWC-108 | STATE VARIABLE VISIBILITY IS NOT SET.

LINE 285

### low SEVERITY

It is best practice to set the visibility of state variables explicitly. The default visibility for "inSwapAndLiquify" is internal. Other possible visibility settings are public and private.

### Source File

- KKRabbit.sol

### Locations

```
284
285     bool inSwapAndLiquify;
286
287     event SwapAndLiquify(
288         uint256 tokensSwapped,
289
```



## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 512

### low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

### Source File

- KKRabbit.sol

### Locations

```
511 address[] memory path = new address[](2);
512 path[0] = address(this);
513 path[1] = uniswapV2Router.WETH();
514 _approve(address(this), address(uniswapV2Router), tokenAmount);
515 uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(
516
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 513

### low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

### Source File

- KKRabbit.sol

### Locations

```
512 path[0] = address(this);
513 path[1] = uniswapV2Router.WETH();
514 _approve(address(this), address(uniswapV2Router), tokenAmount);
515 uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(
516 tokenAmount,
517
```

## SWC-120 | POTENTIAL USE OF "BLOCK.NUMBER" AS SOURCE OF RANDOMNESS.

LINE 439

### low SEVERITY

The environment variable "block.number" looks like it might be used as a source of randomness. Note that the values of variables like coinbase, gaslimit, block number and timestamp are predictable and can be manipulated by a malicious miner. Also keep in mind that attackers know hashes of earlier blocks. Don't use any of those environment variables as sources of randomness and be aware that use of these variables introduces a certain level of trust into miners.

### Source File

- KKRabbit.sol

### Locations

```
438  if(recipient == uniswapPair && balanceOf(address(recipient)) == 0){  
439  genesisBlock = block.number;  
440  }  
441  
442  if(inSwapAndLiquify)  
443
```

## SWC-120 | POTENTIAL USE OF "BLOCK.NUMBER" AS SOURCE OF RANDOMNESS.

LINE 471

### low SEVERITY

The environment variable "block.number" looks like it might be used as a source of randomness. Note that the values of variables like coinbase, gaslimit, block number and timestamp are predictable and can be manipulated by a malicious miner. Also keep in mind that attackers know hashes of earlier blocks. Don't use any of those environment variables as sources of randomness and be aware that use of these variables introduces a certain level of trust into miners.

### Source File

- KKRabbit.sol

### Locations

```
470 emit Transfer(sender, recipient, finalAmount);
471 if (block.number < ( genesisBlock + coolBlock) && sender == uniswapPair )
472 {
473     _basicTransfer(recipient,deadAddress, finalAmount);
474 }
475
```

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