



POWERING THE INTELLIGENT, RESILIENT FACTORY WITH AMD

MANUFACTURING IS BEING REINVENTED IN REAL TIME.

Telecommunications networks are rapidly evolving. Growth in data traffic and capacity demands is being driven by both consumer and enterprise needs.

AI-driven design. Autonomous production lines. Real-time supply chain orchestration. Digital twins that simulate entire factories before a single machine moves. At the same time, manufacturers face margin compression, workforce shortages, reshoring pressures, geopolitical volatility, and rising sustainability mandates.

The next era of industrial leadership will be defined by organizations that can operate intelligently, adapt instantly, and innovate continuously – without increasing cost, risk, or energy consumption.

AMD provides the high-performance, energy-efficient compute foundation that powers this transformation – from advanced simulation in the data center to deterministic control on the factory floor.

MANUFACTURING AT AN INFLECTION POINT

Industrial organizations are navigating converging pressures:

- **Supply chain disruption and reshoring initiatives** demanding operational resilience
- **AI adoption across design, quality control, and production optimization**
- **Workforce gaps** requiring greater automation and human-machine collaboration
- **Expanded connectivity** increasing cybersecurity risk
- **Energy and carbon reduction targets** tightening operational constraints

Technology is no longer a support layer for manufacturing – it is the engine of competitive advantage.

To move forward, manufacturers need to modernize not just systems, but architecture as well.

THE HYBRID INDUSTRIAL REALITY

Modern manufacturing spans multiple compute environments:

DESIGN & ENGINEERING CENTERS

HPC-driven workloads such as CFD, FEA, EDA, and multiphysics simulation accelerate product innovation and validate performance before production begins.

ENTERPRISE & CLOUD INFRASTRUCTURE

AI model training, analytics, and global supply chain systems require scalable, flexible compute platforms.

FACTORY FLOOR & INTELLIGENT EDGE

Computer vision, robotics, and predictive maintenance demand low-latency, deterministic performance in real-time production environments.

EMBEDDED & ADAPTIVE SYSTEMS

Robotics, motion control, and industrial networking rely on secure, highly reliable compute built for continuous operation.

This convergence of IT and OT needs a unified, scalable compute strategy – not disconnected point solutions.

ONE ARCHITECTURE FOR INTELLIGENT MANUFACTURING

FROM SIMULATION TO SMART FACTORY

AMD offers a cohesive, full-stack platform designed to support the entire industrial compute spectrum.

By enabling consistent architecture across data center, cloud, and edge, AMD helps manufacturers:

- Consolidate AI and simulation workloads on shared infrastructure
- Scale performance without expanding physical footprint
- Deploy intelligence closer to production lines

This “one architecture” approach reduces complexity while accelerating innovation across the organization.

TURNING COMPUTE INTO COMPETITIVE ADVANTAGE

Modern infrastructure decisions directly influence business outcomes. AMD platforms help manufacturers achieve measurable impact across four critical dimensions:

ACCELERATED TIME TO MARKET

High-performance compute can shorten simulation cycles, speed design validation, and accelerate product development – enabling faster innovation and competitive differentiation.

HIGH THROUGHPUT & YIELD

AI-driven inspection and analytics can improve quality control, reduce scrap, and optimize production lines in real time.

OPERATIONAL RESILIENCE

Predictive maintenance and real-time analytics can reduce unplanned downtime, extend asset life, and stabilize production in volatile supply environments.

LOW TOTAL COST OF OWNERSHIP

Leadership performance per watt helps reduce energy consumption, cooling requirements, and rack footprint – supporting both cost optimization and sustainability goals.

INTELLECTUAL PROPERTY PROTECTIONS

Built-in hardware security features help safeguard proprietary designs, AI models, and operational systems in increasingly connected environments.

A PURPOSE-BUILT PORTFOLIO FOR INDUSTRIAL INNOVATION

The broad AMD portfolio enables manufacturers to deploy the right compute in the right environment – without compromise.

DATA CENTER & HPC

AMD EPYC™ server CPUs deliver high core density and strong performance for simulation, virtualization, and enterprise consolidation.

AI ACCELERATION

AMD Instinct™ GPUs power AI training, inference, and GPU-accelerated simulation workloads at scale.

ENGINEERING WORKSTATIONS & EDGE AI

AMD Ryzen™ and Ryzen™ AI processors support advanced visualization, design workflows, and real-time inference at the intelligent edge.

ADAPTIVE & EMBEDDED SOLUTIONS

AMD adaptive and embedded technologies enable deterministic control, robotics, and industrial networking in mission-critical environments.

Together, these solutions offer a scalable, heterogeneous platform that aligns design, data, and production under a unified compute strategy.

AN OPEN ECOSYSTEM FOR INDUSTRIAL SCALE

AMD collaborates with leading OEMs, cloud providers, and industrial ISVs – including Ansys, Siemens, Cadence, and others – to deliver validated, optimized solutions across manufacturing workloads.

This open ecosystem approach offers:

- Flexibility across on-premises, cloud, and edge
- Freedom of vendor choice
- Confidence in deployment at industrial scale

ACCELERATE THE FUTURE OF MANUFACTURING WITH AMD

The future of manufacturing will be intelligent, adaptive, and sustainable.

It will depend on unified compute architectures that support AI, simulation, robotics, and real-time analytics – without increasing operational complexity or energy consumption.

AMD provides the compute backbone that enables manufacturers to modernize infrastructure, accelerate innovation, protect intellectual property, and support resilient operation.

Learn more at amd.com/manufacturing or speak to your AMD Sales Representative.