

SMART CONTRACT SECURITY AUDIT OF PUNCH FINANCE



SMART CONTRACT AUDIT | TEAM KYC | PROJECT EVALUATION

RELENTLESSLY SECURING THE PUBLIC BLOCKCHAIN | MADE IN CANADA

Summary

Auditing Firm InterFi Network

Architecture InterFi "Echelon" Auditing Standard

Smart Contract Audit Approved By Chris | Blockchain Specialist at InterFi Network

Platform Solidity

Audit Check (Mandatory) Static, Software, Auto Intelligent & Manual Analysis

Project Check (Optional) KYC, Website & Socials Analysis (Not Applicable)

Consultation Request Date November 01, 2021

Report Date November 02, 2021 (24H fast-tracked)

Audit Summary

InterFi team has performed a line-by-line manual analysis and automated review of the smart contract. The smart contract was analyzed mainly for common smart contract vulnerabilities, exploits, and manipulation hacks. According to the smart contract audit:

- Punch Finance's smart contract source code has LOW RISK SEVERITY.
- Punch Finance has PASSED the smart contract audit.

For the detailed understanding of risk severity, source code vulnerability, and functional test, kindly refer to the audit.



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Project Overview

InterFi was consulted by Punch Finance on November 01, 2021 to conduct a smart contract security audit of their token source code.

<u>Punch Finance is a gaming token that gives 12% rewards on buying and holding the token.</u>

Punch is a project that has been developed and proven to work, and the development team are not new to the blockchain ecosystem. PUNCH has a philosophy that revolves around four key aspects:

- Diversity
- Versatility
- Fairness
- Transparency

Project	Punch Finance
Blockchain	S Binance Smart Chain
Language	Solidity
Block Explorer	https://bscscan.com/address/0x2e25ea4a99cfed65d1a680 4fa7394f5b44c69524
Contract	0x2e25ea4a99cfed65d1a6804fa7394f5b44c69524
Website	https://punchgaming.app/
Telegram	https://t.me/punchgamingtoken



Public logo



Solidity Source Code On Blockchain (BscScan Verified Contract Source Code)

https://bscscan.com/address/0x2e25ea4a99cfed65d1a6804fa7394f5b44c69524#code

Contract Name: Punch

Compiler Version: v0.8.9+commit.e5eed63a

Optimization Enabled: Yes with 200 runs

Solidity Source Code On InterFi GitHub

https://github.com/interfinetwork/audited-codes/blob/main/Punch.sol

InterFi GitHub Commit

Solidity source code is committed at: ff4103263b4f8bc37acef57e5d54015579a2f424

SHA-1 Hash

Solidity source code is audited at hash #040321a817110a78d572f852fe3f0612840ddb18



Audit Scope & Methodology

The scope of this report is to audit the smart contract source code of Punch Finance. The source code can be viewed in its entirety on

https://bscscan.com/address/0x2e25ea4a99cfed65d1a6804fa7394f5b44c69524#code

InterFi has scanned the contract and reviewed the project for common vulnerabilities, exploits, hacks, and back-doors. Below is the list of commonly known smart contract vulnerabilities, exploits, and hacks:

Category

Re-entrancy (RE)

Unhandled Exceptions (UE)

Transaction Order Dependency (TO)

Integer Overflow (IO)

Unrestricted Action (UA)

Ownership Takeover

Gas Limit and Loops

Deployment Consistency

Repository Consistency

Data Consistency

Token Supply Manipulation

Access Control and Authorization

Operations Trail and Event Generation

Assets Manipulation

Liquidity Access

Source Code Review

Smart Contract Vulnerabilities

Functional Assessment



InterFi's Echelon Audit Standard

The aim of InterFi's "Echelon" standard is to analyze the smart contract and identify the vulnerabilities and the hacks in the smart contract. Mentioned are the steps used by ECHELON-1 to assess the smart contract:

- 1. Solidity smart contract source code reviewal:
 - Review of the specifications, sources, and instructions provided to InterFi to make sure we understand the size, scope, and functionality of the smart contract.
 - Manual review of code, which is the process of reading source code line-byline to identify potential vulnerabilities.
- 2. Static, Manual, and Automated Al analysis:
 - Test coverage analysis, which is the process of determining whether the test cases are covering the code and how much code is exercised when we run those test cases.
 - Symbolic execution, which is analysing a program to determine what inputs causes each part of a program to execute.
- 3. Best practices review, which is a review of the smart contracts to improve efficiency, effectiveness, clarify, maintainability, security, and control based on the established industry and academic practices, recommendations, and research.
- 4. Specific, itemized, actionable recommendations to help you take steps to secure your smart contracts

Automated 3P frameworks used to assess the smart contract vulnerabilities

- Slither
- Consensys MythX
- Consensys Surya
- Open Zeppelin Code Analyzer
- Solidity Code Complier



InterFi's Risk Classification

Smart contracts are generally designed to manipulate and hold funds denominated in ETH/BNB. This makes them very tempting attack targets, as a successful attack may allow the attacker to directly steal funds from the contract. Below are the typical risk levels of a smart contract:

Vulnerable: A contract is vulnerable if it has been flagged by a static analysis tool as such. As we will see later, this means that some contracts may be vulnerable because of a false-positive.

Exploitable: A contract is exploitable if it is vulnerable and the vulnerability could be exploited by an external attacker. For example, if the "vulnerability" flagged by a tool is in a function which requires to own the contract, it would be vulnerable but not exploitable.

Exploited: A contract is exploited if it received a transaction on the main network which triggered one of its vulnerabilities. Therefore, a contract can be vulnerable or even exploitable without having been exploited.

D'ala	Smart Contract	
Risk severity	Meaning Security Audit	
	This level vulnerabilities could be exploited easily, and can lead to asset loss	s, data
! Critical	loss, asset manipulation, or data manipulation. They should be fixed right awa	ıy.
! High	This level vulnerabilities are hard to exploit but very important to fix, they co	arry an
	elevated risk of smart contract manipulation, which can lead to critical risk sev	verity
! Medium	This level vulnerabilities are should be fixed, as they carry an inherent risk of	future
	exploits, and hacks which may or may not impact the smart contract execution	on.
	This level vulnerabilities can be ignored. They are code style violations	s, and
! Low	informational statements in the code. They may not affect the smart co	ontract
	execution	



Smart Contract - Overview

Contract information

Query	Result
Name	Punch Finance
Symbol	PUNCH
Decimals	18
Total Supply	1,000,000,000
Owner	0x63a726a6b74fa7c6b37a99d98be89bd4da067486
Marketing Wallet	0x0a739c98bd323d906001595184ab90a93feb6260
Pair	0x2961939b3b0b32c7f5e202f933079c21407a8c0c
Router	0x10ed43c718714eb63d5aa57b78b54704e256024e

Smart Contract Security Audit



Smart Contract - Static Analysis

Symbol	Meaning
•	Function can be modified
₫ \$	Function is payable
	Function is locked
	Function can be accessed
!	Important functionality

```
<mark>*SafeMath**</mark> | Library |
   tryAdd | Internal 🖴
  | trySub | Internal 🔓
   tryMul | Internal 🖴
    tryDiv | Internal 🖴
   tryMod | Internal 🖴
    add | Internal 🗎
   sub | Internal 🖴
   mul | Internal 🗎
   div | Internal 🖴
   mod | Internal 🗎
   sub | Internal 🖴
   div | Internal 🖺
   mod | Internal 🖴
**IBEP20** | Interface | |||
L | totalSupply | External ! |
   decimals | External | | NO! |
   symbol | External | | |NO! |
   name | External [ | |NO [ |
L | getOwner | External | |
L | balanceOf | External | |
   transfer | External 🏴
  | allowance | External | |
   approve | External 📘 | 🥌
                               |N0
   transferFrom | External 📒 | 🥌
<mark>⊳*Auth**</mark> | Implementation | |||
L | <Constructor> | Public | | |
   authorize | Public ! | 🥮 | onlyOwner |
    unauthorize | Public
```



```
L | isOwner | Public | |
                          |NO | |
                               |N0 |
 L | isAuthorized | Public | |
 L | transferOwnership | Public [ | 🛑 | onlyOwner |
 **IDEXFactory** | Interface |
 👢 | createPair | External 📒 | 🥮 |NO 📒 |
 **IDEXRouter** | Interface | |||
 |N0 |
 L | WETH | External | | NO | |
 L | addLiquidity | External 📘 | 🥌
                                   |NO | |
 L | addLiquidityETH | External | | 🕨 |NO! |
    swapExactTokensForTokensSupportingFeeOnTransferTokens | External 📒 | 🥌 |NO! |
    swapExactETHForTokensSupportingFeeOnTransferTokens | External 📒 | 💹 |NO 📙 |
    swapExactTokensForETHSupportingFeeOnTransferTokens | External 📗 🛑
\Pi\Pi\Pi\Pi
 **IDividendDistributor** | Interface | |||
 👢 | setDistributionCriteria | External 📒 | 🥌
                                            |NO ! |
 📙 | setShare | External 📒 | 🥮 |NO 📗 |
   | deposit | External | | 💹 |NO 🖡
 L | process | External | | 🛑 |NO! |
\Pi\Pi\Pi\Pi
 **DividendDistributor** | Implementation | IDividendDistributor |||
 👢 | setDistributionCriteria | External 📒 | 🥮 | onlyToken |
 📙 | setShare | External 🏮 | 🥌 | onlyToken |
 L | deposit | External 📘 | 🝱 | onlyToken |
 👢 | process | External 📒 | 🥮 | onlyToken |
 └ | shouldDistribute | Internal 🛍 |
                                    | \cdot |
 👢 | distributeDividend | Internal 🛍 | 🥌
    claimDividend | External 📒 | 🥮 |NO! |
 L | getUnpaidEarnings | Public | | NO! |
   | getCumulativeDividends | Internal ← |
   | addShareholder | Internal 🛍 | 🥌 | |
 👢 | removeShareholder | Internal 🔒 | 🥮 | |
\Pi\Pi\Pi\Pi
 **punch** | Implementation | IBEP20, Auth |||
 <Receive Ether> | External | | MO | |
    totalSupply | External ! |
                                |NO |
 L | decimals | External | |
                             |N0 |
    symbol | External | | |NO! |
    name | External 📘 |
                         |N0 |
    getOwner | External | | |NO! |
    balanceOf | Public 📒 |
                            |NO |
    allowance | External | | |NO | |
    approve | Public 📒 | 🛑
                           |N0 |
    approveMax | External 📒 | 🥌 |NO 📙 |
     transfer | External | |
                               |NO | |
     transferFrom | External | |
```



```
_transferFrom | Internal 🔒 | 🥌 | |
 | _basicTransfer | Internal 🗎 | 🥌
└ | checkTxLimit | Internal 🛍 | | |
 | shouldTakeFee | Internal ៝ | | |
 | getTotalFee | Public | | NO! |
 📙 | takeFee | Internal 🛍 | 🥮 | |
  shouldSwapBack | Internal 🗎 | | |
👢 | swapBack | Internal 🔓 | 🥌 | swapping |
   shouldAutoBuyback | Internal ← | | |
   uriggerZeusBuyback | External ! | 🔴 | authorized |
👢 | clearBuybackMultiplier | External 📜 | 🥮 | authorized |
└ | triggerAutoBuyback | Internal 🛍 | 🥮 | |
L | buyTokens | Internal 🗎 | 🥮 | swapping |
📙 | setAutoBuybackSettings | External 📘 | 🥮 | authorized |
📙 | setBuybackMultiplierSettings | External 📒 | 🥮 | authorized |
L | launch | Public | | 🛑 | authorized |
L | setFees | External ! | 🛑 | authorized |
L | setDistributionCriteria | External | | 🛑 | authorized |
L | setDistributorSettings | External | | 🛑 | authorized |
L | getCirculatingSupply | Public [ | NO! |
L | getLiquidityBacking | Public | | NO | |
L | isOverLiquified | Public | | | NO! |
```



Smart Contract - Software Analysis

Function Signatures

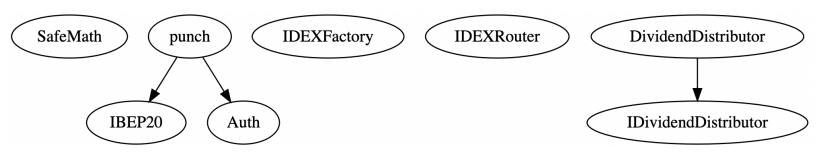
```
884557bf => tryAdd(uint256,uint256)
a29962b1 => trySub(uint256,uint256)
6281efa4 => tryMul(uint256,uint256)
736ecb18 => tryDiv(uint256,uint256)
38dc0867 => tryMod(uint256,uint256)
771602f7 => add(uint256,uint256)
b67d77c5 => sub(uint256,uint256)
c8a4ac9c => mul(uint256,uint256)
a391c15b => div(uint256,uint256)
f43f523a => mod(uint256,uint256)
e31bdc0a => sub(uint256,uint256,string)
b745d336 => div(uint256,uint256,string)
71af23e8 => mod(uint256,uint256,string)
18160ddd => totalSupply()
313ce567 => decimals()
95d89b41 => symbol()
06fdde03 => name()
893d20e8 \Rightarrow get0wner()
70a08231 => balanceOf(address)
a9059cbb => transfer(address,uint256)
dd62ed3e => allowance(address,address)
095ea7b3 => approve(address,uint256)
23b872dd => transferFrom(address,address,uint256)
b6a5d7de => authorize(address)
f0b37c04 => unauthorize(address)
2f54bf6e => is0wner(address)
fe9fbb80 => isAuthorized(address)
f2fde38b => transfer0wnership(address)
c9c65396 => createPair(address,address)
c45a0155 => factorv()
ad5c4648 => WETH()
e8e33700 => addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256)
f305d719 => addLiquidityETH(address,uint256,uint256,uint256,address,uint256)
5c11d795 =>
swapExactTokensForTokensSupportingFeeOnTransferTokens(uint256,uint256,address[],address,uint256)
b6f9de95 => swapExactETHForTokensSupportingFeeOnTransferTokens(uint256,address[],address,uint256)
791ac947 =>
swapExactTokensForETHSupportingFeeOnTransferTokens(uint256,uint256,address[],address,uint256)
2d48e896 => setDistributionCriteria(uint256,uint256)
14b6ca96 => setShare(address,uint256)
d0e30db0 => deposit()
ffb2c479 => process(uint256)
8c21cd52 => shouldDistribute(address)
5319504a => distributeDividend(address)
f0fc6bca => claimDividend()
```



```
28fd3198 => getUnpaidEarnings(address)
e68af3ac =>
             getCumulativeDividends(uint256)
db29fe12 => addShareholder(address)
9babdad6 => removeShareholder(address)
571ac8b0 => approveMax(address)
cb712535 => _transferFrom(address,address,uint256)
f0774e71 => basicTransfer(address,address,uint256)
4afa518a => checkTxLimit(address,uint256)
e7c44c69 => shouldTakeFee(address)
f1f3bca3 => getTotalFee(bool)
d806d12f => getMultipliedFee()
20cb7bce => takeFee(address,address,uint256)
0d5c6cea => shouldSwapBack()
6ac5eeee => swapBack()
4d4e6fe5 => shouldAutoBuyback()
f5cfec0a => triggerZeusBuyback(uint256,bool)
b210b06d => clearBuybackMultiplier()
5cd44665 => triggerAutoBuyback()
c625e9b1 => buyTokens(uint256,address)
048c7baf => setAutoBuybackSettings(bool,uint256,uint256,uint256)
2375ce40 => setBuybackMultiplierSettings(uint256,uint256,uint256)
8091f3bf => launched()
01339c21 => launch()
5c85974f => setTxLimit(uint256)
f708a64f => setIsDividendExempt(address,bool)
658d4b7f => setIsFeeExempt(address,bool)
f84ba65d => setIsTxLimitExempt(address,bool)
04a66b48 => setFees(uint256,uint256,uint256,uint256)
a4b45c00 => setFeeReceivers(address,address)
df20fd49 => setSwapBackSettings(bool,uint256)
201e7991 => setTargetLiquidity(uint256,uint256)
9d1944f5 => setDistributorSettings(uint256)
2b112e49 => getCirculatingSupply()
d51ed1c8 => getLiquidityBacking(uint256)
1161ae39 => is0verLiquified(uint256.uint256)
```



<u>Inheritance Graph</u>



Interfi

Smart Contract
Security Audit



Smart Contract - Manual Analysis

Function	Description	Tested	Verdict
Total Supply	provides information about the total token	V	Descord
rotal oupply	supply	Yes	Passed
Balance Of	provides account balance of the owner's		Passed
balance of	account	Yes	
Transfer	executes transfers of a specified number of	V	Dansasal
Hallstel	tokens to a specified address	Yes	Passed
Approvo	allow a spender to withdraw a set number of	.,	
Approve	tokens from a specified account	Yes	Passed
Allowance	returns a set number of tokens from a spender to		
Allowalice	the owner	Yes	Passed
	is an action in which the project buys back its		
Buy Back	tokens from the existing holders usually at a	Yes	Passed
	market price nort Contract		

Note

- Active Owner: 0x63a726a6b74fa7c6b37a99d98be89bd4da067486
- ❖ Be aware that active smart contract owner privileges constitute an elevated impact to smart contract's safety and security.
- Owner can-not lock or burn user assets.
- Owner can-not stop or pause the smart contract.
- Owner can-not mint tokens after launch.



Important Information

 Punch's smart contract utilizes "SafeMath" function to avoid common smart contract vulnerabilities.

```
library SafeMath {
function add(uint256 a, uint256 b) internal pure returns (uint256) {
    uint256 c = a + b;
    require(c >= a, 'SafeMath: addition overflow');

    return c;
}
function sub(uint256 a, uint256 b) internal pure returns (uint256) {
    return sub(a, b, 'SafeMath: subtraction overflow');
}
uint256 c = a * b;
    require(c / a == b, 'SafeMath: multiplication overflow');

    return c;
}
```

2. Punch's smart contract has I low severity issue which may or may not create any functional vulnerability.

```
"resource": " /Punch.sol",

"owner": "_generated_diagnostic_collection_name_#0",

"severity": 8, (! Low Severity)

"Expected token Semicolon got 'LBrace",

"source": "solc",
```



Smart Contract - SWC Attacks

SWC ID	Description	Verdict
SWC-101	Integer Overflow and Underflow	Passed
SWC-102	Outdated Compiler Version	! Low
SWC-103	Floating Pragma	Passed
SWC-104	Unchecked Call Return Value	Passed
SWC-105	Unprotected Ether Withdrawal	Passed
SWC-106	Unprotected SELFDESTRUCT Instruction	Passed
SWC-107	Re-entrancy	Passed
SWC-108	State Variable Default Visibility	Passed
SWC-109	Uninitialized Storage Pointer	Passed
SWC-110	Assert Violation Smart Contract	Passed
swc-111	Use of Deprecated Solidity Functions	Passed
SWC-112	Delegate Call to Untrusted Callee	Passed
SWC-113	DoS with Failed Call	Passed
SWC-114	Transaction Order Dependence	Passed
SWC-115	Authorization through tx.origin	Passed
SWC-116	Block values as a proxy for time	Passed
SWC-117	Signature Malleability	Passed
SWC-118	Incorrect Constructor Name	Passed



SWC-119	Shadowing State Variables	Passed
SWC-120	Weak Sources of Randomness from Chain Attributes	Passed
SWC-121	Missing Protection against Signature Replay Attacks	Passed
SWC-122	Lack of Proper Signature Verification	Passed
SWC-123	Requirement Violation	Passed
SWC-124	Write to Arbitrary Storage Location	Passed
SWC-125	Incorrect Inheritance Order	Passed
SWC-126	Insufficient Gas Griefing	Passed
SWC-127	Arbitrary Jump with Function Type Variable	Passed
SWC-128	DoS With Block Gas Limit	Passed
SWC-129	Typographical Error	Passed
SWC-130	Right-To-Left-Override control character (U+202E)	Passed
SWC-131	Presence of unused variables	Passed
SWC-132	Unexpected Ether balance	Passed
SWC-133	Hash Collisions With Multiple Variable Length Arguments	Passed
SWC-134	Message call with hardcoded gas amount	Passed
SWC-135	Code With No Effects (Irrelevant/Dead Code)	Passed
SWC-136	Unencrypted Private Data On-Chain	Passed



Smart Contract - Risk Status & Radar Chart

Risk Severity	Status
! Critical	None critical severity issues identified
! High	None high severity issues identified
! Medium	None medium severity issues identified
! Low	1 low severity issue identified
Passed	Score out of 100 Compiler Check 100 Static Analysis Manual Analysis Software Analysis

Compiler Check	96
Static Analysis	94
Software Analysis	92
Manual Analysis	94
Interface Safety	95



Auditor's Verdict

InterFi team has performed a line-by-line manual analysis and automated review of the smart contract. The smart contract was analyzed mainly for common smart contract vulnerabilities, exploits, and manipulation hacks.

Punch Finance's smart contract source code has LOW RISK SEVERITY.

Punch Finance has PASSED the smart contract audit.



Smart Contract Security Audit

Auditor's Note:

- Be aware that active smart contract owner privileges constitute an elevated impact to smart contract's safety and security.
- Project owner's KYC isn't checked and verified due to out of scope.
- Project's liquidity pair isn't checked and verified due to out of scope.
- Project website is not checked due to out of scope. The website hasn't been reviewed for SSL and lighthouse report.



Important Disclaimer

InterFi Network provides contract auditing and project verification services for blockchain projects. The purpose of the audit is to analyse the on-chain smart contract source code, and to provide basic overview of the project. This report should not be transmitted, disclosed, referred to, or relied upon by any person for any purposes without InterFi's prior written consent.

InterFi provides the easy-to-understand assessment of the project, and the smart contract (otherwise known as the source code). The audit makes no statements or warranties on the security of the code. It also cannot be considered as an enough assessment regarding the utility and safety of the code, bug-free status, or any other statements of the contract. While we have used all the data at our disposal to provide the transparent analysis, it is important to note that you should not rely on this report only — we recommend proceeding with several independent audits and a public bug bounty program to ensure the security of smart contracts. Be aware that smart contracts deployed on a blockchain aren't resistant from external vulnerability, or a hack. Be aware that active smart contract owner privileges constitute an elevated impact to smart contract's safety and security. Therefore, InterFi does not guarantee the explicit security of the audited smart contract.

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.

This report should not be considered as an endorsement or disapproval of any project or team.

The information provided on this report does not constitute investment advice, financial advice, trading advice, or any other sort of advice and you should not treat any of the report's content as such. Do conduct your own due diligence and consult your financial advisor before making any investment decisions.



About InterFi Network

InterFi Network provides intelligent blockchain solutions. InterFi is developing an ecosystem that is seamless and responsive. Some of our services: Blockchain Security, Token Launchpad, NFT Marketplace, etc. InterFi's mission is to interconnect multiple services like Blockchain Security, DeFi, Gaming, and Marketplace under one ecosystem that is seamless, multi-chain compatible, scalable, secure, fast, responsive, and easy-to-use.

InterFi is built by a decentralized team of UI experts, contributors, engineers, and enthusiasts from all over the world. Our team currently consists of 6+ core team members, and 10+ casual contributors. InterFi provides manual, static, and automatic smart contract analysis, to ensure that project is checked against known attacks and potential vulnerabilities.

To learn more, visit https://interfi.network

To view our audit portfolio, visit https://github.com/interfinetwork

To book an audit, message https://t.me/interfiaudits





