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BROADBAND: A TRIP TO THE LIBRARY

By RON HRANAC

I was looking at the bookshelves in my office the other day, and realized that out of literally hundreds of books and other reference material lining those shelves, a handful seems to get used way more than the rest. That's not to say the others sit there and collect dust, but a select few clearly have earned their tattered covers. The following is a list—in no particular order—of technical references to which I refer most often. If I were in a situation where I had to put together a technical library from scratch, these would definitely be at the top of my shopping list.

Modern Cable Television Technology, by Walter Ciciora, James Farmer and David Large. Morgan Kaufmann, 1999. ISBN 1-55860-416-2

No question that this book gets referred to more than any other in my collection. Ciciora, Farmer and Large wrote what I consider to be the absolute best cable engineering reference book. Period. I've got a ton of small sticky notes marking various pages. If I could have only one cable-related engineering book, this would be it.

Cable Television Proof of Performance, by Jeffrey Thomas. Prentice Hall PTR, 1995. ISBN 0-13-306382-8

This is one of the better references about how spectrum analyzers work, and it manages to do so without getting into what I call PhD-level theory. It's also a top-notch tutorial about how to use spectrum analyzers to perform the measurements required in cable network proof-of-performance tests. In addition to the how, it includes copious amounts of why in Thomas' well-written explanations.

Broadband Return Systems for Hybrid Fiber/Coax Cable TV Networks, by Donald Raskin and Dean Stoneback. Prentice Hall PTR, 1998. ISBN 0-13-636515-9

Two-way or not two-way, that is the question. Most of the answers will be found here, whether the application is a move from one-way to two-way, or one involving a system that has been a two-way system for several years.

Telecommunications Transmission Handbook, Second Edition, by Roger Freeman. John Wiley & Sons, 1981. ISBN 0-471-08029-2

Even though the book is now up to the fourth edition—and one of these days I really should pick up a copy of the latest version—I still find the content to be quite useful. This 700+ page reference focuses on telephony, data, telegraph, facsimile and video, and includes information on telephone networks, earth station engineering, high frequency (HF) radio, digital modulation, microwave and fiber optics. Granted, things have changed a lot since this particular version was published, but the basics remain the same. Much like Modern Cable Television Technology, this book has numerous sticky notes marking pages of interest.

Fiber Optic Cable A LightGuide, Second Edition, by James Refi. AVO Training Institute, 2001. ISBN 1-56016-076-4

I think I said it best when I reviewed the first edition of this book back in 1992: "Let me assure you that the material in this book is reference quality. With this book you will gain a knowledge of the physical medium of fiber optics communicated in the author's understandable style. It can easily serve double-duty as a training aid and an engineering reference." The second edition is every bit as good as the first, and then some.

DigiPoints, Volume One, by Justin Junkus and Michael Sawyer, SCTE, 1998

This is a well-written source of information about things digital. Communications Technology's columnist Jay Junkus has since penned a second DigiPoints, continuing where the first volume leaves off.

The ARRL Handbook, American Radio Relay League, 2000 edition. ISBN 0-87259-183-2

Even though the Handbook's primary target audience is amateur ("ham") radio operators, just about any edition of the Handbook is an excellent source of general information about electronics and communications. I have several editions dating back to the 1970s, and a fairly recent edition on CD-ROM. I'm surprised how often I refer to the Handbook for information applicable to cable engineering.

The ARRL Antenna Book, 18th Edition. American Radio Relay League, 1997. ISBN 0-87259-613-3

Much like the Handbook the ARRL Antenna Book focuses on practical theory and projects for ham radio operators. Even so, it includes a substantial amount of reference material that is applicable outside the world of ham radio. One other antenna reference book to which I refer frequently is John Kraus's Antennas, Second Edition (McGraw-Hill, 1988, ISBN 0-07-035422-7). The latter is a whole lot thicker on the theory and math side of things, though.

Data Over Cable Service Interface Specification Radio Frequency Interface Specification, DOCSIS 1.0, 1.1, 2.0

Recommended downstream and upstream performance parameters for reliable data transmission on cable networks can be found here. The specs aren't books—though they could be, given their sizes—and I don't even have a hard copy of any of the three documents. I do have them on my computer and in my Internet browser favorites list, and refer to the specs often.

The ARRL RFI Book. American Radio Relay League, 1998-1999. ISBN 0-87259-683-4

The "RFI" in the book's title stands for radio frequency interference. I find the material useful in helping to understand the how and why behind impairments that affect RF signals, including some of those that affect the reverse path in two-way systems.

NCTA Recommended Practices for Measurements on Cable Television Systems, Second Edition. National Cable Telecommunications Association, 1993.

A good resource for detailed RF and video measurement procedures. The upstream supplement is an excellent resource. A third edition of Recommended Practices is now available in book form and CD-ROM—something I need to add to my collection.

Federal Communications Commission Rules, Part 76

The cable rules don't change often, but even so I like to be able to refer to the latest version. Here, too, I don't have a hard copy, but keep a recent copy on my computer. I also maintain a link to the FCC's Web site in my Internet browser favorites list.

Back issues of Communications Technology

A lot of what has appeared in Communications Technology over the years is timeless, and serves as great reference material. Yep, I'm a pack rat. I've got issues going back to the mid-80s, although the collection isn't complete. I'd love to see the publisher make all back issues available on CD-ROM, which would make more room on my bookshelves for even more engineering books!

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