ALPHASEEQ
User Guide

Browser-based analytics for short-horizon crypto prediction markets.

This guide walks through what the platform does, the markets you'll be analyzing, and how to use the Interval Explorer, Probability Grid, Strategy Backtester, and the library of signal strategies bundled with the tools.

Version 1.1

1. What is ALPHASEEQ?

ALPHASEEQ is a web platform that gives traders, quants, and analysts a library of interactive tools for studying short-horizon crypto prediction markets. Everything runs in your browser - there is nothing to install, no notebook to set up, and no data feed to configure.

The focus is 15-minute up/down markets on BTC, ETH, and SOL: markets that open every quarter-hour, let participants take YES or NO on a strike, and settle at the top of the next 15-minute boundary. Two of the largest venues for these markets - Kalshi and Polymarket - are covered side-by-side.

What you get

- A searchable catalog of tools, each embedded directly in its own page.
- Tick-level history for every 15-minute market (both venues) across a rolling 99-day window, refreshed regularly.
- Visual, interactive analysis - no CSV downloads or scripting needed to get started.

2. The Markets You're Analyzing

2.1 The Basic Contract

Every 15 minutes a new market opens on BTC, ETH, and SOL. The market names a **strike price** (usually the spot price near the open) and a direction: did spot close above the strike at the next 15-minute boundary?

- **YES / UP** wins if the reference price at t = 15:00 is strictly above the strike.
- **NO / DOWN** wins otherwise.
- Each contract pays $1 on the winning side and $0 on the losing side.

Because YES + NO must sum to one dollar, the current YES price is the market's implied probability of UP in real time. That is the number you see charted.

2.2 Kalshi vs. Polymarket

Both venues run essentially the same product, but the market microstructure is different, which affects how you read the charts and how a strategy would fill:

	Kalshi	Polymarket
Quote unit	Cents (0-100)	Dollars (0.00-1.00)
Settlement label	yes / no	up / down
Chart resolution	1-second (tick-level)	1-minute (stair-stepped)
Price action	Every trade visible	Snapshots forward-filled

Why this matters for you: on Kalshi you see every trade as it happens, so a chart can look jittery even in a quiet market. On Polymarket the price holds flat for up to a minute between updates. When comparing a strategy across venues, remember that a Polymarket mid-minute 'fill' is an approximation - in reality you could only transact at the next snapshot.

3. Navigating the Platform

3.1 The Top Bar

- **Tools** - the full catalog of interactive analyses.
- **Pricing** - subscription plans.
- **Guide** - this document.
- **Log In / Get Started** - account access.

3.2 The Tool Page

Every tool lives at its own URL and includes a short description, any inputs you can configure, and the interactive output. Inputs common to most tools:

- **Asset** - BTC, ETH, or SOL.
- **Platform** - Kalshi or Polymarket. Switching changes the data behind every chart on the page.
- **Date / interval** - where relevant, pick a specific 15-minute window or a date range.

3.3 Your Dashboard

The dashboard lists the tools you've used recently, any runs you've saved, and a quick-launch grid for the tools you visit most.

4. Interval Explorer

Drill into a single 15-minute market and see exactly how it traded.

4.1 When to use it

- You want to understand how a specific market priced a move.
- You want to eyeball whether a candidate strategy would have worked in a particular interval.
- You want to compare how Kalshi and Polymarket reacted to the same event (switch the Platform toggle side-by-side).

4.2 What the chart shows

- **YES (green)** and **NO (red)** lines - implied probabilities through the 15-minute window, scaled 0 - 100%.
- **Spot (blue)** - the reference crypto price during the interval.
- **Target (dashed)** - the strike the market resolves against.
- **Outcome badge** - YES/NO (Kalshi) or UP/DOWN (Polymarket), plus the realized spot at the close.

4.3 Reading the chart

The x-axis is seconds into the 15-minute interval (0 to 900). Near the start, YES and NO are typically close to the spot-vs-strike distance expressed as a probability. As the interval progresses, implied probability converges toward 0 or 1 depending on which side is winning. Sharp spot moves show up as fast reversals in the YES/NO lines.

> **Kalshi vs. Polymarket, visually:** a Kalshi chart for a busy market will have visible tick-level noise; a Polymarket chart will look like a staircase. That is a real property of how the quotes are published, not a rendering choice.

5. Probability Grid

While Interval Explorer shows one market, the Probability Grid aggregates **every** market over the rolling 99-day window into a single heatmap. It answers questions like: *when the YES price is 30% ten minutes into the interval, how often does YES actually win?*

5.1 What the grid looks like

- **X-axis** - time into the 15-minute interval (seconds).
- **Y-axis** - probability (or price) bucket, from 0% at the bottom to 100% at the top.
- **Cell color** - the statistic for that (time, price) bucket, averaged over every interval in the window that ever visited the cell.
- **Greyed cells** - too few samples to be meaningful.

5.2 Modes

The dropdown has two families: **Grid modes** sweep every (price, second) cell; **Signal modes** only plot cells where a specific strategy fires, so you can see where in the grid that strategy actually enters and how those entries did.

Grid modes

- **Probability** - the calibration view. If a cell reads 0.62, markets in that cell ended YES 62% of the time. Perfectly calibrated cells lie on the diagonal.
- **Buy & Hold** - expected profit/loss in dollars if you bought YES (or NO) at the cell's (time, price) and held to settlement.
- **Buy / Sell** - expected P&L if you entered at one (time, price) cell and exited later in the same interval at another cell.
- **Time Arbitrage** - highlights cells where the implied probability at a given second in the interval has systematically drifted from the eventual YES rate - i.e. the market is statistically mispriced at that moment.

Signal modes

Pick any of **Momentum**, **Value**, **Price Momentum**, **Z-Score**, **Breakout**, **Crossover**, **Early Trend**, or **Spot Mispricing**. The grid becomes sparse - only cells at the (entry price, entry second) where the strategy actually fired. Color is average dollar P&L of those entries. Use this to eyeball *where* a strategy concentrates its trades and whether those concentrations were profitable. Each signal mode exposes its own tuning knobs next to the dropdown (lookback windows, thresholds). The full catalog with definitions is in Section 7.

5.3 Inputs

- **Asset** and **Platform** - which dataset drives the grid.

- **Side** - YES or NO for the P&L-style modes.
- **Time resolution** - how wide each x-axis bucket is (e.g. 15s, 60s).
- **Price resolution** - how many y-axis bins (e.g. 20, 50).

5.4 Reading it well

- Bright green = strong average win/probability; bright red = strong average loss/low probability. Neutral tones are marginal.
- Edges of the grid (very low or very high probability) are the easiest to read, since they dominate outcomes - but they also have the most samples.
- A systematic color block away from the diagonal is the most interesting feature: it means the market is consistently wrong in that region.

6. Strategy Backtester

Pick one of the bundled strategies, tune its parameters, and run it across every 15-minute interval in the 99-day window. You get an equity curve, headline stats, and a full trade log.

6.1 Inputs

- **Asset** - BTC / ETH / SOL.
- **Platform** - Kalshi or Polymarket. The strategy runs against that venue's quote stream and settles against its own outcome.
- **Strategy** - see Section 7 for the full catalog. Two broad kinds: *grid-sweep* strategies (Buy & Hold / Buy & Sell / Time Arb) that enter every qualifying (price, second), and *signal* strategies that fire only when a specific condition is met.
- **Entry Secs** - the time window (in seconds remaining) during which entries are allowed. Outside this window the strategy stays flat.
- **Price Range (c)** - only enter at contract prices inside this range. Cheap, low-edge extremes are excluded by default.
- **Strategy-specific knobs** - each signal strategy adds its own inputs (velocity lookback, z-score threshold, confirm window, etc.). They appear inline when you select the strategy.
- **Exit Hold (s)** - for signal strategies only. 0 = hold to settlement (typical). Any positive value = timed exit N seconds after entry, PnL = exit_price - entry_price in cents.

6.2 What you get back

- **Headline stats** - total P&L, win rate, average win, average loss, max drawdown.
- **Equity curve** - cumulative P&L across all trades, chronological.
- **Trade log** - every trade: interval, side, entry price, entry secs, P&L, outcome. Exportable to XLS.

6.3 How fills work

- One entry per side per interval. If Momentum fires for YES at 250 seconds, it enters YES and ignores further YES triggers for that interval. NO can still fire independently on the same interval.
- Fills use the selected platform's observed price at the triggering second. Polymarket snapshots only update once a minute, so Poly fills inside a minute are approximations - in live trading you could only transact at the next snapshot.
- Settlement P&L uses the selected platform's own outcome. No look-ahead from the other venue.
- No fees or slippage are modeled in this version. At a $1 payout, 1-2 cents of round-trip cost is meaningful - mentally discount any thin edge by that.

6.4 A sensible workflow

- Open the Probability Grid in a Signal mode (e.g. Momentum). The sparse heatmap shows you where that strategy actually enters and how the average P&L of those entries breaks down.
- If a region looks promising, switch to the Strategy Backtester with the same strategy + tuning and run it end-to-end.
- Nudge one parameter at a time and compare total P&L, win rate, and drawdown. A strategy that only works at one specific parameter value is usually overfit.
- For any outlier trade, copy the interval key into the Interval Explorer to sanity-check that the fill looks plausible at the observed tick.

7. Signal Strategy Catalog

Eight signal strategies are bundled in both the Probability Grid (as Signal modes) and the Strategy Backtester. Each produces at most one entry per side per 15-minute interval. All work on either Kalshi or Polymarket - on Polymarket, prices are scaled to cents before the decision runs, so thresholds and parameters are identical across venues.

All signal strategies share a **time window** (between entry_secs and stop_secs) and a **price filter** (min_price to max_price in cents) applied to the chosen side's ask.

7.1 Momentum

Signal: buy the side whose direction is confirmed by spot velocity. If spot is above target and moving up (velocity >= min_velocity_pct of spot), buy YES. If below and moving down, buy NO.

- **Velocity lookback (s)** (default 30): seconds back the spot slope is measured over.
- **Min velocity %** (default 0.0002 = 0.02%): minimum magnitude of (spot - spot_N_secs_ago) / spot required to fire.
- **Min distance %** (default 0.0001 = 0.01%): skips firings when spot is glued to the target.

7.2 Value

Signal: the current favorite (the side with the higher ask) is priced in a narrow value range and spot agrees with the favorite's direction. A simple 'buy the confirmed favorite when it is still cheap' play.

- No extra knobs besides the shared window and price-range controls (defaults 50-65c).

7.3 Price Momentum

Signal: the contract price itself moved at least min_move cents higher over lookback_secs seconds - a breakout in order-book price rather than spot.

- **Lookback (s)** (default 60).
- **Min move (c)** (default 20): minimum cents of upward movement to trigger.

7.4 Z-Score

Signal: spot is statistically far from its moving average over the lookback window. Fires YES if z > threshold, NO if z < -threshold.

- **Vol window (s)** (default 60): samples used for mean and stdev.
- **Min |z-score|** (default 0.5): size of the z in either direction.

7.5 Breakout

Signal: spot pushes through the highest high (buy YES) or lowest low (buy NO) of the prior window by at least min_break_pct.

- **Lookback (s)** (default 180): window the high/low is computed from.
- **Min break %** (default 0.0003 = 0.03%): how far spot must breach the range before the signal fires.

7.6 Crossover

Signal: spot has crossed the target and stayed on the new side for at least confirm_secs seconds. A classic 'signal has stuck' filter - reduces false triggers on a single-tick brush.

- **Confirm (s)** (default 10): the side must hold for this many consecutive seconds before entry.

7.7 Early Trend

Signal: during the first portion of the interval (from t=900s down to 900 - sample_secs), spot was persistently on one side of the target. Buy that side later in the window.

- **Sample window (s)** (default 300): how many seconds of the early interval are averaged.
- **Min avg dist** (default 0.0005): the average normalized distance (spot - target) / target must exceed this in magnitude.

7.8 Spot Mispricing (smispr)

Signal: spot is a large percentage away from target, but the favorite side is still priced modestly (50-60c) - i.e. the order book has not yet caught up to where spot already is.

- **Min dist %** (default 0.05 = 5%): how far spot must be from target for the signal to fire.

7.9 Comparing strategies

- **Momentum** and **Z-Score** are the most 'reactive' - they react to short-window movement in spot.
- **Breakout** and **Crossover** are *stick* filters - they demand confirmation before firing, producing fewer but higher-quality trades.
- **Early Trend** is the only look-back-at-the-start strategy - useful for intervals with a clear early bias.
- **Value**, **Price Momentum**, and **Spot Mispricing** are all price-driven; they fire when the order book itself is interesting.
- Start with default parameters from this guide. If a strategy looks promising, tune one knob at a time and watch the equity curve.

8. Frequently Asked Questions

Why does the Kalshi chart look jumpy while Polymarket looks smooth?

Kalshi publishes every trade; Polymarket publishes once a minute. Same market, different sampling rate.

The Probability Grid is empty for a platform - why?

Usually it means no markets on that platform for the selected asset settled within the window (extremely rare), or that an internal refresh is still in progress. Try another asset or come back shortly.

How far back does the data go?

The rolling window is 99 days. Older intervals roll off as newer ones arrive.

Can I download raw data?

Raw CSV downloads aren't part of the default plan. The interactive tools cover the vast majority of analysis needs. If you have a specific export use case, reach out.

Are these real-time tools?

No - they are analysis tools over recent history. They are not trade-execution interfaces. Nothing you do in a tool results in an order being placed anywhere.

Is any of this financial advice?

No. Everything on the platform is for informational and research use only. Prediction market contracts can lose their entire value. Do your own research before putting real capital at risk, and understand the rules and licensing of the venue you trade on.