

Assure DeFi™

The Verification **Gold Standard**™



Security Assessment **MOONREUM Token**

October 11, 2023

Audit Status: Pass

Audit Edition: Advance



Risk Analysis

Classifications of Manual Risk Results

Classification	Description
🔴 Critical	Danger or Potential Problems.
🟠 High	Be Careful or Fail test.
🟡 Low	Pass, Not-Detected or Safe Item.
🔵 Informational	Function Detected

Manual Code Review Risk Results

Contract Privilege	Description
🟢 Buy Tax	0
🟢 Sale Tax	0
🟢 Cannot Sale	Pass
🟢 Cannot Sale	Pass
🟢 Max Tax	0
🟢 Modify Tax	Not-Detected
🟢 Fee Check	Pass
🟢 Is Honeypot?	Not detected
🟢 Trading Cooldown	Not Detected
🟢 Can Pause Trade?	Pass
🟢 Pause Transfer?	Not-Detected
🟢 Max Tx?	Pass
🟢 Is Anti Whale?	Not Detected
🟢 Is Anti Bot?	Not Detected

Contract Privilege	Description
● Is Blacklist?	Not Detected
● Blacklist Check	Pass
● is Whitelist?	Not-Detected
● Can Mint?	Pass
● Is Proxy?	Not Detected
● Can Take Ownership?	Not detected
● Hidden Owner?	Not detected
● Owner	0x0AB77103c0f399293F2b54e8e104Fb9f104Dd080
● Self Destruct?	Not Detected
● External Call?	Not detected
● Other?	Not detected
● Holders	1
● Auditor Confidence	High

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	0x5144f3E4122128b1FAdeAfa758961946124e0fce
Name	MOONREUM
Token Tracker	MOONREUM (MOONREUM)
Decimals	18
Supply	1,000,000,000,000
Platform	Ethereum
compiler	v0.8.4+commit.c7e474f2
Contract Name	StandardToken
Optimization	Yes with 200 runs
LicenseType	MIT
Language	Solidity
Codebase	https://etherscan.io/ address/0x5144f3E4122128b1FAdeAfa758961946124e0fce#code
Payment Tx	0xed38fe13a1ec28c9f10cf7c4f7d8d929a8704f9d72d528adcb955f 50c46c386f

Main Contract Assessed Contract Name

Name	Contract	Live
MOONREUM	0x5144f3E4122128b1FAdeAfa758961946124e0fce	Yes

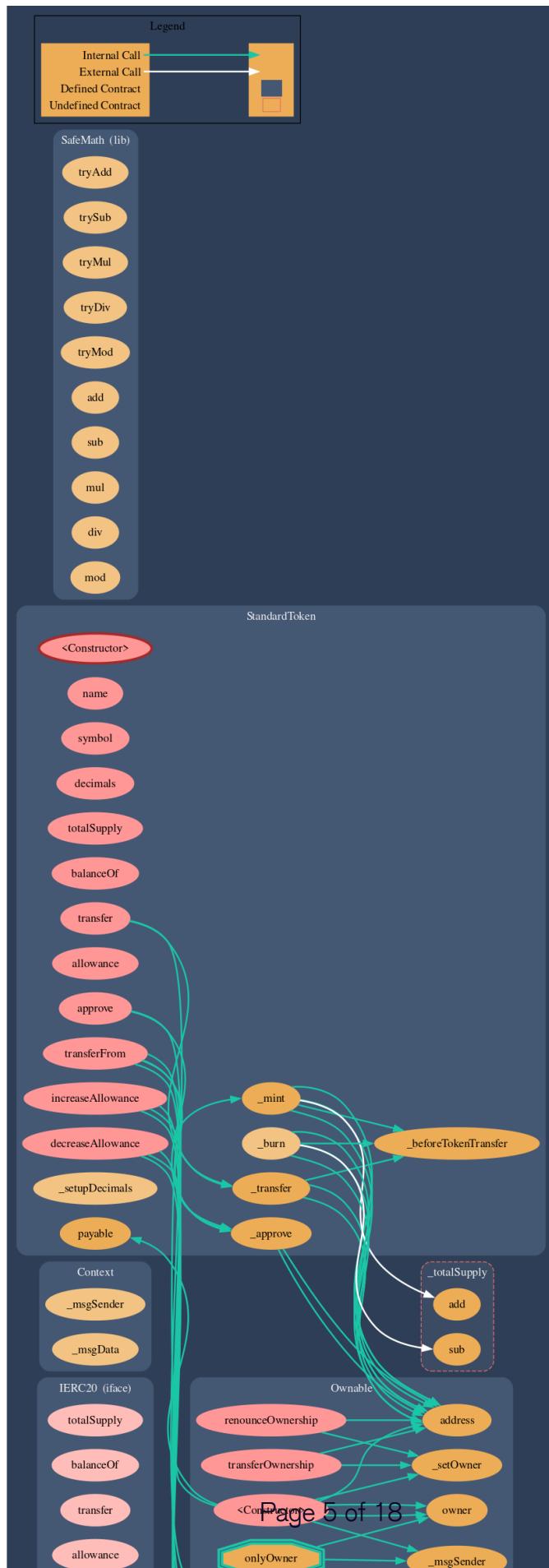
TestNet Contract was Not Assessed

Solidity Code Provided

SolidID	File Sha-1	FileName
MOONREUM	995f0e16243eff9f4e673dd69fcf47a0f8f09d0	MOONREUM.sol
MOONREUM		
MOONREUM		
MOONREUM		

Call Graph

The contract for MOONREUM 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	MOONREUM.sol	L: 0 C: 0
SWC-101	Pass	Integer Overflow and Underflow.	MOONREUM.sol	L: 0 C: 0
SWC-102	Pass	Outdated Compiler Version file.	MOONREUM.sol	L: 0 C: 0
SWC-103	Pass	A floating pragma is set.	MOONREUM.sol	L: 0 C: 0
SWC-104	Pass	Unchecked Call Return Value.	MOONREUM.sol	L: 0 C: 0
SWC-105	Pass	Unprotected Ether Withdrawal.	MOONREUM.sol	L: 0 C: 0
SWC-106	Pass	Unprotected SELFDESTRUCT Instruction	MOONREUM.sol	L: 0 C: 0
SWC-107	Pass	Read of persistent state following external call.	MOONREUM.sol	L: 0 C: 0
SWC-108	Pass	State variable visibility is not set..	MOONREUM.sol	L: 0 C: 0
SWC-109	Pass	Uninitialized Storage Pointer.	MOONREUM.sol	L: 0 C: 0
SWC-110	Pass	Assert Violation.	MOONREUM.sol	L: 0 C: 0
SWC-111	Pass	Use of Deprecated Solidity Functions.	MOONREUM.sol	L: 0 C: 0
SWC-112	Pass	Delegate Call to Untrusted Callee.	MOONREUM.sol	L: 0 C: 0
SWC-113	Pass	Multiple calls are executed in the same transaction.	MOONREUM.sol	L: 0 C: 0

ID	Severity	Name	File	location
SWC-114	Pass	Transaction Order Dependence.	MOONREUM.sol	L: 0 C: 0
SWC-115	Pass	Authorization through tx.origin.	MOONREUM.sol	L: 0 C: 0
SWC-116	Pass	A control flow decision is made based on The block.timestamp environment variable.	MOONREUM.sol	L: 0 C: 0
SWC-117	Pass	Signature Malleability.	MOONREUM.sol	L: 0 C: 0
SWC-118	Pass	Incorrect Constructor Name.	MOONREUM.sol	L: 0 C: 0
SWC-119	Pass	Shadowing State Variables.	MOONREUM.sol	L: 0 C: 0
SWC-120	Pass	Potential use of block.number as source of randomness.	MOONREUM.sol	L: 0 C: 0
SWC-121	Pass	Missing Protection against Signature Replay Attacks.	MOONREUM.sol	L: 0 C: 0
SWC-122	Pass	Lack of Proper Signature Verification.	MOONREUM.sol	L: 0 C: 0
SWC-123	Pass	Requirement Violation.	MOONREUM.sol	L: 0 C: 0
SWC-124	Pass	Write to Arbitrary Storage Location.	MOONREUM.sol	L: 0 C: 0
SWC-125	Pass	Incorrect Inheritance Order.	MOONREUM.sol	L: 0 C: 0
SWC-126	Pass	Insufficient Gas Griefing.	MOONREUM.sol	L: 0 C: 0
SWC-127	Pass	Arbitrary Jump with Function Type Variable.	MOONREUM.sol	L: 0 C: 0
SWC-128	Pass	DoS With Block Gas Limit.	MOONREUM.sol	L: 0 C: 0
SWC-129	Pass	Typographical Error.	MOONREUM.sol	L: 0 C: 0
SWC-130	Pass	Right-To-Left-Override control character (U+202E).	MOONREUM.sol	L: 0 C: 0
SWC-131	Pass	Presence of unused variables.	MOONREUM.sol	L: 0 C: 0

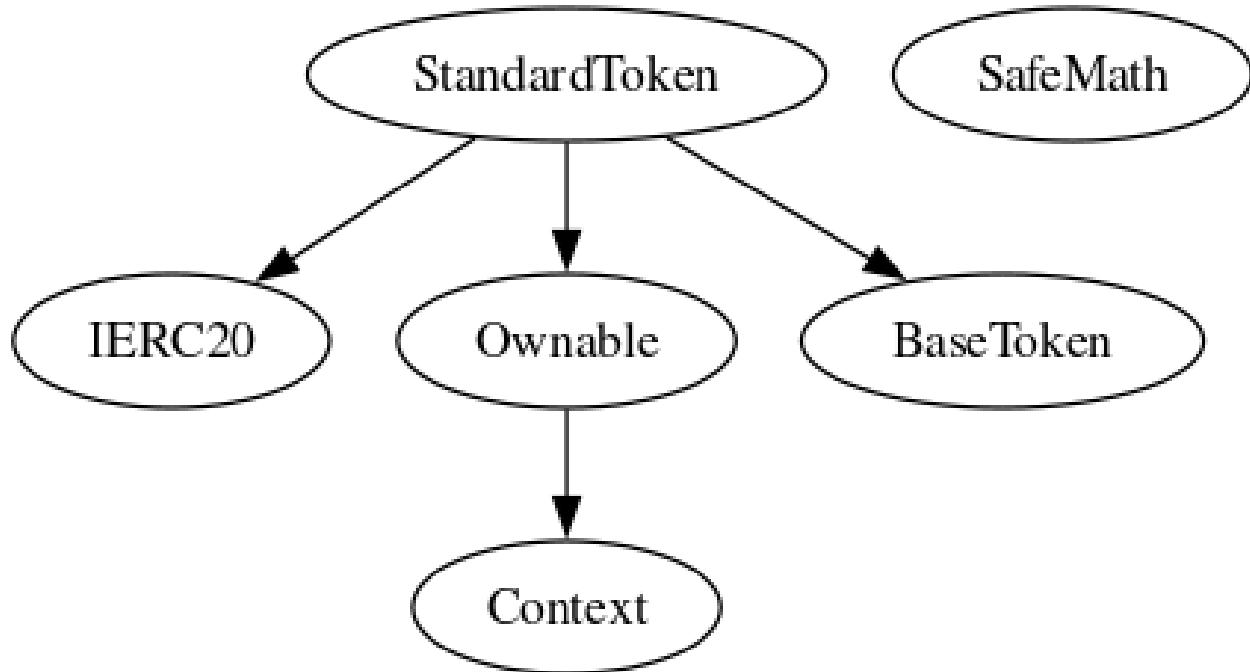
ID	Severity	Name	File	location
SWC-132	Pass	Unexpected Ether balance.	MOONREUM.sol	L: 0 C: 0
SWC-133	Pass	Hash Collisions with Multiple Variable Length Arguments.	MOONREUM.sol	L: 0 C: 0
SWC-134	Pass	Message call with hardcoded gas amount.	MOONREUM.sol	L: 0 C: 0
SWC-135	Pass	Code With No Effects (Irrelevant/Dead Code).	MOONREUM.sol	L: 0 C: 0
SWC-136	Pass	Unencrypted Private Data On-Chain.	MOONREUM.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 MOONREUM has the following inheritance structure.

The Project has a Total Supply of 1,000,000,000,000



Smart Contract Advance Checks

ID	Severity	Name	Result	Status
MOONREUM-01	Minor	Potential Sandwich Attacks.	Pass	Not-Found
MOONREUM-02	Minor	Function Visibility Optimization	Pass	Not-Detected
MOONREUM-03	Minor	Lack of Input Validation.	Pass	Not-Detected
MOONREUM-04	Major	Centralized Risk In addLiquidity.	Pass	Not-Detected
MOONREUM-05	Minor	Missing Event Emission.	Pass	Not-Detected
MOONREUM-06	Minor	Conformance with Solidity Naming Conventions.	Pass	Not-Detected
MOONREUM-07	Minor	State Variables could be Declared Constant.	Pass	Not-Found
MOONREUM-08	Minor	Dead Code Elimination.	Pass	Not-Found
MOONREUM-09	Major	Third Party Dependencies.	Pass	Not-Found
MOONREUM-10	Major	Initial Token Distribution.	Pass	Not-Found
MOONREUM-11	Minor	Airdrop is present in code.	Pass	Not-Detected
MOONREUM-12	Major	Centralization Risks In The X Role	Pass	Not-Found
MOONREUM-13	Informational	Extra Gas Cost For User..	Pass	Not-Found
MOONREUM-14	Critical	Unnecessary Use Of SafeMath	Fail	Detected
MOONREUM-15	Medium	Symbol Length Limitation due to Solidity Naming Standards.	Pass	Not-Found
MOONREUM-16	Medium	Taxes can be up to 100%	Pass	Not-Detected

ID	Severity	Name	Result	Status
MOONREUM-17	Informational	Conformance to numeric notation best practice.	Pass	Not-Found
MOONREUM-18	Critical	Stop Transactions by using Enable Trade.	Pass	Not-Detected

MOONREUM-14 | Unnecessary Use Of SafeMath

Category	Severity	Location	Status
Logical Issue	● Critical	MOONREUM.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.
● High	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
◆ Low	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.
ℹ 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
● High	NaN	undefined	undefined
● Medium	1	0	0
◆ Low	NaN	undefined	undefined
ℹ Informational	0	0	0
Total	NaN	0	0

Social Media Checks

Social Media	URL	Result
Twitter	https://twitter.com/moonreumio	Pass
Other		Fail
Website	https://moonreum.io/	Pass
Telegram	https://t.me/moonreum_global	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	98/100
Auditor Score	85/100
Review by Section	Score
Manual Scan Score	29/23
SWC Scan Score	37 /37
Advance Check Score	32 /40

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:

- Owner can't set max tx amount.
- No high-risk Exploits/Vulnerabilities Were Found in the Source Code.

**Auditor Score =85
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 require statements 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

Assure Defi 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 depreciation of technologies.

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