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AUDIT COMPANY

Smart Contract Security Audit

TechRate

January, 2022

Audit Details

Audited project

Radio Hero

Deployer address

0xf11ab5b56e0c54f403d4937667600b8c841627c6

Client contacts:

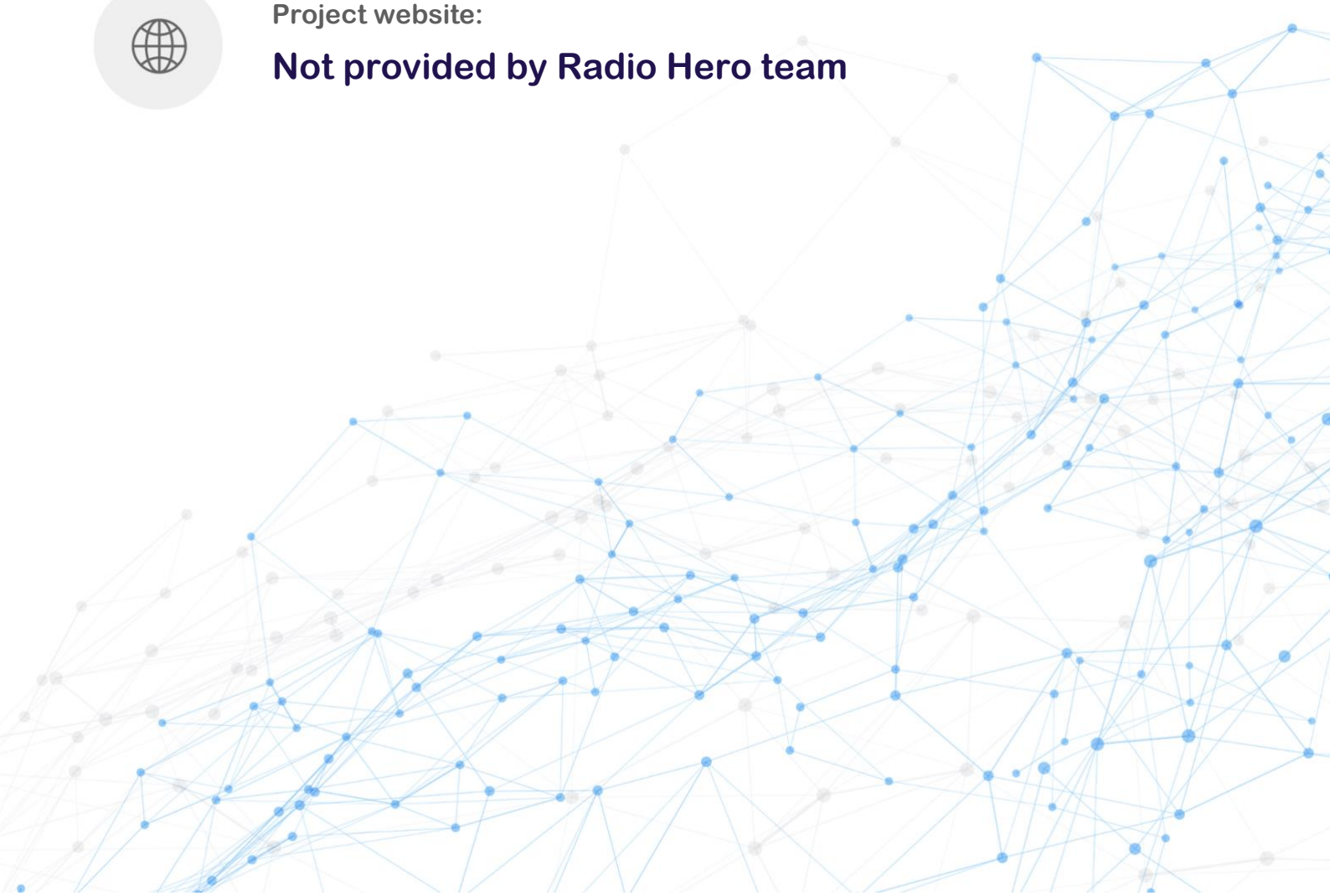
Radio Hero team

Blockchain

Binance Smart Chain

Project website:

Not provided by Radio Hero team



Disclaimer

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

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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.

Background

TechRate was commissioned by Radio Hero to perform an audit of smart contracts:

https://bscscan.com/address/0x0206CFD417f7BfA500B029558232a5f5294dAEd2#code

The purpose of the audit was to achieve the following:

- Ensure that the smart contract functions as intended.
- Identify potential security issues with the smart contract.

The information in this report should be used to understand the risk exposure of the smart contract, and as a guide to improve the security posture of the smart contract by remediating the issues that were identified.

Contracts Details

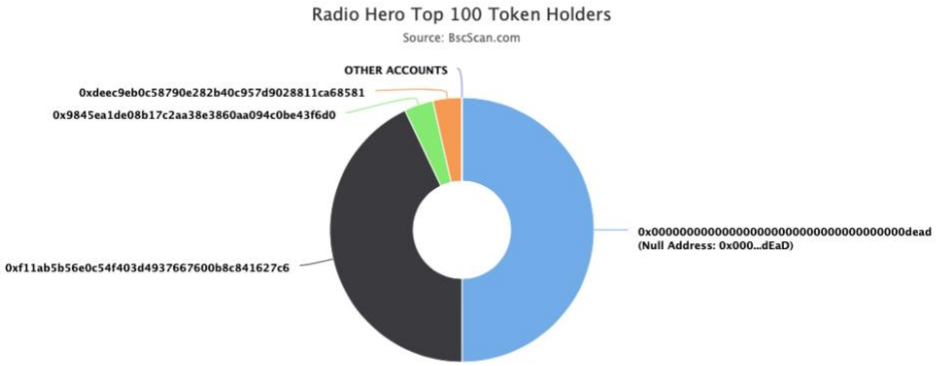
Token contract details for 11.01.2021

Contract name	Radio Hero
Contract address	0x0206CFD417f7BfA500B029558232a5f5294dAEd2
Total supply	3,000,000,000,000
Token ticker	RAHO
Decimals	18
Token holders	4
Transactions count	4
Top 100 holders dominance	100.00%
game	0x4d2c4dee01ca2b00a3dc15b4c3a91546b7368038
Whitelist status	False
Control	0x6853accee342ebefa09c197f6dbe1faabba1f5ab
pair	0x0000000000000000000000000000000000000000
Contract deployer address	0xf11ab5b56e0c54f403d4937667600b8c841627c6
Contract's current owner address	0xf11ab5b56e0c54f403d4937667600b8c841627c6

Radio Hero Token Distribution

The top 100 holders collectively own 100.00% (3,000,000,000,000.00 Tokens) of Radio Hero

Token Total Supply: 3,000,000,000,000.00 Token | Total Token Holders: 4



(A total of 3,000,000,000,000.00 tokens held by the top 100 accounts from the total supply of 3,000,000,000,000.00 token)

Radio Hero Contract Interaction Details

Time Series: Token Contract Overview

Tue 4, Jan 2022 - Sat 8, Jan 2022

Radio Hero Top 10 Token Holders

Rank	Address	Quantity (Token)	Percentage
1	Null Address: 0x000...dEaD	1,500,000,000,000	50.0000%
2	0xf11ab5b56e0c54f403d4937667600b8c841627c6	1,287,264,000,000	42.9088%
3	0x9845ea1de08b17c2aa38e3860aa094c0be43f6d0	106,368,000,000	3.5456%
4	0xdeec9eb0c58790e282b40c957d9028811ca68581	106,368,000,000	3.5456%

Contract functions details

+ Context
  - [Int] _msgSender
  - [Int] _msgData

+ Ownable (Context)
  - [Pub] <Constructor> #
  - [Pub] owner
  - [Pub] renounceOwnership #
    - modifiers: onlyOwner
  - [Pub] transferOwnership #
    - modifiers: onlyOwner
  - [Prv] _setOwner #

+ [Lib] Address
  - [Int] isContract
  - [Int] sendValue #
  - [Int] functionCall #
  - [Int] functionCall #
  - [Int] functionCallWithValue #
  - [Int] functionCallWithValue #
  - [Int] functionStaticCall
  - [Int] functionStaticCall
  - [Int] functionDelegateCall #
  - [Int] functionDelegateCall #
  - [Prv] _verifyCallResult

+ [Int] IERC20
  - [Ext] totalSupply
  - [Ext] balanceOf
  - [Ext] transfer #
  - [Ext] allowance
  - [Ext] approve #
  - [Ext] transferFrom #

+ [Int] IERC20Metadata (IERC20)
  - [Ext] name
  - [Ext] symbol
  - [Ext] decimals

+ ERC20 (Context, IERC20, IERC20Metadata)
  - [Pub] <Constructor> #
  - [Pub] name
  - [Pub] symbol
  - [Pub] decimals
  - [Pub] totalSupply
  - [Pub] balanceOf
  - [Pub] transfer #
  - [Pub] allowance
  - [Pub] approve #
  - [Pub] transferFrom #
  - [Pub] increaseAllowance #

  - [Pub] decreaseAllowance #
  - [Int] _transfer #
  - [Int] _mint #
  - [Int] _burn #
  - [Int] _approve #
  - [Int] _beforeTokenTransfer #
  - [Int] _afterTokenTransfer #

+ [Int] Control
  - [Ext] changeToAdd #
  - [Ext] changeToSwap #
  - [Ext] swapForBNB #
  - [Ext] addLiquidityAuto #
  - [Ext] toAdd
  - [Ext] toSwap

+ RAHO_Token (ERC20, Ownable)
  - [Pub] <Constructor> #
    - modifiers: ERC20
  - [Ext] setBuy #
    - modifiers: onlyOwner
  - [Ext] setSell #
    - modifiers: onlyOwner
  - [Pub] setAddress #
    - modifiers: onlyOwner
  - [Pub] setWhite #
    - modifiers: onlyOwner
  - [Pub] setPair #
    - modifiers: onlyOwner
  - [Pub] setControl #
    - modifiers: onlyOwner
  - [Pub] transfer #
  - [Pub] transferFrom #

($) = payable function
= non-constant function

Issues Checking Status

	Issue description	Checking status
1.	Compiler errors.	Passed
2.	Race conditions and Reentrancy. Cross-function race conditions.	Passed
3.	Possible delays in data delivery.	Passed
4.	Oracle calls.	Passed
5.	Front running.	Passed
6.	Timestamp dependence.	Passed
7.	Integer Overflow and Underflow.	Passed
8.	DoS with Revert.	Passed
9.	DoS with block gas limit.	Passed
10.	Methods execution permissions.	Passed
11.	Economy model of the contract.	Passed
12.	The impact of the exchange rate on the logic.	Passed
13.	Private user data leaks.	Passed
14.	Malicious Event log.	Passed
15.	Scoping and Declarations.	Passed
16.	Uninitialized storage pointers.	Passed
17.	Arithmetic accuracy.	Passed
18.	Design Logic.	Passed
19.	Cross-function race conditions.	Passed
20.	Safe Open Zeppelin contracts implementation and usage.	Passed
21.	Fallback function security.	Passed

Security Issues

High Severity Issues

No high severity issues found.

Medium Severity Issues

No medium severity issues found.

Low Severity Issues

No low severity issues found.

Notes:

- Contract contain interfaces that is not audited, some functions may work different way.

Owner privileges (In the period when the owner is not renounced)

- Owner can change buy & sell fees.

```
function setBuy(uint[] calldata com_⬆) external onlyOwner {
    buy = com_⬆;
}

ftrace | funcSig
function setSell(uint[] calldata com_⬆) external onlyOwner {
    sell = com_⬆;
}
```

- Owner can change game and rewardPool addresses.

```
function setAddress(address game_⬆, address rewardPool_⬆) public onlyOwner {
    game = game_⬆;
    rewardPool = rewardPool_⬆;
}
```

- Owner can whitelist addresses.

```
function setWhite(address addr_⬆, bool com_⬆) public onlyOwner {
    white[addr_⬆] = com_⬆;
}
```

- Owner can change router and pair addresses.

```
function setPair(address addr_⬆, address router_⬆) public onlyOwner {
    pair = addr_⬆;
    router = router_⬆;
}
```

- Owner can change control address.

```
function setControl(address addr_⬆) public onlyOwner {
    control = addr_⬆;
    white[addr_⬆] = true;
}
```

Conclusion

Smart contracts do not contain high severity issues! Liquidity pair contract's security is not checked due to out of scope.

Liquidity locking details are provided by the team:
https://www.pinksale.finance/#/launchpad/0xdeeC9Eb0c58790E282B40c957d9028811ca68581?chain=BSC

TechRate note:

Please check the disclaimer above and note, the audit makes no statements or warranties on business model, investment attractiveness or code sustainability. The report is provided for the only contract mentioned in the report and does not include any other potential contracts deployed by Owner.