



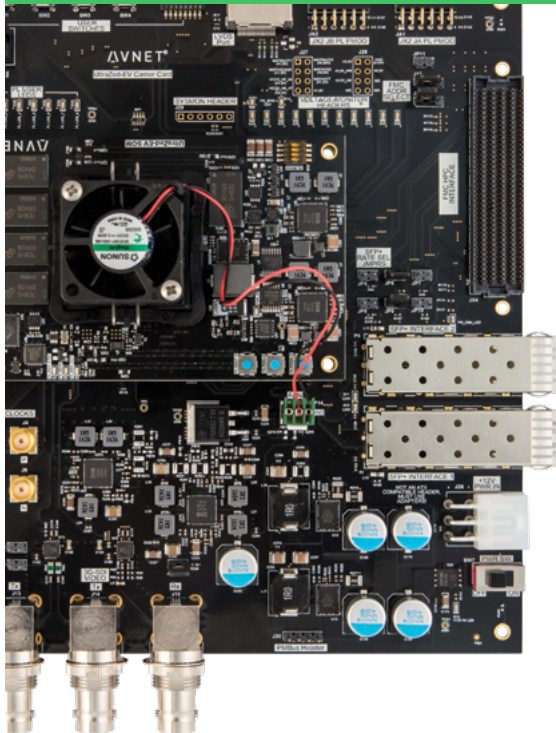
AMD Healthcare



# Solutions Selector Guide

# MEDICAL SOLUTIONS FOR IMAGING, DIAGNOSTICS, AND CLINICAL EQUIPMENT

AMD addresses the growing needs of scalable healthcare platforms with heterogeneous multi-processing, I/O flexibility, hardware-based deterministic controls and comprehensive solutions in healthcare artificial intelligence (AI), medical imaging, and safety & security. AMD healthcare solutions include AMD Versal adaptive SoCs & Zynq UltraScale+ MPSoC products.



## AMD VERSAL™ ADAPTIVE SOCS

The [AMD Versal™ adaptive SoC](#) is a highly integrated, multi-core compute platform that can adapt to evolving and diverse algorithms. The adaptive SoC is dynamically customizable at both the hardware and software levels to fit a wide range of applications and workloads. In addition, Versal is architected around a programmable network-on-chip (NoC), this adaptive SoC is easily programmed by software developers and hardware programmers alike.

These devices feature integrated accelerators for deep learning and its SIMD VLIW 'AI' engines are known for their ability to perform massively parallel signal processing of high-speed data in close to real-time. Versal helps to improve the efficiency of how complex healthcare

machine learning (ML) algorithms are solved and helps to accelerate healthcare applications at the edge, all with less resources, cost and power. With Versal adaptive SoCs, support for recurrent networks could be inherent due to the simple nature of the architecture and its supporting libraries.

AMD has an innovative ecosystem for algorithm and application developers. Unified software platforms, such as [the Vitis™ software platform](#) for application development and [Vitis AI](#) for optimizing and deploying accelerated ML inference, means developers can use advanced devices – such as adaptive SoCs – in their projects.

## AMD ZYNQ™ ULTRASCALE+™ MPSoCS

The AMD SoC portfolio integrates the software programmability of a processor with the hardware programmability of an FPGA, providing exceptional levels of system performance, flexibility, and scalability. The portfolio helps to give your designs overall system benefits of power reduction and lower cost with fast time to market. Unlike traditional SoC processing solutions, the flexible programmable logic provides you with optimization and differentiation, allowing you to add the peripherals and accelerators needed to adapt to a broad base of applications.

[AMD Zynq™ UltraScale+™ MPSoC](#) devices provide 64-bit processor scalability while combining real-time control with soft and hard engines for graphics, video, waveform, and packet processing. Built on a common real-time processor and programmable logic equipped platform, three distinct variants include dual application processor (CG) devices, quad application processor and GPU (EG) devices, and video codec (EV) devices.





These devices provide flexible, scalable embedded platforms with real-time processing capabilities. The Zynq UltraScale+ MPSoC is capable of handling signal acquisition to signal processing to beamformation in a medical ultrasound all in a single chip. It can also handle a high resolution input video pipeline of a complex diagnostic endoscopy processing system and deliver images in nearly real-time to multiple high definition displays. It can be used as a main controller device for complex clinical equipment like defibrillators, patient monitors, and infusion pumps. The devices comply with major industry safety standards and have comprehensive native security features, making them ideal for a wide range of medical applications. Zynq UltraScale+ MPSoCs are also designed with multiple power domains, which allows for mixed criticality applications running safety-critical medical code as well as non-critical application code on the same platform.

# STARTER KITS & EVALUATION BOARDS

## DEMONSTRATION PLATFORM

## STARTER KITS

## FULL EVALUATION BOARDS

Avnet Ultra96-V2 Medical Cybersecurity Platform	Avnet Ultra96-V2 Embedded Linux Starter Kit	Avnet UltraZed-EV Embedded Vision Starter Kit	AMD ZCU104 Embedded Vision Platform	AMD ZCU106 Multimedia & Connectivity Platform	AMD ZCU102 General-Purpose Development	AMD VMK180 Adaptive SoC	AMD VCK190 Adaptive SoC
							
<b>AMD DEVICE</b> ZU3EG	<b>AMD DEVICE</b> ZU3EG	<b>AMD DEVICE</b> ZU7EV	<b>AMD DEVICE</b> ZU7EV	<b>AMD DEVICE</b> ZU7EV	<b>AMD DEVICE</b> ZU9EG	<b>AMD DEVICE</b> VM1802	<b>AMD DEVICE</b> VC1902
<ul style="list-style-type: none"> <li>Demonstration system for medical patient monitors and other clinical equipment that demonstrates how Zynq™ UltraScale+™ device features can protect an 'air-gapped' unsecured medical device in a hospital environment and make it protected end-to-end</li> </ul>	<ul style="list-style-type: none"> <li>Ideal for rapid prototyping for medical clinical appliances that require a high degree of safety and security features at the Edge</li> <li>Quick time to production with SOM card</li> </ul>	<ul style="list-style-type: none"> <li>Kit for medical imaging, machine learning, vision-guided surgical and diagnostic endoscopy, and other surgical applications</li> </ul>	<ul style="list-style-type: none"> <li>Ideal for medical imaging, machine learning, vision-guided surgical and diagnostic endoscopy, and other surgical applications</li> </ul>	<ul style="list-style-type: none"> <li>Platform for medical applications such as endoscopy and surgical applications</li> </ul>	<ul style="list-style-type: none"> <li>Quickly evaluate a wide range of interfaces and applications, such as medical imaging and healthcare AI</li> </ul>	<ul style="list-style-type: none"> <li>Combines a software programmable silicon infrastructure with compute engines and connectivity options to accelerate diverse workloads in medical applications</li> </ul>	<ul style="list-style-type: none"> <li>The Versal™ AI Core with AI Engines and medical imaging libraries for Vitis enables high frame rates and high image quality with low latency for next generation ultrasound machines</li> </ul>
<b>Part #</b> AES-ULTRA96-V2-G	<b>Part #</b> AES-ULTRA96-V2-G	<b>Part #</b> AES-ZU7EV-1-SK-G	<b>Part #</b> EK-U1-ZCU104-G	<b>Part #</b> EK-U1-ZCU106-G	<b>Part #</b> EK-U1-ZCU102-G	<b>Part #</b> EK-VMK180-G	<b>Part #</b> EK-VCK190-G

## SUPPORT

Find the resources you need to start your AMD Zynq SoC and Zynq UltraScale+ MPSoC projects on our [community-based site](#). Explore reference designs, documentation and training material supporting the platforms and solutions presented here.

## CONTACT US

We've helped many companies attain a jump start on their products and get to market faster. [Contact us](#) today to get started.



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