Overview

Moog provides unparalleled control system solutions for present and next generation satellite and launch vehicle programs. The future of spaceflight demands solutions that are reliable and adaptable for mission success; by leveraging expertise in control components and subsystems, Moog offers low risk electronic solutions that complement customer requirements. Moog designs and manufactures control electronics for:

- Actuation
- Data Acquisition
- Engine Controls
- Guidance and Navigation
- Mechanisms
- Ordnance Control
- Power Distribution and Control Unit
- Propulsion Controls

Capabilities

Guidance, Navigation and Control

Building upon success of the flight control computing system for Boeing’s 747-800 series aircraft and system navigation unit (SNU) for SpaceShip One, Moog offers and manufactures safety critical hardware for flight control electronics providing end users complete control and redundancy management for platforms.

- Complete Flight Control System Solutions
- Flexible Real-Time Operating System Options
- Host Customer or Moog Developed Flight Software
- Integral Navigation Sensors (IMU and GPS)
- Multiple Communication Protocol and I/O Support Channel (I/O Channel S/B Channels)
- Triple Dissimilar Flight Controls

Motion Control

For launch vehicles and satellites, Moog leverages their heritage in actuation to deliver solutions with digital control electronics, creating an optimal solution for customers. Motion Control experience includes: hydraulic, electrohydrostatic (EHA), and low/high powered electromechanical (EM) actuators, and spacecraft mechanisms. Moog solutions are developed for reliability, weight and thermal management parameters, and extreme launch and space environments.

- Antenna Pointing Mechanisms
- Flight Surface Actuation Systems
- Radiation Hardened or Tolerant Systems
- Solar Array Devices
- Spacecraft Motor Drive Modules
- Thrust Vector Control (TVC) Systems

Power and Data Management

Moog supplies unique packaging solutions for telemetry hardware and Power Distribution Units (PDU) for launch vehicles and satellites, allowing end users to effectively manage their programs on the ground, during launch, and on-orbit.

- Power Distribution and Control Avionics
- High Voltage Systems
- EM/EMC Compatible Systems
- High Speed Data Acquisition
- Thermal or Lithium Ion Batteries

Propulsion Control

Moog is a leader in fluid control components and systems; offering main propulsion, reaction roll, attitude, and engine control system electronics. Solutions are derived from a comprehensive understanding of industry expectations, space vehicle components, subsystems, and environments, along with years of experience in launch vehicle actuation systems and spacecraft mechanism controls.

- Attitude/Reaction Control System (ACS/RCS)
- Dual, Triple, or Quad Redundant Systems
- Feed System
- Main Engine
- Solid Rocket Motor Pintle Actuation Systems
- Telemetry for Temperature, Pressure, and other Sensors
Facilities

- 54,000 ft², State-of-the-Art Facility Dedicated to Electronics
- On-Site, Real-Time Engineering and Program Support
- 6 Sigma, zero Defect Performance
- Extensive Capabilities: Board-to-Box, High-Reliability/High-Mix
- AS9100 Certified
- IPC A 610 and IPC 7711/7721 Certified
- NASA Certified/JSTD-001D Space Addendum Certified

Expertise

- Circuit Card Assembly (CCA) – Surface Mount and Through Hole
- Flying Probe Test and X-Ray Inspection
- Box Assembly and Test
- Inductive Soldering
- Extensive Failure Analysis (Including On-Site Materials Lab)
- Humiseal, Silicone, and Conathane Coating
- Environmental Testing
  - Thermal Vacuum and Humidity Chambers
  - Vibration and Shock Testing
  - HALT/HASS
  - Altitude and Corona Test
  - EMI/EMC Chambers
LOCATIONS

Argentina
Australia
Austria
Brazil
Canada
China
Finland
France
Germany
India
Ireland
Italy
Japan
Luxembourg
Netherlands
Norway
Philippines
Russia
Singapore
South Africa
South Korea
Spain
Sweden
Switzerland
United Arab Emirates
United Kingdom
United States