



STEMX

# Smart Contract Audit Report

# TABLE OF CONTENTS

## [Audited Details](#)

- Audited Project
- Blockchain
- Addresses
- Project Website
- Codebase

## [Summary](#)

- Contract Summary
- Audit Findings Summary
- Vulnerabilities Summary

## [Conclusion](#)

## [Audit Results](#)

## [Smart Contract Analysis](#)

- Detected Vulnerabilities

## [Disclaimer](#)

## [About Us](#)

# AUDITED DETAILS

## Audited Project

Project name	Token ticker	Blockchain
STEMX	STEMX	Binance Smart Chain

## Addresses

Contract address	0x26734add0650719ea29087fe5cc0aab81b4f237d
Contract deployer address	0x14Ed4C2322543C7eC8cc753b31c011f43d6Bf4D4

## Project Website

<a href="https://stemx.pro/">https://stemx.pro/</a>
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## Codebase

<a href="https://bscscan.com/address/0x26734add0650719ea29087fe5cc0aab81b4f237d#code">https://bscscan.com/address/0x26734add0650719ea29087fe5cc0aab81b4f237d#code</a>
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# SUMMARY

The sports world market continues to grow from year to year, and it is expected that the market will further increase by 30% annually in the next five years. Sports betting is the favorite type of entertainment for sports fans, and it will grow alongside the sports world market. This kind of gambling roots at the beginning of human history. Its origins might be seen even during Rome Empire when betting for the best gladiator was similar to a daily routine. Nowadays, the betting industry continues to thrive. Sports bring many emotions, uniting people of different cultures and ages in communities with the same interests – fan clubs. Genuine engagement in sports life attracts fans to bookmakers to support their team and, as a result, receive possible income. During the existence of sports betting, it got the reputation of dishonest and fraudulent earnings that speculates on the trust and naivety of gambling people. It is often considered a way of preying on fans' love and loyalty. Modern technologies open new opportunities. STEM project has an offer to all sports fans, and is ready to present a revolutionary solution for the betting market, change game the rules, and make money on love without any risk of losing all the savings.

## Contract Summary

### **Documentation Quality**

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

- The technical description is provided clearly and structured and also don't have any high risk issue.

### **Code Quality**

The Overall quality of the basecode is standard.

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

### **Test Coverage**

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

## Audit Findings Summary

- SWC-103 | Pragma statements can be allowed to float when a contract is intended on lines 7.

## CONCLUSION

We have audited the STEMX project released on January 2021 to discover issues and identify potential security vulnerabilities in STEMX 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 satisfactory results with low-risk issues.

The issues found in the STEMX 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 are some arithmetic operation issues, and a floating pragma is set. The current pragma Solidity directive is `^0.8.0`. 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.

# 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.	PASS
Integer Overflow and Underflow	SWC-101	If unchecked math is used, all math operations should be safe from overflows and underflows.	PASS
Outdated Compiler Version	SWC-102	It is recommended to use a recent version of the Solidity compiler.	PASS
Floating Pragma	SWC-103	Contracts should be deployed with the same compiler version and flags that they have been tested thoroughly.	ISSUE FOUND
Unchecked Call Return Value	SWC-104	The return value of a message call should be checked.	PASS
Unprotected Ether Withdrawal	SWC-105	Due to missing or insufficient access controls, malicious parties can withdraw from the contract.	PASS
SELFDESTRUCT Instruction	SWC-106	The contract should not be self-destructible while it has funds belonging to users.	PASS
Reentrancy	SWC-107	Check effect interaction pattern should be followed if the code performs recursive call.	PASS
Uninitialized Storage Pointer	SWC-109	Uninitialized local storage variables can point to unexpected storage locations in the contract.	PASS
Assert Violation	SWC-110 SWC-123	Properly functioning code should never reach a failing assert statement.	PASS
Deprecated Solidity Functions	SWC-111	Deprecated built-in functions should never be used.	PASS
Delegate call to Untrusted Callee	SWC-112	Delegatecalls should only be allowed to trusted addresses.	PASS

DoS (Denial of Service)	<b>SWC-113</b> <b>SWC-128</b>	Execution of the code should never be blocked by a specific contract state unless required.	<b>PASS</b>
Race Conditions	<b>SWC-114</b>	Race Conditions and Transactions Order Dependency should not be possible.	<b>PASS</b>
Authorization through tx.origin	<b>SWC-115</b>	tx.origin should not be used for authorization.	<b>PASS</b>
Block values as a proxy for time	<b>SWC-116</b>	Block numbers should not be used for time calculations.	<b>PASS</b>
Signature Unique ID	<b>SWC-117</b> <b>SWC-121</b> <b>SWC-122</b>	Signed messages should always have a unique id. A transaction hash should not be used as a unique id.	<b>PASS</b>
Incorrect Constructor Name	<b>SWC-118</b>	Constructors are special functions that are called only once during the contract creation.	<b>PASS</b>
Shadowing State Variable	<b>SWC-119</b>	State variables should not be shadowed.	<b>PASS</b>
Weak Sources of Randomness	<b>SWC-120</b>	Random values should never be generated from Chain Attributes or be predictable.	<b>PASS</b>
Write to Arbitrary Storage Location	<b>SWC-124</b>	The contract is responsible for ensuring that only authorized user or contract accounts may write to sensitive storage locations.	<b>PASS</b>
Incorrect Inheritance Order	<b>SWC-125</b>	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/.	<b>PASS</b>
Insufficient Gas Griefing	<b>SWC-126</b>	Insufficient gas grieving attacks can be performed on contracts which accept data and use it in a sub-call on another contract.	<b>PASS</b>
Arbitrary Jump Function	<b>SWC-127</b>	As Solidity doesnt support pointer arithmetics, it is impossible to change such variable to an arbitrary value.	<b>PASS</b>

Typographical Error	SWC-129	A typographical error can occur for example when the intent of a defined operation is to sum a number to a variable.	PASS
Override control character	SWC-130	Malicious actors can use the Right-To-Left-Override unicode character to force RTL text rendering and confuse users as to the real intent of a contract.	PASS
Unused variables	SWC-131 SWC-135	Unused variables are allowed in Solidity and they do not pose a direct security issue.	PASS
Unexpected Ether balance	SWC-132	Contracts can behave erroneously when they strictly assume a specific Ether balance.	PASS
Hash Collisions Variable	SWC-133	Using abi.encodePacked() with multiple variable length arguments can, in certain situations, lead to a hash collision.	PASS
Hardcoded gas amount	SWC-134	The transfer() and send() functions forward a fixed amount of 2300 gas.	PASS
Unencrypted Private Data	SWC-136	It is a common misconception that private type variables cannot be read.	PASS



# SMART CONTRACT ANALYSIS

Started	Saturday Sep 25 2021 10:33:47 GMT+0000 (Coordinated Universal Time)
Finished	Sunday Sep 26 2021 12:22:13 GMT+0000 (Coordinated Universal Time)
Mode	Standard
Main Source File	STEMX.sol

## Detected Issues

ID	Title	Severity	Status
SWC-103	A FLOATING PRAGMA IS SET.	low	acknowledged

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

LINE 7

### low SEVERITY

The current pragma Solidity directive is ""^0.8.0"". 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

- STEMX.sol

### Locations

```
6
7  pragma solidity ^0.8.0;
8
9  /**
10   * @dev Interface of the BEP20 standard as defined in the EIP.
11
```

# DISCLAIMER

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This is a limited report on our findings based on our analysis, in accordance with good industry practice as of the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, the details of which are set out in this report. In order to get a full view of our analysis, it is crucial for you to read the full report. While we have done our best in conducting our analysis and producing this report, it is important to note that you should not rely on this report and cannot claim against us on the basis of what it says or doesn't say, or how we produced it, and it is important for you to conduct your own independent investigations before making any decisions. We go into more detail on this in the below disclaimer below – please make sure to read it in full.

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## ABOUT US

Sysfixed is a blockchain security certification organization established in 2021 with the objective to provide smart contract security services and verify their correctness in blockchain-based protocols. Sysfixed automatically scans for security vulnerabilities in Ethereum and other EVM-based blockchain smart contracts. Sysfixed a comprehensive range of analysis techniques—including static analysis, dynamic analysis, and symbolic execution—can accurately detect security vulnerabilities to provide an in-depth analysis report. With a vibrant ecosystem of world-class integration partners that amplify developer productivity, Sysfixed can be utilized in all phases of your project's lifecycle. Our team of security experts is dedicated to the research and improvement of our tools and techniques used to fortify your code.