

Smart contract security audit TIERRA AUDIO

v.1.0



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TIERRA AUDIO

The ECO-Smart ProAudio Company

1.0 Introduction

1.1 Project engagement

During May of 2022, TIERRA AUDIO engaged CTDSec to audit smart contracts that they created. The engagement was technical in nature and focused on identifying security flaws in the design and implementation of the contracts. TIERRA AUDIO provided CTDSec with access to their code repository and whitepaper.

1.2 Disclaimer

It should be noted that this audit is not an endorsement of the reliability or effectiveness of the contract, rather limited to an assessment of the logic and implementation. In order to ensure a secure contract that's able to withstand the network's fast-paced and rapidly changing environment, we at CTDSec recommend that TIERRA AUDIO team put in place a bug bounty program to encourage further and active analysis of the smart contract.

2.0 Coverage

2.1 Target Code and Revision

For this audit, we performed research, investigation, and review of the TIERRA AUDIO contract followed by issue reporting, along with mitigation and remediation instructions outlined in this report. The following code files are considered in-scope for the review:

Source:

TIERRA AUDIO ICO.zip [SHA256] -

c5c3d671d2f84186840a9123d6d7a12edb8a3045a26762e440fd965279c938c5

2.2 Attacks made to the contract

In order to check for the security of the contract, we tested several attacks in order to make sure that the contract is secure and follows best practices.

No	Issue description.	Checking status
1	Compiler warnings.	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. If application logic is based on an incorrect economic model, the application would not function correctly and participants would incur financial losses. This type of issue is most often found in bonus rewards systems, Staking and Farming contracts, Vault and Vesting contracts, etc.	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 Zeppelin module.	PASSED
21	Fallback function security.	PASSED
22	Overpowered functions / Owner privileges	PASSED

3.0 Security Issues

3.1 High severity issues [0]

No high severity issues found.

3.2 Medium severity issues [0]

No medium severity issues found.

3.3 Low severity issues [0]

No low severity issues found.

4.0 Owner privileges

Owner privileges at token contract:

Mint(): Owner can mint tokens.

Admin privileges at sale contract:

CreatePhase(): Owner can create a phase for the sale.

ChangeDispatcher(): Owner can change the dispatcher (it refers to the account that transfers the contract balance).

CancelPhase(): Owner can cancel a sale phase.

AddToWhitelist(): Owner can add an account to whitelist.

RemoveWhitelistedAddress(): Owner can remove address from the whitelist.

SetChainlinkAddress(): Owner can change the chainlink price feed address.

ChangeEndDate(): Owner can change the end date of the sale.

Withdraw(): Owner can withdraw the eth raised at the sale.

Owner privileges at staking contract:

Deploy(): Owner can deploy a staking pool.

Update(): Owner can update the staking pool.

pullExtraTokens(): Owner can transfer additional tokens.

5.0 Summary of the audit

Contract is safe to be deployed, we recommend that the team make use of a multisignature wallet for the owner role.