ADLINK MedTech



Unlocking Real-Time Healthcare:

Edge AI Solutions Built for Medical Device Manufacturers

Application Story

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The Trend:
Healthcare Utilizing Edge AI for Smarter, Real-Time Care

Healthcare is undergoing a radical transformation—and edge AI is at the forefront. Driven by the surge in medical IoT devices and the explosion of telehealth, edge AI is redefining how and where healthcare decisions are made. Instead of relying on distant cloud servers, real-time data is processed right at the point of care.

This shift isn't speculative—it's backed by hard numbers. Healthcare is expected to see edge computing investments rise from $8.16 billion in 2025 to nearly $20 billion by 2030. *

For system integrators, this explosive growth isn't just an opportunity—it's a call to action to lead the next generation of healthcare innovation with GPU-powered edge solutions that deliver where legacy systems fall short.

Reference:
**Based on reports from Mordor Intelligence*

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The Challenge: Traditional Systems Are Hitting a Wall

Despite the rising demand for AI-driven healthcare tools, many current systems are ill-equipped to handle them at the edge.

Common pain points include:

- Insufficient GPU power: Most legacy systems lack the dedicated GPU acceleration needed for real-time AI inference and image rendering.
- High latency: Dependence on cloud servers slows response times, which is unacceptable in time-critical scenarios like surgery or emergency diagnostics.
- Workflow bottlenecks: Limited local processing delays data handling and can slow down clinical decisions.
- Privacy concerns: Transmitting sensitive patient data to the cloud introduces security risks and regulatory compliance issues.

The Solution: Smart Imaging. Faster Decisions. Better Care.

System integrators are now leveraging embedded GPU platforms to deliver medical devices that are smarter, faster, and more reliable. Here's how edge AI with GPU acceleration is reshaping real-time care delivery:

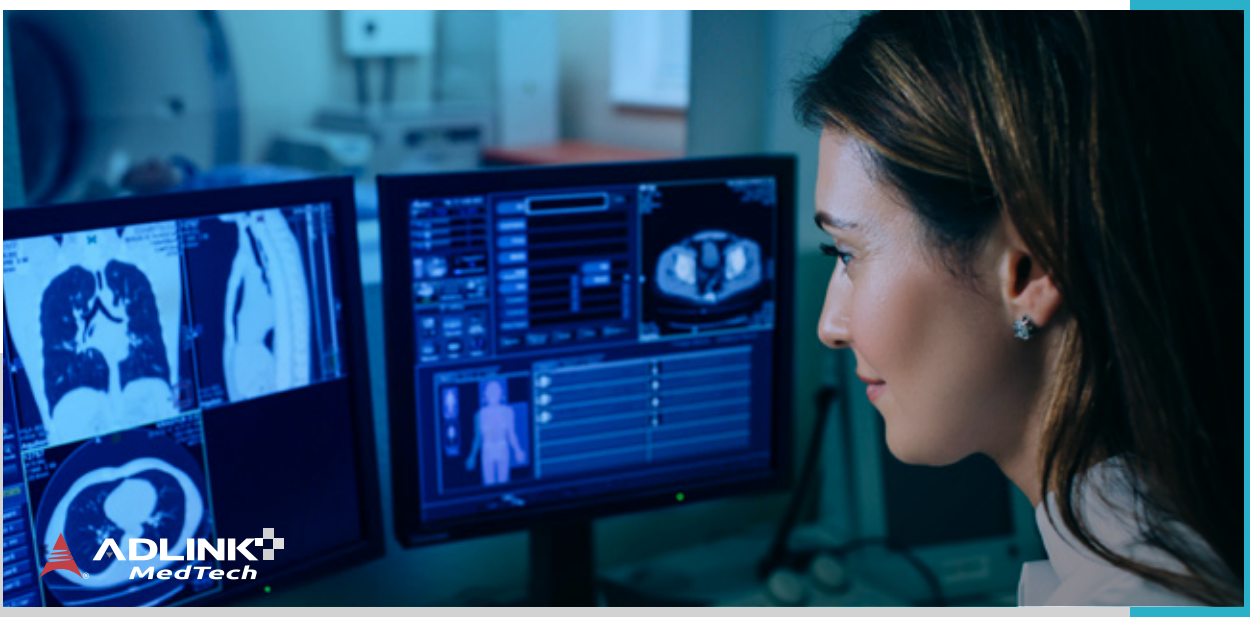
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AI-Assisted CT Imaging:
Instant Diagnostics on the Device

CT systems need to deliver high-speed, high-precision imaging—especially when enhanced with AI. However, traditional platforms fall short when running real-time inference.

By integrating MLB-3100 medical-grade box PCs with an MXM GPU module powered by NVIDIA RTX™ A4500, integrators can empower CT scanners to reconstruct images locally, reduce processing times, and enable smart features like auto-positioning—all without a cloud connection. The result: accelerated diagnostics and streamlined clinical workflows.





Customized MLB-3100
Edge AI Medical Box PC



EGM-MXM-A4500
Ampere

- Local image reconstruction
- Reduced processing time
- Accelerated diagnostics
- Streamlined clinical workflows

C-Arm Imaging at the Edge:
In-Surgery Precision



Intraoperative imaging demands split-second updates. Yet, C-Arms are notoriously limited in space and often lack the computing power needed for real-time performance.

That changes with the MLB-3000 box PC paired with an MXM-T1000 GPU module. Compact enough to fit inside the C-Arm chassis, this setup brings high-performance edge AI directly into the operating room, ensuring precise guidance and real-time visualization during surgery.



Customized MLB-3000
Compact Medical Box PC



EGM-MXM-T1000
Turing

- Compact for space-limited systems
- AI at the point of care
- Real-time visualization during surgery

Smart Ultrasound Navigation:
Dynamic Surgical Feedback

Surgeons rely on ultrasound systems for real-time anatomical insight, but latency and 2D limitations can hinder outcomes.

With the MLB-3102 PC and an MXM-A4500 GPU module, integrators can build ultrasound platforms that process 3D volumes in real time, adapt to anatomical changes instantly, and provide intelligent guidance—all on-site, with zero delay.





MLB-3102
Scalable Medical Box PC



EGM-MXM-A4500
Ampere

- Real-time 3D volumes processing
- Instant adaptation to anatomical changes

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3D Holomedicine:
Localized, Secure Visualization

3D holomedicine—from surgical planning to patient education—requires massive processing power and often leans on cloud services. However, latency and privacy issues make this impractical for sensitive environments.

By integrating the NVIDIA IGX Orin platform with an RTX 6000 Ada GPU, system integrators can now run large language models (LLMs) and complex AI inference locally. Sensitive data never leaves the facility, ensuring security and real-time responsiveness.



MLB-IGX
NVIDIA IGX Platform



NVIDIA RTX 6000 Ada
Ada Lovelace

- Runs LLMs and complex AI locally
- Keeps sensitive data secure on-site
- Reduces latency for real-time use





Empowering Healthcare at the Edge

For system integrators, edge AI represents a game-changing opportunity. Not only does it unlock real-time intelligence and precision, but it also brings significant advantages in security, reliability, and workflow efficiency.

By embedding GPU-powered systems at the heart of medical devices, integrators can offer hospitals and clinics the tools they need to deliver faster, smarter, and more secure patient care—where it matters most.

Edge-AI Medical Box PC



Click Now →

MXM GPU Modules



Click Now →

PCIe Graphics Cards



Click Now →

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