

Smart Contract Security Audit V1

Price Guard Smart Contract Audit

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Background

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.

Project Information

- **Platform:** Binance Smart Chain
- **Name:** PriceGuard
- **Language :** Solidity
- **Contract Address:** 0x0cd9b44996422b4506b1e9132dba3012527475e2, 0x957b4b03c9e343f5818b2d0574f756d8efab9fcb
- **Code Source:** <https://github.com/TerraDharitri/drt-pREWA/tree/main/contracts>

PriceGuard

Protecting DeFi Swaps from Price Manipulation

A secure, upgradeable solidity contract to ensure fair pricing and mitigate front-running in decentralized trading.

Overview

Purpose: Protects against price manipulation and high slippage in DeFi swaps:

Author: Rows

License: MIT 0.8.29

Key Features:

- Validates price impact against oracle prices.
- Implements slippage checks
- Uses a commit-reveal scheme to prevent front-running
- Integrates with Dracleintegration and EmergencyController
- Upgradeable with Open Zeppelin's Initializable Ownable and ReentrancyGuard



Core Components

Contracts & Libraries

Inherits Initializable

- Ensures upgradeability.
- OwnableUpgradeable: Restricts sensitive functions to the owner
- ReentrancyGuardUpgradeable Prevents reentrancy attacks

Interfaces with EmergencyController

Libraries: DecimalMath

Math (OpenZeppelin): Safe math operations

Constants: Defines system constants including BPS, MAX, EMERGENCY, LEVEL, NORMAL

Errors: Custom error messages for reverts

Key Functions

Price & Slippage Checks

- Estimates price impact validates trade
- Commit-reveal processment stations

Configuration

- checkPriceImpact
- emergencyShutdown
- IsEmergencyPaused
- Emergency Handling

- checkPriceImpact
- Estimates price impact
- Emits Rejected
- Prevents block delay

8

- verifyCommitment
- Projects today
- Block delay
- Prevents front rules

!

- preventFrontRunning
- Blackout rules

0

Key Parameters

Price Protection

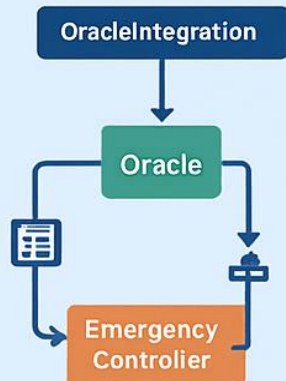
- > checkPriceImpact Computes & commitment hash
- > gasExcessImpact Intergive staken approvable

minimumAcceptablePrice

Forwards token price ratio from oracle

calculateMinimumOutput

Calculates slippage



Key Functions

PriceImpactExceeded

- Upgradeability: Uses insurance definer files

→

COMMIT
EXECUTE



Security Features

- ✓ Reentrancy Protection Resistant to ReentrancyGuardUpgradeable
- ✓ Upgradeability Uses Initializable to support future upgrades
- ✓ Scalability Designed for sDeFi platforms needing secure price validation

Usage Notes

Deployment

- Interacts with oution codes and aftergame/ comioher eopressss

Restrictions

on cosses and medid pinemer less miners

Executive Summary

According to our assessment, the customer's solidity smart contract is **Well-Secured**.

Well Secured	✓
Secured	
Poor Secured	
Insecure	

Automated checks are with remix IDE. All issues were performed by the team, which included the analysis of code functionality, manual audit found during automated analysis were manually reviewed and applicable vulnerabilities are presented in the audit overview section. The general overview is presented in the Project Information section and all issues found are located in the audit overview section.

Team found 0 critical, 0 high, 0 medium, 1 low, 0 very low-level issues and 1 note in all solidity files of the contract

The files:

PriceGuard.sol

Audit Score:

100% secure



File and Function Level Report

File in Scope:

Contract Name	SHA 256 hash	Contract Address
PriceGuard.sol	28b3b3389997bc046b915bbb7a579b615ca0597b	0x0cd9b44996422b4506b1e9132dba3012527475e2, 0x957b4b03c9e343f5818b2d0574f756d8efab9fcb

- Contract: PriceGuard
- Inherit: Initializable, OwnableUpgradeable, ReentrancyGuardUpgradeable, IEmergencyAware
- Observation: All passed including security check
- Test Report: passed
- Score: passed
- Conclusion: passed

Function	Test Result	Type / Return Type	Score
calculateMinimumOutput	✓	Read / public	Passed
commitmentBlocks	✓	Read / public	Passed
commitmentCreators	✓	Read / public	Passed
commitments	✓	Read / public	Passed
getExpectedPrice	✓	Read / public	Passed
checkEmergencyState	✓	Read / public	Passed
emergencyController	✓	Read / public	Passed
maxBlockDelay	✓	Read / public	Passed
owner	✓	Read / public	Passed
isEmergencyPaused	✓	Read / public	Passed
getEmergencyController	✓	Read / public	Passed
maxPriceDeviationEmergency	✓	Read / public	Passed
maxPriceDeviationNormal	✓	Read / public	Passed

maxPriceImpactEmergency	✓	Read / public	Passed
maxPriceImpactNormal	✓	Read / public	Passed
minAcceptablePrice	✓	Read / public	Passed
minBlockDelay	✓	Read / public	Passed
oracleIntegration	✓	Read / public	Passed
preventFrontRunning	✓	Read / public	Passed
validateSlippage	✓	Read / public	Passed
checkPriceImpact	✓	Write / public	Passed
renounceOwnership	✓	Write / public	Passed
transferOwnership	✓	Write / public	Passed
emergencyShutdown	✓	Write / public	Passed
initialize	✓	Write / public	Passed
setCommitRevealParameters	✓	Write / public	Passed
registerCommitment	✓	Write / public	Passed
setMinAcceptablePrice	✓	Write / public	Passed
setEmergencyController	✓	Write / public	Passed
setOracleIntegration	✓	Write / public	Passed
setPriceGuardParameters	✓	Write / public	Passed
verifyCommitment	✓	Write / public	Passed

Issues Checking Status

SWC Attack Analysis

The Smart Contract Weakness Classification Registry (SWC Registry) is an implementation of the weakness classification scheme proposed in EIP-1470. It is loosely aligned to the terminologies and structure used in the Common Weakness Enumeration (CWE) for more info check

<https://swcregistry.io/>

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

118	Incorrect Constructor Name	Passed
117	Signature Malleability	Passed
116	Block values as a proxy for time	Passed
115	Authorization through tx.origin	Passed
114	Transaction Order Dependence	Passed
113	DoS with Failed Call	Passed
112	Delegatecall to Untrusted Callee	Passed
111	Use of Deprecated Solidity Functions	Passed
110	Assert Violation	Passed
109	Uninitialized Storage Pointer	Passed
108	State Variable Default Visibility	Passed
107	Reentrancy	Passed
106	Unprotected SELFDESTRUCT Instruction	Passed
105	Unprotected Ether Withdrawal	Passed
104	Unchecked Call Return Value	Passed
103	Floating Pragma	Not Passed
102	Outdated Compiler Version	Passed
101	Integer Overflow and Underflow	Passed
100	Function Default Visibility	Passed

Severity Definitions

Risk Level	Description
Critical	Critical vulnerabilities are usually straightforward to exploit and can lead to tokens loss etc.
High	High-level vulnerabilities are difficult to exploit; however, they also have significant impact on smart contract execution, e.g. public access to crucial functions
Medium	Medium-level vulnerabilities are important to fix; however, they can't lead to tokens lose
Low	Low-level vulnerabilities are mostly related to outdated, unused etc. code snippets, that can't have significant impact on execution
Note	Lowest-level vulnerabilities, code style violations and info statements can't affect smart contract execution and can be ignored.

Audit Findings

Critical:

No Critical severity vulnerabilities were found.

High:

No High severity vulnerabilities were found.

Medium:

No Medium severity vulnerabilities were found.

Low:

#Unused `maxPriceDeviationNormal` and `maxPriceDeviationEmergency`

Description

The state variables `maxPriceDeviationNormal` and `maxPriceDeviationEmergency` are declared, initialized, and can be set via `setPriceGuardParameters`, but they are never used in any of the contract's logic (e.g., `checkPriceImpact` or `getExpectedPrice`). Dead code, misleading variable names, and wasted storage slots.

Recommendation

- If these variables are intended for future functionality, add a placeholder comment.
- If they are no longer needed, remove them to save gas (storage) and reduce complexity.
- If they *are* meant to be used, implement the logic that utilizes them (e.g., a `checkPriceDeviation` function).

Status: **Acknowledged**.

Very Low:

No Very Low severity vulnerabilities were found.

Notes:

#Pragma version not fixed

Description

It is a good practice to lock the solidity version for a live deployment (use 0.8.28 instead of ^0.8.28). contracts should be deployed with the same compiler version and flags that they have been tested the most with. Locking the pragma helps ensure that contracts do not accidentally get deployed using, for example, the latest compiler which may have higher risks of undiscovered bugs. Contracts may also be deployed by others and the pragma indicates the compiler version intended by the original authors. And avoid Solidity compiler Bugs check here

<https://sepolia.etherscan.io/solcbuginfo>

Remediation

Remove the ^ sign to lock the pragma version.

Automatic Testing

1- SOLIDITY STATIC ANALYSIS

SOLIDITY STATIC ANALYSIS

☒ Select all ☒ Autorun

Run

Security

☒ Select Security

- ☒ **Transaction origin:**
'tx.origin' used
- ☒ **Check-effects-interaction:**
Potential reentrancy bugs
- ☒ **Inline assembly:**
Inline assembly used
- ☒ **Block timestamp:**
Can be influenced by miners
- ☒ **Low level calls:**
Should only be used by experienced devs
- ☒ **Block hash:**
Can be influenced by miners
- ☒ **Selfdestruct:**
Contracts using destructed contract can be broken

Gas & Economy

☒ Select Gas & Economy

- ☒ **Gas costs:**
Too high gas requirement of functions
- ☒ **This on local calls:**
Invocation of local functions via 'this'
- ☒ **Delete dynamic array:**
Use require/assert to ensure complete deletion
- ☒ **For loop over dynamic array:**
Iterations depend on dynamic array's size
- ☒ **Ether transfer in loop:**
Transferring Ether in a for/while/do-while loop

SOLIDITY STATIC ANALYSIS

ERC

☒ Select ERC

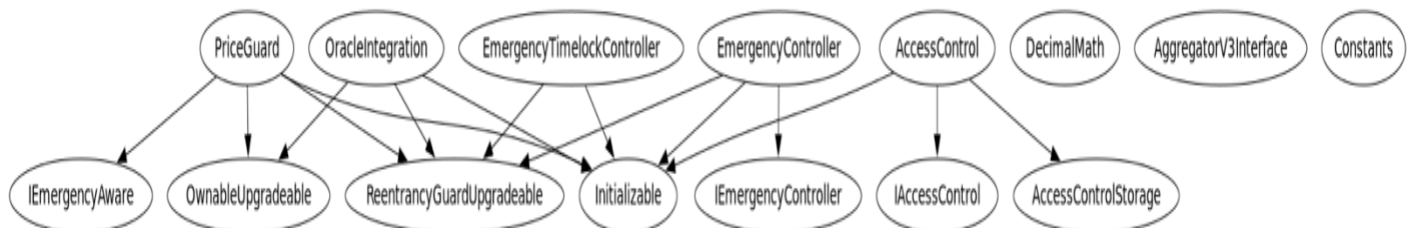
- ☒ **ERC20:**
'decimals' should be 'uint8'

Miscellaneous

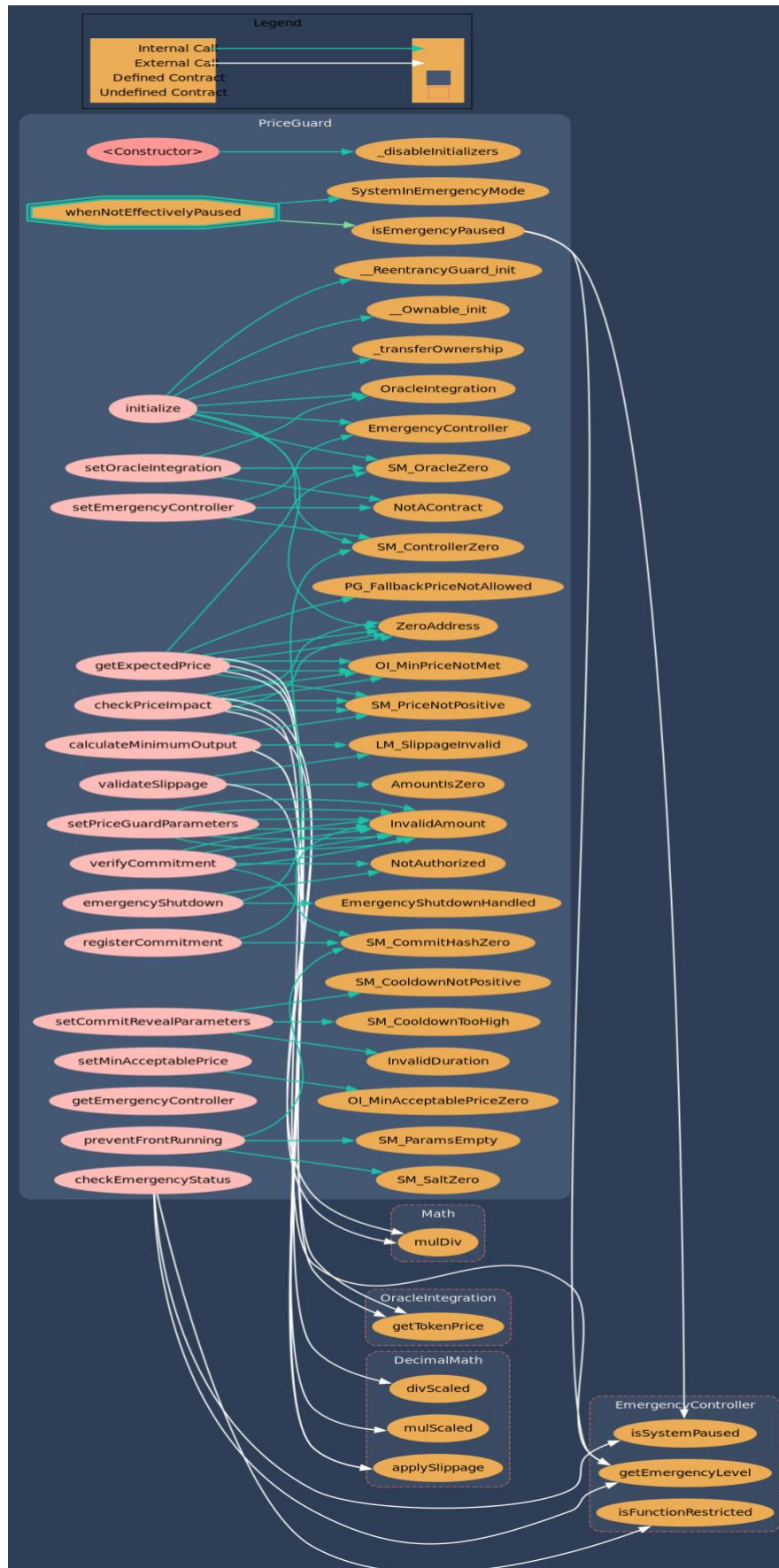
☒ Select Miscellaneous

- ☒ **Constant/View/Pure functions:**
Potentially constant/view/pure functions
- ☒ **Similar variable names:**
Variable names are too similar
- ☒ **No return:**
Function with 'returns' not returning
- ☒ **Guard conditions:**
Ensure appropriate use of require/assert
- ☒ **Result not used:**
The result of an operation not used
- ☒ **String length:**
Bytes length != String length
- ☒ **Delete from dynamic array:**
'delete' leaves a gap in array
- ☒ **Data truncated:**
Division on int/uint values truncates the result

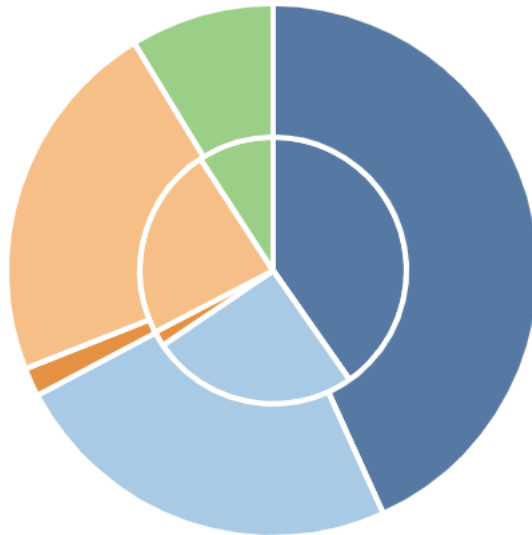
2- Inheritance graph



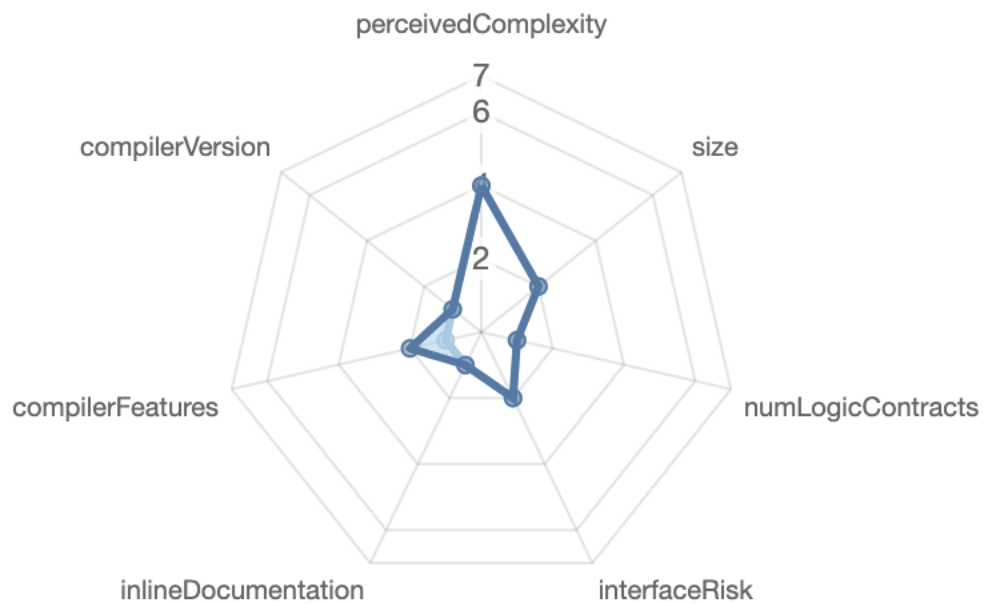
3- Call graph



Source lines



Risk level



Source units in scope

Source Units in Scope

Source Units Analyzed: 1
Source Units in Scope: 1 (100%)

Type	File	Logic Contracts	Interfaces	Lines	nLines	nSLOC	Comment Lines	Complex. Score	Capabilities
	contracts/security/PriceGuard.sol	1	_____	566	529	285	179	254	
	Totals	1	_____	566	529	285	179	254	

Legend: [-]

- **Lines**: total lines of the source unit
- **nLines**: normalized lines of the source unit (e.g. normalizes functions spanning multiple lines)
- **nSLOC**: normalized source lines of code (only source-code lines; no comments, no blank lines)
- **Comment Lines**: lines containing single or block comments
- **Complexity Score**: a custom complexity score derived from code statements that are known to introduce code complexity (branches, loops, calls, external interfaces, ...)

Capabilities

Components

 Contracts	 Libraries	 Interfaces	 Abstract
1	0	0	0

Exposed Functions

This section lists functions that are explicitly declared public or payable. Please note that getter methods for public stateVars are not included.

 Public	 Payable
17	0

External	Internal	Private	Pure	View
16	11	0	2	5

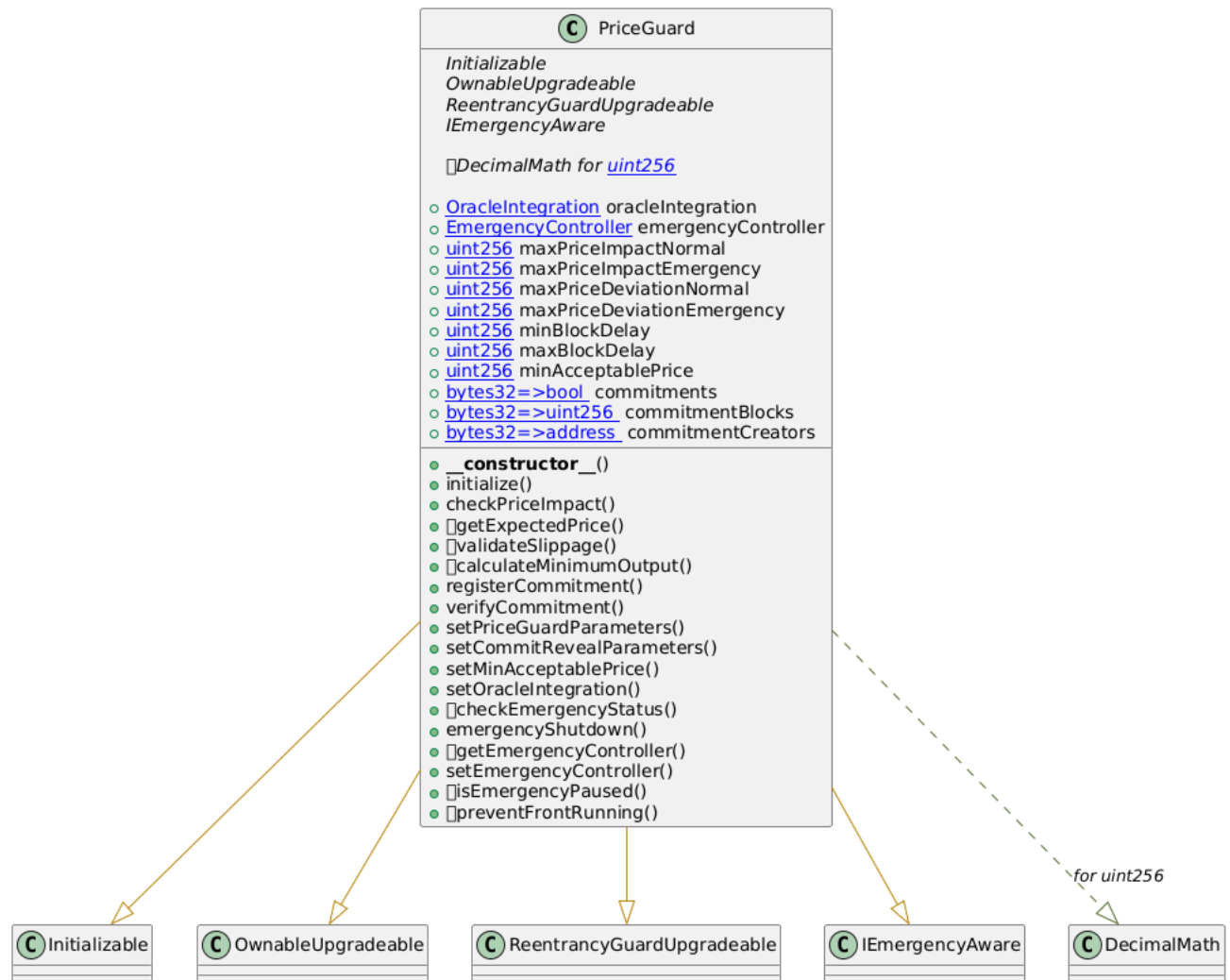
StateVariables

Total	 Public
12	12

Capabilities

Solidity Versions observed	 Experimental Features	 Can Receive Funds	 Uses Assembly	 Has Destroyable Contracts	
^0.8.28			yes (2 asm blocks)		
 Transfers ETH	 Low-Level Calls	 DelegateCall	 Uses Hash Functions	 ECRrecover	 New/Create/Create2
			yes		

Unified Modeling Language (UML)



Functions signature

Function Name	Sighash	Function Signature
-----	-----	-----
initialize	c0c53b8b	initialize(address,address,address)
checkPriceImpact	f1cacf24	checkPriceImpact(address,address,uint256,uint256)
getExpectedPrice	834a742f	getExpectedPrice(address,address)
validateSlippage	803c15df	validateSlippage(uint256,uint256,uint256)
calculateMinimumOutput	113ed4f2	calculateMinimumOutput(uint256,uint256,uint256)
registerCommitment	d9e314d8	registerCommitment(bytes32)
verifyCommitment	b82bc4c5	verifyCommitment(uint8,bytes,bytes32)
setPriceGuardParameters	1274e810	setPriceGuardParameters(uint256,uint256,uint256,uint256)
setCommitRevealParameters	965e4749	setCommitRevealParameters(uint256,uint256)
setMinAcceptablePrice	28b9a503	setMinAcceptablePrice(uint256)
setOracleIntegration	a9361199	setOracleIntegration(address)
checkEmergencyStatus	8aed668a	checkEmergencyStatus(bytes4)
emergencyShutdown	eb1676c1	emergencyShutdown(uint8)
getEmergencyController	c993cc9d	getEmergencyController()
setEmergencyController	6ca7dc89	setEmergencyController(address)
isEmergencyPaused	290d10c4	isEmergencyPaused()
preventFrontRunning	d35c4ae1	preventFrontRunning(bytes32,uint8,bytes,bytes32)

Automatic general report

Files Description Table

File Name	SHA-1 Hash
/Users/macbook/Desktop/drt-pREWA/contracts/security/PriceGuard.sol	28b3b3389997bc046b915bbb7a579b615ca0597b
/Users/macbook/Desktop/drt-pREWA/contracts/libraries/DecimalMath.sol	1f5b0a2a73498dc5cb877c08aea3c971646fb4a5
/Users/macbook/Desktop/drt-pREWA/contracts/oracle/OracleIntegration.sol	56835e91c3d168cbc4e565e742c575c2117bb3bb
/Users/macbook/Desktop/drt-pREWA/contracts/interfaces/AggregatorV3Interface.sol	008fa0a63980b32bdecef492c7da1ae5b441a5c3
/Users/macbook/Desktop/drt-pREWA/contracts/libraries/Errors.sol	0974f6f49e3b655fa93a2792154f1b506ec03c74
/Users/macbook/Desktop/drt-pREWA/contracts/libraries/Constants.sol	62835a8af9d7ab21c0cad9ca03abff6cf4e8e68f
/Users/macbook/Desktop/drt-pREWA/contracts/interfaces/IEmergencyAware.sol	be6e0a371b0a5f62d5c7dc06e5c0c4121dcc7ca1
/Users/macbook/Desktop/drt-pREWA/contracts/controllers/EmergencyController.sol	8e73765eaa98f95db8f5eb7a40cd13b0dc845266
/Users/macbook/Desktop/drt-pREWA/contracts/access/AccessControl.sol	40163fa249f10365c03cf1fa9ddd26e2f6eb1005
/Users/macbook/Desktop/drt-pREWA/contracts/access/storage/AccessControlStorage.sol	2a1f4c3d6956a89011b090a62b15254b1d720d65
/Users/macbook/Desktop/drt-pREWA/contracts/access/interfaces/IAccessControl.sol	540ec54eaade1c05a650af086ebf959654ec6322
/Users/macbook/Desktop/drt-pREWA/contracts/interfaces/IEmergencyController.sol	40bc149ec8alda85c0e4c6170b06f3a0f3b77f3b
/Users/macbook/Desktop/drt-pREWA/contracts/controllers/EmergencyTimelockController.sol	94735e88ad7f750ead488b7ad618b1486cbdb483

Contracts Description Table

Contract	Type	Bases
L	**Function Name**	**Visibility**
Modifiers		**Mutability**

```

|||||
| **PriceGuard** | Implementation | Initializable, OwnableUpgradeable,
ReentrancyGuardUpgradeable, IEmergencyAware |||
| L | <Constructor> | Public ! | 🔒 | NO! |
| L | initialize | External ! | 🔒 | initializer |
| L | checkPriceImpact | External ! | 🔒 | nonReentrant
whenNotEffectivelyPaused |
| L | getExpectedPrice | External ! | | whenNotEffectivelyPaused |
| L | validateSlippage | External ! | | NO! |
| L | calculateMinimumOutput | External ! | | NO! |
| L | registerCommitment | External ! | 🔒 | nonReentrant
whenNotEffectivelyPaused |
| L | verifyCommitment | External ! | 🔒 | nonReentrant
whenNotEffectivelyPaused |
| L | setPriceGuardParameters | External ! | 🔒 | onlyOwner |
| L | setCommitRevealParameters | External ! | 🔒 | onlyOwner |
| L | setMinAcceptablePrice | External ! | 🔒 | onlyOwner |
| L | setOracleIntegration | External ! | 🔒 | onlyOwner |
| L | checkEmergencyStatus | External ! | | NO! |
| L | emergencyShutdown | External ! | 🔒 | NO! |
| L | getEmergencyController | External ! | | NO! |
| L | setEmergencyController | External ! | 🔒 | onlyOwner |
| L | isEmergencyPaused | Public ! | | NO! |
| L | preventFrontRunning | External ! | | NO! |
|||||
| **DecimalMath** | Library | |||
| L | mulScaled | Internal 🔒 | | |
| L | divScaled | Internal 🔒 | | |
| L | mulDiv | Internal 🔒 | | |
| L | calculatePercentage | Internal 🔒 | | |
| L | applySlippage | Internal 🔒 | | |
| L | scaleUp | Internal 🔒 | | |
| L | scaleDown | Internal 🔒 | | |
| L | weightedAverage | Internal 🔒 | | |
| L | compound | Internal 🔒 | | |
| L | divRounded | Internal 🔒 | | |
|||||
| **OracleIntegration** | Implementation | Initializable,
OwnableUpgradeable, ReentrancyGuardUpgradeable |||
| L | <Constructor> | Public ! | 🔒 | NO! |
| L | initialize | External ! | 🔒 | initializer |
| L | setLiquidityManagerAddress | External ! | 🔒 | onlyOwner |
| L | setPriceFeed | External ! | 🔒 | onlyOwner nonReentrant |
| L | registerLPToken | External ! | 🔒 | onlyLiquidityManagerOrOwner
nonReentrant |
| L | setFallbackPrice | External ! | 🔒 | onlyOwner nonReentrant |
| L | setStalenessThreshold | External ! | 🔒 | onlyOwner nonReentrant
|
| L | setMinAcceptablePrice | External ! | 🔒 | onlyOwner nonReentrant
|
| L | getTokenPrice | Public ! | | NO! |

```

```

| L | fetchAndReportTokenPrice | External ! | 🔒 | nonReentrant |
| L | getLPTokenValue | External ! | |NO! |
| L | getLPTokenValueAlternative | External ! | |NO! |
| L | validatePriceAgainstOracle | External ! | |NO! |
| L | _getPriceFromOracle | Private 🔒 | | |
| L | _fetchAndReportPriceFromOracle | Private 🔒 | 🔒 | |
| L | _verifyPriceFeed | Private 🔒 | | |
| L | _getPriceFeedDecimals | Private 🔒 | | |
| L | convertToStandardPrecision | Public ! | |NO! |
| L | _getTokenDecimals | Private 🔒 | | |
| L | getPriceFeedInfo | External ! | |NO! |
| L | getLPTokenInfo | External ! | |NO! |
| L | getStalenessThreshold | External ! | |NO! |
| L | getMinAcceptablePrice | External ! | |NO! |
| | | | |
| **AggregatorV3Interface** | Interface | | |
| L | decimals | External ! | |NO! |
| L | description | External ! | |NO! |
| L | version | External ! | |NO! |
| L | latestRoundData | External ! | |NO! |
| L | getRoundData | External ! | |NO! |
| | | | |
| **Constants** | Library | | |
| | | | |
| **IEmergencyAware** | Interface | | |
| L | checkEmergencyStatus | External ! | |NO! |
| L | emergencyShutdown | External ! | 🔒 |NO! |
| L | getEmergencyController | External ! | |NO! |
| L | setEmergencyController | External ! | 🔒 |NO! |
| L | isEmergencyPaused | External ! | |NO! |
| | | | |
| **EmergencyController** | Implementation | Initializable,
ReentrancyGuardUpgradeable, IEmergencyController | |
| L | <Constructor> | Public ! | 🔒 |NO! |
| L | initialize | External ! | 🔒 | initializer |
| L | setRequiredApprovals | External ! | 🔒 | onlyAdminRole |
| L | setLevel3TimelockDuration | External ! | 🔒 | onlyAdminRole |
| L | setRecoveryAdminAddress | External ! | 🔒 | onlyAdminRole |
| L | approveLevel3Emergency | External ! | 🔒 | onlyEmergencyRole
nonReentrant |
| L | cancelLevel3Emergency | External ! | 🔒 | onlyEmergencyRole
nonReentrant |
| L | executeLevel3Emergency | External ! | 🔒 | onlyEmergencyRole
nonReentrant |
| L | setEmergencyLevel | External ! | 🔒 | onlyEmergencyRole
nonReentrant |
| L | enableEmergencyWithdrawal | External ! | 🔒 | onlyEmergencyRole
nonReentrant |
| L | pauseSystem | External ! | 🔒 | onlyPauserRole nonReentrant |
| L | unpauseSystem | External ! | 🔒 | onlyPauserRole nonReentrant |

```

```

| L | recoverTokens | External ! | 🔒 | onlyEmergencyRole nonReentrant
|
| L | registerEmergencyAwareContract | External ! | 🔒 |
onlyEmergencyRole |
| L | removeEmergencyAwareContract | External ! | 🔒 |
onlyEmergencyRole |
| L | processEmergencyForContract | External ! | 🔒 | nonReentrant |
| L | updateFunctionRestriction | External ! | 🔒 | onlyEmergencyRole |
| L | getEmergencyLevel | External ! | |NO! |
| L | getEmergencyWithdrawalSettings | External ! | |NO! |
| L | isSystemPaused | External ! | |NO! |
| L | getEmergencyAwareContractsPaginated | External ! | |NO! |
| L | getApprovalStatus | External ! | |NO! |
| L | isFunctionRestricted | External ! | |NO! |
| L | _resetApprovals | Internal 🔓 | 🔒 | |
|||||
| **AccessControl** | Implementation | Initializable,
AccessControlStorage, IAccessControl |||
| L | <Constructor> | Public ! | 🔒 |NO! |
| L | initialize | External ! | 🔒 | initializer |
| L | hasRole | External ! | |NO! |
| L | getRoleAdmin | External ! | |NO! |
| L | grantRole | External ! | 🔒 |NO! |
| L | revokeRole | External ! | 🔒 |NO! |
| L | renounceRole | External ! | 🔒 |NO! |
| L | setRoleAdmin | External ! | 🔒 |NO! |
| L | getRoleMember | External ! | |NO! |
| L | getRoleMemberCount | External ! | |NO! |
| L | getRoleMembersPaginated | External ! | |NO! |
| L | _grantRole | Internal 🔓 | 🔒 | |
| L | _revokeRole | Internal 🔓 | 🔒 | |
| L | _setRoleAdmin | Internal 🔓 | 🔒 | |
|||||
| **AccessControlStorage** | Implementation | |||
|||||
| **IAccessControl** | Interface | |||
| L | hasRole | External ! | |NO! |
| L | getRoleAdmin | External ! | |NO! |
| L | grantRole | External ! | 🔒 |NO! |
| L | revokeRole | External ! | 🔒 |NO! |
| L | renounceRole | External ! | 🔒 |NO! |
| L | getRoleMember | External ! | |NO! |
| L | getRoleMemberCount | External ! | |NO! |
| L | getRoleMembersPaginated | External ! | |NO! |
|||||
| **IEmergencyController** | Interface | |||
| L | setEmergencyLevel | External ! | 🔒 |NO! |
| L | enableEmergencyWithdrawal | External ! | 🔒 |NO! |
| L | pauseSystem | External ! | 🔒 |NO! |
| L | unpauseSystem | External ! | 🔒 |NO! |
| L | recoverTokens | External ! | 🔒 |NO! |

```

```

| L | getEmergencyLevel | External ! | |NO! |
| L | getEmergencyWithdrawalSettings | External ! | |NO! |
| L | isSystemPaused | External ! | |NO! |
| L | getEmergencyAwareContractsPaginated | External ! | |NO! |
|||||
| **EmergencyTimelockController** | Implementation | Initializable,
ReentrancyGuardUpgradeable |||
| L | <Constructor> | Public ! | ⬢ |NO! |
| L | initialize | External ! | ⬢ | initializer |
| L | setAllowedTarget | External ! | ⬢ | onlyEmergencyRole |
| L | setAllowedFunctionSelector | External ! | ⬢ | onlyEmergencyRole |
|
| L | proposeEmergencyAction | External ! | ⬢ | onlyEmergencyRole
nonReentrant |
| L | executeEmergencyAction | External ! | ⬢ | onlyEmergencyRole
nonReentrant |
| L | cancelEmergencyAction | External ! | ⬢ | onlyEmergencyRole
nonReentrant |
| L | updateTimelockDuration | External ! | ⬢ | onlyEmergencyRole |
| L | getActionStatus | External ! | |NO! |
| L | getAllActionIds | External ! | |NO! |
| L | getActionDetails | External ! | |NO! |
| L | isFunctionSelectorAllowed | External ! | |NO! |
| L | isTargetAllowed | External ! | |NO! |

```

Legend

Symbol	Meaning
:-----:	-----
⬢	Function can modify state
👛	Function is payable

Conclusion

The contracts are written systematically. Team found no critical issues. So, it is good to go for production.

Since possible test cases can be unlimited and developer level documentation (code flow diagram with function level description) not provided, for such an extensive smart contract protocol, we provide no such guarantee of future outcomes. We have used all the latest static tools and manual observations to cover maximum possible test cases to scan Everything.

Security state of the reviewed contract is “Well Secured”.

- ✓ No volatile code.
- ✓ No high severity issues were found.

Disclaimer

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 the team on the basis of what it says or doesn't say, or how team produced it, and it is important for you to conduct your own independent investigations before making any decisions. team go into more detail on this in the below disclaimer below – please make sure to read it in full.

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