



TECHNICAL COLUMNS

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Originally appeared in the **September 2004** issue of *Communications Technology*.

MAKING THE BEST BETTER

By RON HRANAC

For the past several months I've been perusing a new reference that's found a home on my trusty engineering bookshelf: *Modern Cable Television Technology: Video, Voice, and Data Communications*, 2nd Edition, by Walter Ciciora, James Farmer, David Large and Michael Adams; Morgan Kaufmann Publishers, 2004; ISBN 1-55860-828-1. Like my copy of the first edition, this one is getting regular use, lots of sticky-notes as bookmarks, and the beginning of what will undoubtedly become a thoroughly tattered cover.

Bottom line: If you don't yet have a copy, get one.

What's new in the 2nd edition? Plenty. First is the addition of a new co-author, industry veteran Michael Adams. Second is size, nearly 200 pages more than the first edition; 25 chapters instead of 20; and a number of updates and material applicable to cable technology introduced since the book's first edition was published in 1999.

As with the earlier tome, I didn't sit down and read the book cover to cover. I have skimmed its contents, picked a few parts to read in-depth, and have been using *Modern Cable Television Technology*, 2nd Ed. as a job-related reference on a regular basis.

Glitches? A few that slipped past the editor, such as the misspelling of Ron Cotten's last name (that happened in the first edition, too); the occasional department of redundancy department, along the lines of "16-QAM modulation"; use of the term "acronym" where "abbreviation" would have been the correct choice; and "Cable-Tek Expo" (oops!). Ok, I really had to dig to find these nits, and they absolutely have nothing to do with the real gold in this book, its value as what is without a doubt the best cable engineering reference, period!

I found one possible technical gotcha, and I say possible because the formula I think is right might be wrong. The book's formula for modulation error ratio (MER) on page 179 is $MER = 10\log(\text{RMS error magnitude}/\text{RMS vector magnitude})$. One of my other references says it should be $MER = 10\log(\text{average error power}/\text{average symbol power})$. As a side note, the more formal mathematical definition of MER is a rather gnarly equation that I'll spare you and *Communications Technology's* editors. As usual, I digress.

Content overview

The second edition—much like the first edition—is divided into major sections. Each covers a general category and includes one to seven chapters, depending on subject matter. Here's an overview:

A quick side note: The very brief descriptions here cannot even come close to doing the book justice—even the table of contents is in-depth and comprehensive!

Whew!

The authors included a handy channel allocation chart and video waveform info in the appendix, as well as an expanded glossary of terms and abbreviations.



When I reviewed the first edition (June 1999 *Communications Technology*, www.broadband-pbimedia.com/archives/ct/0699/ct0699s.htm) I noted that my only real complaint was that the book wasn't big enough—even at more than 800 pages! Co-author Jim Farmer admitted back then that they would have liked to include a lot more, not an easy task when publishing a book of this magnitude. The second edition is much expanded compared to the first, and it could easily have been even bigger than its 1,053+ pages!

My comments in my 1999 review apply to the second edition:

"Modern Cable Television Technology will appeal to a fairly broad audience. The subject matter intentionally covers much of the material included in the Society of Cable Telecommunications Engineers' certification programs and, as such, will be a good resource for exam preparation.

"For those in search of a truly comprehensive cable engineering reference volume, you simply won't find anything better. The overall writing style will appeal to most readers and is a reflection of the [four] co-authors' excellent communication skills. If you've ever heard any of them speak at engineering conferences, you'll know what I mean. The book does contain a fair amount of math in places, offering a rigorous analysis of several topics."

I know the second edition has been in print for just a few months, but if the authors can be convinced to pen a third edition down the road a bit, here's my wish list: More reference information in the appendix; and expand the chart on page 170 (Figure 4.17) down to 1.0E-08 bit error rate (BER), which, incidentally, is the cable modem post-forward error correction (FEC) value in the DOCSIS Radio Frequency Interface Specification. Beyond that, it's hard to think of any way to improve upon the best.

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