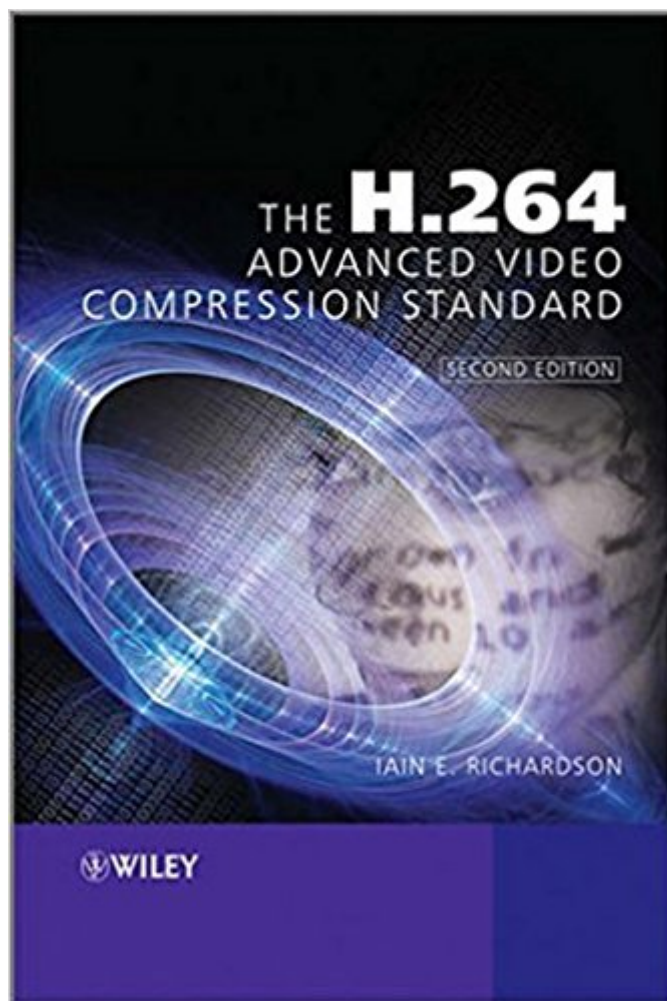


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# The H.264 Advanced Video Compression Standard



## Synopsis

H.264 Advanced Video Coding or MPEG-4 Part 10 is fundamental to a growing range of markets such as high definition broadcasting, internet video sharing, mobile video and digital surveillance. This book reflects the growing importance and implementation of H.264 video technology. Offering a detailed overview of the system, it explains the syntax, tools and features of H.264 and equips readers with practical advice on how to get the most out of the standard. Packed with clear examples and illustrations to explain H.264 technology in an accessible and practical way. Covers basic video coding concepts, video formats and visual quality. Explains how to measure and optimise the performance of H.264 and how to balance bitrate, computation and video quality. Analyses recent work on scalable and multi-view versions of H.264, case studies of H.264 codecs and new technological developments such as the popular High Profile extensions. An invaluable companion for developers, broadcasters, system integrators, academics and students who want to master this burgeoning state-of-the-art technology. "[This book] unravels the mysteries behind the latest H.264 standard and delves deeper into each of the operations in the codec. The reader can implement (simulate, design, evaluate, optimize) the codec with all profiles and levels. The book ends with extensions and directions (such as SVC and MVC) for further research."Â Professor K. R. Rao, The University of Texas at Arlington, co-inventor of the Discrete Cosine Transform

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## Customer Reviews

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Very easy to read, comprehensive, detailed. You don't need to be any kind of picture processing expert to understand the book and at the end you will know everything that is needed to decide upon technological choices of implementation or to understand the original standard.

Excellent book. Very comprehensive!

This is a very clear, well written overview of video compression particularly H.264. It should be accessible to anyone with a CS/engineering background without requiring significant knowledge of information theory. The book is richly illustrated with diagrams that clearly show how the various prediction and artifact removal schemes work. These illustrations are often paired with images from test videos demonstrating the visual impact of the techniques under discussion. Having just finished it, I now feel that I have some understanding of how H.264 works, how it is different and how it will likely evolve -- highly recommended.

After spending the first few weeks pouring over the 600+ page specification, I found this book and immediately bought. I did not regret it. It isn't an easy read, but the author did a great job of explaining things, starting from a high level perspective then moving down into more detail. The end

result is that you will have enough background to be able to understand and implement the specification.

I bought this book thinking that it would be more like the book by Mitchell, et al, on MPEG video compression,

[http://www..com/gp/product/0412087715/ref=s9\\_simh\\_gw\\_p14\\_d7\\_i2?pf\\_rd\\_m=ATVPDKIKX0DER&pf\\_rd\\_s=center-2&pf\\_rd\\_r=0CGPMPA8QBDJDDXEH93J&pf\\_rd\\_t=101&pf\\_rd\\_p=470938631&pf\\_rd\\_i=507846](http://www..com/gp/product/0412087715/ref=s9_simh_gw_p14_d7_i2?pf_rd_m=ATVPDKIKX0DER&pf_rd_s=center-2&pf_rd_r=0CGPMPA8QBDJDDXEH93J&pf_rd_t=101&pf_rd_p=470938631&pf_rd_i=507846) . That book provides a lot of detail. This book is has "Standard" in the title, but it is more of an overview than an expansion on the ITU standard itself (676 pages, and very dry reading). For example, section 4.7.1 uses two paragraphs along with bullet points to convey the information that H.264, relative to other codecs, has better picture quality at a fixed bitrate or a lower bitrate for the same quality. Carriage of H.264 gets short shrift. This looks like a repackaging of one of the author's previous books. In short, if you are looking for the Mitchell equivalent for H.264, this is not it.

I read this book last week and while browsing for another book of similar quality to read on Wifi, I saw the 2-star rating given to this book. I think this book deserves a much better review than that. I had been looking for a book on H.264 for quite a long time until I found this one. And, as I said, I read it last week and found it to be one of the best books on H.264 by far. The book provides a great overview of the H.264 spec as well as a lot of low level details such as stream format, macroblocks, intra- and inter-frame prediction, prediction mode, transform, etc. The chapter on prediction was especially well-written and answered a lot of questions that I had such as how quarter pixel resolution prediction is performed, the need for interpolating the frames in the decoded frame buffer, etc. In addition, the book also provides a much more detailed explanation of many simple, yet important-to-understand terms such as 4:2:0, macroblocks, slices, etc. More important, it helped me put together the various pieces, significantly strengthening my understanding in this area. In short, if you want to get an idea how H.264 works, this is a great book to start with. I even suspect that this might be the only you will ever need, unless you are actually designing the encoder/decode silicon. It certainly beats reading the H.264 spec itself, at least for me anyway.

There is nothing new compared to the old version. It doesn't cover information in depth. If I want to study H.264, I think the book tell us less. Acutally it can't help us understand how H.264 works. The only chapter worth to read is the chapter of "transform and quantization".

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