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 with minimal noise to eliminate distractions and enable concentration. Sourcing 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 scenarios.

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.

Expandable System

- Can be transformed into a panel PC
- Supports cart installation with VESA mount

Slim Modern Appearance

- Dimensions: 345 x 222 x 30 mm/13.5 x 8.74 x 1.18 in
- Quiet operation as a Catalogue

Silent Minimal Noise

- 35 dBA @ 30°C ambient temperature
- Full Range Capabilities
  - Intel® Xeon® E-2176G CPU
  - Intel® Xeon® E-2124G CPU
  - Intel® Core™ i3/i5/i7 CPUs
  - nVidia® MXM 3.0 type A GPU
  - AMD® WX-3100 GPU

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 with minimal noise to eliminate distractions and enable concentration. 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 scenarios.

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.

Expandable System

- Can be transformed into a panel PC
- Supports cart installation with VESA mount

Slim Modern Appearance

- Dimensions: 345 x 222 x 30 mm/13.5 x 8.74 x 1.18 in
- Quiet operation as a Catalogue

Silent Minimal Noise

- 35 dBA @ 30°C ambient temperature
- Full Range Capabilities
  - Intel® Xeon® E-2176G CPU
  - Intel® Xeon® E-2124G CPU
  - Intel® Core™ i3/i5/i7 CPUs
  - nVidia® MXM 3.0 type A GPU
  - AMD® WX-3100 GPU

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 with minimal noise to eliminate distractions and enable concentration. 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 scenarios.
Advantech’s MEB (Medical Equipment Builder) design center is a design partner for medical equipment customers. We provide integrated product development services, from product design to manufacturing and maintenance, and ensure regulatory compliance throughout the entire product lifecycle. Our advanced medical imaging technology and HSA (Heterogeneous System Architecture) solutions provide real-time video processing, streaming, and visualization of medical images to improve medical imaging quality and diagnosis accuracy.

**HSA as MEB Service**

With over a decade of medical image experience, Advantech’s MEB team is dedicated to helping customers develop innovative designs. Accordingly, we integrate virtual RD toolkits and tool factory factory@OS to facilitate internal integration and external technology strategy. We offer the following services:

- **Smart Lifecycle Management**
  - 10+ years lifecycle management
  - Inventory control plan ensures material availability
  - Reduced inventory frequency
  - Extended 10 years lifecycle
  - Reduced raw material availability

- **Medical Certification**
  - ISO 13485-certified factory and full QM system
  - Medical Certification
  - Smart Lifecycle Management
  - In-house expertise for medical equipment sector

- **Medical Equipment Builder Design & Manufacturing Services**
  - Key Advantages
    - ISO 13485-certified factory and full QM system
    - Medical Certification
    - Smart Lifecycle Management
    - In-house expertise for medical equipment sector

- **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 die, with shared memory and tasks. The HSA structure can deliver communication latency between CPUs, GPUs, and other computing devices, offering improved performance and power efficiency.
  - 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 real-time and real-time integration between a desktop GPU and an embedded CPU. Video is imported from the camera to the target GPU for streaming. V.simpleX Fusion hardware is used for video processing. The real-time transformation of imaging data is achieved with memory sharing between the Windows CPU and Linux GPU. This demonstrates processing latency and real-time video processing and streaming for medical imaging applications.

- **Sustainable Innovation and Coworking Model**
  - Advantech and the customer’s engineers to ensure all required features are implemented correctly. After development, Advantech’s MEB teams ensure quality control. All the experience and knowledge gained throughout the development process is passed on and shared for subsequent product generations.

- **Applications**
  - Advantech’s vFoRCE solution enables the ultrarealization of complex applications which can be applied to numerous scenarios for enhanced imaging and improved diagnostics. 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 modular design to accelerate the development of imaging applications and the integration of machine learning-based image analysis.

- **VFoRCE FPGA Integration for Medical Imaging**
  - The vFoRCE evaluation kit is a complete design tool that can be used to develop and test applications that incorporate AI and deep learning. It includes a flexible configuration according to specific application requirements. Advantech’s vFoRCE solution architecture supports modular design to accelerate the development of imaging applications and the integration of machine learning-based image analysis.

- **VFoRCE Package (10 Modules + Driver)**
  - Enables a seamless integration of complex applications which can be applied to numerous scenarios for enhanced imaging and improved diagnostics. MRI and CT machines are highly synchronous and require significant computational capabilities across their various subsystems. Advantech’s vFoRCE solution architecture supports modular 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 complete design tool that can be used to develop and test applications that incorporate AI and deep learning. It includes a flexible configuration according to specific application requirements. Advantech’s vFoRCE solution architecture supports modular design to accelerate the development of imaging applications and the integration of machine learning-based image analysis.

- **VFoRCE Flowchart**
  - The vFoRCE evaluation kit is designed to integrate with existing medical imaging systems. It is compatible with MRI and CT systems to improve imaging quality and diagnostic accuracy. The vFoRCE evaluation kit enables seamless integration of complex applications which can be applied to numerous scenarios for enhanced imaging and improved diagnostics. MRI and CT machines are highly synchronous and require significant computational capabilities across their various subsystems. Advantech’s vFoRCE solution architecture supports modular design to accelerate the development of imaging applications and the integration of machine learning-based image analysis.

- **VFoRCE AC鑽 Driver**
  - Enables a seamless integration of complex applications which can be applied to numerous scenarios for enhanced imaging and improved diagnostics. MRI and CT machines are highly synchronous and require significant computational capabilities across their various subsystems. Advantech’s vFoRCE solution architecture supports modular 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 complete design tool that can be used to develop and test applications that incorporate AI and deep learning. It includes a flexible configuration according to specific application requirements. Advantech’s vFoRCE solution architecture supports modular design to accelerate the development of imaging applications and the integration of machine learning-based image analysis.

- **VFoRCE AC鑽 Driver**
  - Enables a seamless integration of complex applications which can be applied to numerous scenarios for enhanced imaging and improved diagnostics. MRI and CT machines are highly synchronous and require significant computational capabilities across their various subsystems. Advantech’s vFoRCE solution architecture supports modular design to accelerate the development of imaging applications and the integration of machine learning-based image analysis.
Advantech’s vFORCE architecture is a heterogeneous processing architecture well suited for the medical imaging market that supports restorable configuration and programmable FPGA to deliver powerful real-time imaging with zero latency. The vFORCE architecture not only reduces development and implementation time, but also supports flexible future developments according to specific application requirements.

The vFORCE evaluation kit is a kit that can reduce development time and provide comprehensive infrastructure to enable rapid performance evaluations and FPGA code update. With the flexibility and modularity to accelerate development, the low-cost solution tool kit delivers a faster time to market as well as increased serviceability.

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

Advantech’s vFORCE solution architecture supports modularized design to accelerate the development of imaging applications and the integration of machine learning-based image analysis.
Advantech’s vFoRCE solution is a heterogeneous processing architec-
ture built on the x86/RISC comput-
ing platform that supports resilient configuration and programmable Video IP cores to deliver powerful real-time imaging with zero latency. The vFoRCE architecture not only reduces development and implement-
tion time, but also supports flexible scalability 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 diagnostics. 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 kit that can reduce development time and provide comprehensive integration to enable rapid perfor-
mance evaluations and FPGA code update. With the flexibility and modularity to accelerate development, the low-cost solution kit allows developers to target market as well as increased service ability.

**vFoRCE FPGA Integration for Medical Imaging**

An demands for medical imaging technology, heterogeneous multi-channel processing, IoT flexibility, and programmable modularized block continuous 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.

**HSA as MEB Service**

With a decade of real-world experience, Advantech’s MEB team is dedicated to helping customers develop innovative devices. Accordingly, we integrate vertical RD/PM teams and establish Factory/IDM resources to facilitate internal integration and external technology strategy.

**Sustainable Innovation and Coworking Model**

Upon receiving an RFI, 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 team focuses on planning and designing to achieve the required device functionality. In our original design, we emphasize device functionality, software API reusability, and complete system integrations. This necessitates close cooperation between Advantech and the customer’s engineers to ensure all required features are implemented concurrently. After development, Advantech’s MEB teams ensure lifecycle quality control. All the experience and knowledge gained throughout the development process is passed on and translated for subsequent product generations.

**Scope Determination**

**Feature Implementation**

**Lifecyle Quality Control**

**HSA Benefits**

Heterogeneous system architecture (HSA) is a programmable open architecture solution that enables GPUs and processors to be integrated on the same bus, with shared memory and links. The HSA structure can reduce communication latency between GPUs, CPUs, and other comput-
ing devices, making programming tasks easier to implement. Advantech’s MEB team offers considerable benefits to develop unique infrastructure that can be lever-
aged 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. vFoRCEabenoch on heterogeneous processor for video processing. The real-time transmission of imaging data is achieved with memory sharing between the Windows CPU and Linux GPU. This integrates processes such as multi-tasking video processing and streaming for medical imaging applications.

**Key Advantages**

- 10+ year lifecycle management
- Power efficient design ensures material availability
- Reduced logistics frequency
- Enhanced USA; medical device manufacturing increases capital efficiency

**Smart Lifecycle Management**

- Time to Produc
t
- Comprehensive Gaging-Prototyping
- Early Access Design
- Local Engineering and Global Services
- World Class Quality Assurance

**Medical Certification**

- ISO 13485:2016 and FDA
- Collaboration with customers to develop ISO13849-1 compliant medical electrical equipment
- Product development, validation, and consultation services related to IEC 60601-1 and IEC 62304
- FDA approval

**HSA Demo Program**
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, compact, and silent solutions to eliminate distractions and enable concentration. Advantech’s 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.

Key Features:
- 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
- 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 in limited space: The MEB-C100’s slim design supports installation in an X-ray/ultrasound cart with limited space.
- Simplified infrastructure: For CT/MRI system control rooms, MEB-C100 simplifies and streamlines the equipment infrastructure while ensuring high-quality imaging.

Slim Modern Appearance
Silent Minimal Noise
Expandable Flexible Integration
Comprehensive Offerings Supports Customization

ACG Regional DMS Design Centers
Advantech Global Service Centers

Worldwide Services

Worldwide Offices

ACG Regional DMS Design Centers
Advantech Global Service Centers

30 Days to Evaluation
Proto Sample

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

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 System

30 dBA @ 30℃ ambient temperature

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

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 in limited space: The MEB-C100’s slim design supports installation in an X-ray/ultrasound cart with limited space.

Simplified infrastructure: For CT/MRI system control rooms, MEB-C100 simplifies and streamlines the equipment infrastructure while ensuring high-quality imaging.
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, especially in terms of noise, minimal vibration, and high-speed image processing. Advantech’s MEB team has developed a new, innovative solution - the slim, silent, and expandable MEB-C100 server-grade medical PC.

Key Features:
- **Slim Modern Appearance**: 30mm (H) at 35 dB(A) @ 30°C ambient temperature
- **Silent Minimal Noise**: MEB-C100 meets noise regulations for hospitals, ensuring a quiet experience as in a library.
- **Expandable Flexible Integration**: Supports various mounting options to fit different usage scenarios.
- **CT/MRI System Central Brain**: Quiet experience as in a catalogue, compact size as a catalogue.
- **30 Days to Evaluation Proto Sample**

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 limited-sized X-Ray/ultrasound carts.
- Streamlined infrastructure: For CT/MRI system control rooms, MEB-C100 simplifies and streamlines the equipment infrastructure while ensuring high-quality imaging.

** Worldwide Services**

**ACG Regional DMS Design Centers**

Advantech Global Service Centers

**Worldwide Offices**

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, especially in terms of noise, minimal vibration, and high-speed image processing. Advantech’s MEB team has developed a new, innovative 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 scenarios requirements.