HumidiFi Litepaper

The liquidity engine for internet capital markets and DEX for DeFi 2.0

Overview

HumidiFi is Solana's largest decentralized exchange (DEX) by volume, processing over $1B in daily volume - roughly 35% of all spot DEX activity. Unlike traditional automated market makers (AMMs), HumidiFi is a next-generation "proprietary AMM" (prop AMM) that combines on-chain execution with institutional-grade market-making logic. The result: tighter spreads, deeper liquidity, and execution that outperforms both DEX and CEX competitors.

Built to evolve with Solana itself, HumidiFi's architecture leverages every advancement - from smart contract optimizations to validator upgrades - to push on-chain markets forward and produce optimal outcomes for its users.

HumidiFi's mission is to make Solana the home of the world's most efficient, performant, and transparent markets: true internet capital markets.

Market Context & Problem

Traditional AMMs are the backbone of DeFi, but they were designed for simplicity, not performance. Their static liquidity curves can't adapt in real time, creating systemic inefficiencies:

- Static pricing that cannot react to real-time market conditions.
- Capital inefficiency with funds spread across price ranges instead of concentrated where trading happens.
- Wide spreads and poor price discovery that degrade execution quality.
- Lack of user segmentation prevents real users from receiving better execution and pricing than toxic arbitrage or informed bots.
- Fragmented liquidity scattered across pools, venues, and pairs.
- Impermanent loss and poor capital efficiency for LP's that punish depositors when markets move quickly, causing reduced returns on capital.
- Traders face wide spreads and high slippage, yielding poor execution quality for retail users.

As DeFi has matured, these limitations have become glaring. Users want CEX-level execution without sacrificing custody, tight spreads, and transparency.

Rise of Prop AMMs

On Solana, the market has already begun to evolve:

- Prop AMMs now account for nearly 75% of DEX volume.
- HumidiFi powers over 60% of all prop AMM activity.
- This segment has grown from <10% to >70% of total DEX share in roughly a year.

Prop AMMs bring active, data-driven liquidity to Solana: liquidity that moves with the market, not behind it. HumidiFi is the market leader, leveling up Solana to DeFi 2.0.

The HumidiFi Solution

HumidiFi addresses the core issues of legacy AMMs by introducing an active-liquidity framework:

- Predictive quoting: Quotes are generated from real-time market data and internal risk metrics, not just formulaic curves.
- Dynamic inventory management: Exposure is continuously rebalanced to avoid stale quotes and mispriced risk, and to maximize capital efficiency.
- On-chain settlement, off-chain intelligence: Heavy computation happens off-chain, while custody, settlement, and accounting remain entirely on Solana.
- Retail users are first class citizens: Differentiates retail users from arbitrage or informed bots, thus offering these users better spreads and less congestion.

This architecture:

- Reduces slippage and failed transactions.
- Provides issuers with healthier secondary markets from day one.
- Gives traders execution quality that feels like a CEX while remaining non-custodial.
- Maintains composability with existing on-chain routing protocols unlike RFQ solutions.

Core Architecture

HumidiFi is designed specifically for Solana's performance profile: high throughput, low latency, and parallel execution.

High-Level Design

HumidiFi consists of:

1. On-Chain Programs
    - Handle trade execution, settlement, and accounting.

- - Manage and rebalance on-chain inventory.
  - Identify and penalize toxic arbitrage and informed bots.
  - Enforce custody guarantees and transparency.
  - Minimize compute usage to avoid clogging Solana during volatile periods.
  - Composes seamlessly with other DEXs for on-chain routing.
2. Off-Chain Orchestration
   - Runs quoting logic and predictive models.
   - Aggregates price data from centralized and decentralized markets.
   - Feeds fresh prices, market conditions, and inventory updates into the on-chain programs.
3. Transaction Landing & Routing
   - Uses Nozomi for best transaction landing.
   - Optimizes when and how transactions are submitted to Solana.
   - Reduces latency, dropped transactions, and execution uncertainty.
   - Ensures quotes can be updated and filled at high frequency.

Core Components

Proprietary Liquidity Logic

- HumidiFi's quoting engine is proprietary.
- Open-sourcing internal market-making logic historically leads to predatory flow and toxic MEV which worsens retail user outcomes.
- Instead of blacklisting addresses, HumidiFi's engine adapts to adversarial behavior in real time, maintaining healthy spreads and execution quality.

Off-Chain Oracle & Predictive Model

- A world-class HFT model powers an off-chain oracle that continuously streams market data into HumidiFi.
- A single oracle tick can update quotes across all supported markets.
- Frequent, low-cost updates let HumidiFi react nearly instantly to market moves without overloading the network.

Optimized Solana Integration

- Leverages Solana's parallel execution and account model.
- Trades are confirmed in milliseconds.
- Hundreds of pools can update quotes off a single oracle event.
- Network congestion remains low even during high volatility.

Integrations, Composability & Roadmap

Current Integrations

HumidiFi is already integrated with major Solana routing and execution infrastructure, including:

- Jupiter
- DFlow
- Titan
- OKX Router

These integrations ensure that when users trade across Solana's ecosystem, a significant portion of that flow naturally routes into HumidiFi's liquidity. The team is actively expanding integrations with wallet front-ends, analytics providers, and portfolio management tools.

Universal Liquidity Layer

HumidiFi's architecture is intentionally general-purpose:

- New pools can be created by the labs team.
- Each pool is independent but shares:
    - Oracle infrastructure
    - Quoting framework
    - Execution guarantees

This paves the way for:

- General-purpose platform AMM services for large routers and institutional partners.
- Issuer-centric pools with custom strategies managed by dedicated desks.
- Cross-chain expansion via bridged assets, preserving the same execution standards for non-native tokens.

The long-term vision is clear: transform HumidiFi from a single DEX into Solana's universal liquidity layer for internet capital markets.

Conclusion

HumidiFi represents the next phase of DeFi on Solana:

- From passive liquidity to active, predictive liquidity
- From fragmented markets to a unified liquidity layer
- From simple curves to institutional-grade market-making on-chain

For traders, token issuers, liquidity providers, and the broader Solana community, HumidiFi is not just another DEX. It is the infrastructure layer that makes internet capital markets real: fast, fair, transparent, and accessible to anyone with a wallet.

If you're exploring HumidiFi as a user, partner, issuer, LP, or community member, this is the foundation we're building on, and we're just getting started.

HumidiFi represents a new category of AMM, one that combines proprietary precision with open accessibility, defining how liquidity forms, moves, and performs on Solana.

Building internet capital markets. DeFi 2.0.