



ZIN Technologies

## RF / Microwave Engineering

### RF / Microwave Engineering

#### *Importance of RF Circuit Design*

- Wireless communications
- Global positioning systems (GPS)
- –Computer engineering (bus systems, CPU, peripherals exceeding 600 MHz)

#### *Hybrid and Microwave*

- Printed circuits, lamination, electronics assembly, hybrid and microwave integrated circuits, encapsulation, precision cleaning, metal treatment, wet and dry lubrication, potting, electromagnetic, flight assembly, and mechanical and electronic inspection.

#### *Integrated Modeling and Simulation*

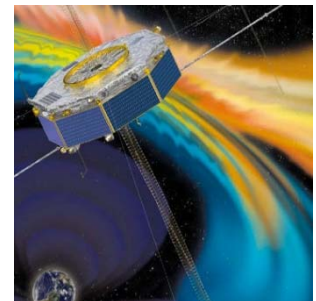
- Provides end-to-end design modeling by simulating scene inputs and disturbances, instrument output, data analysis, and comparison to input
- Hardware design is incorporated in a “virtual instrument” that accurately predicts performance Instrument Development Lab prototypes specific hardware with difficult-to-simulate properties



ZIN has expertise in the design, production, and testing of RF and microwave hardware and associated electrical and mechanical component, and mechanical inspections. Our expertise spans the range from systems engineering, performance analysis and design through assembly, integration, and test (AI&T). Personnel specialize in aperture design and analysis, RF electronics, assembly, alignment, integration, and test. Capabilities include design, analysis, assembly, alignment, test and post launch support for RF/microwave components.



- ZIN has extensive experience with the development of complex microwave instruments and phased array antenna subsystems.
- ZIN maintains a host of Electromagnetic, Antenna Simulation and Design Tools.
- For reflector antenna work we use TICRA GRASP software and also a custom version of physical optics (PO) implemented in MATLAB™.
- For antenna and microwave circuit design Ansoft's High Frequency Structure Simulator (HFSSTM), CST's Microwave Studio™ and Microstripes™ and FEKOTM method of moments software are used.



**ZIN Technologies Inc.**

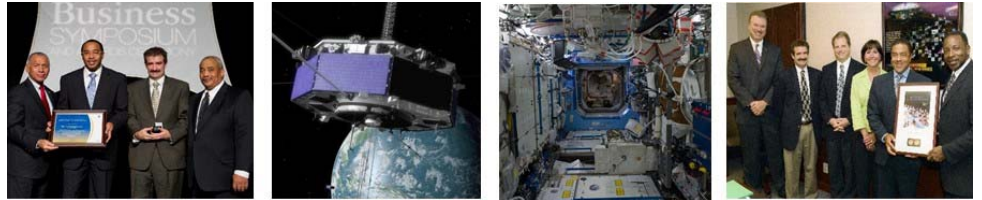
6745 Engle Road | Middleburg Heights, Oh 44130  
Phone: 440.625-2223 | johansonm@zin-tech.com | www.ZIN-Tech.com

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.

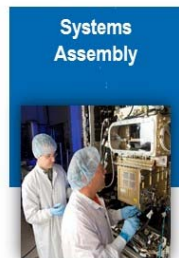


**Focus on Quality - Certified and Compliant with Industry and Government Quality Standards**



**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



- ❑ Minority Owned-SDB
- ❑ AS9100 certified
- ❑ Experienced Team of scientists, engineers, designers, and technicians
- ❑ DCAA Approved Forward Pricing
- ❑ Headquartered Cleveland Ohio
- ❑ Award Winning Capabilities

# ZIN Technologies Inc.

6745 Engle Road | Middleburg Heights, Oh 44130  
 Phone: 440.625-2223 | johansonm@zin-tech.com | www.ZIN-Tech.com