



ZIN Technologies

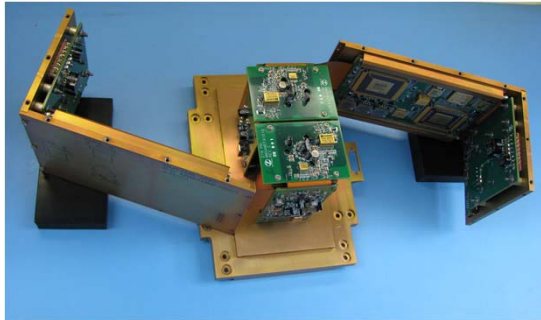
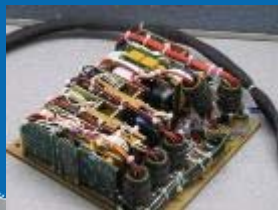
Electrical Design Capabilities

Multi-Disciplined Engineering: Electrical Design Capabilities

Performance - For the NASA Goddard Space Flight Center, ZIN designed, built, tested, and delivered the MMSAMS Flight Inertial Navigation avionics units for GSFC. For this instrument ZIN designed a mixed-signal Rigid-Flex PWA to IPC-6013 specifications. This design allowed for signals to be collected, filtered, digitized and processed to allow for digital transmission of high dynamic range data with real time temperature and bias stability.

TOOLS:

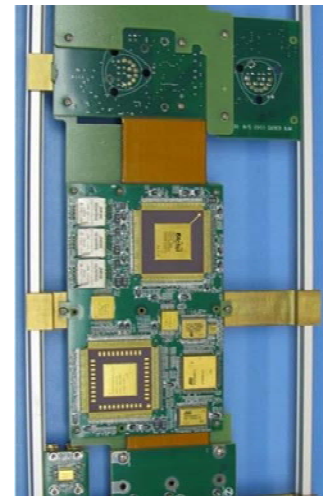
- Mentor DxDesigner and Expedition
- Altium
- OrCAD
- Pro E – Wildfire 5.0.
- Siemens – NX 9.0
- Hyperlynx, BoardSim and LineSim
- TMG: Thermal Analysis
- NX Nastran: Structural Analysis
- PowerSIM : Power Electronics Simulation
- Power 4-5-6: Power Electronics Control Loop Design



ZIN has design experience for space-rated digital design, mixed signal instrument systems, RF, Microwave electronics, and power products. The primary tool set for electrical design is DxDesigner and Expedition. The schematic design is done concurrently with LineSim analysis (or other simulation where appropriate) to ensure performance. Concurrent with Layout, BoardSim analysis is completed. For specialty products additional analysis such as PowerSIM or Power 4-5-6 may be applied. Rules are applied to insure compliance with IPC and NASA requirements for pad sizing and inspection requirements. Concurrent with design, parts controls are planned for the product. Part requirements are assessed, and nonstandard and source controlled part procurements are planned.

Before procurement of EEE parts or bare PCB's the team performs additional analysis including worst case circuit analysis (WCA), part stress analysis, and radiation assessment against requirements. WCA typically includes: Memory Bus Timing Analysis, Timing Analysis, FPGA Static Timing Analysis, Signal Integrity Analysis, Temperature Sensitivity, Power Up Sequence / Power-On-Reset, and Analog Circuit Error Analysis.

- ZIN develops circuits, mixed signal boards, and single board computers for embedded systems.
- This involves the design, analysis, and fabrication of digital and mixed signal based solution for space-rated, radiation tolerant systems.
- In addition, ZIN has experience with power electronics circuits for mission and life critical spaceflight applications.
- Total Ionizing Dose and Single Event Upset / Effect are typically reported as a separate analysis.



ZIN Technologies Inc.

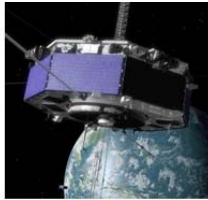
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Founded in 1957, ZIN provides multidisciplinary engineering services to NASA and the aerospace industry and has managed the development of space flight and ground system hardware (aerospace/space systems) from formulation, design, and development through to fabrication, integration, testing, verification, and mission operations.

Our experience includes the development and validation of new technologies (sensors, inertial navigational measurement units (IMUs), composites, advanced acoustic resonant attenuation, optics, power, additive manufacturing and wireless/RF), ISS research investigations, space launch systems (Orion, commercial crew/resupply), satellite (IMU) accelerometer systems, and space based human research projects enabling future space and science missions.



Focus on Quality - Certified and Compliant with Industry and Government Quality Standards



ZIN Technologies, Inc. is an experienced developer of ground and flight systems for manned and unmanned aerospace applications. Marking history for almost five decades, we have provided integrated hardware and software development products and services to NASA, DoD and Fortune 500 companies.

OUR PRODUCTS & SERVICES

	SPACE SYSTEMS INTEGRATION & OPERATIONS		MANUFACTURED PRODUCTS		ADDITIVE MANUFACTURING
	ENGINEERING & TECHNICAL SERVICES		HARDWARE & SOFTWARE DEVELOPMENT		HUMAN HEALTH & MEDICAL DEVICES

Research & Technology



Systems Concepts




Systems Design & Analysis



Engineering & Manufacturing



Systems Assembly



Systems Integration & Test



Management & Mission Operations



Logistics & Sustainment



- | | |
|---|---|
| <input type="checkbox"/> Minority Owned-SDB | <input type="checkbox"/> DCAA Approved Forward Pricing |
| <input type="checkbox"/> AS9100 certified | <input type="checkbox"/> Headquartered Cleveland Ohio |
| <input type="checkbox"/> Experienced Team of scientists, engineers, designers, and technicians | <input type="checkbox"/> Award Winning Capabilities |

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