



# MODAS

## MODular Avionics System

The Space Dynamics Laboratory's MODular Avionics System (MODAS) is a compact, robust, flexible avionics system made up of a collection of functional building blocks that can be combined to meet a multitude of space systems requirements. MODAS is based on the industry standard PCI-104 architecture that includes a 32-bit, 33MHz PCI bus in a very compact and robust form factor. The system has been designed from the ground up to excel within the harsh environments of LEO, GEO, and deep space missions. The modules use 100 krad tolerant components along with SEE mitigation techniques such as EDAC, TMR, and TTMR. The MODAS structure is designed to withstand the high vibration and shock environments of launch vehicles.

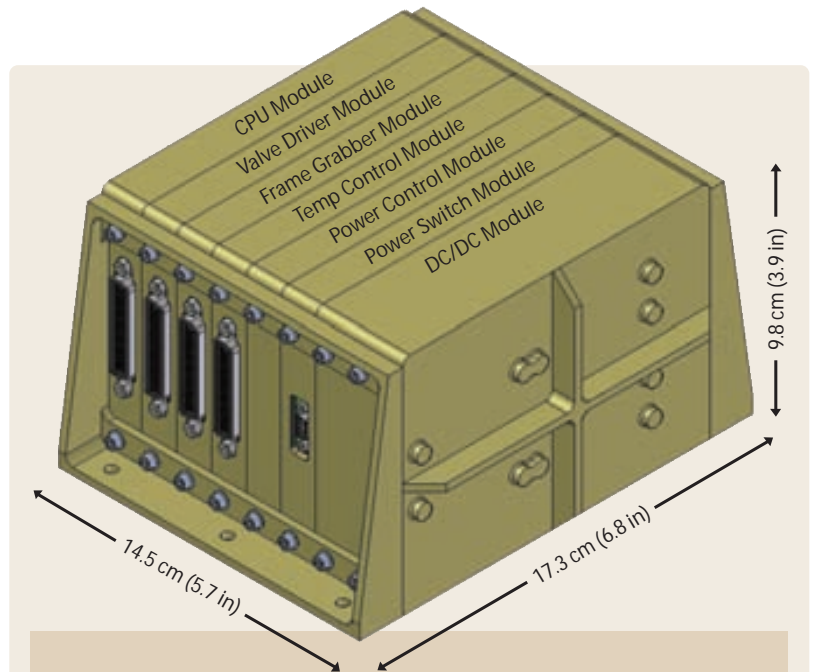
### Flexible Capability

The MODAS "Stack" is configured by selecting any combination of functional modules. The PCI-104 form does not have a backplane, allowing the structure to grow or shrink with the number of modules added, resulting in a structure that is only as large as required for the modules selected.

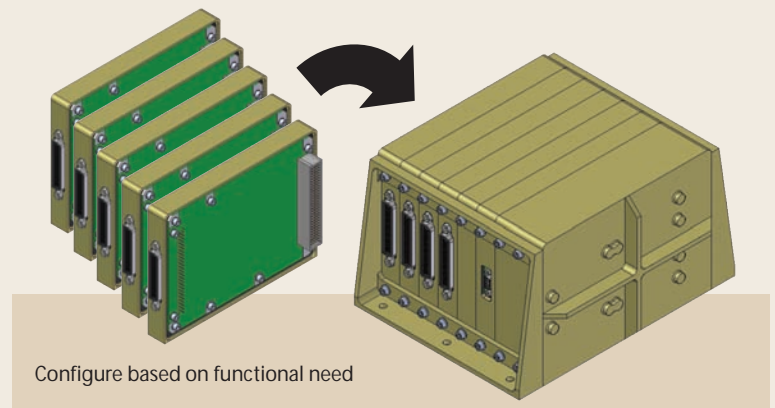
### Ideal for On-board Distributed Computing

One stack or multiple stacks can be configured and used to meet the system requirements. A multiple stack architecture forms a distributed web of processing and control capability. Each stack becomes a hub for external I/O to connect into the overall system architecture. This modular design can easily scale up or down depending on the system requirement. The electronics are powerful enough to serve as the main system electronics or can be used to add capability or payload control to an existing legacy system.

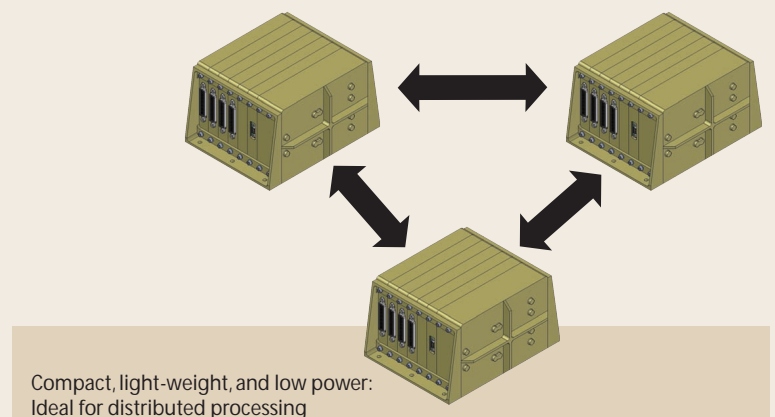
Seven functional building blocks already exist. Custom modules can be designed as required.



This sample configuration shows a compact, integrated avionics suite ideal for a small satellite.



Configure based on functional need



Compact, light-weight, and low power:  
Ideal for distributed processing

