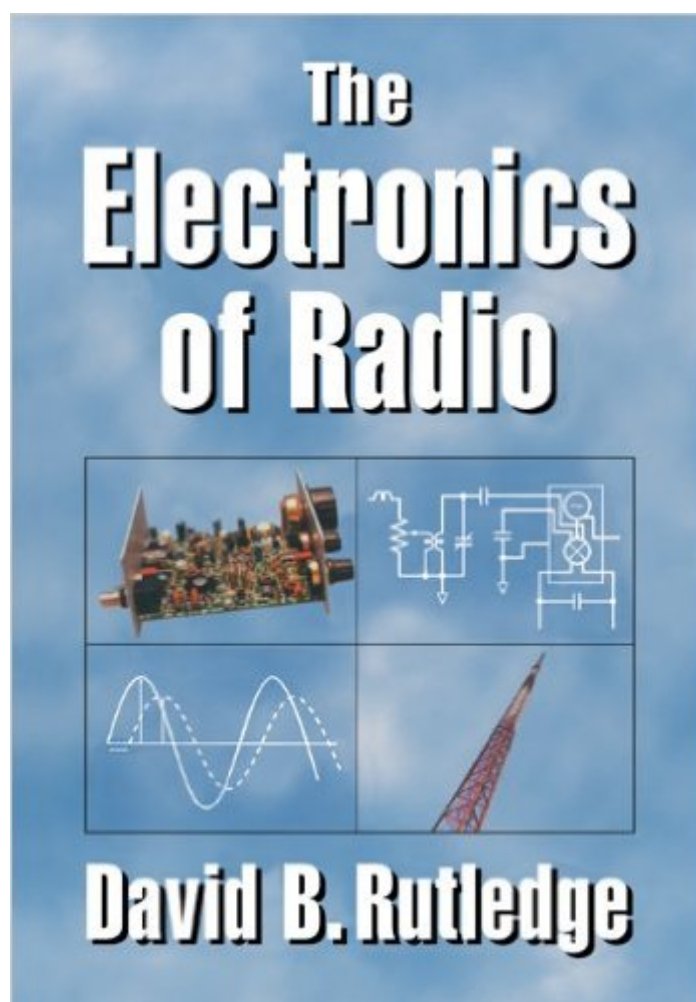


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# The Electronics Of Radio



## Synopsis

This fascinating book provides a stimulating introduction to analog electronics by analysing the design and construction of a radio transceiver. Essential theoretical background is given along with carefully designed laboratory and homework exercises. The author begins with a thorough description of basic electronic components and simple circuits and goes on to describe the key elements of radio electronics, including filters, amplifiers, oscillators, mixers, and antennas. Laboratory exercises lead the reader through the design, construction, and testing of a popular radio transceiver (the NorCal 40A). A diskette containing the widely known circuit simulation software, Puff, is included in the book. This was the first book to deal with elementary electronics in the context of radio. It can be used as a textbook for introductory analog electronics courses, for more advanced undergraduate classes on radio-frequency electronics, and will also be of great interest to electronics hobbyists and radio enthusiasts.

## Book Information

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## Customer Reviews

If you're a build-it-yourself amateur radio hobbyist with a thirst for information about how it all works, this book should be on your shelf. It is somewhat less math-intensive than Wes Hayward's classic, Introduction to RF Circuit Design, but more practical than most other books I've seen on the subject. The book approaches the topic by taking the reader step-by-step through the inner workings of the NorCal 40A, a popular QRP (low-power) HF transceiver kit, which means that you'll get the most from the book if you also have the kit (or a completed NorCal 40A). The author presents each section of the radio's design and discusses each in detail, with many circuit examples. The author discusses the pertinent radio or electronics theory in the context of how each part of the radio works. There are also many practical exercises and tests that the reader can perform on the radio, either as it is being built or after it is finished. Having a NorCal 40A isn't a requirement, and most of the book is useful, even apart from the kit construction, since many of the exercises and test procedures can be applied to other radio circuits with little trouble. The book is organized to make it very useful as a college-level engineering text, but the hobbyist shouldn't be scared off by the math and theory. All in all, this is a great new book for the amateur radio community.

Our library ordered this book last year and since then I have been reading on and off when I get spare time. Being quite a novice on radio electronics and an amateur radio operator (bx2ah, ex-bv2wn) in Taipei, Taiwan I am very much into any underlying building blocks of the radio art. This book is particularly useful for laymen with only modest college math background. If you are a serious amateur radio operator who wishes to learn more about the workings of your ham rig/antenna, I wholeheartedly highly recommend this brilliant book to you. frank chen bx2ah, ex-bv2wn

I am a ham radio operator. It had been years since I had dabbled in building a radio so I found this book. I built the radio as I went through the book. It helped me successfully transition from tubes to transistors and integrated circuits. Now I have a great radio and know how to troubleshoot it when it has problems. Armed with the technical and conceptual knowledge I gained from this book, it is easy to understand circuitry in other ham radio gear, making it possible for me to do my own repairs.

Speaking from the view of an electronics technician who later became an educator (BS in Secondary Ed - U of TN 1980), I believe it accomplishes its purpose for being published (>90%)! Knowing there are no perfect books or authors and one book can not teach you everything about such a complex technical subject, The Electronics of Radio is a very well written and organized

book. However, having built one of the ORIGINAL NorCal 40 transceivers kitted by the Northern California QRP Club (years before the book was written), and having used this radio to make hundreds of contacts across the US and Canada as KD4ZPA & KS4RT, I would recommend the following books be read first! Basic Radio: Understanding the Key Building Blocks by Joel R. Hallas and published by the ARRL. Basic Radio describes radio theory in a much simpler, non engineering, manner. Its first few pages gives the background for basic communications almost 200 years ago and without boring the reader continues to give good examples, diagrams, and illustrations as radio communications progressed through the years up to today's modern digital communications equipment. For a more in depth study of basic electronics, I recommend, electronics DeMYSTiFieD by Stan Gibilisco and published by McGraw Hill. Both of these authors are college teachers (Professors), but do a very good job of making what could be boring reading at times, very interesting and engaging. Very little higher level math is required, but both books teach the same concepts in a more easily understood manner than is possible through a book like, The Electronics of Radio. Either or both of these books will make understanding The Electronics of Radio easier! Have more questions, my email, is [ks4rt@hotmail.com](mailto:ks4rt@hotmail.com).

If you are interested in learning or reviewing radio electronics, I highly recommend this book. The math is not too advanced. The concepts and examples are clearly explained on a level from engineering to the interested layman. Rutledge does a grate job of merging the old technology with that of the 21st century. I also bought "The Science of Radio" by Paul J. Nahin. This is also a great read.

This book is the sole textbook for the two-term intro ee course EE20 at Caltech. Having gone through every page of this thing quite thoroughly, I can say that it is ok at what it attempts to do. It has decent instructions on how to build and test a NorCal 40A radio. Having a well-stocked lab and lots of test equipment helps you get what you should out of the book, and I'd say it's almost essential to actually build the radio to get everything you can out of this book. Beyond the build, this book, and its course, are a sort of intro to circuit analysis, although in this aspect I find it lacking, with brief descriptions of techniques and circuits that either are not clear or leave too much out of the discussion. For more basic/general E&M a book such as Physics for Scientists and Engineers by Serway and Jewett would be far more useful, and for more advanced circuit analysis techniques, something along the lines of Microelectronic Circuits by Sedra and Smith is a good choice. This book would be good for those interested in the inner workings of a radio and some bits and pieces

of RF stuff, however I must emphasize that the building of the radio (which would be fairly expensive) and testing of it are where the real value of this book lie. I must also emphasize that the resulting radio is pretty fiddly and not a practical piece of kit. However, if you buy this book and don't build the radio or do the exercises, then you probably bought the wrong book.

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