DARCEO Inc. Technical Services

The high level of expertise, technology and quality you need and the high level of attention you deserve.

PAXCELL
Bridging Technologies

Company Overview

Resources That Can Help You.

- Company Overview
- **Product Support Group Services**
  - **Design and Development**
  - **DFX**
  - **Supply Chain**
- **Factory Support Group Services**
  - **Factory Automation**
  - **Lean Factory**
  - **Factory Test**
- **Affiliates – Experts and Scaling**
  - **Technical Specialists**
  - **Working Partnerships**

Resources That Can Help You.

- What
  - We provide professional engineering services for electrical, mechanical, and software development. This is supported through professional project management (PMI), and we work to integrate with our customers meeting their needs and requirements.
- Why
  - We believe we can help our customers expand there work bench depth and help them manage resources to meet project deliverables and timelines.
- How
  - We do this through controlled process (AS9100), years of experience and use of tier one tool sets. Our engineers are also capable of integrating with our customers toolsets to meet customer system requirments.

History/Location

- **South Dakota-Based Company Founded in 2008**
  - Headquartered in Rapid City, SD
- **Business Drivers**
  - #1 Lowest Cost for Doing Business Index – Milken Institute
  - #2 State Business Tax Climate – Tax Foundation
  - #6 Best Corporate Business Climate – Pollina
  - Corporate Income Tax – None
  - Business Inventory Tax – None
  - Personal Income Tax – None
  - Personal Property Tax – None
  - Non-union environment

  Source: SD Gov.'s Office of Economic Development

Strategic Markets

Medical

Ventilators
Cardiac Systems
Patient Management
Blood Analysis
Fluid Delivery
Imaging Diagnostic

Military/Aerospace

Contract Engineering
Guidance Systems
Power Management
Detection
Delivery Controls

Industrial Controls / Test & Measurement

PLC Controllers
Fire Safety
Particle Detection
Energy
Security Monitoring
Oil & Gas

Customer Experience

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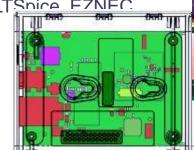 - **Technical Specialists**
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Electrical Engineering Team Capabilities

- **Design:**
  - Analog, Digital
  - Power Supply, In/Converters, Switching
  - Electronics Hardening
  - RF Low to High Frequency (6Ghz)
  - RF Communications -Wi-Fi, Bluetooth, Ant, ISM
  - Embedded Systems
  - Power Systems
  - Magnetics
  - DSP/FPGA/CPLD/Micro controller (TI, Arm, Altera, Xilinx)
  - Buss and I/O Structures
- **Toolsets:**
  - Altium Designer
  - Cadence OrCad Capture/OrCAD PCB (Allegro)
  - Mentor DX Designer/PADS
  - Xilink ISE and Altera Quartus
  - RF99, LTSpice, EZNEC

- **Technologies**
  - Avionics
  - Power Systems and Controls
  - Harsh Environment
  - Industrial/Home Automation and Controls
  - IoT Sensors and Systems
  - Medical Device (Diagnostic & Monitoring)
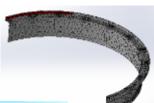 - LED Product Design
  - Optics

Product Services Group

Mechanical Engineering Team Capabilities

- **Design:**
    - Structures/Chassis/Hardware Design
    - Externals Design for military and commercial engines
    - Inlets and exhaust design for military aircrafts with air frame integration
    - Prototype design and fabrication for fit, form and function analysis
    - Prototype design for experimental testing
    - Design Validation– Drop, Environmental, Finishes
    - Stress/Heat Analysis (FEA)
    - Hardware Tolerance GD&T
    - Fastener Technologies
    - Fluid Mechanics/Pneumatics Systems
    - Design for Additive Manufacturing (Plastics and Metals)
    - Plastics, Sheet metal, Milled, "Printed" Metal
    - Electromechanical Design & Integration
    - Color Material Finish

- **Toolsets:**
    - SolidWorks CAD
    - SolidWorks Simulations
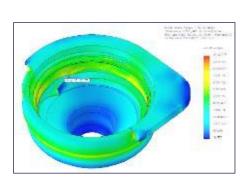   - NX/Unigraphics
    - Creo
    - AutoCAD

Technologies:
- Aerospace
- Drone Technologies
- Prototyping and Fabrication
- Conceptual Designs and Renderings
- Test Equipment Design and Layout
- Monitoring and Measurement Systems
- Machine Design
- 80/20 Chamber and Workbench Design
- Plant Automation
- Nanofiber Electrospinning
- Medical Device
- Housings/Structures
- Aftermarket Automotive Accessories
- Electronic Enclosures
- Industrial Design/Product Definition
- Additive Manufacturing

Product Services Group

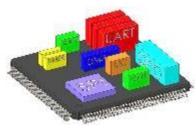## Software Engineering Team Capabilities

- **Platforms & Peripherals:**
    - Multiple Chipsets: Intel, NXP, STM, Atmel, Microchip, TI
    - Peripherals:
        - Ethernet, USB, SPI, I2C, UART, CAN, DMA, ADC, DAC, Timers, RTC, SDIO
    - Wireless Communications:
        - Wi-Fi, Bluetooth, ZigBee, ANT, Cellular, LoRa, ISM
    - User Interfaces:
        - LCD Displays, Touch Screens, LED Displays
    - Sensors:
        - GPS, Biomedical, Environmental, Motion, Particle, Ultrasonic
    - Actuators:
        - Motors, Solenoids, Fans, Relays, Switches
- **Toolsets:**
    - Multiple IDEs:
        - Keil, IAR, Visual Studio, Atmel Studio, MPLAB, Eclipse, National Instruments LabView
    - Multiple Debuggers:
        - Segger J-Link, STM ST-Link, Microchip MPLAB ICD
    - Multiple Languages:
        - C, C++, C#, Java, Assembly
    - Over 100 Development Kits and Evaluation Boards to Accelerate Product Development

KEIL
An ARM® Company

LabVIEW

Microsoft® Visual Studio

Firmware Functionality
- Bare-Metal Development as well as Operating Systems: Linux, ThreadX, RTOS, etc.
- Encrypted & Secure Transactions and Field Updates.
- Data Acquisition and Instrumentation
- Signal Processing (FIR & IIR Filters, FFT Frequency Analysis, etc.)
- Network and Web Capable: TCP/IP, LwIP, HTTP/HTTPS, Server/Client, etc.
- Kalman Filters, Adaptive Filters, and Adaptive Control
- Internet of Things (IoT), Database, and Cloud Applications.

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Military Product Support

Component Analysis and Repair
process development.

Equipment and process development for
advanced weapon systems components.

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  - **Factory System Integration and Lean Factory**
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Factory Support Group
Automation

Process Automation

- PLC Allen Bradley and Siemens
- Robotic Automation (Fanuc, Emerson, Universal)
- 6 Axis, Linear Rail, SCARA
- Panel Design and Builds
- Safety Systems with Caging
- Gripper and Tooling Design

Material Handling

- Conveyors, Automated Material Handling
- Machine Load and Unload
- Track Trace Control
- Serial Generation
- Label Management

Inspection Equipment

- Vision Systems (Cogiscan, Keyence)
- Electrical, Software, Process Development
- Hyperspectral, Moleculescope, Optical

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Factory Support Group
Integration Services

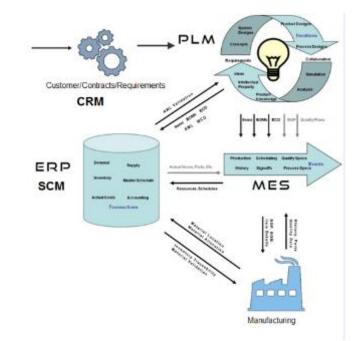## Factory Systems Integration

- Equipment to Manufacturing Execution Systems
- IoT 4.0 Integration
- Controls Hardware Development
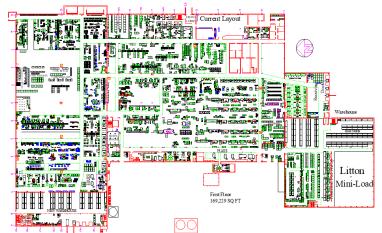- Automated Lean Controls

RF Systems Test Platform Cross Product Platform for Prime

- Communications Control Platform
- Signal Multiplexing platform
- 386 Switched signals from 384 MHz to 3.2 GHz

Plasma Electrolyte Deposition Equipment

- Advanced Nano Materials Research
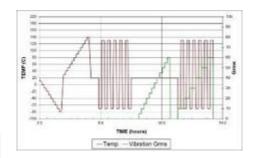- Electrical, Software, Process Development
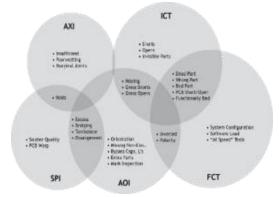
Factory Test Development

- Strategy development
- BOM/Test coverage analysis
  - Fault Spectrum
- Test Technology Road mapping
- Test Development Capability
  - Design Validation Testing
  - BIST
  - Embedded self test
  - Functional test platform design
  - Reliability testing
  - Run-in Development
  - Halt, ESS, HASS Profile Development

Airforce Factory Integration

- Air Force Research and Development Program
- Advanced Manufacturing Process Implementation – 3D Manufacturing Lab
- FEA/Stress Analysis
- Elasticity, Crack Propagation, Thermal analysis, Wear analysis, Environmental analysis
- Product Requirements Definition
- Test Validation – Flight Analysis
- AS9100C Regulatory Control

Critical Flight Support Program. Planes Stop Flying!

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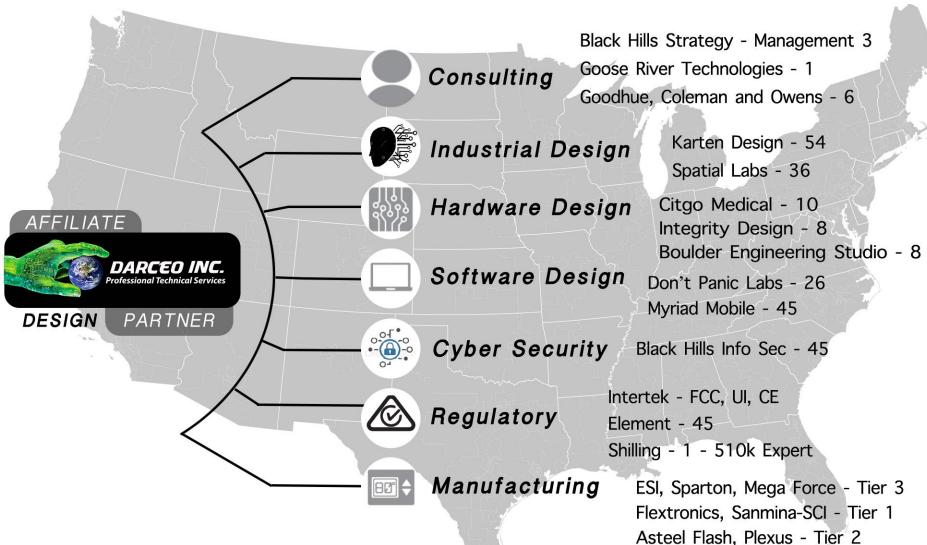 - **Working Partnerships**

Affiliates – Experts and Scaling

- **Darceo Affiliate Partners**
  - **Our customers receive access to a network of experts needed throughout their design life cycle and service engagement while partners benefit from an expanded customer base, increased revenue stream and the ability to differentiate themselves in today's competitive marketplace.**
- **Allows Darceo to Quickly Scale to larger projects**
  - **Using Know resources with central Project Management**
- **Supporting resources to help from startup concept phase to complete product implementation for our customers**
- **Experienced Relationships**
  - **Known Entities**
  - **No Freelancers**
  - **Financially Secure Experienced Organizations**

Affiliates – Experts and Scaling

Consulting
Black Hills Strategy - Management 3
Goose River Technologies - 1
Goodhue, Coleman and Owens - 6

Industrial Design
Karten Design - 54
Spatial Labs - 36

Hardware Design
Citgo Medical - 10
Integrity Design - 8
Boulder Engineering Studio - 8

Software Design
Don't Panic Labs - 26
Myriad Mobile - 45

Cyber Security
Black Hills Info Sec - 45

Regulatory
Intertek - FCC, UI, CE
Element - 45
Shilling - 1 - 510k Expert

Manufacturing
ESI, Sparton, Mega Force - Tier 3
Flextronics, Sanmina-SCI - Tier 1
Asteel Flash, Plexus - Tier 2

Contact Us:

Paxcell Group

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