

# Pulse Network

smart contracts  
preliminary audit report  
for internal use only

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# 1. Disclaimer

This is a limited report on our findings based on our analysis, in accordance with good industry practice at 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 disclaimer below - please make sure to read it in full.

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## 2. Overview

HashEx was commissioned by the Pulse Network team to perform an audit of their smart contract. The audit was conducted between 30/11/2022 and 02/12/2022.

The purpose of this audit was to achieve the following:

- Identify potential security issues with smart contracts
- Formally check the logic behind given smart contracts.

Information in this report should be used for understanding the risk exposure of smart contracts, and as a guide to improving the security posture of smart contracts by remediating the issues that were identified.

Standard ERC20 token contract. The code is available at [0x86c4d3aAD236239D96B292a55F53CC1419CBB1b5](#) in Ethereum mainnet. The contracts SafeMath, ERC20, IERC20, and Context are written according to the OpenZeppelin library standard, which is considered the best practice.

## 2.1 Summary

Project name	Pulse Network
URL	<a href="http://pulsemед.xyz">http://pulsemед.xyz</a>
Platform	Ethereum
Language	Solidity

## 2.2 Contracts

Name	Address
pulse	0x86c4d3aAD236239D96B292a55F53CC1419CBB1b5

### 3. Found issues



● Info

1 (100%)

#### C1. pulse

ID	Severity	Title	Status
C1-01	● Info	Too wide pragma	🔍 Open

## 4. Contracts

### C1. pulse

#### Overview

[Standard ERC20](#) token contract.

#### Issues

##### C1-01 Too wide pragma

[Info](#)[Open](#)

The range of supported compilers `pragma solidity >=0.4.22 <0.9.0` is too wide. While the reviewed contract is compiled with appropriate 0.7.4 version of Solidity, we recommend anyone who is going to fork the Pulse Network token to restrict `pragma <0.8.0`.

## 5. Conclusion

The audited contract is an ERC20 token made with standard OpenZeppelin templates. No issues of critical, high, medium or low severity were found. The reviewed contract follows the best practices of smart contract development.



## Appendix A. Issues severity classification

- **Critical.** Issues that may cause an unlimited loss of funds or entirely break the contract workflow. Malicious code (including malicious modification of libraries) is also treated as a critical severity issue. These issues must be fixed before deployments or fixed in already running projects as soon as possible.
- **High.** Issues that may lead to a limited loss of funds, break interaction with users, or other contracts under specific conditions. Also, issues in a smart contract, that allow a privileged account the ability to steal or block other users' funds.
- **Medium.** Issues that do not lead to a loss of funds directly, but break the contract logic. May lead to failures in contracts operation.
- **Low.** Issues that are of a non-optimal code character, for instance, gas optimization tips, unused variables, errors in messages.
- **Info.** Issues that do not impact the contract operation. Usually, info severity issues are related to code best practices, e.g. style guide.

## Appendix B. Issue status description

- ✔ **Resolved.** The issue has been completely fixed.
- 🔧 **Partially fixed.** Parts of the issue have been fixed but the issue is not completely resolved.
- 👁 **Acknowledged.** The team has been notified of the issue, no action has been taken.
- ❓ **Open.** The issue remains unresolved.

## Appendix C. List of examined issue types

- Business logic overview
- Functionality checks
- Following best practices
- Access control and authorization
- Reentrancy attacks
- Front-run attacks
- DoS with (unexpected) revert
- DoS with block gas limit
- Transaction-ordering dependence
- ERC/BEP and other standards violation
- Unchecked math
- Implicit visibility levels
- Excessive gas usage
- Timestamp dependence
- Forcibly sending ether to a contract
- Weak sources of randomness
- Shadowing state variables
- Usage of deprecated code

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