

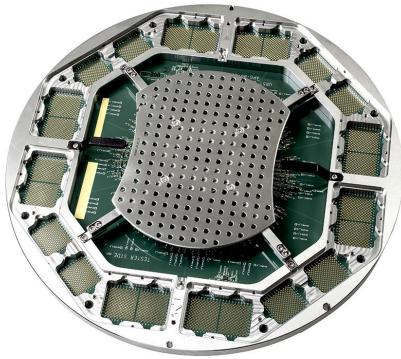
Technoprobe (TPRO)

Category: Test Equipment (Consumable)

Est. Price Per Unit: \$50k - \$100k+ per card (AI cards significantly more expensive)

What They Do

Product 101 and Where They Fit into the AI Stack



- Technoprobe manufactures **probe cards**—consumable interfaces required to test chips (CPUs, GPUs, AI accelerators) before they are packaged.
- Before a chip goes into a plastic case and gets soldered into a phone or server, it must be tested. If you package a broken chip, you waste money on packaging and risk shipping a dud. The problem is that silicon wafers have millions of microscopic contact points, and the testing machine (ATE) is too clumsy to touch them directly.
- A probe card is a round circuit board with thousands of microscopic MEMS needles in the center. These needles physically prick the wafer to create an electrical loop for testing.
- Every time Nvidia or Apple designs a new chip, the contact point layout changes. They must buy a new custom probe card.

Alignment with Overall Thesis

- AI chips are massive and require probe cards with tens of thousands of pins. These cards cost \$100k+ vs. standard cards at \$50k.
- Chiplets and advanced packaging (CoWoS, SoIC) require **Known Good Die** testing—you can't stack chips without verifying each layer works. One bad layer ruins the whole stack. This drives 100% testing coverage and higher probe card volume.
- Technoprobe specialises in logic (processors), not memory. Directly aligned with AI accelerator growth.

Business Model, Customers

- \$50k-\$100k+ per card. AI/advanced logic at the high end.
- Unlike ATE machines (Teradyne), which are one-time capex, probe cards are consumables. Volume driven (more chips = more wear = more replacement) and design driven (new chip = new card).

Comments on Team

- Family led, Italian. Founded in 1995 by Giuseppe Crippa in a garage. Family still owns controlling stake.
- Co-founder was CEO until 2017 (age 82) and passed in 2025.
- Current CEO is founder's nephew; Chairman and Vice Chairman are founder's sons.

- Engineering-first, secretive, agile. Known for being technically superior in **vertical probe cards** (the type needed for high-end logic).

Early View of Moat Hypothesis

- Design lock-in: every new chip needs a new probe card. Once you're the incumbent, switching mid-production is painful.
 - Technical leadership in vertical probes—decades of precision engineering investment.
 - Family structure allows faster iteration than publicly traded American competitors.
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Why They're Interesting, and Why Now

- AI chips are bigger and more complex = more pins, more testing, higher-value cards. We have to believe AI chip production scales—if it does, Technoprobe is a direct beneficiary.
 - Chiplets increase the need for Known Good Die testing. You can't stack without verifying.
 - Unlike one-time capex equipment, probe cards are consumables that scale with production volume. More recurring dynamics.
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Key Risks

- Customer concentration. If one of the Giants shifts to FormFactor, it hurts.
 - Tech disruption: if chip designs move to wafer-level burn-in or self-testing architectures, probe card TAM shrinks.
 - Family governance can be a strength (long-term thinking) or weakness (succession, capital allocation).
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Gaps in Understanding / Key Questions

- How defensible is the technical lead vs. FormFactor? Winning on tech or relationships/price?
 - Actual customer concentration breakdown—is it 50% TSMC or more diversified?
 - Succession planning—how deep is the bench beyond the Crippa family?
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Select Financial Graphs

R1: Total Revenue & YoY Growth



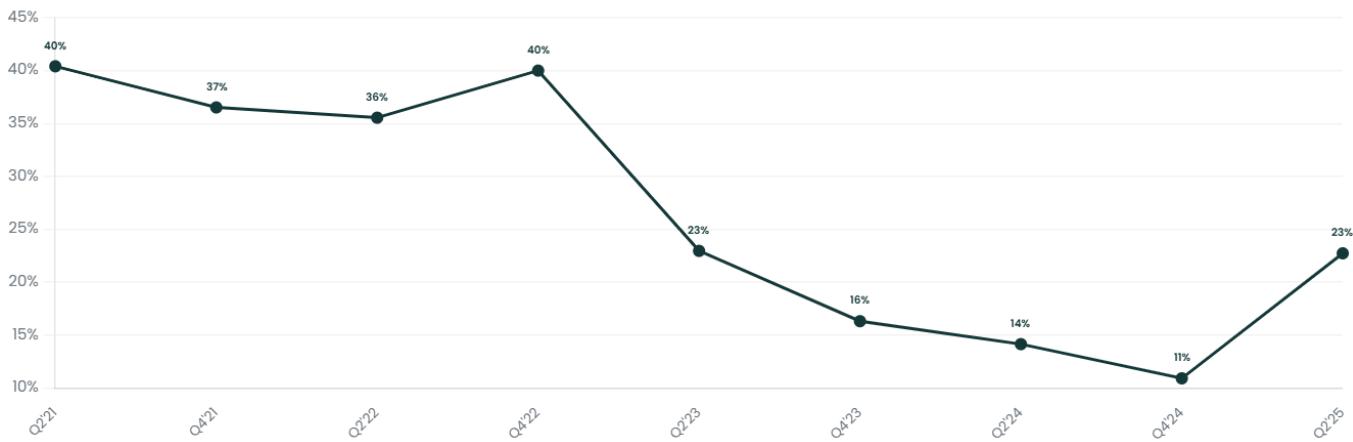
I1: Inventory Turns



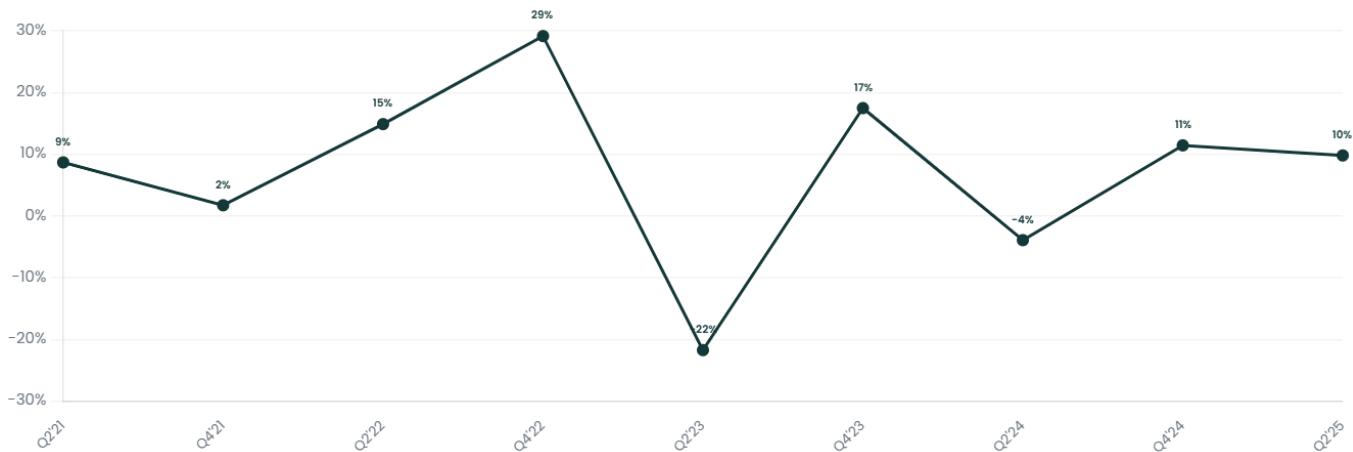
P2: Gross Margin



P4: EBIT Margin



CF2: FCF Margin



V1: EV/Sales NTM



Interesting Topics to Read

- Probe cards vs. ATE (Teradyne, Advantest)
- Vertical Probe Cards vs. Cantilever technology
- Known Good Die (KGD) testing for chiplets
- FormFactor competitive positioning

- MEMS probe technology