ALGODEX

Algodex Token (ALGX) Rewards Plan

Updated: June 16th, 2022

Overview

A total of 360 million ALGX, or 6% of the total supply of ALGX are allocated for the ALGX rewards program. This program is aimed to incentivize and encourage participation in the Algodex trading platform.

Mainnet rewards are available to users who trade or have traded verified asset pairs on Algodex.

Reward Distribution

Mainnet Rewards	75% of total reward pool; 270 million ALGX
Testnet Rewards	22.5% of total reward pool; 81 million ALGX
Community Leaders Rewards	2.5% of total reward pool; 9 million ALGX

Liquidity Rewards Formula

Liquidity provider performance is calculated on a minute-by-minute basis using random sampling and is aggregated into a score (Q_{MARKET}) for a given asset pair. Scores of asset pairs are then aggregated into a Q_{FINAL} score that depicts a users score across all assets. Liquidity providers earn weekly rewards based on their relative Q_{FINAL} proportion per week.

$$Q_{MARKET} = \sum_{N=1}^{10,080} \{Q_{MIN(N)} = [\frac{BidDepth_1}{Spread_1} + \frac{BidDepth_2}{Spread_2} + \cdots + \frac{BidDepth_N}{Spread_N}, \frac{AskDepth_1}{Spread_1} + \frac{AskDepth_2}{Spread_2} + \cdots$$
$$+ \frac{AskDepth_N}{Spread_N}]\}^{0.35} \times [\sum_{N=1}^{10,080} Count(Q_{MIN(N)} > 0)]^5 \times [ALGX]^{0.2} \times [MakerVolume]^{0.225}$$
$$\times [\sum_{N=1}^{10,080} (\frac{ProvidedLiquidity_A}{AssetLiquidity_A - ProvidedLiquidity_A} + \cdots + \frac{ProvidedLiquidity_Z}{AssetLiquidity_Z - ProvidedLiquidity_Z})]^{0.225}$$

$$Q_{MARKET} = SpreadTier \times Q_{PERIOD}^{0.35} \times Uptime_{PERIOD}^5 \times ALGX^{0.2} \times MakerVolume^{0.225}$$
$$\times LiquidityShare^{0.225} \times AssetGrade$$

Liquidity Rewards Details

Variable/Term	Description
$BidDepth$	The $BidDepth$ at a given price is the cumulative volume of a current buy orders on the book at that price or higher. $$BidDepth = OrderVolume \times BidPrice$$
$AskDepth$	The $AskDepth$ at a given price is the cumulative volume of current sell orders on the book at that price or lower.

$$AskDepth = OrderVolume \times AskPrice$$

$Spread$	The $Spread$ is the difference between the bid and ask prices.
Q_{MIN}	Q_{MIN} is calculated every minute and rewards 2-sided liquidity by taking the minimum of Q_{BID} and Q_{ASK}.
Q_{BID}	Calculated every minute using random sampling. $$Q_{BID} = \frac{BidDepth_1}{Spread_1} + \frac{BidDepth_2}{Spread_2} + \cdots + \frac{BidDepth_N}{Spread_N}$$
Q_{ASK}	Calculated every minute using random sampling. $$Q_{ASK} = \frac{AskDepth_1}{Spread_1} + \frac{AskDepth_2}{Spread_2} + \cdots + \frac{AskDepth_N}{Spread_N}$$
$SpreadTier$	Users will receive a multiplier based on the tier their spread is in. This is described in further detail under the "**Initial Maximum Spreads**" section. This only applies to Mainnet Version 2.
Q_{PERIOD}	The sum of all Q_{MIN} in a given period (1 week). $$Q_{PERIOD} = \sum_{N=1}^{10,080} (Q_{MIN})_N$$
$Uptime_{PERIOD}$	The time in a period that a given market maker was live and quoting on both the bid and ask sides with order sizes greater than the stated order minimum and spreads smaller than the stated maximum spread. Multiplying this factor by Q_{PERIOD} normalizes it to account for uptime. An exponent of 5 is applied to $Uptime_{PERIOD}$ to greatly incentivize users to provide as much uptime as possible. $$Uptime_{PERIOD} = \sum_{N=1}^{10,080} Count(Q_{MIN(N)} > 0)$$
Q_{MARKET}	The score assigned to an individual address for a given market in one week.
Q_{FINAL}	The final score assigned to an individual address for all eligible asset pairs in one week. It is the sum of Q_{MARKET}'s for an individual address in a given week.
$ALGX$	The average amount of ALGX held by an address across the period. It is measured randomly every minute.
$MakerVolume$	Maker orders are limit orders that is not immediately matched or filled with an existing order on the order book. $MakerVolume$ is the volume a user provides that isn't immediately filled. Calculated every minute using random sampling.

LiquidityShare	Calculated every minute using random sampling. The sum of *ProvidedLiquidity* over (*AssetLiquidity* − *ProvidedLiquidity*). This factor incentivizes users to provide liquidity to less-liquid pairs.

$$\sum_{N=1}^{10,080} \left(\frac{ProvidedLiquidity_1}{AssetLiquidity_1 - ProvidedLiquidity_1} + \cdots + \frac{ProvidedLiquidity_N}{AssetLiquidity_N - ProvidedLiquidity_N} \right)$$

AssetLiquidity	The total amount of liquidity (including liquidity provided by the user) on a given asset.
ProvidedLiquidity	The amount of liquidity a user provides to any given asset.
AssetGrade	Markets that are unrestricted in the US and Canada will receive a multiplier of 3x. Markets that are restricted in US and Canada will not receive a multiplier. This provides incentive for users to provide liquidity to markets available in the US and Canada.

Minimum Depth

Orders below a certain minimum depth size per market are excluded.

(in $USD)	Minimum BidDepth	Minimum AskDepth
Mainnet Version 1	$15	$30
Testnet	$15	$30
Mainnet Version 2	$50	$100

Initial Maximum Spreads

Orders above a maximum mid-market spread will be excluded. Q_{ASK} and Q_{BID} will not be generated when the spread is above a given market's maximum spread. The initial maximum spreads are listed below and are subject to change. Spreads are measured in basis points (bps). One basis point is one-hundredth of one percent.

For Mainnet Version 1 and Testnet, the maximum spreads are 1000 bps (10%).

Mainnet Version 2 is broken up into tiers:

SpreadTier	Range	Multiplier
A	0-50 bps (0%-0.5%)	10x
B	51-100 bps (0.51%-1.0%)	2.5x
C	101-500 bps (1.01%-5%)	1x

Liquidity Rewards Tiers & Corresponding Rates (2022)

Tier 1   February 10 – February 24 [0-2 weeks]   5% or 18,000,000 ALGX per week.

Tier 2   February 25 – April 29 [3-12 weeks]   2.5% or 9,000,000 ALGX per week.

Tier 3   April 30 – December 22 [13-45 weeks]   1.061% or 3,819,600 ALGX per week.

These rates apply to both versions of the Mainnet and Testnet reward plans.

Reward Calculation

Q_{FINAL} is the final score assigned to an individual address for all eligible asset pairs. It is taken by summing up all Q_{MARKET} scores for a user. The rewards are distributed based on a simple formula:

$$Reward = \frac{Q_{FINAL}}{Q_{PLATFORM}} \times TierRate \times 360,000,000$$

$Q_{PLATFORM}$ is the sum of all users Q_{FINAL} scores for the platform in a given period.

$TierRate$ is the rate described above (5%, 2.5%, 1.061%) which varies depending on the week of the program.

360,000,000 is the total supply of ALGX allocated to the rewards program.

Vesting Schedule

Rewards earned from Mainnet Version 1, Testnet, and Mainnet Version 2 are subject to a vesting schedule (depicted below). The Rewards Launch is defined as the date the updated rewards plan is officially implemented. Vested rewards will automatically be distributed to eligible wallets via a smart contract.

Rewards Launch	6 months	12 months	18 months	24 months	36 months	48 months
10%	5%	15%	15%	15%	20%	20%

Liquidity Rewards FAQ

How can I claim my rewards?

Rewards will be automatically calculated and distributed to eligible wallets.

When do I get my rewards?

ALGX tokens rewarded via the Liquidity Provider Rewards Program will be distributed after a 2-day waiting period after the end of each week. Rewards are subject to a vesting schedule.

The official rewards launch date is TBD, however, it will coincide with the rewards web app launch.

Where can I sign up and track my rewards?

A web app will be coming soon that allows for registering via a Wallet connection. Users will be required to complete a simple sign-up process on the app after connecting their wallet. This sign-up process will require users to send an amount of 0 Algo to themselves as proof of their participation.

Each week, liquidity providers earn a yield based on their relative Q_{FINAL} score. The Algodex rewards web app will show users how many rewards they have earned in each week, total earnings, and other statistics regarding rewards.

What is Mid-Market Spread?

The spread between the highest bid price, and the lowest ask price in a given market. The mid-market spread takes the midpoint of the market.

i.e., A bid price is $4,000 and the ask price is $4,100. The bid-ask spread is therefore $100, and the mid-market price is $4,050. Therefore, the mid-market spread is $50.

Example Calculations

1. Calculating Q_{BID}:
   Assume a liquidity provider has multiple open bid orders in the goETH market:
   - 1 goETH at $3,900
   - 5 goETH at $3,850
   - 10 goETH at $3,500

   Assume goETH is currently trading at $4,000 (based on mid-market). Assume the minimum depth (for both bid and ask) is $100. Assume MaxSpread is 100 bps (1%) and mid-market is $25; therefore, MaxSpread vs. mid-market is $\frac{\$25}{\$4,000} = 62.5$ bps.

$$Q_{BID} = \left(\frac{1 \times \$3,900}{\frac{\$100}{\$4,000}} \right) + \left(\frac{5 \times \$3,850}{\frac{\$150}{\$4,000}} \right) + \left(\frac{10 \times \$3,500}{\frac{\$500}{\$4,000}} \right) = 949,333$$

   Note that all terms are included, as no term violates the maximum spread or minimum depth rules.

2. Calculating Q_{ASK}:
   Assume a liquidity provider has multiple open ask orders in the goETH market:
   - 1 goETH at $4,100
   - 5 goETH at $4,150
   - 10 goETH at $4,175

Assume goETH is currently trading at \$4,000 (based on mid-market). Assume the minimum depth (for both bid and ask) is \$100. Assume MaxSpread is 100 bps (1%) and mid-market is \$25; therefore, MaxSpread vs. mid-market is $\frac{\$25}{\$4,000} = 62.5$ bps.

$$Q_{ASK} = \left(\frac{1 \times \$4,100}{\frac{\$100}{\$4,000}} \right) + \left(\frac{5 \times \$4,150}{\frac{\$150}{\$4,000}} \right) + \left(\frac{10 \times \$4,175}{\frac{\$175}{\$4,000}} \right) = 1{,}524{,}019$$

Note that all terms are included, as no term violates the maximum spread or minimum depth rules.

1. Mainnet Rewards – Version 1 [February 10, 9:00:00, 2022 – June 2, 23:59:59, 2022]

Rewards are calculated using a modified version of the Liquidity Rewards Formula. Holding ALGX in a wallet is not a factor, therefore the term $Asset^{0.2}$ is removed from the equation. $LiquidityShare$ is also not available in this version of the formula. The factor weightings on Q_{PERIOD} and $UnexecutedVolume$ were increased by 25% to compensate for the removed factors weight. Additionally, having both buy and sell orders is not a factor in reward eligibility. The modified version of the Liquidity Rewards Formula is below:

$$Q_{MARKET} = Q_{PERIOD}{}^{0.4375} \times Uptime_{PERIOD}{}^{5} \times MakerVolume^{0.5625}$$

If a user did not place both a bid and ask order, the minimum function would return 0. Therefore, the median of 0 and $MAX(Q_{BID}, Q_{ASK})$ will be used instead.

$$Q_{PERIOD} = \sum_{N=1}^{10{,}080} \left\{ \frac{\left(MAX \left(\frac{BidDepth_1}{Spread_1} + \cdots + \frac{BidDepth_N}{Spread_N}, \frac{AskDepth_1}{Spread_1} + \cdots + \frac{AskDepth_N}{Spread_N} \right) \right)}{2} \right\}$$

2. Mainnet Rewards [June 3, 0:00:00, 2022 – December 22, 23:59:59, 2022]

Rewards are calculated using the Liquidity Rewards Formula. June 3 is the 16th week of rewards, therefore the $TierRate$ will be a constant 1.061% until the end of the program (December 22, 2022). ALGX held in a wallet is a contributing factor to the reward calculation. $LiquidityShare$ is a new factor introduced to the formula; it incentivizes users to provide liquidity to pairs with minimal liquidity. Additionally, having both buy and sell orders is another eligibility criteria.

3. Testnet Rewards [August 26 0:00:00, 2021 – February 9, 23:59:59, 2022]

Testnet rewards are calculated using the Liquidity Rewards Formula. Any participating wallet will receive 3,000 ALGX. Additional ALGX is rewarded based on the Liquidity Rewards Formula, however it uses a modified final reward calculation (depicted below). Additionally, users must hold a minimum balance of 3,000 ALGX during the vesting period. The maximum reward an address can receive is 15,000 ALGX.

$$Reward = \frac{Q_{FINAL}}{Q_{PLATFORM}} \times TierRate \times 360{,}000{,}000 \times 0.5$$

Additionally, 3,000 ALGX in Testnet rewards is eligible for a vesting exemption. This number may be revised downwards if too many eligible wallets receive the exemption. The criteria for having 3,000 ALGX in Testnet rewards be exempt from vesting is:

- Opt-in using the rewards web app
- 5 orders placed
- 10 orders executed
- Wallet must have been active on at least 5 different calendar days
- Wallet must have been active on at least 2 different calendar months

4. Community Leaders Rewards

The Community Leaders Rewards plan is still under development and will be available in another document in the near future. Stay tuned!

Eligibility

To be eligible for Mainnet rewards, the user must trade, or have traded verified asset pairs on Algodex between February 10, 9:00:00 and June 2, 23:59:59, for the original rewards system, or June 3, 0:00:00 and December 22, 23:59:59, for the improved rewards system. Testnet rewards are eligible to anyone who traded any asset pair on Algodex between August 26, 0:00:00, 2021 and February 9, 23:59:59, 2022. The Algodex development team and insiders are excluded from all rewards.

Terms

All specifics outlined in the above rewards plan are subject to change without notice.