1. Record Nr. UNINA9910438055103321

Titolo	A combined data and power management infrastrcture : for small satellites / / Jens Eickhoff, editor
Pubbl/distr/stampa	Heidelberg, Germany, : Springer, c2013
ISBN	3-642-35557-9
Edizione	[1st ed. 2013.]
Descrizione fisica	1 online resource (268 p.)
Collana	Springer aerospace technology
Altri autori (Persone)	EickhoffJens
Disciplina	629.46
Soggetti	Artificial satellites - Electronic equipment Artificial satellites - Control systems Engineering Microprogramming Astronautics Systems engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	The OBC overall Design Concept -- The OBC Processor Board -- The I/O-Board -- The CCSDS Decoder/Encoder IP-Core -- The CCSDS Decoder/Encoder Board -- The Power Control and Distribution Unit -- The OBC Power Supply Boards -- The OBC inter-board Harness -- OBC Mechanical and Thermal Design -- OBC HW/SW Integration Testing -- The Research Satellite Target.
Sommario/riassunto	In 2009 the need for a suitable onboard computer design arose for the small satellite project at the Institute of Space Systems, University of Stuttgart, Germany. It had to meet the constraints imposed by the small satellite (a 130 kg CubeSat) with its full featured ACS, diverse payloads and full CCSDS telecommand and telemetry standard compliance. The design of the Onboard Computer system lead to a functional merging between onboard computer components and the satellite's Power Control and Distribution Unit, resulting in a very innovative solution – the so-called Combined Data and Power Management Infrastructure. The technical implementation of such a design was achieved with the support of an international industry partner consortium consisting of Astrium GmbH, Aeroflex Colorado Springs Inc., 4Links Ltd., Aeroflex

Gaisler AB, Vectronic Aerospace GmbH and HEMA Kabeltechnik GmbH & Co. KG. At end of the flight unit's development the consortium decided to provide a single consistent documentation of the developed CDPI Infrastructure. The technical overview should be available for other university students in a sort of mix between technical brochure and user guide. This book also might be of interest for future university or industry partners who intend to order rebuilds / adaptations of the CDPI infrastructure or even the entire satellite bus in Stuttgart for their missions.