QUANTUM

Proprietary Risk Management Algorithm by RiskGuard Management

In trading, most traders devote time and energy to finding increasingly precise entry strategies. However, in the long run, the variable that truly determines the survival and growth of an account is **risk management**.

Quantum was created with a clear objective: **to protect capital and overcome the limits of fixed risk through a dynamic and adaptive approach**.

Why risk must be analyzed statistically

In trading, a strategy does not produce linear results, but rather a **sequence of positive and negative outcomes**. Even a profitable strategy can experience significant drawdowns simply due to the order in which wins and losses occur.

Monte Carlo analysis exists precisely for this reason: to simulate thousands of possible outcome sequences starting from the same parameters (win rate, risk-to-reward ratio, number of trades) in order to understand **how capital can evolve over time**.

Even working with risk calculated through statistical simulation would drastically increase the survival probability of most traders, because it shifts the focus from the individual trade to the **overall behavior of the account**.

Quantum builds on this principle, but goes further: it does not use Monte Carlo merely as a preliminary analysis, but as the foundation of a **dynamic risk management model**, continuously adapted to the real state of the account.

What Quantum is

Quantum is a proprietary algorithm developed by **RiskGuard Management**, designed to calculate the **optimal risk for each individual trade** based on the real condition of the account.

It does not modify the trading strategy, does not generate signals, and does not alter entries.

Quantum operates exclusively on **risk sizing**, leaving the trader’s operational logic unchanged.

The trader’s only decision: maximum acceptable drawdown

One of Quantum’s defining characteristics is its simplicity from the user’s perspective.

The only variable the trader must decide is the **maximum drawdown percentage they are willing to accept on the account**.

Quantum does not require the trader to choose:

- a fixed risk percentage per trade,
- multipliers,
- discretionary operational parameters.

All risk decisions are **automatically derived** from this single constraint.

Maximum drawdown becomes the **boundary within which the algorithm operates**, and every simulation, risk allocation, and dynamic recalculation is performed with the objective of **never exceeding this threshold**.

In this way, risk control shifts from the individual trade to the **overall behavior of the account**, aligning capital management with the trader’s real tolerance.

Why fixed risk is a limitation

Using a fixed risk percentage for every trade (for example, 1%) is a widespread practice, but it has clear limitations.

This approach:

- ignores statistical variability in results,
- does not account for losing streaks,
- does not adapt to account evolution.

Two traders using the same strategy with fixed risk can achieve very different results **solely due to the sequence of trades**.

The risk engine

At the core of Quantum lies a **Monte Carlo–based simulation engine**.

The algorithm analyzes thousands of possible outcome sequences using real parameters such as:

- win rate,
- risk-to-reward ratio,
- number of trades,
- maximum acceptable drawdown.

The objective is not to maximize theoretical profit, but to identify the **most efficient level of risk in relation to capital protection**.

Dynamic and adaptive risk

Quantum never uses static risk.

Risk values are continuously recalculated based on:

- balance,
- equity,
- current drawdown,
- the statistical behavior of the strategy.

Each trade can therefore have a **different risk level**, always consistent with the real state of the account.

Starting on new accounts and statistical continuity

Quantum is designed to operate correctly both when a trader **starts with an account that has no historical data**, and when trading continues on a **new account due to a forced account change**, as commonly occurs with prop firms.

When a trader starts from scratch, Quantum initially has no real statistical data from the account. During this initialization phase, the algorithm uses a **risk value declared by the trader**, which should be consistent with a backtest-based statistic, ideally obtained through Monte Carlo analysis of the strategy used.

Even during this initial phase, risk is not applied statically, but is **adapted to real account conditions**, taking into account balance, equity, drawdown, and exposure.

After a minimum number of trades, once the account's statistics become sufficiently representative, Quantum transitions to **fully autonomous risk management**, based exclusively on data generated by real trading activity.

In the opposite case—when a trader is forced to change account, for example after a payout or a reset imposed by a prop firm—Quantum avoids resetting its statistical base.

Within RiskGuard Management, the trader can transfer **key parameters from the previous account**, allowing the algorithm to maintain **statistical continuity even on a new account**.

In this scenario, Quantum does not interpret the new account as an empty starting point, but continues managing risk **as if trading were proceeding along the same statistical path**, preserving coherence, adaptability, and drawdown control.

Thanks to this approach, Quantum adapts both to traders who are starting today and to those operating in environments where accounts change frequently, without compromising the integrity of the risk management model.

Pending trade management

Quantum accounts for the fact that account conditions can change even when an order **has not yet entered the market**.

When pending trades are present:

- risk is dynamically updated before activation,
- calculations are re-evaluated if balance, equity, or drawdown changes,
- the order enters the market with risk aligned to real conditions at execution time.

This prevents the use of risk values calculated on outdated data.

Real account exposure control

Quantum continuously analyzes the **overall account exposure**, monitoring:

- all open positions,
- the real placement of stop losses,
- the maximum potential loss if all stops were hit.

The risk of each new trade is calculated while considering **risk already allocated**, preventing overexposure even when multiple trades are active simultaneously.

Same trades, same drawdown, different results

One of Quantum's key characteristics is that:

- trades remain identical,
- drawdown can remain similar,
- the growth curve can change significantly.

Quantum does not increase risk aggressively, but **redistributes it intelligently across the trade sequence**.

Free simulator

To ensure maximum transparency, RiskGuard Management provides a **free Quantum simulator**, allowing users to test the algorithm with different parameters and directly verify its efficiency.

👉 Here you can access the free Quantum simulator to see and test how the algorithm works under different market conditions.

https://www.riskguardmanagement.com/en/download

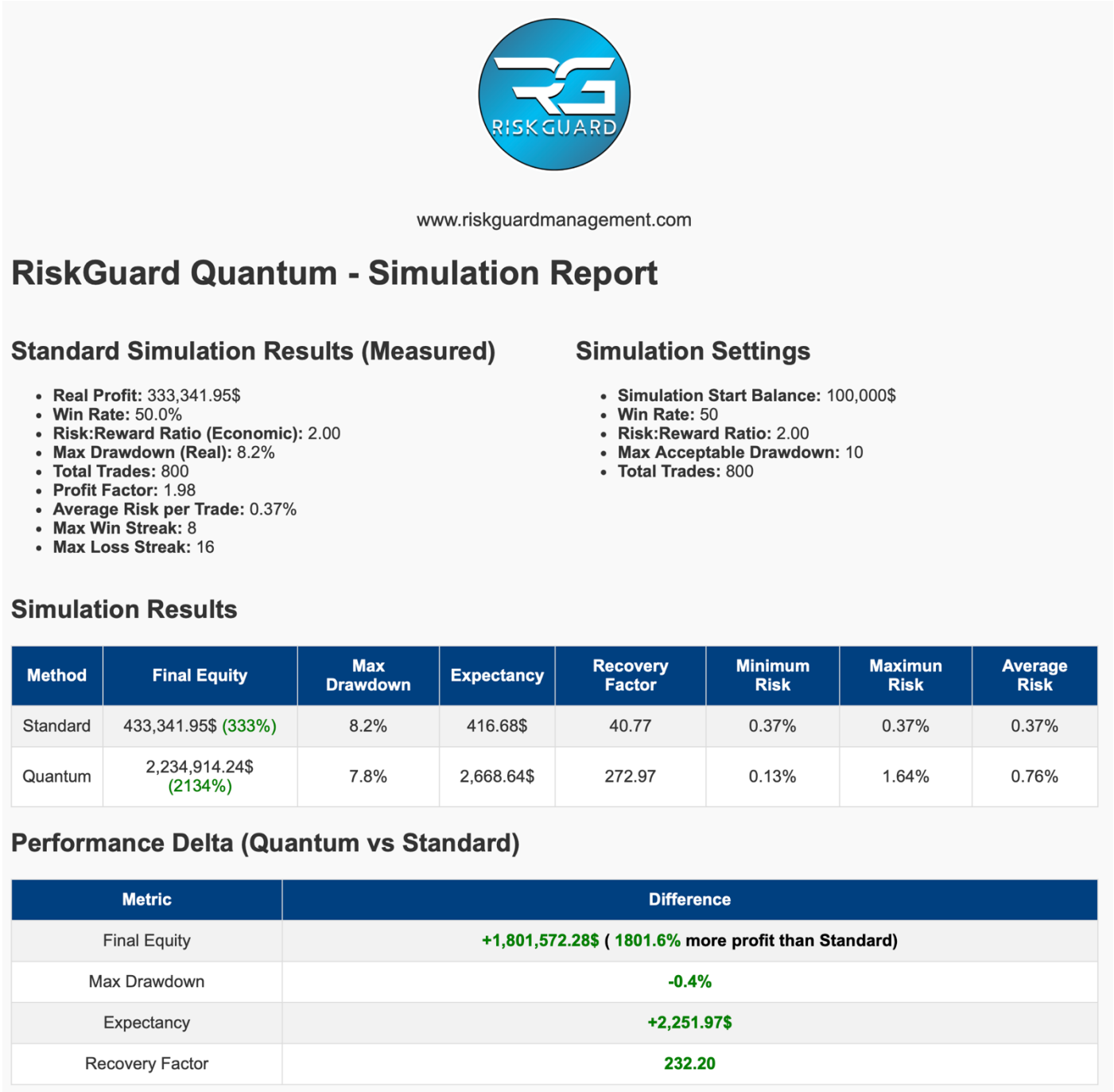
https://youtu.be/uUV0e1mB0lk?si=L5oD59ZBYnJrJLgc

HTML reports and result transparency

Quantum Simulator generates **detailed HTML reports**, allowing analysis of:

- equity performance,
- drawdown,
- risk applied to each trade,
- comparison between standard risk management and Quantum.

These reports make the algorithm's behavior **fully verifiable**.



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RiskGuard Quantum - Simulation Report

Standard Simulation Results (Measured)

- **Real Profit:** 333,341.95$
- **Win Rate:** 50.0%
- **Risk:Reward Ratio (Economic):** 2.00
- **Max Drawdown (Real):** 8.2%
- **Total Trades:** 800
- **Profit Factor:** 1.98
- **Average Risk per Trade:** 0.37%
- **Max Win Streak:** 8
- **Max Loss Streak:** 16

Simulation Settings

- **Simulation Start Balance:** 100,000$
- **Win Rate:** 50
- **Risk:Reward Ratio:** 2.00
- **Max Acceptable Drawdown:** 10
- **Total Trades:** 800

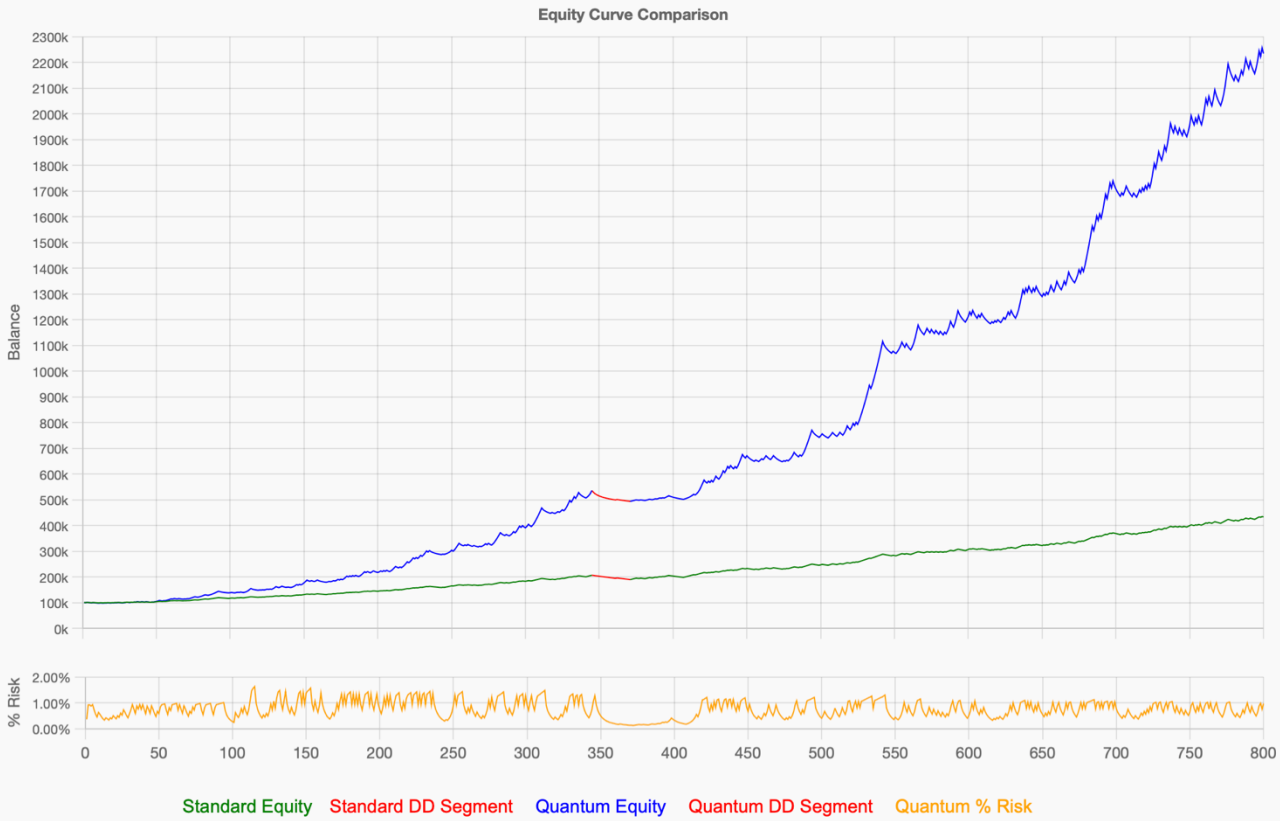
Simulation Results

Method	Final Equity	Max Drawdown	Expectancy	Recovery Factor	Minimum Risk	Maximun Risk	Average Risk
Standard	433,341.95$ (333%)	8.2%	416.68$	40.77	0.37%	0.37%	0.37%
Quantum	2,234,914.24$ (2134%)	7.8%	2,668.64$	272.97	0.13%	1.64%	0.76%

Performance Delta (Quantum vs Standard)

Metric	Difference
Final Equity	**+1,801,572.28$ (1801.6% more profit than Standard)**
Max Drawdown	**-0.4%**
Expectancy	**+2,251.97$**
Recovery Factor	**232.20**

Equity Curve



Trade-by-Trade Results

			Standard					Quantum				
N. Trade	OP	R:R	% Risk	% Profit	Profit/Loss	Balance	Drawdown	% Risk	% Profit	Profit/Loss	Balance	Drawdown
1	1	2.0	0.37%	0.74%	740.00$	100,740$	0.74%	0.37%	0.74%	740.00$	100,740$	0.74%
2	-1	-1.0	0.37%	-0.37%	-372.74$	100,367$	0.00%	0.93%	-0.93%	-931.85$	99,808$	-0.19%
3	1	2.0	0.37%	0.74%	742.72$	101,110$	0.00%	0.93%	1.86%	1860.11$	101,668$	0.00%
4	-1	-1.0	0.37%	-0.37%	-374.11$	100,736$	-0.37%	0.88%	-0.88%	-897.75$	100,771$	-0.88%
5	-1	-1.0	0.37%	-0.37%	-372.72$	100,363$	-0.74%	0.94%	-0.94%	-949.50$	99,821$	-1.82%
6	-1	-1.0	0.37%	-0.37%	-371.34$	99,992$	-1.11%	0.74%	-0.74%	-740.43$	99,081$	-2.55%
7	1	2.0	0.37%	0.74%	739.94$	100,732$	-0.37%	0.57%	1.15%	1139.23$	100,220$	-1.42%
8	-1	-1.0	0.37%	-0.37%	-372.71$	100,359$	-0.74%	0.46%	-0.46%	-464.11$	99,756$	-1.88%
9	-1	-1.0	0.37%	-0.37%	-371.33$	99,988$	-1.11%	0.64%	-0.64%	-640.13$	99,116$	-2.51%
10	-1	-1.0	0.37%	-0.37%	-369.95$	99,618$	-1.48%	0.56%	-0.56%	-559.42$	98,556$	-3.06%
11	-1	-1.0	0.37%	-0.37%	-368.59$	99,249$	-1.84%	0.47%	-0.47%	-461.27$	98,095$	-3.51%
12	1	2.0	0.37%	0.74%	734.44$	99,984$	-1.11%	0.39%	0.79%	771.35$	98,866$	-2.76%
13	-1	-1.0	0.37%	-0.37%	-369.94$	99,614$	-1.48%	0.34%	-0.34%	-333.94$	98,532$	-3.08%
14	-1	-1.0	0.37%	-0.37%	-368.57$	99,245$	-1.84%	0.43%	-0.43%	-427.24$	98,105$	-3.50%
15	1	2.0	0.37%	0.74%	734.41$	99,980$	-1.12%	0.39%	0.78%	765.53$	98,871$	-2.75%
16	-1	-1.0	0.37%	-0.37%	-369.92$	99,610$	-1.48%	0.34%	-0.34%	-335.10$	98,536$	-3.08%
17	1	2.0	0.37%	0.74%	737.11$	100,347$	-0.75%	0.43%	0.87%	855.66$	99,391$	-2.24%

Integration in RiskGuard Management

Quantum is available as an **integrated function within the RiskGuard Management Expert Advisor**.

The algorithm operates in real time during trading activity, automatically applying calculated risk **without requiring manual intervention from the trader**.

Michele Montorio – Founder & Developer

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