

Medical Equipment Builder Design & Manufacturing Services

Targeting Next-Generation Medical Applications

- ✓ HSA as MEB Service
- ✓ vFoRCE FPGA Integration for Medical Imaging
- ✓ Compact Ultra-Silent Medical PCs



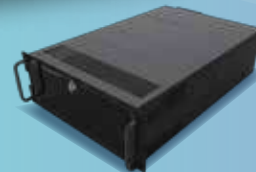
Board & Evaluation
Kits



Box PCs



Workstations



Servers



Tablet & Panel PCs

ADVANTECH

Enabling an Intelligent Planet

www.advantech.com/solutions/design-and-manufacturing-services



Medical Equipment Builder Design & Manufacturing Services

Advantech's MEB DMS group serves as a design partner for medical equipment customers. We provide integrated product development services, from product design to manufacturing and maintenance, and ensure certification compliance throughout the entire product lifecycle. Targeting next-generation medical and healthcare applications, we offer customization services to accelerate AI adoption in healthcare. In addition, through strategic change management, Advantech ensures stable production for lengthy product lifecycles.

Key Advantages



Time to
Prototype



Comprehensive
Computing Platform



Early Access
Design



Local Engineering and
Global Services

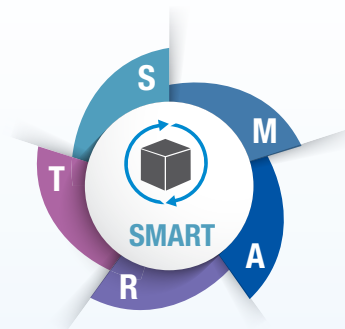


World-Class Quality
Assurance



Smart Lifecycle Management

- 10+ years lifecycle management
- Allied supplier control plan ensures material availability
- Reduced recertification frequency
- Optimized EOL inventory management increases capital efficiency



S Shared material information
Milestone for phase change
Aligned LTB QTY
Regular material available review
Traceable

Medical Certification

Advantech holds the most comprehensive ISO certifications in the IPC industry, which demonstrates our ability to manufacture products for diverse industries as well as our commitment to worldwide regulations and standards compliance. For the healthcare industry, we offer the following:



ISO 13485-certified factory and design processes ensure the transparency and traceability of medical products



Collaboration with customers to develop IEC60601-1-compliant medical electrical equipment



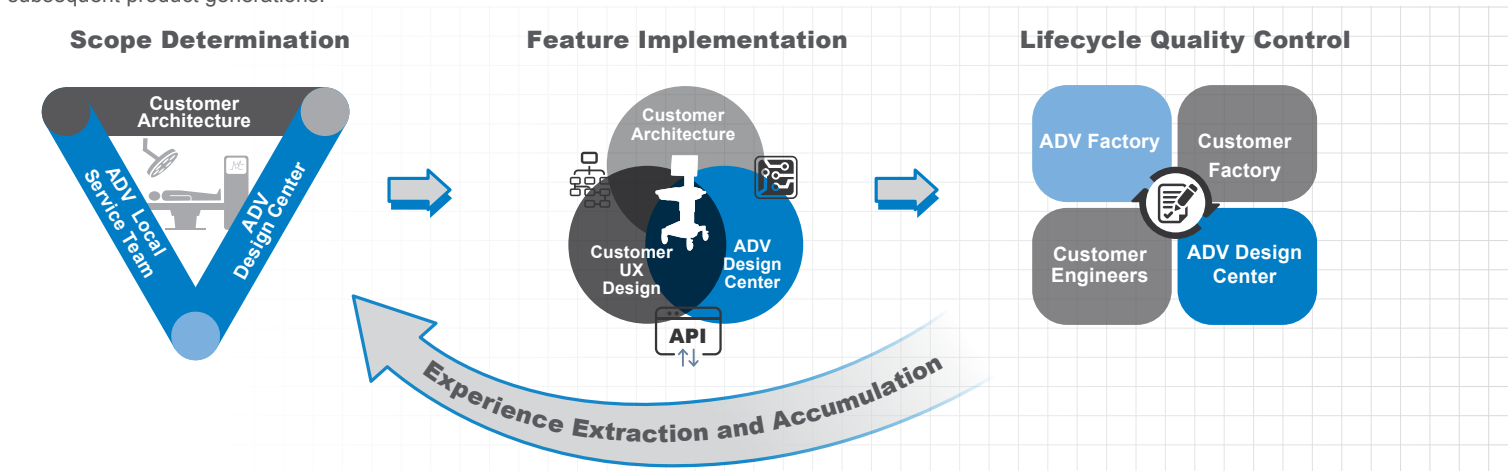
Product development, validation, and consultation services related to securing U.S. FDA approval

HSA as MEB Service

With over a decade of real-world experience, Advantech's MEB team is committed to helping customers develop innovative designs. Accordingly, we integrate vertical RD/PM/sales and horizontal Factory/cert/QE resources to facilitate internal integration and external technology sharing.

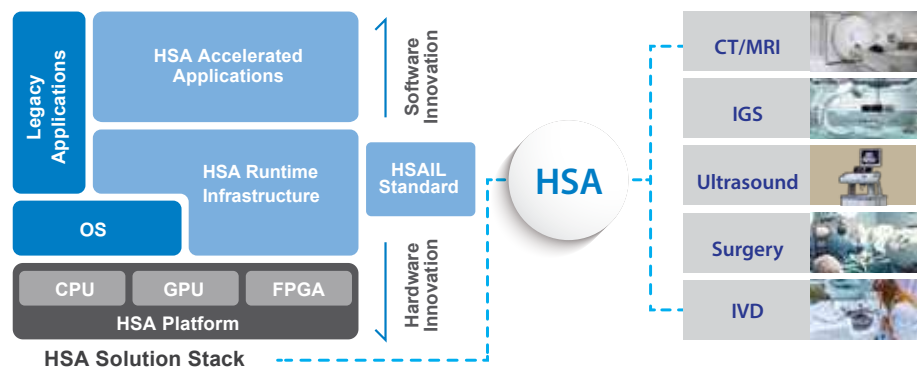
Sustainable Innovation and Coworking Model

Upon receiving an RFQ, Advantech's MEB and sales teams work to understand the full scope of a customer's business in order to develop innovative solutions. The MEB teams focus on planning and designing to achieve the required device functionality. For complex or original designs, we emphasize device functionality, software API enforceability, and complete system integrity. This necessitates close cooperation between Advantech and the customer's engineers to ensure all required features are implemented correctly. After development, Advantech's MEB teams ensure lifecycle quality control. All the experience and knowledge gained throughout the development process is passed on and leveraged for subsequent product generations.



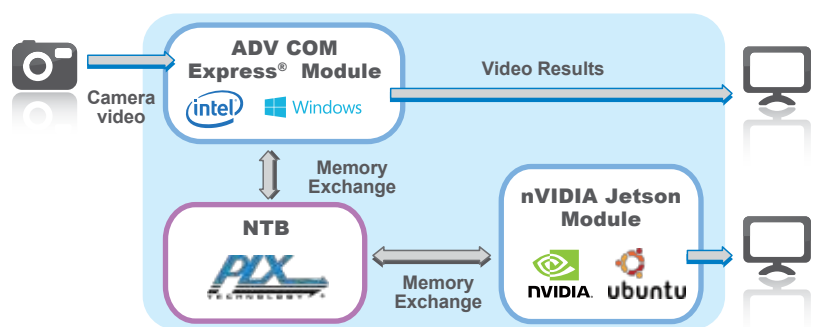
HSA Benefits

Heterogeneous system architecture (HSA) is a cross-platform open architecture set that enables CPUs and graphics processors to be integrated on the same bus, with shared memory and tasks. The HSA structure can reduce communication latency between CPUs, GPUs, and other computing devices, making programming tasks more compatible. Advantech's MEB team offers considerable benefits to develop unique infrastructure that can be leveraged for all medical equipment sectors.



HSA Demo Program

Advantech's HSA demo program showcases multi-tasking and task integration between a Windows CPU and Linux GPU. Video is imported from the camera to the Intel CPU for streaming. nVIDIA Jetson hardware is then used for video processing. The real-time transformation of imaging data is achieved with memory sharing between the Windows CPU and Linux GPU. This eliminates processing latency and optimizes video processing and streaming for medical imaging applications.

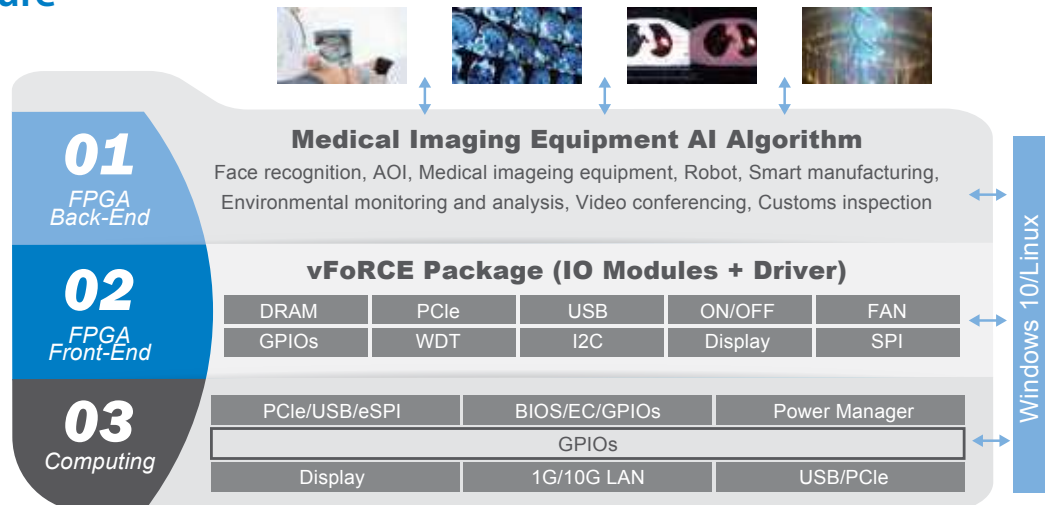


vFoRCE FPGA Integration for Medical Imaging

As demands for medical imaging technology, heterogeneous multi-channel processing, I/O flexibility, and programmable modularized hardware continue to rise, solutions that incorporate artificial intelligence and deep learning are becoming increasingly important. In response, Advantech has launched its vFoRCE architecture aimed at satisfying diverse medical imaging needs.

vFoRCE Architecture

Advantech's vFoRCE solution is a heterogeneous processing architecture built on the x86/RISC computing platform that supports modular configuration and programmable Xilinx FPGAs to deliver powerful real-time imaging with zero latency. The vFoRCE architecture not only reduces development and implementation time, but also supports flexible configuration according to specific application requirements.



Applications

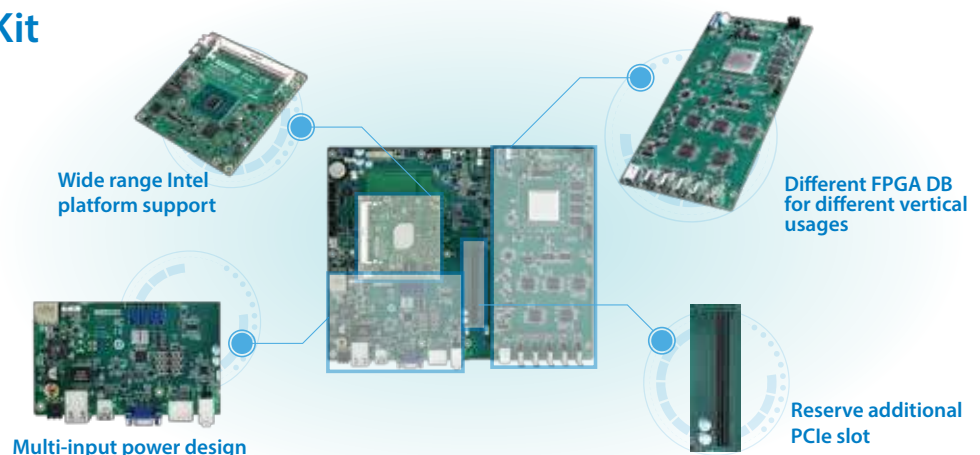
Advantech's vFoRCE solution enables the ultra-miniaturization of complex architectures which can be applied to ultrasound scanners for enhanced imaging and improved diagnosis.

Magnetic resonance imaging (MRI) and computed tomography (CT) machines are highly synchronous and require significant computational capabilities across their various subsystems. Advantech's vFoRCE solution architecture supports modularized design to accelerate the development of imaging applications and the integration of machine learning-based image analysis.



vFoRCE Evaluation Kit

The vFoRCE evaluation kit is a tool that can reduce development time and provide comprehensive integration to enable rapid performance evaluations and FPGA code updates. With the flexibility and modularization to accelerate development, the vFoRCE evaluation kit delivers a faster time to market as well as increased service ability.



Compact Ultra-Silent Server-Grade Box PCs

Experience high-quality diagnostic imaging and accelerated processing with modern appearance

For certain medical tasks, such as those related to dental surgery, ophthalmic surgery, and MRI/CT control room applications, server-grade box PCs must deliver high-performance computing with minimum noise to eliminate distractions and enable concentration. Leveraging decades of design experience, Advantech's MEB team has developed an innovative new solution – the slim, silent, and expandable MEB-C100 server-grade medical PC. Equipped with an MXM GPU that supports image analysis applications, MEB-C100 delivers high-performance computing and data processing with minimal noise. This eliminates potential distractions for users while also ensuring easy deployment in a range of environments. In addition, to provide best-fit solutions for diverse applications, Advantech offers a full range of computing devices with flexible mounting options to fulfill various usage scenario requirements.



**30 Days to
Evaluation
Proto Sample**

Slim

Modern Appearance



Compact Size as a Catalogue

- Dimensions (L x W x H):
345 x 222 x 30 mm/
13.5 x 8.74 x 1.18 in

Silent

Minimal Noise



Quiet Experience as in a Library

- 35 dBA @ 30°C ambient temperature

Comprehensive Offerings

Supports Customization

Full Range Capabilities

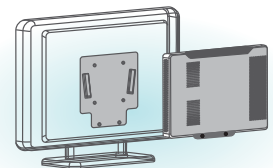
- Intel® Xeon® E-2176G CPU
- Intel® Xeon® E-2124G CPU
- Intel® Core™ i3/i5/i7 CPU
- nVidia® MXM 3.0 type A GPU
- AMD® MXM 3.0 type A GPU

Expandable

Flexible Integration

Expandable System

- Integrated Wi-Fi module
- Can be transformed into a panel PC
- Supports cart installation with VESA mount



Applications

- Minimal noise to eliminate distractions and enable concentration: During surgical operations or consultations, doctors must be able to concentrate without distraction or interruption.
- Precise diagnostic image processing with limited space: The MEB-C100's slim design supports installation on an X-Ray/ultrasound cart with limited space.
- Streamlined infrastructure: For CT/MRI system control rooms, MEB-C100 simplifies and streamlines the equipment infrastructure while ensuring high-quality imaging.

Surgical Operations



CT/MRI System Control Room



Worldwide Services

ACG Regional DMS Design Centers
Advantech Global Service Centers



ACG Regional DMS Design Centers

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