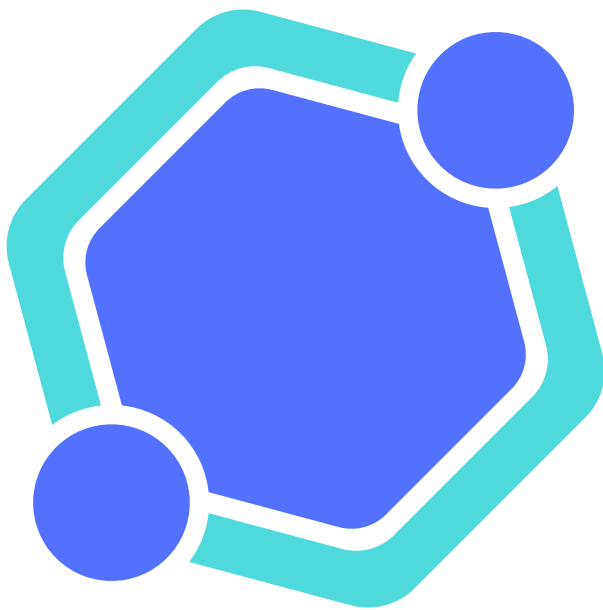


AUDIT REPORT

December 2023



Audit conducted by
RICARDO PONTES

Summary

Auditing Firm	Crypto Hub
Architecture	Crypto Hub Auditing Standard
Smart Contract Audit Approved By Platform	Ricardo Blockchain Dev at Crypto Hub Solidity
Mandatory Audit Check	Static, Software & Manual Analysis
Consultation Request Date	December 2, 2023
Report Date	December 3, 2023

Audit Summary

Crypto Hub team has performed a line-by-line manual analysis and automated review of the smart contract. The smart contract was analyzed mainly for common smart contract vulnerabilities, exploits, and manipulation hacks. According to the smart contract audit:

- ★ ALTITUDE smart contract source code has **LOW RISK SEVERITY**.
- ★ ALTITUDE has **PASSED** the smart contract audit.

For the detailed understanding of risk severity, source code vulnerability, and functional test, kindly refer to the audit.

✅ Verify the authenticity of this report on Crypto Hub Website:

<https://www.cryptohub.agency/>



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Project Overview

Crypto Hub was consulted by ALTITUDE to conduct the smart contract security audit of their solidity source code.

Project	ALTITUDE
Blockchain	Base Mainnet
Language	Solidity
Contracts	0x72b2fd2a6964aaa6233336751996a28a9568a40d
Website:	https://www.altitudetoken.com/

Public logo:



Solidity Source Code On Blockchain (Verified Contract Source Code)

<https://basescan.org/token/0x90678c02823b21772fa7e91b27ee70490257567b#code>

Contract Name: ALTITUDE

Compiler Version: v0.8.18

Optimization Enabled: yes

SHA-1 Hash

Solidity source code is audited at hash

#27ef8d3093ec8ad14f0e8ed66625e61cfa5167b3



Audit Scope & Methodology

The scope of this report is to audit the above smart contract source code and Crypto Hub has scanned the contract and reviewed the project for common vulnerabilities, exploits, hacks, and back-doors. Below is the list of commonly known smart contract vulnerabilities, exploits, and hacks:

Smart Contract Vulnerabilities

- Re-entrancy
- Unhandled Exceptions
- Transaction Order Dependency
- Integer Overflow
- Unrestricted Action
- Incorrect Inheritance Order
- Typographical Errors
- Requirement Violation

Source Code Review

- Ownership Takeover
- Gas Limit and Loops
- Deployment Consistency
- Repository Consistency
- Data Consistency
- Token Supply Manipulation

Functional Assessment

- Access Control and Authorization
- Operations Trail and Event Generation
- Assets Manipulation
- Liquidity Access



Crypto Hub Audit Standard

The aim of Crypto Hub standard is to analyze the smart contract and identify the vulnerabilities and the hacks in the smart contract. Mentioned are the steps used by ECHELON-1 to assess the smart contract:

1. Solidity smart contract source code reviewal:

- ❖ Review of the specifications, sources, and instructions provided to Crypto Hub to make sure we understand the size, scope, and functionality of the smart contract.
- ❖ Manual review of code, which is the process of reading source code line-by-line to identify potential vulnerabilities.

2. Static, Manual, and Software analysis:

- ❖ Test coverage analysis, which is the process of determining whether the test cases are covering the code and how much code is exercised when we run those test cases.
- ❖ Symbolic execution, which is analyzing a program to determine what inputs cause each part of a program to execute.

3. Best practices review, which is a review of the smart contracts to improve efficiency, effectiveness, clarify, maintainability, security, and control based on the established industry and academic practices, recommendations, and research.

4. Specific, itemized, actionable recommendations to help you take steps to secure your smart contracts

Automated 3P frameworks used to assess the smart contract vulnerabilities

- ❖ Slither
- ❖ Consensys MythX
- ❖ Consensus Surya
- ❖ Open Zeppelin Code Analyzer
- ❖ Solidity Code Complier



Crypto Hub's Risk Classification

Smart contracts are generally designed to manipulate and hold funds denominated in ETH/BNB. This makes them very tempting attack targets, as a successful attack may allow the attacker to directly steal funds from the contract. Below are the typical risk levels of a smart contract: **Vulnerable:**

A contract is vulnerable if it has been flagged by a static analysis tool as such. As we will see later, this means that some contracts may be vulnerable because of a false-positive.

Exploitable: A contract is exploitable if it is vulnerable and the vulnerability could be exploited by an external attacker. For example, if the "vulnerability" flagged by a tool is in a function which requires to own the contract, it would be vulnerable but not exploitable.

Exploited: A contract is exploited if it received a transaction on the main network which triggered one of its vulnerabilities. Therefore, a contract can be vulnerable or even exploitable without having been exploited.

Risk severity	Meaning
! Critical	This level of vulnerability could be exploited easily, and can lead to asset loss, data loss, asset manipulation, or data manipulation. They should be fixed right away.
! High	This level vulnerabilities are hard to exploit but very important to fix, they carry an elevated risk of smart contract manipulation, which can lead to critical risk severity
! Medium	This level of vulnerabilities should be fixed, as they carry an inherent risk of future exploits, and hacks which may or may not impact the smart contract execution.
! Low	This level of vulnerability can be ignored. They are code style violations, and informational statements in the code. They may not affect the smart contract execution



Smart Contract Risk Assessment

Contract Snapshot

```
contract ALTITUDE is IERC20, Ownable {
    using SafeERC20 for IERC20;
    uint8 private _decimals;
    mapping(address => uint256) private _rOwned;
    mapping(address => uint256) private _tOwned;
    mapping(address => mapping(address => uint256)) private _allowances;
    mapping(address => bool) private _isExcluded;
    address[] private _excluded;
    uint256 private constant MAX = ~uint256(0);
    uint256 private _tTotal;
    uint256 private _rTotal;
    uint256 private _tFeeTotal;
    string private _name;
    string private _symbol;

    uint256 private _rewardFee;
    uint256 private _previousRewardFee;

    uint256 private _liquidityFee;
    uint256 private _previousLiquidityFee;

    uint256 private _marketingFee;
    uint256 private _previousMarketingFee;

    uint256 private _burnFee;
    uint256 private _previousBurnFee;

    bool private inSwapAndLiquify;
    uint16 public sellRewardFee;
    uint16 public buyRewardFee;
    uint16 public sellLiquidityFee;
    uint16 public buyLiquidityFee;

    uint16 public sellMarketingFee;
    uint16 public buyMarketingFee;

    uint16 public sellBurnFee;
    uint16 public buyBurnFee;

    address public marketingWallet;
    bool public isMarketingFeeETH;

    uint256 public minAmountToTakeFee;
    uint256 public maxWallet;
    uint256 public maxTransactionAmount;

    IUniswapV2Router02 public mainRouter;
    address public mainPair;

    mapping(address => bool) public isExcludedFromFee;
    mapping(address => bool) public isExcludedFromMaxTransactionAmount;
    mapping(address => bool) public automatedMarketMakerPairs;

    uint256 private _liquidityFeeTokens;
    uint256 private _marketingFeeTokens;
```



Static / Quick Analysis

Contract Security



Contract source code verified

This token contract is open source. You can check the contract code for details. Unsourced token contracts are likely to have malicious functions to defraud their users of their assets.



No proxy

There is no proxy in the contract. The proxy contract means contract owner can modify the function of the token and possibly effect the price.



No mint function

Mint function is transparent or non-existent. Hidden mint functions may increase the amount of tokens in circulation and effect the price of the token.



No function found that retrieves ownership

If this function exists, it is possible for the project owner to regain ownership even after relinquishing it



Owner can't change balance

The contract owner is not found to have the authority to modify the balance of tokens at other addresses.



No hidden owner

No hidden owner address was found for the token. For contract with a hidden owner, developer can still manipulate the contract even if the ownership has been abandoned.



This token can not self destruct

No self-destruct function found. If this function exists and is triggered, the contract will be destroyed, all functions will be unavailable, and all related assets will be erased.



No external call risk found

External calls would cause this token contract to be highly dependent on other contracts, which may be a potential risk.



This token is not a gas abuser

No gas abuse activity has been found.



Honeypot Risk

Buy Tax: unknown Sell Tax: unknown



This does not appear to be a honeypot.

We are not aware of any malicious code.



No codes found to suspend trading.

If a suspendable code is included, the token maybe neither be bought nor sold (honeypot risk).



The token can be bought

Generally, these unbuyable tokens would be found in Reward Tokens. Such Tokens are issued as rewards for some on-chain applications and cannot be bought directly by users.



No trading cooldown function

The token contract has no trading cooldown function. If there is a trading cooldown function, the user will not be able to sell the token within a certain time or block after buying.



Anti_whale(Limited number of transactions)

The number of token transactions is limited. The number of scam token transactions may be limited (honeypot risk).



Anti whale is modifiable

The maximum token trading amount or maximum position can be modified, which may lead to suspension of trading. (honeypot risk).



Tax can be modified

The contract owner may contain the authority to modify the transaction tax. If the transaction tax is increased to more than 49%, the tokens will not be able to be traded (honeypot risk).



No blacklist

The blacklist function is not included. If there is a blacklist, some addresses may not be able to trade normally (honeypot risk).



Whitelist function

The whitelist function is included. Some addresses may not be able to trade normally (honeypot risk).

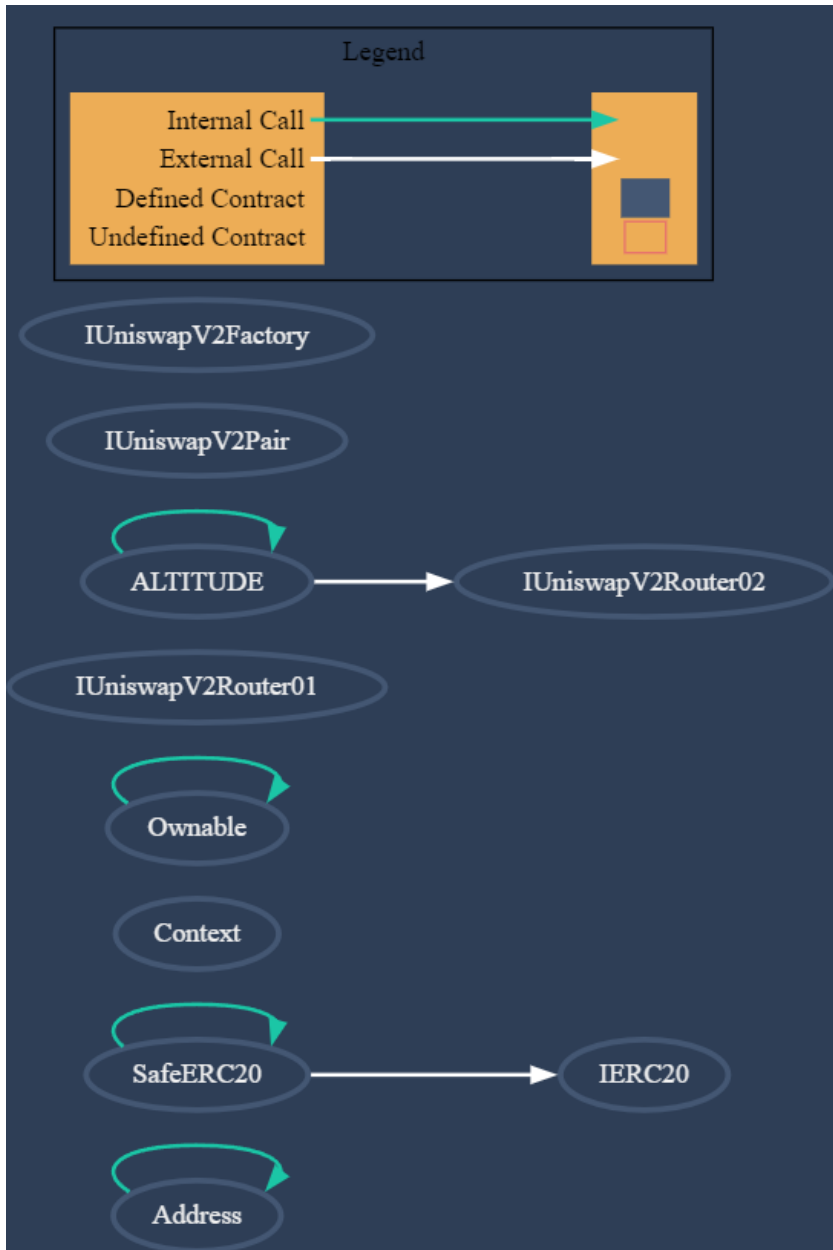
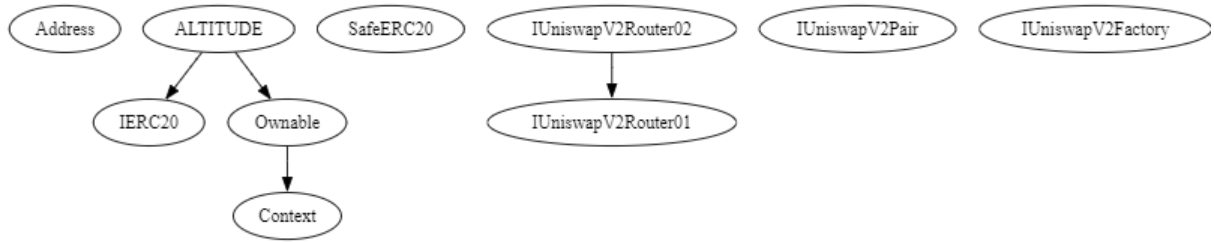


No tax changes found for personal addresses

No tax changes were found for every assigned address. If it exists, the contract owner may set a very outrageous tax rate for assigned address to block it from trading.



Software Analysis

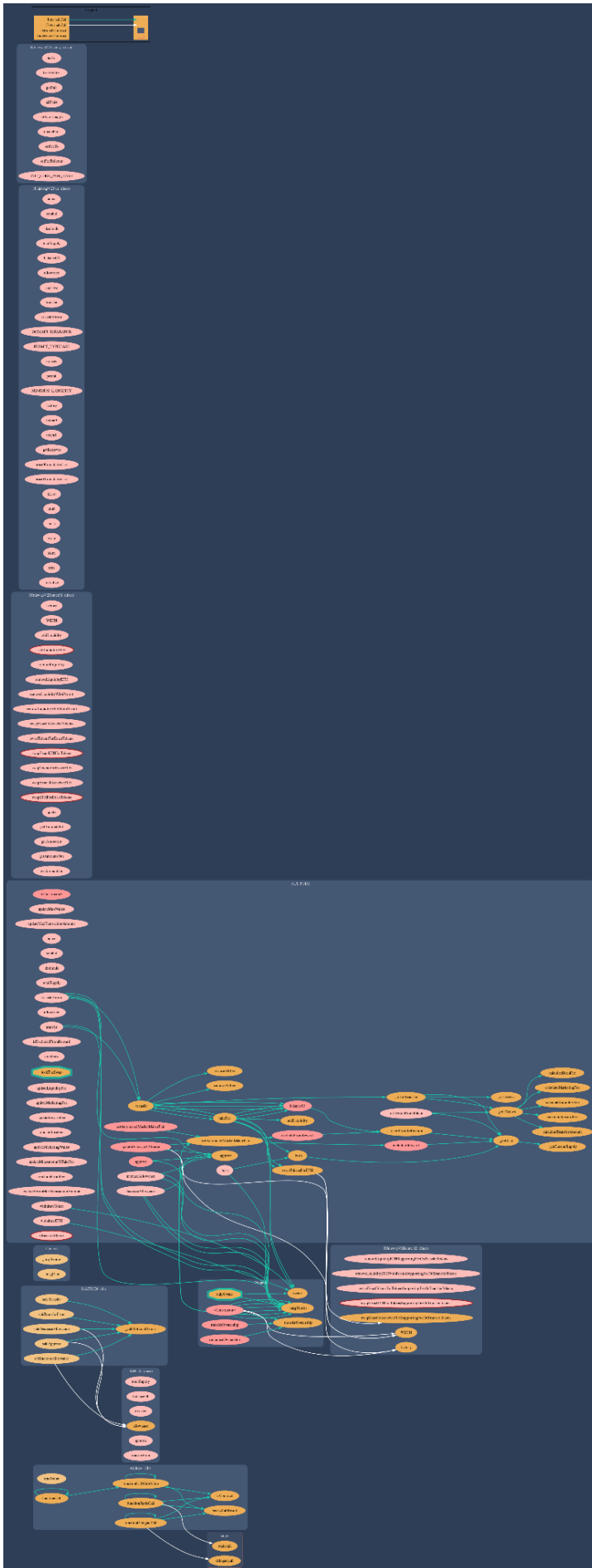


```

| Function Name | Sighash | Function Signature |
|-----|-----|-----|
| totalSupply | 18160ddd | totalSupply() |
| balanceOf | 70a08231 | balanceOf(address) |
| transfer | a9059cbb | transfer(address,uint256) |
| allowance | dd62ed3e | allowance(address,address) |
| approve | 095ea7b3 | approve(address,uint256) |
| transferFrom | 23b872dd | transferFrom(address,address,uint256) |
| owner | 8da5c5b5 | owner() |
| renounceOwnership | 715018a6 | renounceOwnership() |
| transferOwnership | f2fde38b | transferOwnership(address) |
| factory | c45a0155 | factory() |
| WETH | ad9c4648 | WETH() |
| addLiquidity | e0e3790e | addLiquidity(address,address,uint256,uint256,uint256,address,uint256) |
| addLiquidityETH | f305d719 | addLiquidityETH(address,uint256,uint256,uint256,address,uint256) |
| removeLiquidity | baa2abde | removeLiquidity(address,address,uint256,uint256,uint256,address,uint256) |
| removeLiquidityETH | 02751ccc | removeLiquidityETH(address,uint256,uint256,uint256,address,uint256) |
| removeLiquidityWithPermit | 2195995c | removeLiquidityWithPermit(address,address,uint256,uint256,uint256,address,uint256,bool,uint8,bytes32,bytes32) |
| removeLiquidityETHWithPermit | ded9382a | removeLiquidityETHWithPermit(address,address,uint256,uint256,uint256,address,uint256,bool,uint8,bytes32,bytes32) |
| swapExactTokensForTokens | 38ed1739 | swapExactTokensForTokens(uint256,uint256,address[],address,uint256) |
| swapTokensForExactTokens | 8083dbee | swapTokensForExactTokens(uint256,uint256,address[],address,uint256) |
| swapExactETHForTokens | 7ff36ab5 | swapExactETHForTokens(uint256,address[],address,uint256) |
| swapTokensForExactETH | 4a25d94a | swapTokensForExactETH(uint256,uint256,address[],address,uint256) |
| swapExactTokensForETH | 18c8afe5 | swapExactTokensForETH(uint256,uint256,address[],address,uint256) |
| swapETHForExactTokens | fb3bd411 | swapETHForExactTokens(uint256,address[],address,uint256) |
| quote | ad615dec | quote(uint256,uint256,uint256) |
| getAmountOut | 054d56d4 | getAmountOut(uint256,uint256,uint256) |
| getAmountIn | 85f8c259 | getAmountIn(uint256,uint256,uint256) |
| getAmountsOut | d06ca61f | getAmountsOut(uint256,address[]) |
| getAmountsIn | 1f00ca74 | getAmountsIn(uint256,address[]) |
| removeLiquidityETHSupportingFeeOnTransferTokens | af2979eb | removeLiquidityETHSupportingFeeOnTransferTokens(address,uint256,uint256,uint256,address,uint256) |
| removeLiquidityETHWithPermitSupportingFeeOnTransferTokens | 5b0d5984 | removeLiquidityETHWithPermitSupportingFeeOnTransferTokens(address,uint256,uint256,uint256,address,uint256,bool,uint8,bytes32,bytes32) |
| swapExactTokensForTokensSupportingFeeOnTransferTokens | 5c11d795 | swapExactTokensForTokensSupportingFeeOnTransferTokens(uint256,uint256,address[],address,uint256) |
| swapExactETHForTokensSupportingFeeOnTransferTokens | b6f9de95 | swapExactETHForTokensSupportingFeeOnTransferTokens(uint256,address[],address,uint256) |
| swapExactTokensForETHSupportingFeeOnTransferTokens | 791ac947 | swapExactTokensForETHSupportingFeeOnTransferTokens(uint256,uint256,address[],address,uint256) |
| name | 067dde03 | name() |
| symbol | 95d89b41 | symbol() |
| decimals | 313ce567 | decimals() |
| totalSupply | 18160ddd | totalSupply() |
| balanceOf | 70a08231 | balanceOf(address) |
| allowance | dd62ed3e | allowance(address,address) |
| approve | 095ea7b3 | approve(address,uint256) |
| transfer | a9059cbb | transfer(address,uint256) |
| transferFrom | 23b872dd | transferFrom(address,address,uint256) |
| DOMAIN_SEPARATOR | 3644e515 | DOMAIN_SEPARATOR() |
| PERMIT_TYPEHASH | 30adf01f | PERMIT_TYPEHASH() |
| nonces | 7cebe00 | nonces(address) |
| permit | d505accf | permit(address,address,uint256,uint256,uint8,bytes32,bytes32) |
| MINIMUM_LIQUIDITY | ba9a7a56 | MINIMUM_LIQUIDITY() |
| factory | c45a0155 | factory() |
| token0 | 0df1681 | token0() |
| token1 | d21220a7 | token1() |
| getReserves | 0902f1ac | getReserves() |
| price0CumulativeLast | 5909c0d5 | price0CumulativeLast() |
| price1CumulativeLast | 5a3d5493 | price1CumulativeLast() |
| kLast | 7464fc3d | kLast() |
| mInt | 6a627842 | mInt(address) |
| burn | 09afcb44 | burn(address) |
| swap | 027c0d9f | swap(uint256,uint256,address,bytes) |
| skim | bc25c777 | skim(address) |
| sync | fff6cae9 | sync() |
| initialize | c4d66e08 | initialize(address) |
| feeTo | 01707e58 | feeTo() |
| feeToSetter | 094b7415 | feeToSetter() |
| getPair | e6a43905 | getPair(address,address) |
| allPairs | 1e3dd18b | allPairs(uint256) |
| allPairsLength | 574f2ba3 | allPairsLength() |
| createPair | c9c65396 | createPair(address,address) |
| setFeeTo | f46901ed | setFeeTo(address) |
| setFeeToSetter | a2e74af6 | setFeeToSetter(address) |
| INIT_CODE_PAIR_HASH | 5855a25a | INIT_CODE_PAIR_HASH() |
| updateUniswapV2Router | 65b8db0c | updateUniswapV2Router(address) |
| updateMaxWallet | 1c499ab0 | updateMaxWallet(uint256) |
| updateMaxTransactionAmount | aa498023 | updateMaxTransactionAmount(uint256) |
| name | 067dde03 | name() |
| symbol | 95d89b41 | symbol() |
| decimals | 313ce567 | decimals() |
| totalSupply | 18160ddd | totalSupply() |
| balanceOf | 70a08231 | balanceOf(address) |
| transfer | a9059cbb | transfer(address,uint256) |
| allowance | dd62ed3e | allowance(address,address) |
| approve | 095ea7b3 | approve(address,uint256) |
| transferFrom | 23b872dd | transferFrom(address,address,uint256) |
| increaseAllowance | 39589351 | increaseAllowance(address,uint256) |
| decreaseAllowance | a457c2d7 | decreaseAllowance(address,uint256) |
| isExcludedFromReward | 88f92020 | isExcludedFromReward(address) |
| totalFees | 13114a9d | totalFees() |
| reflectionFromToken | 4549b039 | reflectionFromToken(uint256,bool) |
| tokenFromReflection | 2d838119 | tokenFromReflection(uint256) |
| excludeFromReward | 52390c02 | excludeFromReward(address) |
| includeInReward | 3685d419 | includeInReward(address) |
| updateLiquidityFee | d68f0cde | updateLiquidityFee(uint16,uint16) |
| updateMarketingFee | cf089e13 | updateMarketingFee(uint16,uint16) |
| updateRewardFee | 948384dc | updateRewardFee(uint16,uint16) |
| updateBurnFee | 2073bd85 | updateBurnFee(uint16,uint16) |
| updateMarketingWallet | 4707c551 | updateMarketingWallet(address,bool) |
| updateMinAmountToTakeFee | 73b9e82c | updateMinAmountToTakeFee(uint256) |
| setAutomatedMarketMakerPair | 9a7a23d6 | setAutomatedMarketMakerPair(address,bool) |
| excludeFromFee | df8408fe | excludeFromFee(address,bool) |
| excludeFromMaxTransactionAmount | 2ae2f121 | excludeFromMaxTransactionAmount(address,bool) |
| burn | 42966c68 | burn(uint256) |
| withdrawETH | e086e5ec | withdrawETH() |
| withdrawToken | 89476069 | withdrawToken(address) |

```





SWC Attacks

The following table contains an overview of the SWC registry. Each row consists of an SWC identifier (ID), weakness title, CWE parent and list of related code samples.

The auditor used a MythX tool, A static analyzer that parses the Solidity AST, a symbolic analyzer that detects possible vulnerable states, and a greybox fuzzer that detects vulnerable execution paths.

ID	Description	Status
SWC - 100	Function Default Visibility	✓ Passed
SWC - 101	Integer Overflow and Underflow	✓ Passed
SWC - 102	Outdated Compiler Version	✓ Passed
SWC - 103	Floating Pragma	✓ Passed
SWC - 104	Unchecked Call Return Value	✓ Passed
SWC - 105	Unprotected Ether Withdrawal	✓ Passed
SWC - 106	Unprotected SELFDESTRUCT Instruction	✓ Passed
SWC - 107	Reentrancy Passed	✓ Passed
SWC - 108	State Variable Default Visibility	✓ Passed
SWC - 109	Uninitialized Storage Pointer	✓ Passed
SWC - 110	Assert Violation Passed	✓ Passed
SWC - 111	Use of Deprecated Solidity Functions	✓ Passed
SWC - 112	Delegatecall to Untrusted Callee	✓ Passed
SWC - 113	DoS with Failed Call	✓ Passed
SWC - 114	Transaction Order Dependence	✓ Passed
SWC - 115	Authorization through tx.origin	✓ Passed
SWC - 116	Block values as a proxy for time	✓ Passed
SWC - 117	Signature Malleability	✓ Passed



ID	Description	Status
SWC - 118	Incorrect Constructor Name	✓ Passed
SWC - 119	Shadowing State Variables	✓ Passed
SWC - 120	Weak Sources of Randomness from Chain Attributes	✓ Passed
SWC - 121	Missing Protection against Signature Replay Attacks	✓ Passed
SWC - 122	Lack of Proper Signature Verification	✓ Passed
SWC - 123	Requirement Violation Passed	✓ Passed
SWC - 124	Write to Arbitrary Storage Location	✓ Passed
SWC - 125	Incorrect Inheritance Order Passed	✓ Passed
SWC - 126	Insufficient Gas Griefing	✓ Passed
SWC - 127	Arbitrary Jump with Function Type Variable	✓ Passed
SWC - 128	DoS With Block Gas Limit	✓ Passed
SWC - 129	Typographical Error	✓ Passed
SWC - 130	Right-To-Left-Override control character (U+202E)	✓ Passed
SWC - 131	Presence of unused variables	✓ Passed
SWC - 132	Unexpected Ether balance	✓ Passed
SWC - 133	Hash Collisions With Multiple Variable Arguments	✓ Passed
SWC - 134	Message call with hardcoded gas amount	✓ Passed
SWC - 135	Code With No Effects	✓ Passed
SWC - 136	Unencrypted Private Data On-Chain	✓ Passed



Manual Analysis

Risk Status

Risk severity	Meaning
! Critical	None critical severity issues identified
! High	None high severity issues identified
! Medium	None medium severity issues identified
! Low	None low severity issues identified
Verified	29 functions and instances verified and checked
Safety Score	93 out of 100

Report Summary

Crypto Hub team has performed a line-by-line manual analysis and automated review of the smart contract. The smart contract was analyzed mainly for common smart contract vulnerabilities, exploits, and manipulation hacks.

ALTITUDE smart contract source code has **LOW RISK SEVERITY**.

ALTITUDE has **PASSED** the smart contract audit.



Note for stakeholders:

Be aware that active smart contract owner privileges constitute an elevated impact on smart contract's safety and security.

Make sure that the project team's KYC/identity is verified by an independent firm, e.g., Crypto Hub.

Always check if the contract's liquidity is locked. A longer liquidity lock plays an important role in the project's longevity. It is recommended to have multiple liquidity providers.

Examine the unlocked token supply in the owner, developer, or team's private wallets. Understand the project's tokenomics, and make sure the tokens outside of the LP Pair are vested or locked for a longer period of time.

Ensure that the project's official website is hosted on a trusted platform, and is using an active SSL certificate. The website's domain should be registered for a longer period of time.



Audit & KYC Certificates

We hereby certificate ALTITUDE smart contract as an audited project under the Crypto Hub enterprise umbrella. And to represent it as such we issued the following certificate:

CRYPTO HUB
WEB3 AGENCY

3rd November 2023

Audit Certificate

This Audit verification certifies that the mentioned project has been audited by Crypto Hub - Web3 Agency and their team has performed a line-by-line manual analysis and automated review of the above smart contract.

ALTITUDE PROJECT
<https://basescan.org/token/0x90678c02823b21772fa7e91b27ee70490257567b#code>

Ricardo Pontes
CTO / Founder

Pedro Costa
CEO / Founder

Verify the authenticity of this Audit Certificate on
<https://www.cryptohub.agency/>

MythX



Legal Advisory

Important Disclaimer

Crypto Hub provides contract auditing and project verification services for blockchain projects. The purpose of the audit is to analyze the on-chain smart contract source code, and to provide a basic overview of the project. This report should not be transmitted, disclosed, referred to, or relied upon by any person for any purposes without Crypto Hub prior written consent.

Crypto Hub provides the easy-to-understand assessment of the project, and the smart contract (otherwise known as the source code). The audit makes no statements or warranties on the security of the code. It also cannot be considered as an adequate assessment regarding the utility and safety of the code, bug-free status, or any other statements of the contract. While we have used all the data at our disposal to provide the transparent analysis, it is important to note that you should not rely on this report only — we recommend proceeding with several independent audits and a public bug bounty program to ensure the security of smart contracts. Be aware that smart contracts deployed on a blockchain aren't resistant from external vulnerability, or a hack. Be aware that active smart contract owner privileges constitute an elevated impact to smart contract's safety and security. Therefore, Crypto Hub does not guarantee the explicit security of the audited smart contract.

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.

This report should not be considered as an endorsement or disapproval of any project or team. The information provided in this report does not constitute investment advice, financial advice, trading advice, or any other sort of advice and you should not treat any of the report's content as such. Do conduct your own due diligence and consult your financial advisor before making any investment decisions.



About Crypto Hub

Crypto Hub provides intelligent blockchain solutions. Crypto Hub is developing an ecosystem that is seamless and responsive. Some of our services: Blockchain Security, Token Launchpad, NFT Marketplace, etc. Crypto Hub's mission is to interconnect multiple services like Blockchain Security, DeFi, Gaming, and Marketplace under one ecosystem that is seamless, multi-chain compatible, scalable, secure, fast, responsive, and easy-to-use.

Crypto Hub is built by a decentralized team of UI experts, contributors, engineers, and enthusiasts from all over the world. Our team currently consists of 3+ core team members, and 6+ casual contributors. Crypto Hub provides manual, static, and automatic smart contract analysis, to ensure that the project is checked against known attacks and potential vulnerabilities.

