



Express Rack Technology for Space Station

By Ted B. Davis

BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 24 pages. Dimensions: 9.7in. x 7.4in. x 0.1in. The EXPRESS rack provides accommodations for standard Mid-deck Locker and ISIS drawer payloads on the International Space Station. A design overview of the basic EXPRESS rack and two derivatives, the Human Research Facility and the Habitat Holding Rack, is given in Part I. In Part II, the design of the Solid State Power Control Module (SSPCM) is reviewed. The SSPCM is a programmable and remotely controllable power switching and voltage conversion unit which distributes and protects up to 3kW of 12OVDC and 28VDC power to payloads and rack subsystem components. Part III details the development and testing of a new data storage device, the BRP EXPRESS Memory Unit (BEMU). The BEMU is a conduction-cooled device which operates on 28VDC and is based on Boeing-modified 9GB commercial disk-drive technology. In Part IV results of a preliminary design effort for a rack Passive Damping System (PDS) are reported. The PDS is intended to isolate ISPR-based experiment racks from on-orbit vibration. System performance predictions based on component developmental testing indicate that such a system can provide effective isolation at frequencies of 1 Hz and...



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