



**TechRate**

AUDIT COMPANY

# Smart Contract Security Audit

TechRate

June, 2021

# Audit Details



Audited project

**ATA Token**



Deployer address

**0xcC8f0B47Cf0E2d5428eDaE93d968eA927De626a2**



Client contacts:

**ATA Token team**



Blockchain

**Binance Smart Chain**



Project website:

**<https://atatoken.io>**

# 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 ATA Token to perform an audit of smart contracts:

<https://bscscan.com/address/0xf30d69c1bf77542cf2649a011d2829cbf88e8e6c#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 06.06.2021

Contract name	ATA Token
Contract address	0xf30d69C1bF77542CF2649A011d2829Cbf88e8e6C
Total supply	1,881,000,000,000
Token ticker	ATA
Decimals	9
Token holders	1,924
Transactions count	5,091
Top 100 holders dominance	93.29%
Liquidity fee	5
Tax fee	5
Total fees	77650583141501571846
Uniswap V2 pair	0x41855a77b4954d18bae56348716cc120c15a9e0c
Contract deployer address	0xcC8f0B47Cf0E2d5428eDaE93d968eA927De626a2
Contract's current owner address	0x8b887a1367c38b15d7d8644f0c8fbc4238e7e5b9

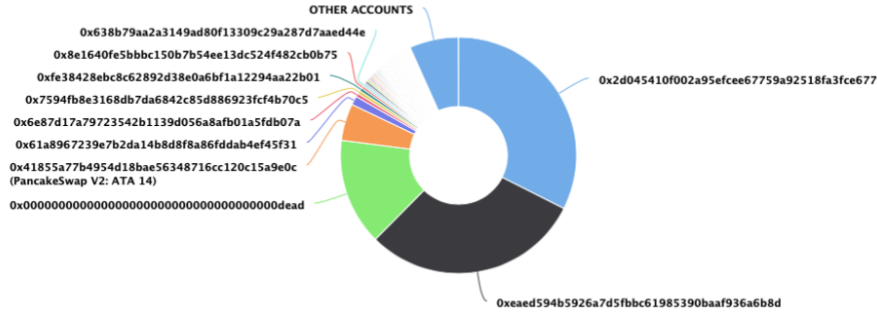
# ATA Token Token Distribution

💡 The top 100 holders collectively own 93.29% (1,754,726,542,744.52 Tokens) of ATA Token

💡 Token Total Supply: 1,881,000,000,000.00 Token | Total Token Holders: 1,924

### ATA Token Top 100 Token Holders

Source: BscScan.com



(A total of 1,754,726,542,744.52 tokens held by the top 100 accounts from the total supply of 1,881,000,000,000.00 token)

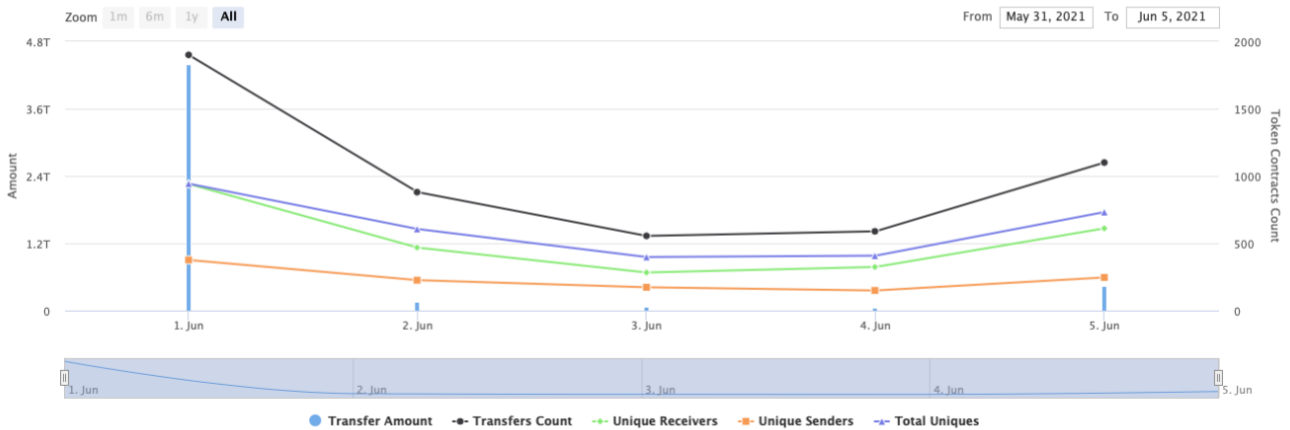
# ATA Token Contract Interaction Details

### Time Series: Token Contract Overview

Tue 1, Jun 2021 - Sat 5, Jun 2021




Token Contract 0xf30d69c1bf77542cf2649a011d2829cbf88e8e6c (ATA Token)

Source: BscScan.com





# ATA Token Top 10 Token Holders

Rank	Address	Quantity (Token)	Percentage
1	 0x2d045410f002a95efcee67759a92518fa3fce677	610,064,655,052.562160304	32.4330%
2	 0xeaed594b5926a7d5fbbc61985390baaf936a6b8d	564,300,000,000	30.0000%
3	0x00dead	274,710,063,532.853602649	14.6045%
4	 PancakeSwap V2: ATA 14	95,039,397,207.827610864	5.0526%
5	0x61a8967239e7b2da14b8d8f8a86fddab4ef45f31	22,953,830,381.376520131	1.2203%
6	0x6e87d17a79723542b1139d056a8afb01a5fdb07a	8,824,697,836.261249082	0.4691%
7	0x7594fb8e3168db7da6842c85d886923fcfb70c5	8,555,300,639.744766543	0.4548%
8	0xfe38428ebc8c62892d38e0a6bf1a12294aa22b01	8,100,043,225.341432014	0.4306%
9	0x8e1640fe5bbbc150b7b54ee13dc524f482cb0b75	5,959,903,483.1031199	0.3168%
10	0x638b79aa2a3149ad80f13309c29a287d7aead44e	5,690,168,854.526689263	0.3025%

# ATA Token LP Token Holders

Rank	Address	Quantity	Percentage
1	 0xeb3a9c56d963b971d320f889be2fb8b59853e449	100.159872204391314307	68.6117%
2	0x00dead	45.225363227559334821	30.9804%
3	0x07d80ae6f36a5e08dca74ce884a24d39db9934ed	0.595548147368637126	0.4080%
4	 0x00	0.000000000000001	0.0000%



# Contract functions details

- + [Int] IERC20
  - [Ext] totalSupply
  - [Ext] balanceOf
  - [Ext] transfer #
  - [Ext] allowance
  - [Ext] approve #
  - [Ext] transferFrom #
- + [Lib] SafeMath
  - [Int] add
  - [Int] sub
  - [Int] sub
  - [Int] mul
  - [Int] div
  - [Int] div
  - [Int] mod
  - [Int] mod
- + Context
  - [Int] \_msgSender
  - [Int] \_msgData
- + [Lib] Address
  - [Int] isContract
  - [Int] sendValue #
  - [Int] functionCall #
  - [Int] functionCall #
  - [Int] functionCallWithValue #
  - [Int] functionCallWithValue #
  - [Prv] \_functionCallWithValue #
- + Ownable (Context)
  - [Int] <Constructor> #
  - [Pub] owner
  - [Pub] renounceOwnership #
    - modifiers: onlyOwner
  - [Pub] transferOwnership #
    - modifiers: onlyOwner
  - [Pub] geUnlockTime
  - [Pub] lock #
    - modifiers: onlyOwner
  - [Pub] unlock #
- + [Int] IUniswapV2Factory
  - [Ext] feeTo
  - [Ext] feeToSetter
  - [Ext] getPair
  - [Ext] allPairs
  - [Ext] allPairsLength
  - [Ext] createPair #
  - [Ext] setFeeTo #



- [Ext] setFeeToSetter #
- + [Int] IUniswapV2Pair
  - [Ext] name
  - [Ext] symbol
  - [Ext] decimals
  - [Ext] totalSupply
  - [Ext] balanceOf
  - [Ext] allowance
  - [Ext] approve #
  - [Ext] transfer #
  - [Ext] transferFrom #
  - [Ext] DOMAIN\_SEPARATOR
  - [Ext] PERMIT\_TYPEHASH
  - [Ext] nonces
  - [Ext] permit #
  - [Ext] MINIMUM\_LIQUIDITY
  - [Ext] factory
  - [Ext] token0
  - [Ext] token1
  - [Ext] getReserves
  - [Ext] price0CumulativeLast
  - [Ext] price1CumulativeLast
  - [Ext] kLast
  - [Ext] mint #
  - [Ext] burn #
  - [Ext] swap #
  - [Ext] skim #
  - [Ext] sync #
  - [Ext] initialize #
- + [Int] IUniswapV2Router01
  - [Ext] factory
  - [Ext] WETH
  - [Ext] addLiquidity #
  - [Ext] addLiquidityETH (\$)
  - [Ext] removeLiquidity #
  - [Ext] removeLiquidityETH #
  - [Ext] removeLiquidityWithPermit #
  - [Ext] removeLiquidityETHWithPermit #
  - [Ext] swapExactTokensForTokens #
  - [Ext] swapTokensForExactTokens #
  - [Ext] swapExactETHForTokens (\$)
  - [Ext] swapTokensForExactETH #
  - [Ext] swapExactTokensForETH #
  - [Ext] swapETHForExactTokens (\$)
  - [Ext] quote
  - [Ext] getAmountOut
  - [Ext] getAmountIn
  - [Ext] getAmountsOut
  - [Ext] getAmountsIn
- + [Int] IUniswapV2Router02 (IUniswapV2Router01)
  - [Ext] removeLiquidityETHSupportingFeeOnTransferTokens #
  - [Ext] removeLiquidityETHWithPermitSupportingFeeOnTransferTokens #

- [Ext] swapExactTokensForTokensSupportingFeeOnTransferTokens #
- [Ext] swapExactETHForTokensSupportingFeeOnTransferTokens (\$)
- [Ext] swapExactTokensForETHSupportingFeeOnTransferTokens #
- + LiquidityGeneratorToken (Context, IERC20, Ownable)
  - [Pub] <Constructor> #
  - [Pub] name
  - [Pub] symbol
  - [Pub] decimals
  - [Pub] totalSupply
  - [Pub] balanceOf
  - [Pub] transfer #
  - [Pub] allowance
  - [Pub] approve #
  - [Pub] transferFrom #
  - [Pub] increaseAllowance #
  - [Pub] decreaseAllowance #
  - [Pub] isExcludedFromReward
  - [Pub] totalFees
  - [Pub] deliver #
  - [Pub] reflectionFromToken
  - [Pub] tokenFromReflection
  - [Prv] \_transferBothExcluded #
  - [Pub] excludeFromFee #
    - modifiers: onlyOwner
  - [Pub] includeInFee #
    - modifiers: onlyOwner
  - [Ext] setTaxFeePercent #
    - modifiers: onlyOwner
  - [Ext] setLiquidityFeePercent #
    - modifiers: onlyOwner
  - [Ext] setMaxTxPercent #
    - modifiers: onlyOwner
  - [Pub] setSwapAndLiquifyEnabled #
    - modifiers: onlyOwner
  - [Ext] <Fallback> (\$)
  - [Prv] \_reflectFee #
  - [Prv] \_getValues
  - [Prv] \_getTValues
  - [Prv] \_getRValues
  - [Prv] \_getRate
  - [Prv] \_getCurrentSupply
  - [Prv] \_takeLiquidity #
  - [Prv] calculateTaxFee
  - [Prv] calculateLiquidityFee
  - [Prv] removeAllFee #
  - [Prv] restoreAllFee #
  - [Pub] isExcludedFromFee
  - [Prv] \_approve #
  - [Prv] \_transfer #
  - [Prv] swapAndLiquify #
    - modifiers: lockTheSwap
  - [Prv] swapTokensForEth #
  - [Prv] addLiquidity #
  - [Prv] \_tokenTransfer #

- [Prv] \_transferStandard #
- [Prv] \_transferToExcluded #
- [Prv] \_transferFromExcluded #
- [Pub] disableFees #
  - modifiers: onlyOwner
- [Pub] enableFees #
  - modifiers: onlyOwner

(\$) = 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.	Low issues
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

### 1. Out of gas

Issue:

- The function `_getCurrentSupply` also uses the loop for evaluating total supply. It also could be aborted with `OUT_OF_GAS` exception if there will be a long excluded addresses list.

```
function _getCurrentSupply() private view returns (uint256, uint256) {
    uint256 rSupply = _rTotal;
    uint256 tSupply = _tTotal;
    for (uint256 i = 0; i < excluded.length; i++) {
        if (
            _rOwned[excluded[i]] > rSupply ||
            _tOwned[excluded[i]] > tSupply
        ) return (_rTotal, _tTotal);
        rSupply = rSupply.sub(_rOwned[excluded[i]]);
        tSupply = tSupply.sub(_tOwned[excluded[i]]);
    }
    if (rSupply < _rTotal.div(_tTotal)) return (_rTotal, _tTotal);
    return (rSupply, tSupply);
}
```

Recommendation:

Check that the excluded array length is not too big.

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

- Owner can change the tax and liquidity fee.

```
function setTaxFeePercent(uint256 taxFee) external onlyOwner() {
    _taxFee = taxFee;
}

function setLiquidityFeePercent(uint256 liquidityFee) external onlyOwner() {
    _liquidityFee = liquidityFee;
}
```

- Owner can change the maximum transaction amount.

```
function setMaxTxPercent(uint256 maxTxPercent↑) external onlyOwner() {
    _maxTxAmount = _tTotal.mul(maxTxPercent↑).div(
        10**2
    );
}
```

- Owner can exclude from the fee.

```
function excludeFromFee(address account↑) public onlyOwner {
    _isExcludedFromFee[account↑] = true;
}
```

- Owner can disable and enable fees.

```
ftrace | funcSig
function disableFees() public onlyOwner {
    _prevLiqFee = _liquidityFee;
    _prevTaxFee = _taxFee;

    _maxTxAmount = _tTotal;
    _liquidityFee = 0;
    _taxFee = 0;
    _swapAndLiquifyEnabled = false;
}
```

```
ftrace | funcSig
function enableFees() public onlyOwner {
    _maxTxAmount = _tTotal;
    _liquidityFee = _prevLiqFee;
    _taxFee = _prevTaxFee;
    _swapAndLiquifyEnabled = true;
}
```

- Owner can lock and unlock. By the way, using these functions the owner could leave as owner even after the ownership was renounced.

```
//Locks the contract for owner for the amount of time provided
function lock(uint256 time) public virtual onlyOwner {
    _previousOwner = _owner;
    _owner = address(0);
    _lockTime = now + time;
    emit OwnershipTransferred(_owner, address(0));
}

//Unlocks the contract for owner when _lockTime is exceeds
function unlock() public virtual {
    require(_previousOwner == msg.sender, "You don't have permission to unlock");
    require(now > _lockTime, "Contract is locked until 7 days");
    emit OwnershipTransferred(_owner, _previousOwner);
    _owner = _previousOwner;
}
```



# Conclusion

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

Liquidity locking details provided by the team:

<https://dxsale.app/app/pages/dxlockview?id=0&add=0x8b887a1367c38B15D7d8644f0C8fBc4238e7E5B9&type=lplock&chain=BSC>

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## *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.*