Questions about technical product development?
Data Spectrum, Inc. has answers.

Why do clients hire us?

We provide an engineering resource to accelerate their technical product development. We're on call as a multi-discipline technical department to fill in where they need help with skills and technologies not available on their staff. Projects with manpower shortages or schedule problems will move forward with our assistance.

Often we are included in early product definition discussions where we can help determine the most efficient path for engineering a high performance product.

Let us help you boost the output of *your* engineering department!

What are our special abilities?

We excel at developing products for technical and professional users.

We understand the industrial, scientific & medical application, the physics behind the operation, and the user's point of view. Our experience with design of medical products that are subject to regulatory review such as FDA, UL or CE will pay off with a more efficient development process.

When it comes to projects requiring precision, complex, reliable engineering that is typical of low volume, high value products, we will immediately contribute to the effort.

We have a lab ready to build prototypes and custom test equipment. Electronics are assembled using SMT and thru-hole PCBs. Design validation is accomplished with a complete set of test equipment and we can run temperature, Hi-Pot and ESD tests in our shop.

How can we help you?

System Engineering - feasibility, concept, system design.

Electronic Design - Microprocessor, power, motor control, battery charging, audio, sensors, medical requirements.

Software - Embedded system, flash based designs, user interface, comm protocols, 3D transformations, servo systems, user interface, debug utilities.

Printed Circuit Board - design, layout, fabrication, testing, short run production. Full documentation packages.

Packaging & Industrial Design - 3D Modeling, sheetmetal, extrusion & rapid prototyping, epoxy, urethane & silicone castings. Overlays, silkscreen.

Communication links - CAN Bus, serial, PCI, USB, TAXI.

Servo Control - Multi axis, high power, automatic move, collision avoidance, safety features.

Medical applications - design to meet regulatory requirements; low leakage, high reliability. Imaging & Xray applications

Solving Technical Challenges - Give us a try and we'll show you.

What are some example projects?

High Speed Starter
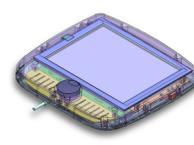

Stereotaxic Biopsy

Cardiac Assist Console

Handheld Control

12 Axis Motion

PCI CAN Card

Touch Panel CPU

	High Speed Starter	12 Axis Motion	Stereotaxic Biopsy	PCI CAN Card	Cardiac Assist Console	Touch Panel CPU	Handheld Control
Application & Product Requirements	Hi Power, Hi Voltage 3-Phase Induction Motor Booster. UL Cert, compact packaging.	Highly automated multi-axis positioner. Hi & med power servo, multi-point control. Goto stored positions.	3D Target Location using stereo 2D images, provide steering coordinates for biopsy instrument.	Interface CAN Bus to WindowsNT workstation using PCI bridge interface & dual port RAM.	Complex, high-rel battery backed system for Cardiac Assist Pump. UL, CE and FDA. Power Mgmt.	Touch screen user interface for Xray generator. Complete packaging design using 3D model.	Primary operator control point for 5 axis precision patient positioning system.
User Interface & Communication Links	Serial link with Xray Generator, packet-based protocol.	Muli point controls, CAN Bus comm link. Control Pendant & graphic display.	Serial link with digitizing tablet and motion control servo. Later adapted to PC front end.	PCI card with interface chip & support logic, microprocessor buffer and coordinator.	User interface & comm between 6 uPs on CAN bus. Medical spec isolation, precision sensors.	Touch panel, color graphical interface is central part of xray system control. Serial link to generator.	Soft overmold for handheld control device. Dual level switches. CAN bus link.
Technologies & Physical Attributes	IGBT, PWM, 3-Phase waveform synthesis. SMT PCB & large components on aluminum chassis.	Modular system card cage, cast urethane parts, DSP-based collision avoidance, autopositioner logic.	Create algorithm for 3D transformations, 8-bit microprocessor implementation. 2 axis servo motor.	PCI bus spec, CAN communication link.	Low leakage EMI & ESD testing, battery charger, sheetmetal & 3D design.	Sheetmetal, PCB & cast urethane components. Resistive touch screen. User Interface software.	Complex 3D surfacing to produce design involving 9 cast items. High quality, low volume production.