

NOTERA PROTOCOL

Programmable Markets for Yield, Protection, and Automated Settlement

Protocol: Notera

Token: \$NTER

Network: Robinhood Chain

Version: 1.0

Abstract

Notera is an on-chain market protocol designed to connect two complementary forms of capital:

capital seeking predefined yield and **capital seeking protection against severe downside**.

The protocol packages these opposing objectives into programmable market contracts.

Participants can enter one of two sides of a Notera Market.

The **Yield Side** provides stablecoin liquidity and receives predefined periodic payments in exchange for accepting the possibility of receiving the underlying asset under certain settlement conditions.

The **Protection Side** supplies the underlying asset together with the required payment reserve and receives predefined protection when the underlying experiences a sufficiently severe decline.

All required collateral is committed before a market becomes active. Market conditions are established at creation, observations are performed according to a predetermined schedule, and final outcomes are executed by smart contracts.

Notera is designed to make this entire lifecycle transparent, deterministic, and verifiable on-chain.

1. Introduction

Traditional structured financial products generally rely on an intermediary to determine pricing, custody collateral, monitor market conditions, and execute settlement.

Notera replaces these functions with programmable blockchain infrastructure.

A Notera Market is defined by a set of predetermined parameters:

- an underlying asset;
- an initial reference price;
- a protection threshold;
- an activation level;
- a payment rate;
- an observation schedule;
- a maximum duration;
- and settlement conditions.

Participants select the side of the market corresponding to their desired exposure.

Once a market becomes active, its lifecycle is governed by the protocol.

Market observations determine whether periodic payments occur, whether the market terminates early, or whether the market proceeds to final settlement.

2. The Notera Concept

The name **Notera** represents the protocol's core philosophy:

Turn financial agreements into programmable notes.

Every Notera Market is effectively a digital agreement whose conditions are encoded into smart contracts.

Instead of relying on an institution to determine what happens after a market moves, the protocol defines those outcomes in advance.

This creates a system where:

Capital is deposited → Conditions are observed → Rules are triggered → Assets are settled.

3. Core Principles

Notera is built around six principles.

3.1 Pre-Funded Markets

Collateral required for a market must be committed before the market becomes active.

3.2 Deterministic Execution

Market outcomes are determined by predefined rules rather than discretionary intervention.

3.3 Transparent Accounting

Collateral, positions, fees, and settlement activity are recorded on-chain.

3.4 Separated Exposure

Participants can choose between pursuing yield and obtaining downside protection.

3.5 Physical Asset Settlement

Where required by the market design, settlement can occur using the underlying asset itself.

3.6 Non-Leveraged Structure

Notera markets are designed around fully committed collateral rather than continuously margined leveraged positions.

4. Notera Markets

A Notera Market represents a single structured position around a supported underlying asset.

For example:

Underlying Asset: [UNDERLYING]

At market creation, Notera records the initial reference price:

P_0 = Initial Reference Price

This value becomes the basis for all subsequent thresholds.

Each market receives a unique identifier.

For example:

Market #1042

The market may then contain two corresponding position classes:

- **YIELD-1042**
- **PROTECT-1042**

These positions represent the two sides of the same market.

5. The Two Market Sides

Notera separates the market into two complementary positions.

5.1 YIELD

YIELD is designed for participants seeking periodic income.

A YIELD participant deposits the designated settlement currency into the market.

In return, the participant becomes entitled to the payments defined by the market and receives the corresponding settlement assets when the market concludes.

The YIELD participant accepts the possibility of receiving the underlying asset if the market reaches its defined downside settlement condition.

YIELD provides:

- Stablecoin liquidity
- Capital for market settlement

YIELD receives:

- Periodic payments
- Principal or settlement assets according to market conditions

6. PROTECT

PROTECT is designed for holders of the underlying asset who want defined downside protection.

A PROTECT participant deposits:

- the underlying asset;
- and the required payment reserve.

In exchange, the position provides a contractual protection mechanism when the market reaches its predefined downside condition.

PROTECT provides:

- Underlying asset
- Payment reserve

PROTECT receives:

- Periodic market payments where applicable
 - Protection under the defined downside condition
 - Return of the underlying asset when the protection condition is not triggered
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7. The Economic Relationship

The two sides are intentionally complementary.

The YIELD participant wants income.

The PROTECT participant wants protection.

Therefore:

YIELD accepts risk in exchange for payments.

while:

PROTECT pays for reduced downside exposure.

Notera creates the infrastructure that connects these two objectives.

The protocol does not need to promise an arbitrary return.

Instead, the market establishes its economics through the relationship between the two sides.

8. Market Formation

A new Notera Market begins with a subscription period.

During this period, participants commit capital to either YIELD or PROTECT.

The protocol records the committed amounts and determines the amount of capital that can be matched.

A market may include parameters such as:

- target notional;
- minimum subscription;
- maximum subscription;
- payment range;
- protection threshold;
- termination level;
- observation frequency;
- maturity;
- and supported assets.

Once the market becomes active, the relevant parameters are locked for that market.

9. Market Matching

Notera markets are based on matching complementary capital.

Suppose:

YIELD Demand = \$500,000

and:

PROTECT Demand = \$750,000

The protocol can only activate the matched portion unless an authorized liquidity mechanism covers the remaining imbalance.

The clearing mechanism determines the amount of exposure that can actually become active.

This prevents the protocol from creating obligations that are not backed by corresponding collateral.

10. Payment Rate

Each market has a predefined payment rate.

The payment rate represents the compensation paid to the YIELD side for accepting the market's defined risk.

For example:

Payment Rate = 1.50% per observation

The rate can be established through the market-clearing mechanism or protocol-defined parameters.

Once the market becomes active, the payment rate cannot be arbitrarily changed for existing positions.

11. Protection Threshold

Each market contains a predefined protection threshold.

Let:

$B = P_0 \times \text{Barrier Ratio}$

For example:

Initial price:

$P_0 = \$100$

Barrier ratio:

65%

Therefore:

B = \$65

The protection threshold determines whether the severe-downside settlement condition has occurred.

A price above the threshold does not activate the severe-downside condition.

A qualifying observation below the threshold does.

12. Termination Level

A Notera Market may also contain an automatic termination level.

Let:

$A = P_0 \times \text{Activation Ratio}$

For example:

Initial price:

\$100

Activation ratio:

100%

Therefore:

A = \$100

If an eligible observation reaches or exceeds this level, the market can automatically terminate.

This allows successful market conditions to conclude the position before its maximum maturity.

13. Observation Engine

Notera does not continuously calculate market outcomes based on every price movement.

Instead, each market has predefined observation events.

At an observation:

$P_{\square}$ = Official Reference Price

The protocol evaluates the market against its predefined conditions.

Depending on the observed price, the market may:

1. trigger a scheduled payment;
2. remain active;
3. terminate early;
4. or proceed toward final settlement.

This creates predictable and auditable market behavior.

14. Periodic Payments

When an observation satisfies the payment condition, the YIELD position becomes entitled to its scheduled payment.

For example:

Notional = \$10,000

Payment = 1.50%

Payment:

\$150

The payment is determined by the market's fixed rules.

If the payment condition is not satisfied, the corresponding payment is not generated.

The protocol therefore does not guarantee a fixed return independent of market conditions.

15. Automatic Termination

If an eligible observation satisfies:

$$P_{\square} \geq A$$

the market can enter its termination state.

Upon termination:

- active obligations are closed;
- eligible payments are calculated;
- underlying collateral is returned according to the settlement rules;
- settlement currency is distributed;
- and remaining reserves are released.

Once the market has been finalized, its outcome cannot be reopened through ordinary protocol operations.

16. Final Settlement

If the market reaches its final observation without early termination, Notera evaluates the final settlement condition.

There are two primary outcomes.

Normal Settlement

If the underlying remains above the protection threshold:

$$P_{\square} \geq B$$

the downside condition has not occurred.

The underlying collateral is returned to the PROTECT side according to the market rules.

The YIELD side receives its applicable final settlement.

Protection Settlement

If:

$$P \square < B$$

the severe-downside condition is activated.

The underlying asset is settled according to the market's predefined physical-settlement mechanism.

The YIELD side receives the underlying exposure specified by the contract.

The PROTECT side receives the protection value defined by the market.

17. Physical Settlement

Notera is designed to support settlement directly using the underlying token.

This avoids requiring the protocol to create synthetic representations of an asset merely to settle a position.

For a qualifying downside event:

Underlying collateral → Settlement mechanism → YIELD position

This produces a direct relationship between the asset deposited by PROTECT participants and the asset delivered under the YIELD settlement condition.

18. Collateral Architecture

Collateral is held by protocol-controlled escrow contracts.

The system distinguishes between:

User Collateral

Assets committed to active markets.

Payment Reserves

Assets reserved for scheduled payments.

Protocol Treasury

Assets generated through protocol fees or otherwise owned by the protocol.

These pools must remain logically separated.

Treasury assets must not be treated as collateral for user positions.

19. Collateral Conservation

Notera's accounting architecture is designed around collateral conservation.

For every active market:

Deposited collateral $\geq$ Maximum contractual obligation

A market cannot create additional obligations without corresponding collateral.

Upon settlement:

Initial collateral = Distributed settlement + Returned collateral + Valid protocol fees

subject to the market's specific accounting rules.

This creates an auditable relationship between assets entering and leaving the system.

20. No Margin Calls

Notera does not rely on continuously margined positions.

Once a market becomes active, participants do not normally need to add collateral simply because the underlying price moves.

The position follows its predefined lifecycle.

This means Notera avoids a conventional liquidation engine for its core market structure.

However, this does not eliminate risk.

A participant can still experience substantial losses depending on the market outcome.

21. Position Representation

Each active market can issue tokenized representations of its positions.

For example:

YIELD-1042

represents the income-oriented side of Market #1042.

PROTECT-1042

represents the protection-oriented side.

Position tokens can potentially be transferred between wallets.

Transferability does not guarantee a secondary market.

A position may remain illiquid even when technically transferable.

22. Smart Contract Architecture

Notera can be divided into several core modules.

22.1 Notera Core

The central market engine.

Responsibilities include:

- market creation;
- market activation;
- subscription;
- matching;
- lifecycle management;

- observation handling;
 - and settlement.
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22.2 Notera Vault

The custody layer for market collateral.

Responsibilities include:

- stablecoin custody;
 - underlying-token custody;
 - payment reserves;
 - accounting;
 - and controlled withdrawals.
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22.3 Notera Positions

The position representation layer.

Responsibilities include:

- position issuance;
 - position balances;
 - market identifiers;
 - transferability;
 - and settlement status.
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22.4 Notera Oracle

The market-data layer.

Responsibilities include:

- receiving approved reference prices;
- validating timestamps;
- checking freshness;
- normalizing decimals;
- and authorizing eligible observations.

22.5 Notera Settlement

The finalization layer.

Responsibilities include:

- evaluating market conditions;
 - calculating payments;
 - distributing settlement assets;
 - returning unused collateral;
 - and permanently closing completed markets.
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23. Oracle Security

Price data is one of the most important components of the system.

The oracle layer should enforce:

- approved data sources;
- freshness requirements;
- timestamp validation;
- observation windows;
- decimal normalization;
- circuit breakers;
- and invalid-price rejection.

The protocol should not treat an arbitrary price submission as a valid market observation.

A market observation must satisfy the requirements defined by the corresponding market.

24. Market Lifecycle

Every Notera Market follows a defined lifecycle.

Stage 1 — Creation

Market parameters are initialized.

Stage 2 — Subscription

Participants commit capital.

Stage 3 — Matching

Compatible YIELD and PROTECT exposure is matched.

Stage 4 — Activation

The market becomes active.

Stage 5 — Observation

The oracle provides scheduled market observations.

Stage 6 — Payment

Eligible payments are processed.

Stage 7 — Termination or Maturity

The market either terminates early or reaches its final observation.

Stage 8 — Settlement

Assets are distributed according to the final market state.

Stage 9 — Closure

The market becomes permanently inactive.

25. Liquidity Facility

Notera may operate a protocol-controlled liquidity facility.

The facility can provide limited participation when market demand between YIELD and PROTECT is temporarily unbalanced.

It is not intended to provide unlimited liquidity.

The facility can be constrained by:

- maximum market exposure;
- aggregate exposure;
- utilization limits;
- supported assets;
- maturity limits;
- and governance-defined risk parameters.

A liquidity facility is therefore a controlled protocol participant rather than a guarantee that every market will always be matched.

26. Fees

Notera may charge protocol fees for selected activities.

Potential fee sources include:

- market creation;
- settlement;
- position issuance;
- protocol liquidity;
- and other defined services.

Fees should be clearly displayed before a user commits capital.

Example:

Gross Payment: \$150

Protocol Fee: \$3

Net Payment: \$147

The exact fee structure is determined by the deployed contracts.

27. Notera Treasury

Protocol revenue is directed to the Notera Treasury.

Treasury assets may include:

- stablecoins;
- \$NTER;
- underlying assets;
- liquidity positions;
- and other protocol-owned assets.

Treasury holdings are distinct from user collateral.

The treasury may support:

- protocol operations;
 - liquidity;
 - ecosystem incentives;
 - security;
 - development;
 - token mechanisms;
 - and other governance-approved activities.
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28. \$NTER

\$NTER is the native token of the Notera ecosystem.

The token is separate from the collateral used to settle individual markets.

Holding \$NTER does not automatically represent:

- ownership of user collateral;
- ownership of underlying assets;
- guaranteed yield;
- guaranteed redemption;
- or a claim against protocol reserves.

The token exists as the ecosystem's native digital asset and may provide utility throughout the Notera ecosystem.

29. \$NTER Utility

Depending on the final implementation, \$NTER may be used for:

Governance

Participation in protocol governance.

Staking

Optional staking mechanisms defined by deployed contracts.

Liquidity Incentives

Distribution to eligible liquidity providers.

Ecosystem Incentives

Rewards for community and protocol participation.

Protocol Utility

Certain ecosystem functions may use \$NTER as an access or utility asset.

The presence of utility does not constitute a promise of token appreciation.

30. Token Economics

The final \$NTER supply and allocation are determined by the deployed token contract.

A transparent token model should disclose:

- maximum supply;
- circulating supply;
- liquidity allocation;
- community allocation;
- treasury allocation;
- ecosystem incentives;
- team allocation, if applicable;
- vesting schedules;
- and any token-burning or buyback mechanisms.

No undisclosed token allocation should exist outside the published token architecture.

31. Token Liquidity

Market liquidity for \$NTER is separate from the liquidity of Notera structured markets.

The ability to trade \$NTER does not mean that a participant can automatically exit a YIELD or PROTECT position.

These are distinct markets with distinct risk profiles.

32. Governance

Notera governance may control parameters that are intended to remain adjustable.

Potential governance-controlled parameters include:

- supported assets;
- protocol fees;
- market limits;
- oracle configuration;
- liquidity-facility limits;
- token incentives;
- and risk parameters.

Governance should not possess unrestricted authority to confiscate user collateral.

Critical administrative actions should use appropriate access controls and, where practical, delayed execution.

33. Security Architecture

The protocol should be developed with security as a core design constraint.

Recommended controls include:

- unit testing;
- integration testing;
- fuzz testing;
- invariant testing;
- economic simulations;
- oracle failure testing;
- access-control testing;
- static analysis;
- deployment verification;
- and independent security review.

Critical contracts should minimize privileged functionality.

Where administrative controls are necessary, their permissions should be publicly documented.

34. Protocol Invariants

Notera's implementation should maintain several core invariants.

Asset Conservation

Assets cannot leave an active market without a corresponding authorized state transition.

Position Conservation

Outstanding position balances must correspond to actual market exposure.

Settlement Conservation

Settlement distributions cannot exceed the assets available for the relevant market.

Reserve Isolation

Payment reserves assigned to one market cannot be silently redirected to another.

Finality

A completed market cannot be modified after final settlement.

35. Worked Example

Consider a hypothetical Notera Market.

Underlying: [UNDERLYING]

Initial Price: \$100

Protection Threshold: \$65

Termination Level: \$100

Notional: \$10,000

Payment: 1.50% per observation

The YIELD participant supplies:

\$10,000

The PROTECT participant supplies the corresponding underlying asset and payment reserve.

Observation One

Underlying price:

\$94

Since:

\$94 > \$65

the downside condition has not occurred.

The scheduled payment is processed according to the market rules.

Observation Two

Underlying price:

\$78

Again:

\$78 > \$65

The market remains active.

Observation Three

Underlying price:

\$103

Since:

\$103 ≥ \$100

the termination level has been reached.

The market terminates.

Eligible payments are calculated.

The underlying collateral is returned according to the market's settlement rules.

The YIELD participant receives the applicable settlement.

36. Downside Example

Using the same market:

Initial Price: \$100

Protection Threshold: \$65

Suppose the final eligible observation records:

\$54

Because:

\$54 < \$65

the severe-downside condition is activated.

The market enters protection settlement.

The underlying collateral is delivered according to the physical-settlement rules.

The YIELD participant assumes the defined underlying exposure.

The PROTECT participant receives the contractual protection value.

37. Risk Factors

Participation in Notera markets involves significant risk.

Underlying Asset Risk

The underlying asset may lose substantial value.

Settlement Risk

The value received at settlement may differ materially from the participant's initial capital.

Barrier Risk

Protection depends on the predefined threshold.

A loss that does not cross the threshold may not activate protection.

Early Termination Risk

A market can terminate earlier than expected.

Oracle Risk

Incorrect or unavailable market data can affect settlement.

Smart Contract Risk

Contract vulnerabilities may result in partial or total loss of deposited assets.

Liquidity Risk

A position may be difficult or impossible to sell before maturity.

Stablecoin Risk

Settlement currencies may themselves experience liquidity, depeg, issuer, or infrastructure risks.

Token Risk

\$NTER may be highly volatile and may lose substantial or all of its market value.

Regulatory Risk

The legal treatment of tokenized assets and structured financial products varies between jurisdictions.

Participants are responsible for determining whether interaction with Notera is legally permitted in their jurisdiction.

38. No Guarantee of Returns

Notera does not guarantee:

- profits;
- token appreciation;
- fixed investment returns;
- minimum APY;
- protection from every market decline;
- secondary-market liquidity;
- or successful execution under every possible technical circumstance.

All payments and settlement outcomes are conditional on the market rules.

39. Notera's Design Goal

The purpose of Notera is not to predict markets.

It is to make market conditions programmable.

A participant should be able to understand:

What am I depositing?

What conditions trigger payment?

What price activates protection?

What price ends the market?

What happens at maturity?

What asset will I receive?

The protocol's objective is to make those answers explicit before capital is committed.

40. Closing Statement

Notera transforms structured market exposure into programmable blockchain infrastructure.

It connects:

Yield seekers

with

Protection seekers

through:

Collateralized markets

Scheduled observations

Automated payments

Deterministic settlement

and

On-chain accounting.

The protocol separates the meme-native identity of \$NTER from the financial mechanics of the Notera market layer.

The result is a system designed to make sophisticated market structures accessible through transparent smart contracts.

The market moves.

The rules remain.

Notera executes.

Disclaimer

This document describes the intended architecture and economic design of the Notera protocol.

It does not constitute financial, investment, legal, tax, accounting, insurance, or other professional advice.

Digital assets and blockchain-based financial products involve substantial risk. Participants may lose some or all of the assets committed to the protocol.

Nothing in this document constitutes a promise or guarantee regarding the future value of \$NTER, protocol revenue, market returns, liquidity, or protection outcomes.

Actual protocol behavior is determined by the deployed smart contracts and their associated parameters.

Users should independently evaluate the technical, financial, legal, regulatory, and tax implications of interacting with Notera.

Participation should only be undertaken with assets that the participant can afford to lose.