DSP Systems

Engineering Solutions for Science and Industry

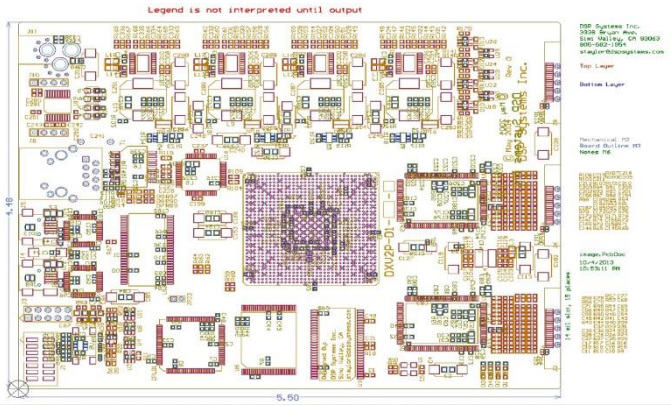
DSP Systems specializes in developing engineering solutions for commercial and industrial applications, research and development projects, and military application problems. We will supply systems engineering, electrical design engineering, circuit card design and production engineering expertise, as well as software and firmware coding specialists to complete your entire project or work with your team to assist with any part of your next development effort.

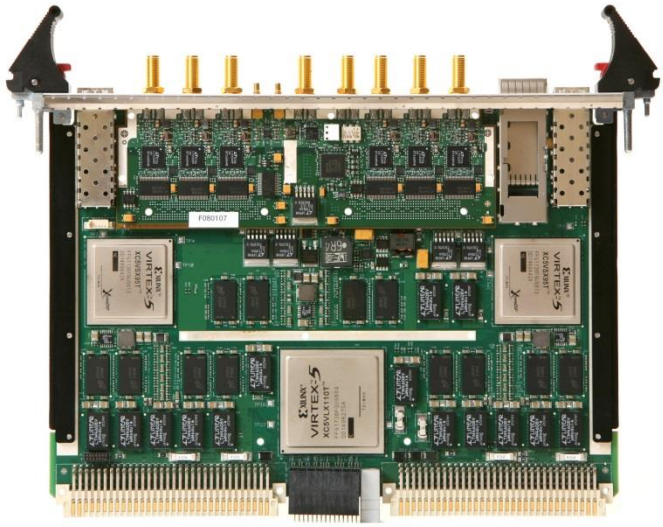
DSP Systems have the talent and experience needed to help with your next project from concept definition, circuit design, FPGA design and implementation, software specification and coding, to final completion. Start to finish.

DSP Systems have worked closely with small and large companies alike to develop and produce custom data, control, and communications systems for all kinds of applications. But, more importantly, we work as a team member with our customers to help engineer solutions for their particular problems from digital signal processing or industrial controllers to embedded applications and communications links. Whether you are upgrading an existing system or planning a new one, we have the capabilities to help with your job.

Our Hardware Engineering Services Include

- Analog and digital circuit design and analysis
- Circuit schematic capture
- PCB layout, component placement, and circuit route
- Production bill-of-materials generation and parts acquisition
- Prototype and/or production PCB fabrication
- PCB assembly and part management
- Product testing and documentation
- Application and driver software development
- Product support and repair and maintenance





Analog Processing Board

DSP Systems develop our own hardware platforms and use those of other state-of-the-art manufacturers (as shown above) to implement solutions for the toughest application problems. Each of our engineers combine hardware, firmware, and software expertise and can quickly cut through to core design problems to produce fast and accurate results.

Hardware Technologies

- Precision DC and AC measurement analog converter design and production
- Ultra-high speed A/D and D/A converter technology (GS/s speeds)
- FPGA, including system-on-chip (SoC) design and implementation.
- Standard and custom digital interface design
- Gigabit Ethernet, PCIe, Fibre Channel, and other high-speed serial link development
- High-performance processor and memory interface designs
- Specialized Ethernet and USB interfaces
- High-current (>1,000 amps) and high-voltage (>30kV) design and production including solid-state power modulator design

DSP Systems have been in business for over two decades and have designed, developed, and produced hardware and software solutions ranging from wire wrapped TTL/ECL logic, in the 80s, too fast and compact circuit cards running the most modern FPGA and processor technology available today.

DSP Systems, Inc. PO Box 1596 Culver City, CA 90232. (310) 280-0496. www.dspsystems.com

We specialize in the design and production of very-high speed interconnection system. We have developed high-performance parallel interconnect systems using VLDS and ECL signaling as well as high-speed serial communication technology using USB II and III, gigabit Ethernet, and PCIe interfaces. These interfaces are generally implemented across a processor-FPGA hardware solution but we have implemented gigabit Ethernet and USB on bare FPGA devices as well. Several recent projects involve the Xilinx Zynq all programmable system-on-a-chip device which is an ideal solution to the classic problem of combining a logic fabric and processor in a single design.

Processor Technology

- ARM (AXI) processor and interfaces
- Hard and soft FPGA processor cores
- Texas Instruments C6x, C5x, C4x, C2x DSP processors
- Intel x86 and Motorola PPC processor designs
- Analog Devices Processor designs
- PIC and other micro-controller system designs
- PCIe, USB, Ethernet interconnect designs

FPGA Design

- Design and produce FPGA hardware
- Xilinx and Altera devices
- Xilinx Zynq System-on-Chip (SoC) designs

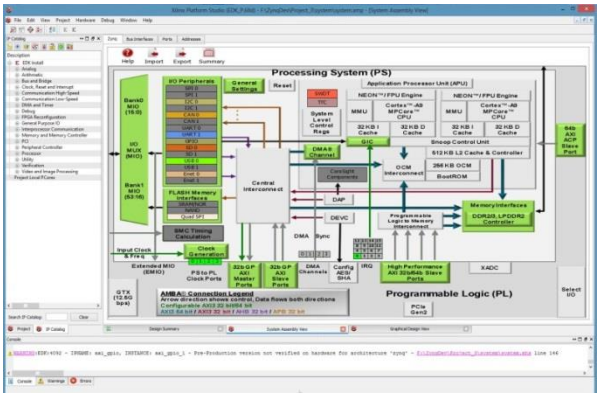
PCIe Implementation in FPGA

Firmware Design and Implementation

- VHDL and AHDL designs, simulation, and implementation
- Digital signal processing design and production, including down-conversion, filtering, and data processing in hardware
- High-speed VHDL input/output designs including gigabit Ethernet and PCIe
- Serial communications and parallel communications applications
- Embedded and soft and SoC core designs

Software Design and Coding

- Embedded C,C++ driver and application software for ARM, PPC, Intel, and Texas Instruments processors
- C and C++ application software written to meet user requirements
- C# and .Net applications and graphical user interfaces
- National Instruments Measurement Studio/MSVC and Lab View drivers and applications
- Signal processing and data analysis applications



Analog I/O Design

- Low noise and precision designs optimized for D/C measurement
- High-speed, High-accuracy A/D and D/A designs
- A/D and D/A sample rates from DC to GS/s
- Analog converter combined with processors or FPGAs
- Simple low-speed using SoC and microcontrollers

Controller Applications

- Motor controllers and shaft encoder hardware designs and production
- Motor and motion control firmware and software design and coding
- Systems using micro-controllers, high-speed DSP, or FPGA controllers
- Very-low cost controller application design and production

Project Management and Proposal Writing Services

- Project management services including cost accounting and labor scheduling
- Project engineering services for all aspects of an internal or contracted project
- Specification design and documentation
- Project documentation