

AMD VERSAL™

The AMD Versal™ adaptive SoC integrates capabilities that surpass those of traditional CPUs, GPUs, and FPGAs, enabling adaptive, domain specific architectures to accelerate whole applications.

With powerful chips comes high complexity. At Fidus, as an AMD Adaptive Computer Premier Partner, we manage this complexity, so you avoid critical design challenges. As specialists in electronic product development, Fidus works with the latest silicon, tools and software roadmaps. Our team is technically certified by AMD which ultimately enables you to get your solution to market faster.

Fidus has industry leading experience with Versal. Whether it is implementing or developing high-efficiency kernels for the new artificial intelligence (AI) Engines or passing massive amounts of data around using the NOC or designing complex custom hardware; Fidus will reduce your risk and will accelerate your application, your development, your Versal knowledge, and, most importantly, your time to market.

HERE ARE SOME EXAMPLES OF OUR WORK:

AI Edge Series: This series delivers an adaptive technology platform that combines high AI inference performance, low latency, and power efficiency for edge applications.

Fidus optimized a Software Defined Radio Design using AI Engines leveraging the AMD VEK280:

- RLS Decision Feedback Equalization
- MLSE Equalization
- Hardware-in-the-loop (MATLAB®)
- Golden vector comparison

AI Core Series: The high-compute series with medium density programmable logic and connectivity capability coupled with AI and DSP acceleration engines.

Fidus conserved precious logic resources, enhanced design flexibility, and reduced power consumption using the AI Engines in a RADAR application:

- Space Time Adaptive Processing (STAP)
- Custom Kernel development
- Cuboid data movement and processing
- Hardware-in-the-loop (MATLAB®)
- Golden vector comparison

Premium Series: The high-end, high bandwidth series, rich in networking interfaces, security engines, and providing high compute density.

Fidus developed robust custom Versal-based hardware for Mil/Aero applications featuring:

- High density compute capabilities
- Rugged 6U VPX Form Factor
- SOSA™ aligned
- Multiple high-speed memory interfaces
- High-speed transceiver links

Prime Series: The mid-range series with medium density programmable logic, signal processing, and connectivity capability.

Fidus developed CXL solutions on Versal featuring:

- CXL engines for Type 1 and Type 3 support
- Verified using UVM, including Avery Design Systems' CXL VIP
- Targeted at PCIe Gen5 applications

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VERSAL

ADDITIONAL VERSAL ARCHITECTURE, DESIGN, OPERATION, AND IMPLEMENTATION EXPERIENCE:

- AIE (AI Engine) implementation and custom Kernel authoring
- Network-on-Chip (NOC)
- DCMAC (100/200/400/600GE)
- SLR (Super Logic Region) restrictions and data transfer
- XPIO interface usage and multiplexing
- MATLAB-based development, verification, coding, targeting, and re-verification
- PCIe Gen4 x16, 64-bit configuration, TLPs (Transaction Layer Packets)
- Vitis™ AI

ADDITIONAL CAPABILITIES TO EASE YOUR VERSAL DESIGN EXPERIENCE INCLUDE:

- Signal (beyond 112G/PAM4) and Power Integrity (impedance profiling and optimization)
- HBM (High Bandwidth Memory) applications
- Flexibility, performance-based clock and timing subsystems
- Thermal simulations and solutions
- Embedded Software (e.g., Board Support Packages, drivers, etc.)
- Verification (e.g., UVM)
- Complex signal DSP processing

AMD PREMIER PARTNERSHIP

As an AMD Premier Partner we have experience and proficiency with all device families including with the latest MPSoC, RFSoc, etc.



ABOUT FIDUS

Fidus Systems, founded in 2001, specializes in leading-edge electronic product development with offices in Ottawa and Waterloo, Ontario, and San Jose, California. Our hardware, software, FPGA, verification, wireless, mechanical and signal integrity teams work to innovate, design and deliver next-generation products for customers in emerging technology markets. Fueled by 20+ years' experience and creativity, along with our collaborative and process driven approach, we turn complex challenges into well-designed solutions. And with over 400 customers and 3000+ completed projects, we have the expertise to be a seamless extension of your team, providing a clear focus and commitment to getting designs and prototypes to market faster. Once you start working with us, you'll trust us like one of your own. Our hallmark is transparency. Our guiding principle is first time right.



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