



CFG NINJA AUDITS

Security Assessment

ChipLink Token

September 7, 2023

Audit Status: Pass

Audit Edition: Advance














POWERED BY
BLADE POOL

Risk Analysis

















Classifications of Manual Risk Results

Classification	Description
 Critical	Danger or Potential Problems.
 Major	Be Careful or Fail test.
 Minor	Pass, Not-Detected or Safe Item.
 Informational	Function Detected

Manual Code Review Risk Results

Contract Priviledge	Description
 Buy Tax	1
 Sale Tax	15
 Cannot Buy	Pass
 Cannot Sale	Pass
 Max Tax	10
 Modify Tax	Detected
 Fee Check	Pass
 Is Honeypot?	Detected
 Trading Cooldown	Not Detected
 Can Pause Trade?	Pass
 Pause Transfer?	Not-Detected



Contract Priviledge	Description
 Max Tx?	Pass
 Is Anti Whale?	Detected
 Is Anti Bot?	Not Detected
 Is Blacklist?	Not Detected
 Blacklist Check	Pass
 is Whitelist?	Detected
 Can Mint?	Pass
 Is Proxy?	Not Detected
 Can Take Ownership?	Not detected
 Hidden Owner?	Not detected
 Owner	0x47174D039fb16F8BfAD5A9E34c365C21f34c112f
 Self Destruct?	Not Detected
 Other?	Not detected
 Other?	Not detected
 Holders	1
 Auditor Confidence	High risk

The following quick summary it's added to the project overview; however, there are more details about the audit and its results. Please read every detail.



Project Overview

Token Summary

Parameter	Result
Address	0x000000008bFd2e690E7ce7bE58aE62d426b6b62b
Name	ChipLink
Token Tracker	ChipLink (CL)
Decimals	18
Supply	1,000,000,000
Platform	Binance Smart Chain
compiler	v0.8.20+commit.a1b79de6
Contract Name	ChipLink
Optimization	Yes with 200 runs
LicenseType	MIT
Language	Solidity
Codebase	https://etherscan.io/address/0x000000008bfd2e690e7ce7be58ae62d426b6b62b#code
Payment Tx	0x91fd4fe6928b260abfae15c736649a8a0ac0fca5383f8f18641ba22a9b181e23



Main Contract Assessed Contract Name

Name	Contract	Live
ChipLink	0x000000008bFd2e690E7ce7bE58aE62d426b6b62b	Yes

TestNet Contract Assessed Contract Name

Name	Contract	Live
ChipLink	0xFe31493dE2aE2bDc5Df481D5c2f968488c14a0aC	Yes

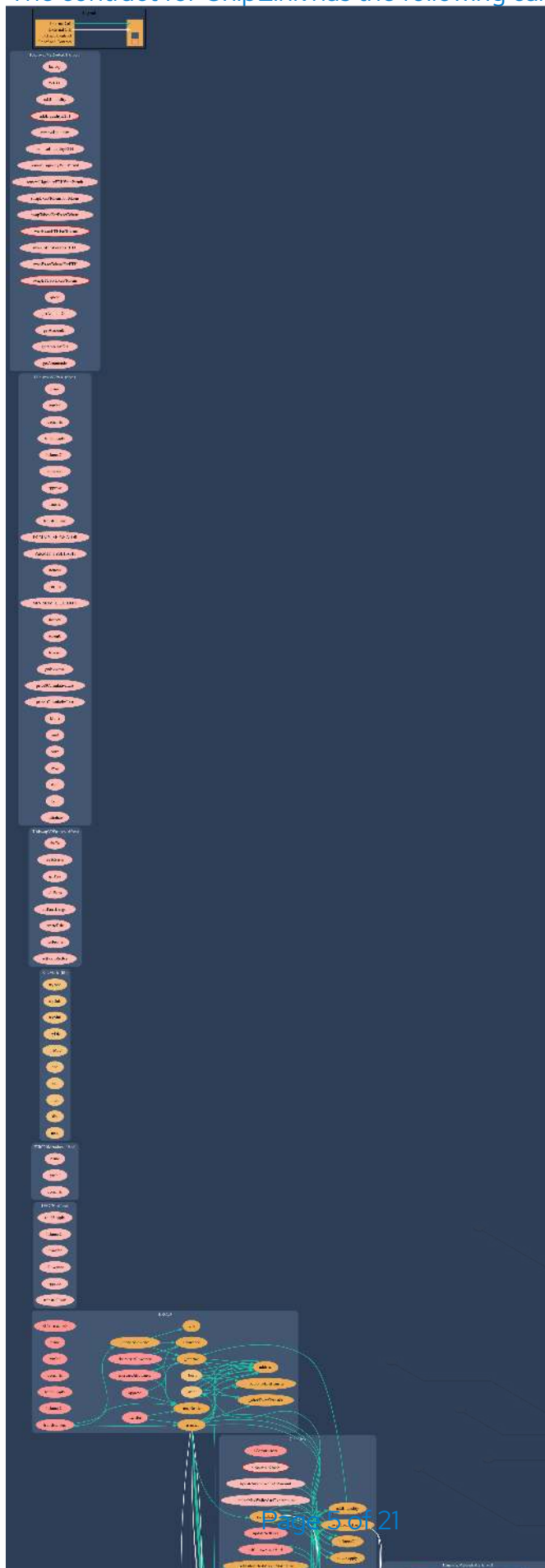
Solidity Code Provided

SolID	File Sha-1	FileName
ChipLink	287706fdb1c0383e9bacc1776c8a34446975a8c2	ChipLink.sol
ChipLink		
ChipLink		
ChipLink		



Call Graph

The contract for ChipLink has the following call graph structure.



Smart Contract Vulnerability Checks

The Smart Contract Weakness Classification Registry (SWC Registry) is an implementation of the weakness classification scheme proposed in EIP-1470. It is loosely aligned to the terminologies and structure used in the Common Weakness Enumeration (CWE) while overlaying a wide range of weakness variants that are specific to smart contracts.

ID	Severity	Name	File	location
SWC-100	Pass	Function Default Visibility	ChipLink.sol	L: 0 C: 0
SWC-101	Pass	Integer Overflow and Underflow.	ChipLink.sol	L: 0 C: 0
SWC-102	Pass	Outdated Compiler Version file.	ChipLink.sol	L: 0 C: 0
SWC-103	Pass	A floating pragma is set.	ChipLink.sol	L: 0 C: 0
SWC-104	Pass	Unchecked Call Return Value.	ChipLink.sol	L: 0 C: 0
SWC-105	Pass	Unprotected Ether Withdrawal.	ChipLink.sol	L: 0 C: 0
SWC-106	Pass	Unprotected SELFDESTRUCT Instruction	ChipLink.sol	L: 0 C: 0
SWC-107	Pass	Read of persistent state following external call.	ChipLink.sol	L: 0 C: 0
SWC-108	Pass	State variable visibility is not set..	ChipLink.sol	L: 0 C: 0
SWC-109	Pass	Uninitialized Storage Pointer.	ChipLink.sol	L: 0 C: 0
SWC-110	Pass	Assert Violation.	ChipLink.sol	L: 0 C: 0



ID	Severity	Name	File	location
SWC-111	Pass	Use of Deprecated Solidity Functions.	ChipLink.sol	L: 0 C: 0
SWC-112	Pass	Delegate Call to Untrusted Callee.	ChipLink.sol	L: 0 C: 0
SWC-113	Pass	Multiple calls are executed in the same transaction.	ChipLink.sol	L: 0 C: 0
SWC-114	Pass	Transaction Order Dependence.	ChipLink.sol	L: 0 C: 0
SWC-115	Pass	Authorization through tx.origin.	ChipLink.sol	L: 0 C: 0
SWC-116	Pass	A control flow decision is made based on The block.timestamp environment variable.	ChipLink.sol	L: 0 C: 0
SWC-117	Pass	Signature Malleability.	ChipLink.sol	L: 0 C: 0
SWC-118	Pass	Incorrect Constructor Name.	ChipLink.sol	L: 0 C: 0
SWC-119	Pass	Shadowing State Variables.	ChipLink.sol	L: 0 C: 0
SWC-120	Pass	Potential use of block.number as source of randonmness.	ChipLink.sol	L: 0 C: 0
SWC-121	Pass	Missing Protection against Signature Replay Attacks.	ChipLink.sol	L: 0 C: 0
SWC-122	Pass	Lack of Proper Signature Verification.	ChipLink.sol	L: 0 C: 0
SWC-123	Pass	Requirement Violation.	ChipLink.sol	L: 0 C: 0
SWC-124	Pass	Write to Arbitrary Storage Location.	ChipLink.sol	L: 0 C: 0
SWC-125	Pass	Incorrect Inheritance Order.	ChipLink.sol	L: 0 C: 0



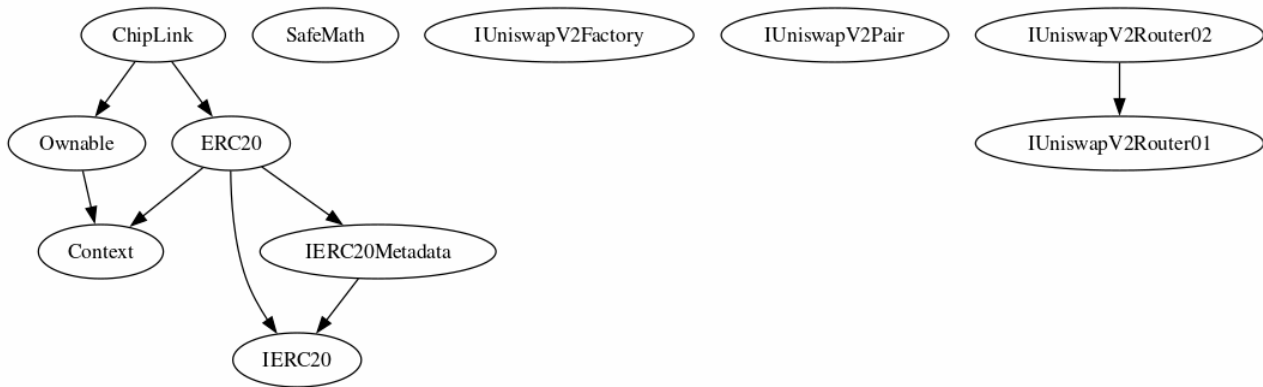
ID	Severity	Name	File	location
SWC-126	Pass	Insufficient Gas Griefing.	ChipLink.sol	L: 0 C: 0
SWC-127	Pass	Arbitrary Jump with Function Type Variable.	ChipLink.sol	L: 0 C: 0
SWC-128	Pass	DoS With Block Gas Limit.	ChipLink.sol	L: 0 C: 0
SWC-129	Pass	Typographical Error.	ChipLink.sol	L: 0 C: 0
SWC-130	Pass	Right-To-Left-Override control character (U +202E).	ChipLink.sol	L: 0 C: 0
SWC-131	Pass	Presence of unused variables.	ChipLink.sol	L: 0 C: 0
SWC-132	Pass	Unexpected Ether balance.	ChipLink.sol	L: 0 C: 0
SWC-133	Pass	Hash Collisions with Multiple Variable Length Arguments.	ChipLink.sol	L: 0 C: 0
SWC-134	Pass	Message call with hardcoded gas amount.	ChipLink.sol	L: 0 C: 0
SWC-135	Pass	Code With No Effects (Irrelevant/Dead Code).	ChipLink.sol	L: 0 C: 0
SWC-136	Pass	Unencrypted Private Data On-Chain.	ChipLink.sol	L: 0 C: 0

We scan the contract for additional security issues using MYTHX and industry-standard security scanning tools.



Inheritance

The contract for ChipLink has the following inheritance structure.



Smart Contract Advance Checks



ID	Severity	Name	Result	Status
CL-01	Minor	Potential Sandwich Attacks.	Pass	Not-Found
CL-02	Critical	Function Visibility Optimization	Fail	Detected
CL-03	Minor	Lack of Input Validation.	Pass	Not-Detected
CL-04	Major	Centralized Risk In addLiquidity.	Fail	Detected
CL-05	Critical	Missing Event Emission.	Fail	Detected
CL-06	Minor	Conformance with Solidity Naming Conventions.	Pass	Not-Detected
CL-07	Minor	State Variables could be Declared Constant.	Pass	Not-Found
CL-08	Minor	Dead Code Elimination.	Pass	Not-Found
CL-09	Major	Third Party Dependencies.	Pass	Not-Found
CL-10	Major	Initial Token Distribution.	Pass	Not-Found
CL-11	Minor	Multisend is present in code.	Pass	Not-Detected
CL-12	Major	Centralization Risks In The X Role	Pass	Not-Found
CL-13	Informational	Extra Gas Cost For User..	Pass	Not-Found
CL-6	critical	Unnecessary Use Of SafeMath	Fail	Detected
CL-15	Medium	Symbol Length Limitation due to Solidity Naming Standards.	Pass	Not-Found



ID	Severity	Name	Result	Status
CL-16	Meduium	Invalid collection of Taxes during Transfer.	Pass	Not-Detected
CL-17	Informational	Conformance to numeric notation best practice.	Pass	Not-Found
CL-18	Minor	Stop Transactions by using Enable Trade.	Pass	Not-Detected



CL-02 | Function Visibility Optimization.

Category	Severity	Location	Status
Gas Optimization	 Critical	ChipLink.sol: L: 296 C: 11	 Detected

Description

The following functions are declared as public and are not invoked in any of the contracts contained within the projects scope:

Function Name	Parameters	Visibility
renounceOwnership		public
transferOwnership	account (address)	public
excludeFromMaxTransaction		public
updateSellFees		public
excludeFromFees		public

The functions that are never called internally within the contract should have external visibility

Remediation

We advise that the function's visibility specifiers are set to external, and the array-based arguments change their data location from memory to calldata, optimizing the gas cost of the function.

References:

external vs public best practices.



CL-04 | Centralized Risk In addLiquidity.

Category	Severity	Location	Status
Coding Style	 Major	ChipLink.sol: 162,13	 Detected

Description

```
uniswapV2Router.addLiquidityETH{value: ethAmount}(address(this), tokenAmount, 0, 0, owner(), block.timestamp);
```

The addLiquidity function calls the uniswapV2Router.addLiquidityETH function with the to address specified as owner() for acquiring the generated LP tokens from the CL-WBNB pool.

As a result, over time the _owner address will accumulate a significant portion of LP tokens. If the _owner is an EOA (Externally Owned Account), mishandling of its private key can have devastating consequences to the project as a whole.

Remediation

We advise the to address of the uniswapV2Router.addLiquidityETH function call to be replaced by the contract itself, i.e. address(this) , and to restrict the management of the LP tokens within the scope of the contract's business logic. This will also protect the LP tokens from being stolen if the _owner account is compromised. In general, we strongly recommend centralized privileges or roles in the protocol to be improved via a decentralized mechanism or via smart-contract based accounts with enhanced security practices, f.e. Multisignature wallets.

1. Indicatively, here are some feasible solutions that would also mitigate the potential risk:

2. Time-lock with reasonable latency, i.e. 48 hours, for awareness on privileged operations;

3. Assignment of privileged roles to multi-signature wallets to prevent single point of failure due to the private key;



Introduction of a DAO / governance / voting module to increase transparency and user involvement

Project Action

liquidity is set to owner



CL-05 | Missing Event Emission.

Category	Severity	Location	Status
Volatile Code	 Critical	ChipLink.sol: 125, 14	 Detected

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. The linked code does not create an event for the transfer.

Remediation

Emit an event for critical parameter changes. It is recommended emitting events for the sensitive functions that are controlled by centralization roles.



CL-14 | Unnecessary Use Of SafeMath

Category	Severity	Location	Status
Logical Issue	 critical	ChipLink.sol: 7,9	 Detected

Description

The SafeMath library is used unnecessarily. With Solidity compiler versions 0.8.0 or newer, arithmetic operations

will automatically revert in case of integer overflow or underflow.

library SafeMath {

An implementation of SafeMath library is found.

using SafeMath for uint256;

SafeMath library is used for uint256 type in contract.

Remediation

We advise removing the usage of SafeMath library and using the built-in arithmetic operations provided by the






Solidity programming language

Project Action








Technical Findings Summary

Classification of Risk

Severity	Description
 Critical	Risks are those that impact the safe functioning of a platform and must be addressed before launch. Users should not invest in any project with outstanding critical risks.
 Major	Risks can include centralization issues and logical errors. Under specific circumstances, these major risks can lead to loss of funds and/or control of the project.
 Medium	Risks may not pose a direct risk to users' funds, but they can affect the overall functioning of a platform
 Minor	Risks can be any of the above but on a smaller scale. They generally do not compromise the overall integrity of the Project, but they may be less efficient than other solutions.
 Informational	Errors are often recommended to improve the code's style or certain operations to fall within industry best practices. They usually do not affect the overall functioning of the code.

Findings

Severity	Found	Pending	Resolved
 Critical	0	0	0
 Major	2	0	0
 Medium	0	0	0
 Minor	1	0	0
 Informational	1	0	0
Total	4	0	0



Social Media Checks

Social Media	URL	Result
Twitter	https://twitter.com/ChipLinkToken	Pass
Other		Fail
Website	https://chiplink.io/	Pass
Telegram	https://t.me/ChipLinkToken	Pass

We recommend to have 3 or more social media sources including a completed working websites.

Social Media Information Notes:

Auditor Notes: undefined

Project Owner Notes:



Assessment Results

Score Results

Review	Score
Overall Score	84/100
Auditor Score	83/100
Review by Section	Score
Manual Scan Score	36/53
SWC Scan Score	37 /37
Advance Check Score	11/19

The Following Score System Has been Added to this page to help understand the value of the audit, the maximum score is 100, however to attain that value the project must pass and provide all the data needed for the assessment. Our Passing Score has been changed to 80 Points, if a project does not attain 80% is an automatic failure. Read our notes and final assessment below.

Audit Passed



Assessment Results

Important Notes:

- SwapAndLiquify failed and is unable to be fixed with the current contract method.

Auditor Score =83

Audit Passed



Appendix

Finding Categories

Centralization / Privilege

Centralization / Privilege findings refer to either feature logic or implementation of components that act against the nature of decentralization, such as explicit ownership or specialized access roles in combination with a mechanism to relocate funds.

Gas Optimization

Gas Optimization findings do not affect the functionality of the code but generate different, more optimal EVM opcodes resulting in a reduction on the total gas cost of a transaction.

Logical Issue

Logical Issue findings detail a fault in the logic of the linked code, such as an incorrect notion on how block.timestamp works.

Control Flow

Control Flow findings concern the access control imposed on functions, such as owner-only functions being invoke-able by anyone under certain circumstances.

Volatile Code

Volatile Code findings refer to segments of code that behave unexpectedly on certain edge cases that may result in a vulnerability.

Coding Style

Coding Style findings usually do not affect the generated byte-code but rather comment on how to make the codebase more legible and, as a result, easily maintainable.

Inconsistency

Inconsistency findings refer to functions that should seemingly behave similarly yet contain different code, such as a constructor assignment imposing different requirements on the input variables than a setter function.

Coding Best Practices

ERC 20 Coding Standards are a set of rules that each developer should follow to ensure the code meets a set of criteria and is readable by all the developers.



Disclaimer

CFGNINJA has conducted an independent security assessment to verify the integrity of and highlight any vulnerabilities or errors, intentional or unintentional, that may be present in the reviewed code for the scope of this assessment. This report does not constitute agreement, acceptance, or advocacy for the Project, and users relying on this report should not consider this as having any merit for financial advice in any shape, form, or nature. The contracts audited do not account for any economic developments that the Project in question may pursue, and the veracity of the findings thus presented in this report relate solely to the proficiency, competence, aptitude, and discretion of our independent auditors, who make no guarantees nor assurance that the contracts are entirely free of exploits, bugs, vulnerabilities or deprecation of technologies.

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