



Smart Contract Security Audit

Project: SUN

Oct 17, 2022



Contract Address

0xF586f0c88A8e5B6e5B7C0A2EEf0CB3aE94ad91Bd

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The review does not address the compiler layer, any other areas beyond the programming language, or other programming aspects that could present security risks. If the audited source files are smart contract files, risks or issues introduced by using data feeds from off-chain sources are not extended by this review either.

Audit Review

The source code of the Sun was audited in order to acquire a clear impression of how the project was implemented. The Cracken Tech audit team conducted in-depth research, analysis, and scrutiny, resulting in a series of observations. A detailed list of each issue found, and vulnerabilities in the source code will be included in the audit report. The problems and potential solutions are given in this report, we will identify common sources for such problems and comments for improvement.

The auditing process will follow a routine as special considerations by Cracken:

- Review of the specifications, sources, and instructions provided to Cracken to make sure the contract logic meets the intentions of the client without exposing the user's funds to risk.
- Manual review of the entire codebase by our experts, which is the process of reading source code line-by-line in an attempt to identify potential vulnerabilities.
- Specification comparison is the process of checking whether the code does what the specifications, sources, and instructions provided to Cracken describe.
- Test coverage analysis determines whether the test cases are covering the code and how much code is exercised when we run the test cases.
- Symbolic execution is analyzing a program to determine what inputs cause each part of a program to execute.
- Reviewing the codebase to improve maintainability, security, and control based on the established industry and academic practices.

Project Review

Token Summary

Parameter	Result
Token Name	Sun
Token Symbol	Sun
Token Decimal	18
Total Supply	100,000,000
Platform	HECO
Buy Tax Fee	4%
Sell Tax Fee	4%
Contract Creation Date	Oct 16, 2022
Liquidity Status	Not Available
Liquidity Lockup Time	Not Available
Compiler Version	v0.6.12+commit.27d51765
Optimization	Yes with 200 runs
Contract Address	0xf586f0c88a8e5b6e5b7c0a2eef0cb3ae94ad91bd
Deployer Address	0x0f86869b92f525079efe39901ff0a79eac2ee544
Owner Address	0x0f86869b92f525079efe39901ff0a79eac2ee544

Source Code

CRACKEN was commissioned by Sun to perform an audit based on the following smart contract:

<https://www.hecoinfo.com/en-us/address/0xf586f0c88a8e5b6e5b7c0a2eef0cb3ae94ad91bd>





Smart Contract Vulnerability Checks

Vulnerability	Auto-Scan	Manual-Scan	Result
Unencrypted Private Data On-Chain	Complete	Complete	Low / No Risk
Code With No Effects	Complete	Complete	Low / No Risk
Message call with hardcoded gas amount	Complete	Complete	Low / No Risk
Hash Collisions with Multiple Variable Length Arguments	Complete	Complete	Low / No Risk
Unexpected Ether balance	Complete	Complete	Low / No Risk
Presence of unused variables	Complete	Complete	Low / No Risk
Right-To-Left-Override control character (U+202E)	Complete	Complete	Low / No Risk
Typographical Error	Complete	Complete	Low / No Risk
DoS With Block Gas Limit	Complete	Complete	Low / No Risk
Arbitrary Jump with Function Type Variable	Complete	Complete	Low / No Risk
Insufficient Gas Grieving	Complete	Complete	Low / No Risk
Incorrect Inheritance Order	Complete	Complete	Low / No Risk
Write to Arbitrary Storage Location	Complete	Complete	Low / No Risk
Requirement Violation	Complete	Complete	Low / No Risk
Missing Protection against Signature Replay Attacks	Complete	Complete	Low / No Risk
Weak Sources of Randomness from Chain Attributes	Complete	Complete	Low / No Risk
Authorization through tx. origin	Complete	Complete	Low / No Risk
Delegate call to Untrusted Callee	Complete	Complete	Low / No Risk





Vulnerability	Auto-Scan	Manual-Scan	Result
Use of Deprecated Solidity Functions	Complete	Complete	Low / No Risk
Assert Violation	Complete	Complete	Low / No Risk
Reentrancy	Complete	Complete	Low / No Risk
Unprotected SELF-DESTRUCT Instruction	Complete	Complete	Low / No Risk
Unprotected Ether Withdrawal	Complete	Complete	Low / No Risk
Outdated Compiler Version	Complete	Complete	Low / No Risk
Integer Overflow and Underflow	Complete	Complete	Low / No Risk
Function Default Visibility	Complete	Complete	Low / No Risk

Manual Code Review

Classification of Issues

Severity	Description
 High-Risk	A vulnerability that affects the desired outcome when using a contract, or provides the opportunity to use a contract in an unintended way.
 Medium-Risk	A vulnerability that could affect the desired outcome of executing the contract in a specific scenario.
 Low-Risk	A vulnerability that does not have a significant impact on possible scenarios for the use of the contract and is probably subjective.
 Informational	A vulnerability that has an informational character but is not affecting any of the code.

Findings

Severity	Found
 High-Risk	1
 Medium-Risk	0
 Low-Risk	2
 Informational	0
Total	3

● High-Risk: functions make cause the rug or scam project. **Must be fixed.**

The blacklist function is enabled

Description:

The owner can add blacklist users

[HIGH-RISK]

```
function blacklistAddress(address account, bool value) external onlyOwner{  
  
    _isBlacklisted[account] = value;  
  
}
```

Recommendation:

We recommend that the owner should disable the blacklist function.

● **Low-Risk:** Implementation of certain corrective actions or accepting the risk.

Set Buy / Sell Fees

Description:

Total fees can be changed up to 20%.

```
function setFees(uint256 _mark, uint256 _reward) external onlyOwner {
```

```
    require(_mark.add(_reward) < 20, "Tax too high");
```

```
    marketingFee = _mark;
```

```
    HTRewardsFee = _reward;
```

```
    totalFees = marketingFee.add(HTRewardsFee);
```

```
}
```

● Low-Risk: Implementation of certain corrective actions or accepting the risk.

Set kill blocks function is enabled

Description:

The owner can kill blocks

```
function setKillTime(uint kill) external onlyOwner {
```

```
    killTime = kill;
```

```
}
```

Privileged Functions

onlyOwner

Function Name	Parameters	Visibility
approve	address spender, uint256 amount	Public
blacklistAddress	address account, bool value	External
cancelLimit	None	External
cancelLimit	None	External
claim	None	Public
decreaseAllowance	address spender, uint256 subtractedValue	Public
excludeFromDividends	address account	External
excludeFromFees	address account, bool excluded	Public
excludeMultipleAccountsFromFees	address[] calldata accounts, bool excluded	Public
increaseAllowance	address spender, uint256 addedValue	Public
processDividendTracker	uint256 gas	External
renounceOwnership	None	Public
rescueEther	None	Public
setAutomatedMarketMakerPair	address pair, bool value	Public
setFees	uint256 _mark, uint256 _reward	External
setKillTime	uint kill	External
setMarketingWallet	address payable wallet	External
setShares	uint256 _mark, uint256 _reward	External
setSwapAndLiquifyEnabled	bool status	External

Function Name	Parameters	Visibility
setTradingIsEnabled	uint kill	External
transfer	address recipient, uint256 amount	External
transferFrom	address sender, address recipient, uint256 amount	Public
transferOwnership	address newOwner	Public
updateClaimWait	uint256 claimWait	External
updateGasForProcessing	uint256 newValue	Public
updateUniswapV2Router	address newAddress	Public

Contract Ownership

The contract ownership of Sun is not currently renounced. The ownership of the contract grants special powers to the protocol creators, making them the sole addresses that can call sensible ownable functions that may alter the state of the protocol.

The current owner is the address `0x0f86869b92f525079efe39901ff0a79eac2ee544` which can be viewed: [HERE](#)

The owner wallet has the power to call the functions displayed on the privileged functions list above, if the owner wallet is compromised these privileges could be exploited.

We recommend the team renounce ownership at the right time if possible, or gradually migrate to a time lock with governing functionalities in respect of transparency and safety considerations.

Liquidity Overview

Liquidity Information

Parameter	Result
Pair Address	<code>0xe72D6eF1f66D124727E7E73DB374bef288844857</code>
Sun Reserves	143.88M Sun
WHT Reserves	787.17 WHT
Liquidity Value	\$12.66K USD
Liquidity Ownership	<code>0x0f86869b92f525079efe39901ff0a79eac2ee544</code>

Tokenomics

Rank	Address	Quantity (Token)	Percentage
1	0xe72d6ef1f66d124727e7e73db374bef288844857	148,185,319.716360 66	14.81%
2	0x0000000000000000000000000000000000dead	100,000,000	10.00%
3	0x27f9a8ecca0313248e7216a46ffa40579f09fe89	87,420,000	8.74%
4	0x82317f4526e3a33d174ec2ddd783915a5de6cdf2	23,064,000	2.30%
5	0x53eb00357997a1117c92891dbc34644da2c35219	18,193,857.0668331 16	1.81%

Social Media Check

Social Media Type	Link	Result
Twitter	https://twitter.com/SuncoinHeco/	Checked
Telegram	https://t.me/Sun_Heco/	Checked

Audit Conclusion

- The owner cannot mint new tokens
- The owner cannot pause trading
- **The owner can blacklist users [High-Risk]**
- **The owner can kill blocks [Low-Risk]**
- The owner cannot change the max tx amount
- **The owner can change buy/sell fees up to 20% [Low-Risk]**
(The fees cannot be changed if the owner renounced the ownership)

AUDIT IS PASSED