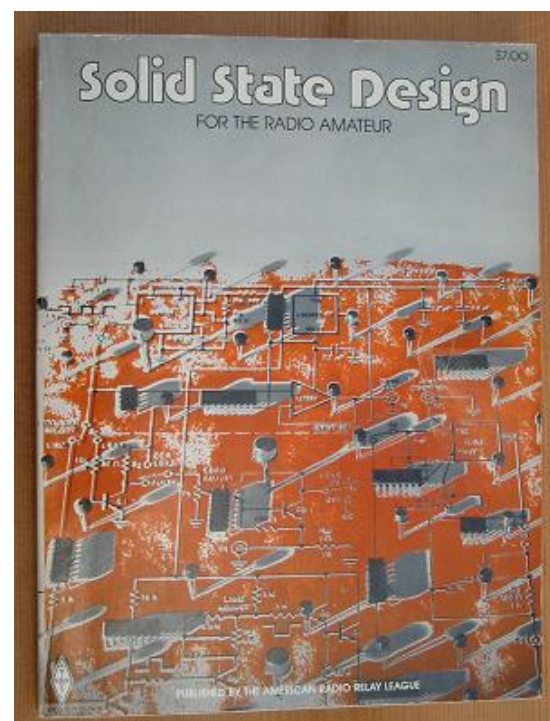
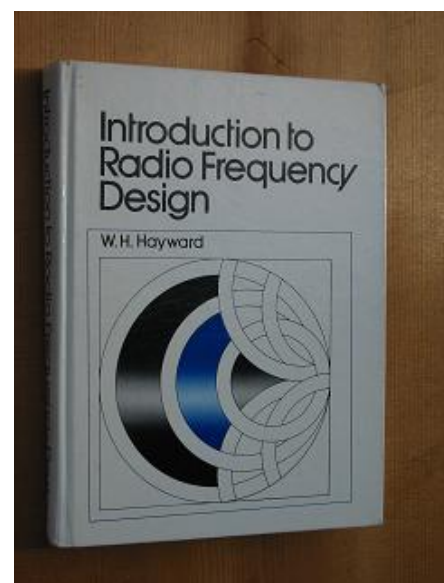


**(Note—all of the books below are out of print. Errata is still available at <http://w7zoi.net/> . 15Oct2022)**

I've participated in three book projects as well as a few software efforts. The relation between the books is not always clear. This web section is intended to clarify it and to point the reader toward errata for some of the books.

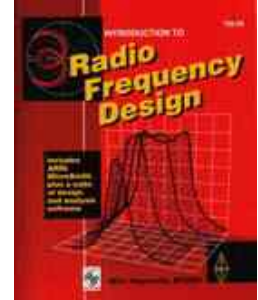


The first book, "Solid State Design for the Radio Amateur," was coauthored with the late Doug DeMaw, W1FB, and was first published in 1977 by ARRL. The volume, SSD, finally went out of print in 2002, well after Doug's untimely death at the hands of leukemia. The major purpose of SSD was to introduce solid state design ideas to an amateur radio community already familiar with vacuum tube methods. The book took on an additional flavor, partially the result of a conscious rule that Doug and I set for ourselves: We would avoid taking an encyclopedic approach found in handbooks of the day where many topics were discussed because they fit with the subject matter. Rather, we would present only those subjects where we had specific personal experience. If we had not built it, we would not write about it. SSD is now out of print and no longer available, although second hand copies are stick kicking around. Some of them are in the piles goodies at hamfests for less than a buck while some eBay prices are completely embarrassing.



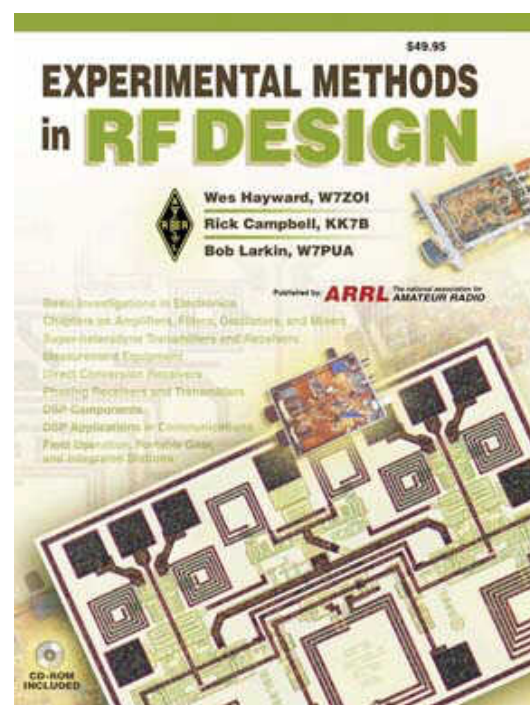
My first engineering level text was Introduction to Radio Frequency Design, first published in hard-back in 1982 by Prentice-Hall. This volume was intended to be a college level text book and industry reference, so it used more mathematics than usually encountered with ham texts. I was working at Tektronix at the time and they are listed on the title page.

The period from 1980 to 1990 in electronics was strongly dominated by a growth of digital design methods with little real interest in RF. Recall that the early PCs appeared in the mid 1980s. So, after 4 IRFD printings, Prentice-Hall dropped it from their catalog in 1989 and the copyright reverted to me.



But the field changed. The 1990s arrived, complete with cellular telephones, ushering in the next "wireless revolution." The original book was out of print, but demand was growing. This led in 1994 to an ARRL paperback edition of IRFD, which now included design software. One errata for the book is listed in the "technical" section of my web site. [Click here.](#)

I started working on a SSD update in the mid 1990s. But career demands left little time for writing. Also, working with RF and Microwave design during the day left me saturated, with little motivation to do more of it on the off hours. A couple of starts were completely trashed. The project finally got off the ground when Rick Campbell, KK7B, agreed to provide material for the book on direct conversion receivers and phasing systems. The project was further accelerated in 1998 when I retired from TriQuint Semiconductor so I could devote more time to writing. We also expanded the book concept by inviting Bob Larkin, W7PUA, to contribute chapters on practical digital signal processing. The result is a follow on, or update for Solid State Design for the Radio Amateur, which we call Experimental Methods in RF Design.



EMRFD was published by ARRL in February of 2003. The book is significantly larger than its parent, SSD, with about twice the number of pages. The text emphasizes experimentation, as reflected by the title. Here, experimentation usually means measurement, and we try to back up the design methods presented in the text with measurements that confirm performance.

EMRFD includes a CD containing Microsoft Windows (c) based software for LC and crystal filter design and analysis, transistor biasing, feedback amplifier design, and multiple stage system design. The CD includes the extensive DSP software for projects that Bob has developed, including his popular DSP-10 transceiver from 1999 QST. Finally, there are a large number of previously published papers from QST, QEX, Communications Quarterly, Proceedings of Microwave Update, and Ham Radio Magazine. These papers relate directly to subject matter from the book.

The first chapter of EMRFD contains a collections of circuits, projects, and hints for the beginning radio experimenter. Chapters 2 through 5 then present a more detailed discussion of amplifiers, filters, oscillators and synthesizers, and finally, mixers and frequency multipliers. Chapter 6 is a long chunk of the book dealing with superhet receivers and transmitters. Considerable material on wide dynamic range systems is included here. Chapter 7 then presents a collection of measurement applications. We do **not** assume that the experimenter will have expensive, lab quality measurement equipment. Rather, we present measurements that the experimenter can do on his or her own without the expensive lab gear. We include information on building a lot of test equipment even including spectrum analyzers. Chapter 8 presents detailed information on direct conversion receivers while phasing methods are detailed in chapter 9. Chapter 10 discusses the basics of digital signal processing (DSP) from the perspective of one accustomed to dealing with more traditional analog signal processing systems. Then, chapter 11 provides DSP applications. The book finishes with chapter 12, a collection of circuits of special personal interest to the three of us including some portable rigs that we take into the mountains of the Pacific West. All chapters include construction projects aimed at illustrating the related concepts. EMRFD was not intended to replace Introduction to RF Design. Rather, it is intended to be a sequel to SSD. IRFD is still available for the reader with a stronger analytic background.

Our goal was not to present EMRFD as an advanced text for engineers, for it is not that. Rather, we wanted to address the needs of the experimentally active radio amateur. We envisioned this as a guy or gal who has built a few kits and has perhaps duplicated a circuit or two from the journals or handbooks. EMRFD mathematics is generally confined to beginning algebra, although considerable trigonometry appears in Chapter 9 on phasing. We do assume that the reader can substitute data into algebraic equations to obtain numeric answers.

[Click here to see errata for EMRFD, including some comments related to the text.](#) Then click on the large colored button.

I've often been asked about the book covers. I have no idea what the circuit is on the front of SSD. But the cover of EMRFD is well defined: It's a photomicrograph of the surface of an integrated circuit designed primarily by KK7B. The IC, built in GaAs, is the front end portion for a microwave phasing type direct conversion receiver. You can read about the circuit, including the complete schematic, at <http://www.highfrequencyelectronics.com>. The IRFD hardcover shows a stylized Smith Chart while the ARRL version presents artwork showing the transfer response of a double tuned circuit. (Many thanks to Sue Fagen at ARRL who did the super artwork for EMRFD and the paperback IRFD.)

A complete abstract is included on my web site, [seen by clicking here.](#) EMRFD and IRFD can both be purchased directly from the ARRL web site.