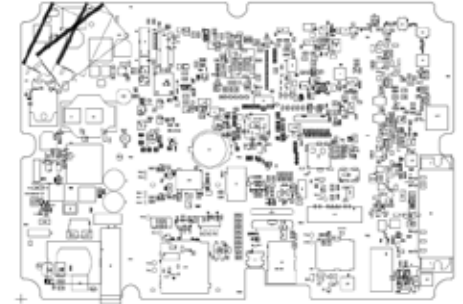




PCB Layout

OUR PCB LAYOUT TEAM HITS THE HIGHS:

High-speed, high frequency, high complexity, high layer counts, and high performance dielectrics! From simple standalone boards to very thick, high-speed, mixed technology, back drilled backplanes — we will find a creative solution to make it work.



Your teams are facing unique challenges, and we understand — too many projects and too few engineering resources. And that's not all. Designing for your complex prototype or product requires deep technical knowledge as well as thoughtful consideration and planning. Bottom line, you need to meet your roadmap schedule, and with Fidus as an extension of your team, you will get there, and get it right the first time.

HOW WE HELP

Delivering solutions at the speed of your business.

After more than 20 years, 3,000 projects and 400 customers, we've learned how to transform your idea, vision or concept into the product you've imagined. That's because we know how to take complex problems, and design and deliver them against dynamic environments and tight deadlines.

Your project needs the right team and the right toolset with a rigorous process to deliver on your capability and capacity challenges. At Fidus, we become a seamless extension of your team, with a clear focus and commitment to getting your design or prototype to market faster.

Working with our PCB Layout team means not having to worry about DFM/ DFA rules, high-speed routing, high-current routing, and layer stack-ups. We'll take care of it all to ensure a high-yield and CM agnostic design. From 2 layer consumer products to 40+ layer multi-gigabit backplanes with complex laminates and stack-ups, you're in good hands with our IPC recognized layout designers (CID/CID+). And since Fidus attracts a variety of industries and customers, our teams have cultivated creative problem solving expertise, ensuring projects are efficiently planned and cost effective.

That's not all! Our PCB layout design teams' skills are well complemented by our hardware, FPGA/DSP, signal integrity, embedded software, and mechanical design expertise.

Extend your team — you choose how we work together.

Design projects have many elements, all of which are in your control when you work with Fidus. Do you want to hand off the whole project or just find a few people to supplement your staff? Looking for project management to keep you informed and the project on track? Our breadth of expertise, creative team structures, and flexible payment options allow a customized service that works for you:

- **Turnkey design services:** Plan and execute with our team for an end-to-end development solution, or choose anything in between to suit your requirements.
- **Staffing services:** Utilize a design expert at your virtual or physical location, for the length of your project, or for a targeted engagement.

DESIGN EXPERTISE

Designations: Our designers have CID/CID+ accreditation

High Density Interconnect (HDI):

Microvia/stacked microvia, blind and buried, via-in-pad, fine-line, buried capacitance

High-speed: 28Gbps+ serdes, DDR3/4/5 memory interfaces

RF/wireless/analog: 24GHz+, including, 2.4GHz and 5GHz, printed antennas, other printed elements, sensitive signal handling

Impedance control: Single ended, differential

PCB types: Rigid, Flex, Rigid-Flex

PCB materials: FR4, Polyimide, high speed/low loss dielectrics, (Megtron 6/7), hybrid constructions (e.g. FR4/Rogers), RoHS

Layer counts: 2 to 40+ layers

Layer stacks: Custom layer stacks for signal integrity

Constraint driven placement and routing: Net topology and scheduling, absolute and relative propagation delay matching, limiting parallelism to avoid crosstalk, package pin delays, phase matching and back drilling, etc.

Signal Integrity: Pre and post-route analysis and simulations to increase timing margins, reduce reflections, and reduce EMI, fiber weave effect mitigation

Power Integrity: Capacitor placement, plane assignment, dielectric thickness, and simultaneous switching noise (SSN) optimizations, current carrying and thermal analysis/strategies

Layout/Mechanical integration: Component interference checking

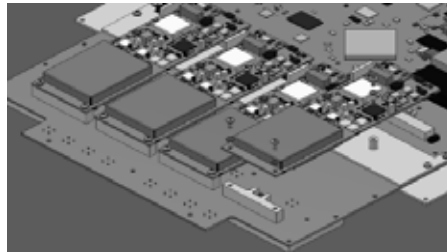
DFx: Balancing cost, yield, and DFM/DFA/DFT

TOOLS FOR HIGH-END DEVELOPMENT

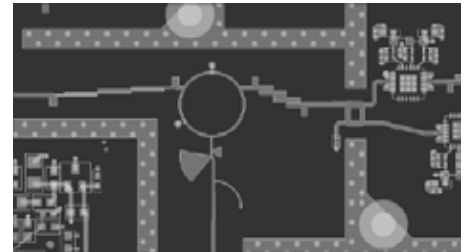
PCB Layout: Cadence®, Altium®, Mentor® (Expedition and PADS)

PCB Signal Integrity: Agilent ADS, ANSYS HFSS™, Cadence® Allegro PCB SI SPECCTRAQuest), Cadence PSPICE®, Synopsys HSPICE®, Mentor Graphics HyperLynx®

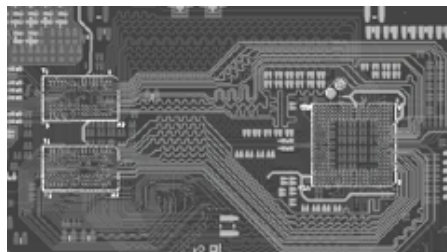
EXAMPLES OF OUR WORK



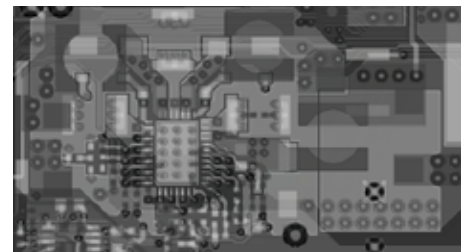
Full CCA and mechanical integration



RF/Wireless design and routing



High-speed memory layout DDR3/4/5, EMI etc.



Conscientious power placement, fan-out, and routing



BRINGING YOU XILINX PREMIER

As Xilinx Premier, Fidus receives exclusive training, certification, and early-access to tools, IP, and new silicon. By invitation, Fidus was the inaugural Xilinx Premier Design Services member in North America. So what does this mean? It means that when you hire Fidus, you know that Fidus is on the forefront of Xilinx's roadmap, experienced in the most advanced tool flows, and is top of mind within the Xilinx support network.

DESIGN SOLUTIONS WITH FIDUS

Need prototype and product design help?

We'll work with you to understand what you're looking for, and we'll dedicate the necessary resources to make sure it's a success the first time. Come to us with just an idea or specific challenges that are keeping you up at night, and we'll help you solve them.

Fueled by 20+ years' experience, our expertise, and creativity, along with our collaborative and process driven approach, turns complex challenges into well-designed solutions, and we keep customers like you coming back, again and again:

1. We are committed to "first time right."
2. Experience has taught us how to solve problems on any scale.
3. Faster time to market means faster time to benefit.
4. You choose how we work together.
5. Unique projects are our obsession.
6. We believe transparency builds trust.
7. Customer focus is our calling card.

20+

years experience

Collaborating with smart teams is what fuels us every day.

3,000+

successful projects

Your unique challenges are our obsession.

400+

customers

Extending your team with our expertise brings designs to market faster.

82%

repeat customers

Customers love to work with us, again and again.

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.

fidus
innovate • design • deliver

fidus.com

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