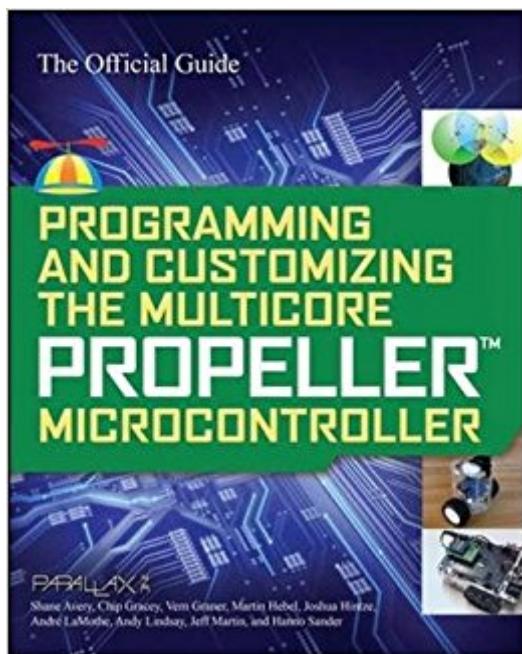


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# Programming And Customizing The Multicore Propeller Microcontroller: The Official Guide



## Synopsis

The Only Official Guide to the Parallax Multicore Propeller Microcontroller Written by a team of Propeller experts, this authoritative guide shows you how to realize your design concepts by taking full advantage of the multicore Propeller microcontroller's unique architecture. The book begins with a review of the Propeller hardware, software, and Spin language so you can get started right away. Programming and Customizing the Multicore Propeller Microcontroller: The Official Guide is filled with a wide variety of step-by-step, hands-on projects. Put your ideas into production when you learn how to: Debug code for multiple cores Understand how the Propeller interacts with different sensors Wirelessly network Propeller chips Build a balancing robot and control it with computer vision Develop networking applications using an off-the-shelf Ethernet chip Create a portable multivariable GPS tracking and data logging device Use the Propeller as a remote virtual peripheral for media applications Create a Propeller-powered HVAC green house model Synthesize speech with the Propeller Experience more of the process at [mhprofessional.com/propeller](http://mhprofessional.com/propeller)

## Book Information

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## Customer Reviews

Parallax, Inc., a privately held company, designs and manufactures microcontroller development tools and small single-board computers that are used by electronic engineers, educational institutions, and hobbyists.

An adequate reference from the development group and authors at Parallax, this book serves to

enable proficient programming of the powerful, 8-cog Propeller microcontroller chip. Don't expect too much theory-based material, as the reference book is meant to be more of a practical reference. Therein lies its weakness. More theory would have helped to clarify many of the cloudy topics presented. One example of this glaring oversight comes to mind. The Propeller is capable of analog-to-digital conversion via an onboard converter, yet the author fails to expound on the characteristic, and instead recommends an ancillary discrete device, the MCP3208, for analog-to-digital conversions. There is even a building block object for the MCP3208 to facilitate interfacing with the Propeller. Why? Is there a problem with the internal Propeller's ADC? I was led to believe so. On the other hand, the experimenter will find an abundance of practical examples that can be readily implemented. In summation, my goal was to learn Propeller programming, and I did, but I was forced to search other references in my endeavors to achieve that goal.

As a beginner to electronics with limited hobby level experience in programming computers, I am very impressed with "Programming and Customizing the Multicore Propeller Microcontroller." The book begins with a description of the multicore Propeller and an introduction to the Spin language used to program it. Debugging tools and practices are discussed followed by an overview of sensor basics with examples. Eight interesting projects fill the remainder of the book, with topics ranging from a balancing robot to an HVAC green house model. My favorite project is the chapter on wirelessly networking Propeller chips. In this chapter we are taken through the steps required to wirelessly network a robot with a compass and a PING))) ultrasonic sensor, an accelerometer/inclinometer, and a display. The communication is provided via XBee 802.15.4 modem/transceivers. The final result is a robot that can follow a heading, turn based on wireless input from an accelerometer board (steering wheel), and wirelessly transmit useful information back to the tv display, such as bearing, distance to objects, bar indicators for drives, and signal strength. Anyone from beginner to advanced skill levels will find this book educational, interesting, and engaging.

Okay - I am a Hobbie, but I do have some cool goals for this year using the propeller. The biggest problem I have is I really like practical examples. I bought this book thinking it would just be a good reference, and yes it does show you lots of practical things you can do with a Propeller. Fortunately for me, this is not a reference book after-all. You will find things for the absolute beginner, and all the way to the "Mad Scientists." I was surprised to see how I really wanted to read this book in a 'linear' form! This was not a book on tips and tricks. This is classroom material, with labs to be done! Fun,

and crazy things to do at that. Looking for a better understanding of sensors - sure it's here, but that's just the surface. I really like the way this book has been set-up with a backbone of understanding approach. You can skip ahead to see some really cool projects and the thinking process of how to do them, but you are doing yourself an injustice to skim the first parts. The Propeller is a different type of microcontroller and it has some very cool techniques to things so I appreciated the extra time put in this book for all the notes and extra care to really help explain all these crazy cool options. Overall - I am very pleased with the book, and I wish this was the book I first was able to pick up when I started working on the Propeller. The forums are nice but this would have answered a ton of questions I had when I started. There are still lots of material in this book that is crazy cool and beyond my scope of projects and current understanding, but it's nice to know that's there when get to that level.

As an electrical engineer with 30+ years of experience designing with various microprocessors, microcontrollers, ASICs, FPGAs and CPLDs, I found the book to be a refreshing joy to read compared to most of the similar books available. This book has something for everyone regardless of skill level and is not just the common "re-hash" of the documentation commonly found in many books on the subject. The book begins with a well-written discussion of the Multicore Propeller and the languages used to program it and escalates throughout, building layer upon layer of knowledge, showing how to have fun and learn using concrete example projects. Upon completion the reader will be well poised to continue exploring this exciting world with the Multicore Propeller.

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