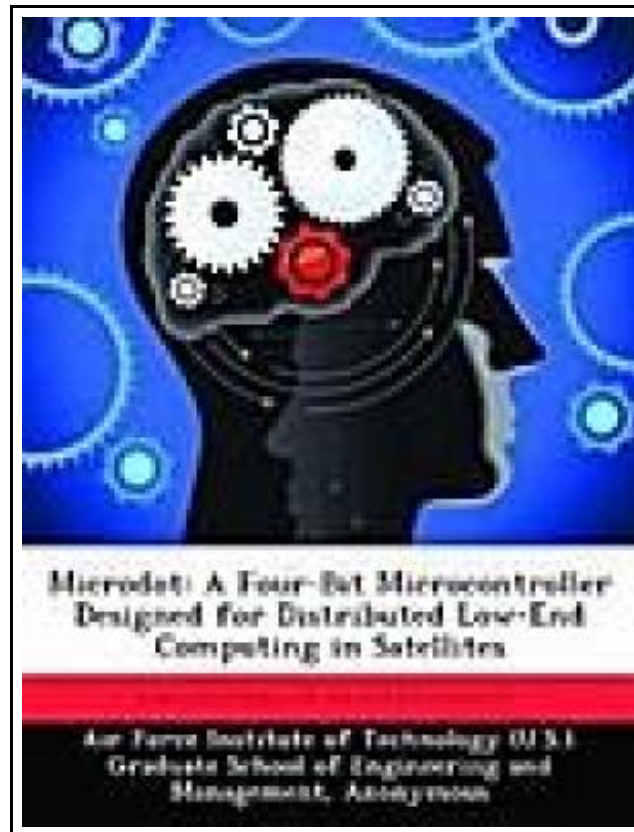


## Microdot: A Four-Bit Microcontroller Designed for Distributed Low-End Computing in Satellites



Filesize: 1.97 MB

### ***Reviews***

*I actually started out reading this pdf. Of course, it really is play, continue to an interesting and amazing literature. I realized this pdf from my i and dad encouraged this pdf to discover.*

***(Maddison Becker)***

## MICRODOT: A FOUR-BIT MICROCONTROLLER DESIGNED FOR DISTRIBUTED LOW-END COMPUTING IN SATELLITES

[DOWNLOAD](#)

Biblioscholar Sep 2012, 2012. Taschenbuch. Book Condition: Neu. 246x189x9 mm. This item is printed on demand - Print on Demand Neuware - As satellites become more complex, the on-board processing capabilities must keep up. Many satellites are an integrated collection of sensors and actuators with many requiring dedicated real-time control to operate correctly. For single processor systems, adding more sensors requires an increase in computing power and speed to provide the multi-tasking capability needed to service each sensor. Faster processors are more costly and consume more power, which can tax a satellite's power resources and may lead to shorter satellite lifetimes. Commercial-Off-The-Shelf (COTS) electronic components are usually not acceptable for satellite design because they have not been hardened against the radiation environment of space. An alternative design approach is to use a distributed network of small and low power microcontrollers designed for space to handle the computing requirements of each individual sensor and actuator. The design of microdot, a four-bit microcontroller for distributed low-end computing, is presented. The design is based on previous research completed at the Space Electronics Branch, Air Force Research Laboratory (AFRL/VSSE) at Kirtland AFB, NM, and the Air Force Institute of Technology at Wright- Patterson AFB, OH. The Microdot has 29 instructions and a 1K x 4 instruction memory. The distributed computing architecture is based on the Philips Semiconductor I2C Serial Bus Protocol. A prototype was implemented and tested using an Altera Field Programmable Gate Array (FPGA). The prototype was operable up to 9.1 MHz. The design was also targeted for fabrication using a radiation-hardened-by-design gate-array library from Mission Research Corporation. The gate-array library is designed for the TSMC 0.35 micrometer CMOS process. 146 pp. Englisch.



[Read Microdot: A Four-Bit Microcontroller Designed for Distributed Low-End Computing in Satellites Online](#)



[Download PDF Microdot: A Four-Bit Microcontroller Designed for Distributed Low-End Computing in Satellites](#)

## Related Books



### **Psychologisches Testverfahren**

Reference Series Books LLC Nov 2011, 2011. Taschenbuch. Book Condition: Neu. 249x191x7 mm. This item is printed on demand - Print on Demand Neuware - Quelle: Wikipedia. Seiten: 100. Kapitel: Myers-Briggs-Typindikator, Keirsey Temperament Sorter, DISG,...

[Read PDF »](#)



### **Programming in D**

Ali Cehreli Dez 2015, 2015. Buch. Book Condition: Neu. 264x182x53 mm. This item is printed on demand - Print on Demand Neuware - The main aim of this book is to teach D to readers...

[Read PDF »](#)



### **Six Steps to Inclusive Preschool Curriculum: A UDL-Based Framework for Children's School Success**

Brookes Publishing Co. Paperback. Book Condition: new. BRAND NEW, Six Steps to Inclusive Preschool Curriculum: A UDL-Based Framework for Children's School Success, Eva M. Horn, Susan B. Palmer, Gretchen D. Butera, Joan A. Lieber, How...

[Read PDF »](#)



### **Sport is Fun (Red B) NF**

Pearson Education Limited. Paperback. Book Condition: new. BRAND NEW, Sport is Fun (Red B) NF, Dianne Irving, This title is part of Pearson's Bug Club - the first whole-school reading programme that joins books and...

[Read PDF »](#)



### **It's Just a Date: How to Get 'em, How to Read 'em, and How to Rock 'em**

HarperCollins Publishers. Paperback. Book Condition: new. BRAND NEW, It's Just a Date: How to Get 'em, How to Read 'em, and How to Rock 'em, Greg Behrendt, Amiira Ruotola-Behrendt, A fabulous new guide to dating...

[Read PDF »](#)