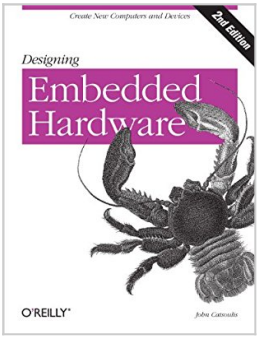

Designing Embedded Hardware: Create New Computers and Devices

By John Catsoulis

Designing Embedded Hardware: Create New Computers and Devices By John Catsoulis

Embedded computer systems literally surround us: they're in our cell phones, PDAs, cars, TVs, refrigerators, heating systems, and more. In fact, embedded systems are one of the most rapidly growing segments of the computer industry today.Along with the growing list of devices for which embedded computer systems are appropriate, interest is growing among programmers, hobbyists, and engineers of all types in how to design and build devices of their own. Furthermore, the knowledge offered by this book into the fundamentals of these computer systems can benefit anyone who has to evaluate and apply the systems.The second edition of *Designing Embedded Hardware* has been updated to include information on the latest generation of processors and microcontrollers, including the new MAXQ processor. If you're new to this and don't know what a MAXQ is, don't worry--the book spells out the basics of embedded design for beginners while providing material useful for advanced systems designers.*Designing Embedded Hardware* steers a course between those books dedicated to writing code for particular microprocessors, and those that stress the philosophy of embedded system design without providing any practical information. Having designed 40 embedded computer systems of his own, author John Catsoulis brings a wealth of real-world experience to show readers how to design and create entirely new embedded devices and computerized gadgets, as well as how to customize and extend off-the-shelf systems.Loaded with real examples, this book also provides a roadmap to the pitfalls and traps to avoid. *Designing Embedded Hardware* includes:

- The theory and practice of embedded systems
- Understanding schematics and data sheets
- Powering an embedded system
- Producing and debugging an embedded system
- Processors such as the PIC, Atmel AVR, and Motorola 68000-series
- Digital Signal Processing (DSP) architectures
- Protocols (SPI and I2C) used to add peripherals
- RS-232C, RS-422, infrared communication, and USB
- CAN and Ethernet networking

- Pulse Width Monitoring and motor control

If you want to build your own embedded system, or tweak an existing one, this invaluable book gives you the understanding and practical skills you need.

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Editorial Review

About the Author

John Catsoulis lives under the tropical sun in Brisbane, Australia. He has a Bachelor of Science with Honors (Griffith University) with a triple major in quantum physics, electronics and mathematics, and a Master of Engineering (La Trobe University) in specialized computer architectures. He has been responsible for the design of more computer systems than he can remember, from tiny finger-sized machines to multi-processor compute engines. Corporations and government bodies around the world have used his designs and software. John has also taught the dark arts of computer architecture and design at several Universities. He is currently conducting research at the University of Queensland into fault-tolerant reconfigurable computers for spacecraft avionics.When not slaving over a hot microprocessor, John enjoys hiking and camping, wildlife and landscape photography, fishing, dabbling in permaculture, cooking Indian and Mediterranean food, and playing model trains with his nephews, Andrew and James.

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