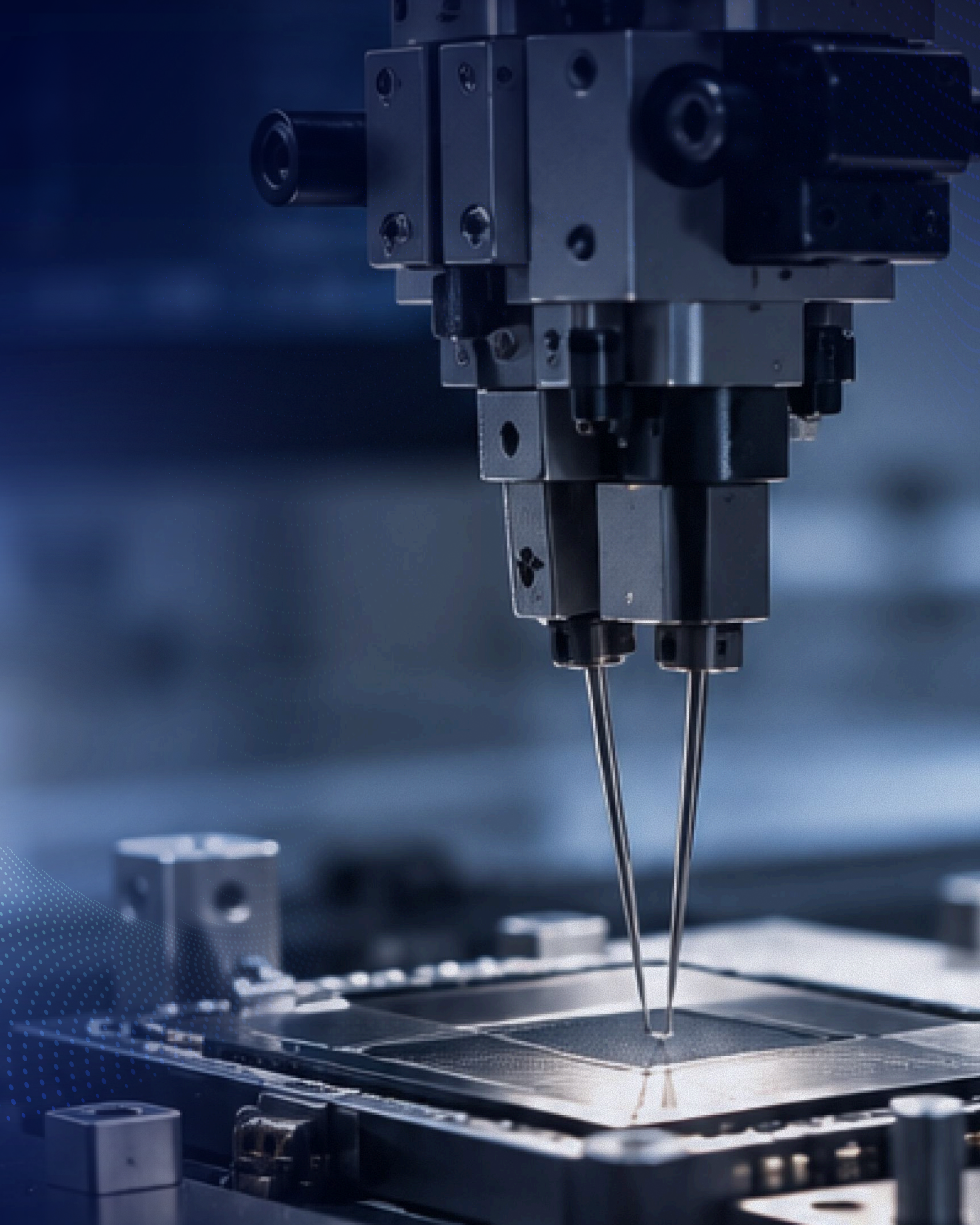




VERSAL™ PREMIUM PCIE CARD FOR NETWORK TEST:

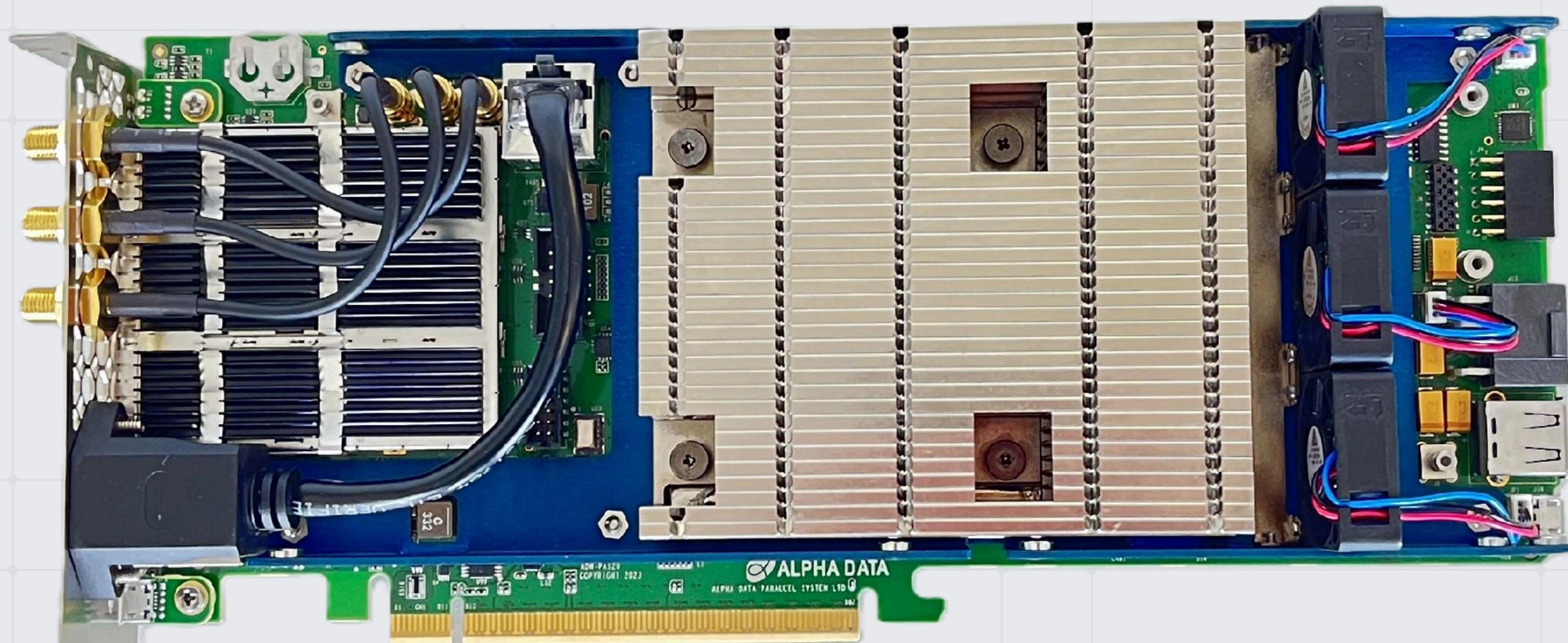
Solving memory bandwidth, product
longevity and time-to-market trade-offs

Back-end test and measurement systems for synchronous networking need a PCIe platform that can move enough data for demanding back-end processing and hold precise timing references at the same time. Alpha Data turned a shared roadmap into a standardized off-the-shelf platform the whole industry can now build on.



WHERE SYNCHRONOUS NETWORK TEST HAPPENS

5G, SyncE, and IEEE 1588 networks all depend on precise timing distribution, and that precision has to be verified before equipment goes into service. Synchronous network test systems handle that verification, using PCIe network interface cards installed in a host platform to generate traffic, check timing accuracy, and process the results.



What Test Hardware has to Deliver

High Memory Bandwidth: Enough throughput to process demanding volumes of captured network traffic without becoming the bottleneck.

Precision Timing I/O: Dedicated clock and synchronization signals, not just data throughput.

Long Program Life: Hardware that stays supportable for as long as the test program runs, often a decade or more, avoiding costly requalification of test infrastructure.

HIGH-MEMORY BANDWIDTH FOR THE LONG TERM

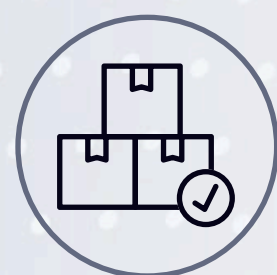
High memory bandwidth (HBM) is readily available through the deployment of HBM based devices, with integrated HBM Double Data Rate (DDR) die. However these parts come with a catch - the integrated HBM DDR die has availability constrained by **fast moving data center technologies** and can quickly go obsolete, leaving products needing **mid-life hardware refreshes and re-design**. So for a long-term available solution, high performance Low-Power Double Data Rate (LPDDR) external devices with many layout challenges are required. Add precision timing to the requirement, and we require a solution that's **more than just a general purpose FPGA PCIe plug in accelerator**.





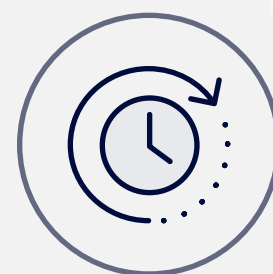
Bandwidth vs. Availability

High-bandwidth memory usually means HBM, and HBM's production lifespan runs a few years, not the decade-plus a test program needs.



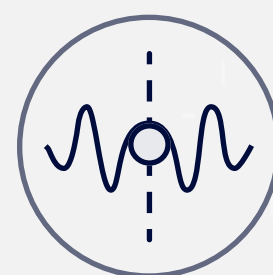
Volume Still Matters:

A board that solves both problems still has to be available at real production volume and pricing, not exist as a one-off engineering sample.



Availability Without a Refresh:

A 15+ year availability window keeps test programs clear of the cost and uncertainty a mid-life technology update would bring.



Timing Isn't an Add-On:

Precision timing I/O, including ToD, PPS, TRIG, and 10MHz references, has to be purpose-built for the most demanding synchronous network applications

Alpha Data had already started closing that gap before this specification arrived. Having been first to market with AMD Versal™ Prime and AI Core PCIe cards, Alpha Data's roadmap called for a Versal™ Premium platform soon after silicon availability.

KEY PLATFORM SPECIFICATIONS

Multi-bank LPDDR4 memory

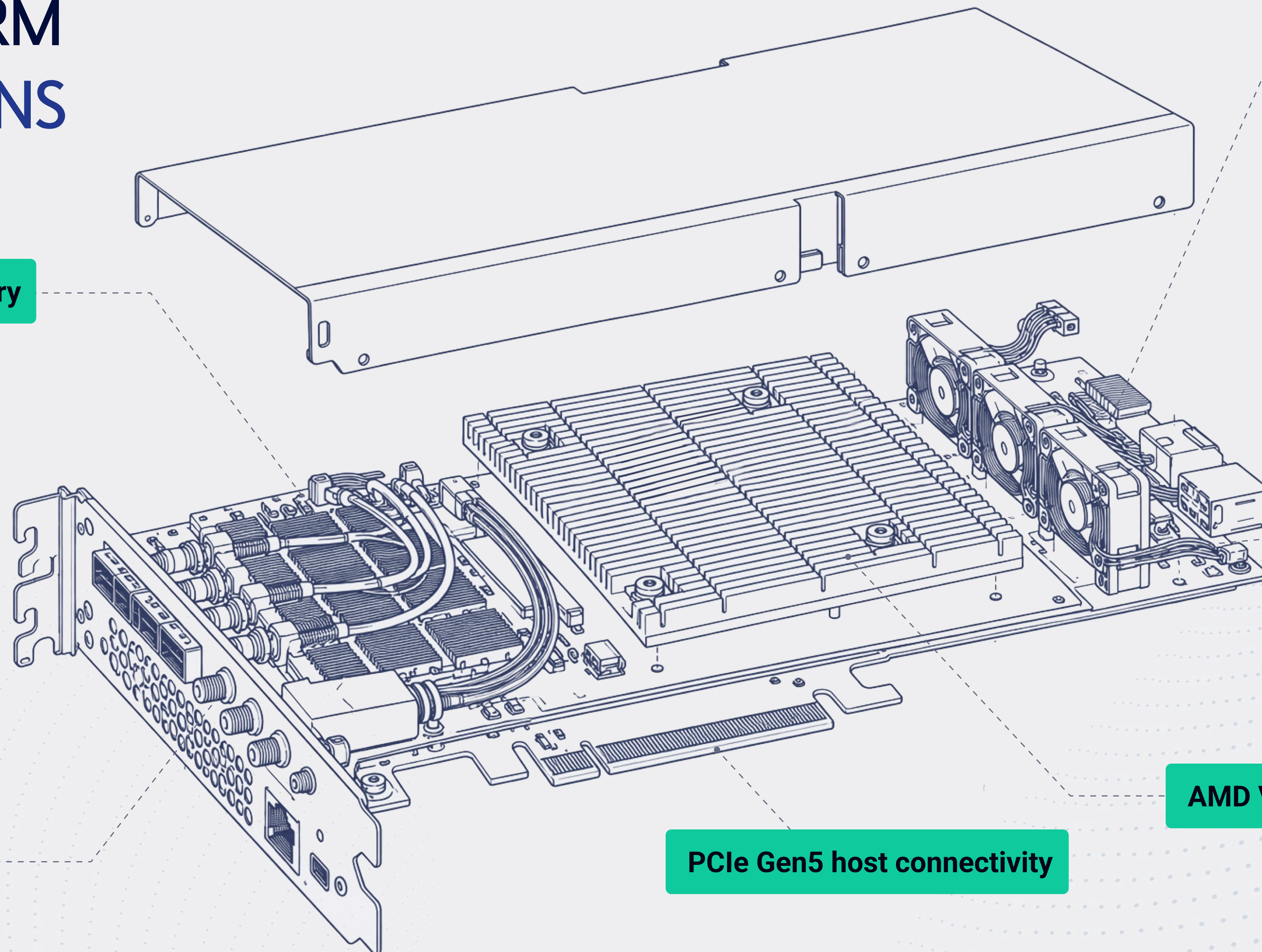
GTYP & GTM transceivers

New ADQDMA Linux driver

AMD Versal™ VP1202 / VP1502

ITU-T G.703 clock sync

PCIe Gen5 host connectivity



“

As Adaptive SoC platforms become foundational to network test infrastructure, Alpha Data is committed to bringing new AMD Versal™ silicon to market as an off-the-shelf product rather than a bespoke one, so every customer benefits from shared design and shared risk.

David Miller

Managing Director, Alpha Data

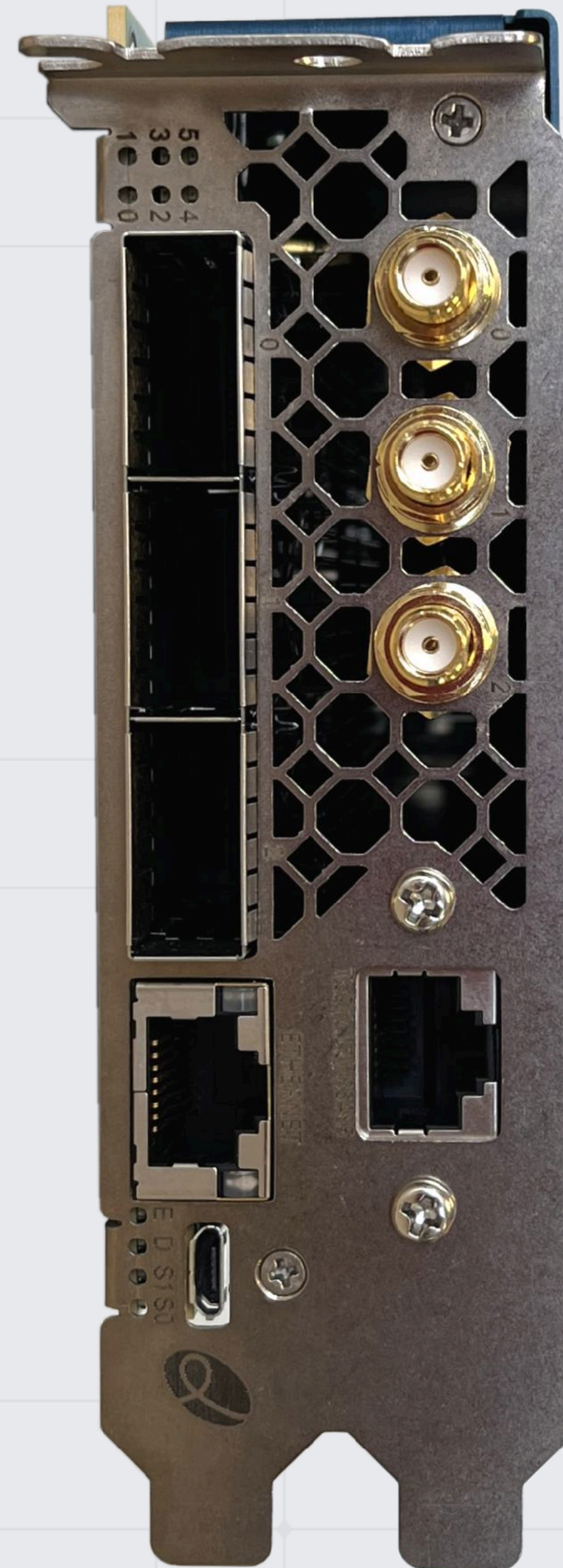


THE ALPHA DATA SOLUTION

A test and measurement customer approached Alpha Data with a requirement for a custom PCIe card for their test and measurement application.

Alpha Data explored this requirement thoroughly with them, covering many options, including a modified-Commercial-Off-The-Shelf (COTS) solution based on an existing HBM based card.

However, long term availability was not going to be possible with this solution, and so jointly, the **customer and Alpha Data adapted the specification** of a proposed Versal Premium that was already on the roadmap to allow it to **exactly meet all the customer's needs**.



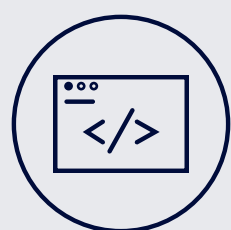
Along with the technical needs, the development of the card as both the customer's ideal solution and a COTS PCIe product provided many scheduling advantages, **allowing rapid time to market and server qualification for the product**. It also meant having a product suited for volume deployment, with **real off-the-shelf availability from stock and no long lead times**.

Alpha Data's rapid response and flexible approach turned a shared specification into an impressive delivery timeline. The ADM-PA120, Alpha Data's AMD Versal™ Premium PCIe platform, addresses each of those problems directly →



Rapid Path to a Shared Specification

Existing Versal™ Prime and AI Core experience let the customer's requirements fold into a single roadmap product quickly, rather than a bespoke design cycle.



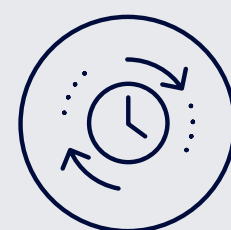
Software-Ready from Day One

Vivado and Vitis board files, PCIe and embedded ARM reference designs, and a newly developed ADQDMA Linux driver deliver the queue features and virtualization network applications expect.



Server-Qualified Hardware

The ADM-PA120 is now a server-qualified component that can be called off whenever new test and measurement systems require it.



Long-Term Availability

Built for a service life that outlasts the test programs it supports, with multiple device variants ready from stock.

Availability Snapshot



ADM-PA120:

VP1202 / VP1502 Versal Devices:
from stock



ADM-PB125:

VP2502 AI Engine variant: for
PCIe environment deployment

Anticipated end-of-life: beyond 2040

PARTNER WITH ALPHA DATA FOR YOUR NEXT ADAPTIVE SOC INNOVATION

A test program that can't afford to get timing wrong shouldn't have to compromise on bandwidth or longevity to get it right. That's the platform Alpha Data built.

Whether you're developing test and measurement infrastructure, aerospace systems, financial services platforms, or other demanding applications, Alpha Data supports the full product lifecycle from rapid prototyping to deployment-ready solutions.

ADM-PA120

Explore →



ADM-PB125

Explore →

