

Take Control

of Digital TV: Second Edition

by Clark Humphrey

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This is a free sample of "Take Control of Digital TV."
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READ ME FIRST

Welcome to *Take Control of Digital TV: Second Edition*, version 2.1.

This book tells you how to choose, purchase, set up, and use a digital TV (DTV) receiver, and gives you ideas for a variety of peripherals you might attach to a TV, including devices that help you transfer digital video content to and from a TV and a personal computer. This book was written by Clark Humphrey, edited by Lea Galanter, and published by TidBITS Publishing Inc.

This book is not designed to replace the documentation that comes with your digital TV hardware; nor does it compare or recommend specific products. This book looks only at TV hardware and transmissions in the United States and Canada. Other countries are switching to digital TV at their own paces. (The Netherlands and some regions in Germany and Italy, for example, have already turned off their analog TV transmissions and gone all-digital.)

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What's New in Version 2.1

This version incorporates several dozen updates, scattered throughout the text, to information about products, prices, TV channels, and programs. It includes updates about:

- Dozens of new high-definition cable channels, and DirecTV's promise of even more HD choices. See [Consider the Source](#) (p. 19) and [Find HDTV Programming](#) (p. 48).

- The newest products by Elgato and Miglia to connect Macs to TV broadcasting sources, add digital VCR features, and convert video files for the iPod and Apple TV. See [Record broadcast TV](#) (p. 66).
- Apple's iPhone and the new generation of video-enabled iPods. See [Consider an iPod or an iPhone](#) (p. 76).
- New alliances in the next-generation DVD wars [HD on DVD: The Format War](#) (p 52).
- Alternate means of receiving video programming. See [FIOS](#) (p. 21) and [Use Your Computer to Watch TV](#) (p. 63).

What Was New in Version 2.0

This edition incorporated several dozen prior updates to information about digital TV products and programming. It also included:

- New and expanded material in a new [Use Your Computer to Watch TV](#) (p. 63) section, with discussions of a variety of methods and sources for downloading video content from the Internet and for receiving broadcast television on a computer.
- New sections about new technologies—[Consider an Apple TV](#) (p. 72) and [Consider an iPod or an iPhone](#) (p. 76).
- [Case Studies](#) from Mac celebrities Andy Ihnatko, Dan Frakes, and Chad Magendanz about digital TV setups in their homes (p. 79).

INTRODUCTION

Television has long been derided as “the idiot box,” often by critics who proclaim themselves too intelligent to bother with the medium. But these days, shopping for a new TV set can make even tech-savvy folks feel like idiots.

If you're like many people, you upgrade your computer equipment a lot more often than you upgrade your TV equipment. You might have heard or read something about the new digital TV (known as *DTV*) and high-definition TV (*HDTV*) technologies. But on your first inspection of these in a store or on a Web site, you confront a baffling array of buzzwords, acronyms, and prices.

This book tells you what those terms mean, how to choose the new set that's right for you, and how to confidently plunge into the digital TV viewing experience.

How did such a basic consumer technology become so complex? To put it simply, the technologies of TV production, distribution, and reception are finally catching up to the digital age. The trend began about a decade ago, on the production and transmission sides. But in the last few years, the technologies that have driven computer displays have made their way into consumer TV sets.

In the next few years, the entire TV broadcasting industry will move to digital transmission. The analog technology that brought us everything from *What's My Line?* to *Pimp My Ride* will go away forever.

These two trends—digital TV production and distribution, and better displays for viewing TV—converge in HDTV, a new all-digital transmission standard that offers beautiful, sharp images and surround sound.

All HDTV is DTV, but not all DTV is HDTV. That's just one of the things the first-time DTV buyer must know. There is much more.

This ebook teaches you about digital TV, systematically. By the time you're through, you'll have a state-of-the-art installation that fits your budget, your living space, and your viewing habits. You'll also know a bit more about online and other video sources. The shows you're watching might not be any smarter, but you will be.

QUICK START

To enjoy the digital TV of your dreams, you must know what's available and how to get it running. You can read this book in order or flip ahead to any section listed here.

Research digital TV features:

- Learn how TV's changing—[Understand the Analog-to-Digital Transition](#) (p. 6).
- Sort through the acronyms—DTV, SDTV, EDTV, and HDTV—and [Choose Your Signal](#) (p. 12).
- Decide how to receive programs in [Consider the Source](#) (p. 19).
- [Determine Where to Put Your Set](#) (p. 23).
- [Choose Your Hardware](#) (p. 27), whether it's some sort of tube, a flat screen, or a projection set.

Buy your equipment:

- [Decide Where to Buy Your TV](#) (p. 34).

Set up your TV:

- Hook it all up (p. 38): [Connect the Cables](#), [Set Up the Sound System](#), [Adjust Your Set](#), and [Set Up a Set-Top Box](#).
- Start enjoying your television—[Find HDTV Programming](#) (p. 48).

Add extras:

- Add a variety of peripherals. For instance, you might [Consider a DVD Recorder](#) (p. 58), and make your TV conform to your schedule. [Add Peripherals](#) (p. 55) has lots of suggestions.
- Read [Use Your Computer to Watch TV](#) (p. 63) to learn how to put video content on your computer, so that you can then play it on your computer screen, television screen, or an iPod.
- Although some of the options discussed in [Use Your Computer to Watch TV](#) will move video from your computer to a television screen, you might especially [Consider an Apple TV](#) (p. 72).
- Take your video to go! [Consider an iPod or an iPhone](#) (p. 76).

Dispose of your old set:

- [Discard or Recycle It](#) or [Sell It or Give It Away](#) (both on p. 77).

UNDERSTAND THE ANALOG-TO-DIGITAL TRANSITION

Television's original developers and regulators did their best to give us a simple, easy-to-use technology, given the primitive tools and mechanisms then at hand. The ability to send moving pictures through the air in real time was one miracle; making their reception easy enough for the average family was another.

(If you're less interested in history but more interested in choosing digital TV gear, and getting it going, you can jump ahead to the next section, [Choose Your Signal](#).)

The Past: Analog

Regularly scheduled telecasts began in the United States in 1939 (3 years after they'd begun in Britain). The first Canadian stations launched in 1952; by then, many Canadians could already receive northern U.S. stations.

The *National Television System Committee* (NTSC), made up of corporate and governmental representatives, devised the transmission standards for North American TV. They included 525 horizontal lines (including 480 devoted to the picture), at 60 [interlaced](#) fields or half-frames (for 30 total [frames](#)) of black-and-white pictures per second, transmitted on 6 MHz channels, with frequency-modulated (FM) audio.

In the early 1950s, a second NTSC was formed to add color information to the signals. The committee chose RCA's "compatible" color scheme, which enabled existing black-and-white TV sets to receive monochrome versions of color transmissions. It did this by adding a color signal (known as *chrominance*) to the existing brightness signal (known as *luminance*). For more than 4 decades, all video innovations (videotape, camcorders, cable, VCRs, and transistor- and chip-based equipment) sold in the United States and Canada would be made to NTSC specifications.

By the mid-1980s, the NTSC phased in stereo sound and *closed captioning* (optional subtitles for the hearing impaired, as described at http://en.wikipedia.org/wiki/Closed_captioning). They were the last major additions to NTSC analog TV.

CHOOSE YOUR SIGNAL

Compared to the electronics industry's efforts to keep early TV simple to use, today's TV-set makers have confused consumers with a baffling array of standards and acronyms. If you're like most consumers, you keep a TV a lot longer than you keep a personal computer, so even if you're buying on a budget, try not to settle for a lesser standard than you can imagine yourself wanting. In this section, I explain the three choices—SDTV, EDTV, and HDTV. As you read, refer to **Table 1**, which summarizes the technical details.

Table 1: Digital TV Standards				
Standard	Pixels	Aspect Ratio	Scanning	Frames per Second
SDTV	640 x 480	4:3	Interlaced	30
EDTV	640 x 480	4:3	Progressive	30
HDTV: 720p	1,280 x 720	16:9	Progressive	24 to 60
HDTV: 1,080i	1,920 x 1,080	16:9	Interlaced	24 to 60
"Full HDTV": 1,080p	1,920 x 1,080	16:9	Progressive	24 to 60
Note: All HD and HD-Ready sets display 480i, 720p, and 1,080i signals, and convert them to match the sets' resolution. Some convert 480i signals into 480p.				

DTV a.k.a. SDTV: Good

Plain vanilla digital TV, also known as *SDTV*, offers a 480-line interlaced image (480i; the *i* in "480i" means "interlaced"). This is equal to the old 525-line analog TV, and it's what most cable and satellite channels (and most of the non-prime-time schedules on broadcast channels) currently send out.

Why is 480 as good as 525? Because early cathode-ray tube ([CRT](#)) receivers needed time for the electronic beam to reset itself from the bottom to the top of the screen. So the engineers and bureaucrats who set the NTSC standard built in a [vertical blanking interval](#) of 45 lines between the image frames. On an old set with faulty vertical hold, you could see this interval as a sort of stretched-out Chevrolet logo shape as the image frames scrolled up or down. In later years, broadcasters have used this blank space to transmit closed-captioning and other data. Despite having the same horizontal resolution, SDTV is still

CONSIDER THE SOURCE

When TV broadcasting began, receiving signals was deceptively simple. If you lived in town, you used a small rabbit-ears antenna placed on top of your set (or a car-radio-type antenna protruding from the set). If you lived out of town, you stuck a multipronged antenna on the roof. If you lived *really* out of town, or where local topography obstructed reception, you subscribed to an early 12-channel cable system. (I say “deceptively simple” because, before TV sets had automatic self-adjustment features, you may have had to regularly reposition the antenna or fiddle with fine-tuning buttons.)

When multichannel cable, and then home satellite services, emerged in the 1980s, even this discipline went away. The cable guy installed and set up everything. All you had to do was change the channel, which, thanks to remote controls, you could do from your seat.

But in the digital TV age, you have to do more of the work yourself. And before you do that, you have to choose from whence your shows will come, which depends on what channels you want, at what price, from what’s available in your location. The equipment you buy depends on these decisions.

Over-the-Air

As mentioned in the previous section, some digital TV sets (integrated HDTV) come with a built-in digital TV tuner. If you want to watch digital TV signals from your own antenna, you’ll need a digital tuner, either built into the set or (in the case of an HD Ready TV) attached to it. If all your viewing content will come from cable, satellite, or DVDs, you won’t need to add a tuner.

By mid-2007, almost every network-affiliate station in the United States, and most independent local stations, were running digital simulcast channels. The major networks now show all their filmed prime-time shows in HD, as well as major sporting events and selected other shows. (See [Find HDTV Programming](#).)

Over-the-air (OTA) might be the inexpensive choice for you if you live within a metro area, you want your local broadcast channels, and you don’t need cable-satellite channels (such as CNN, ESPN, and HBO). Or, if you subscribe to a satellite service that offers few or no “HD

DETERMINE WHERE TO PUT YOUR SET

Digital TV sets come in a staggering array of shapes, sizes, and types. Before you choose which one's for you, decide where to put it, and also where to place the external speakers, if you use any.

Home Theater

Many larger new houses these days are designed with a room dedicated to watching television and playing video games. Other households are turning unused or under-used rooms (basements, rec rooms, studies, empty-nest bedrooms, even garages and attics) into home theaters.

There's literally no limit to the time and money you can devote to installing a home theater and creating its environment. If you want only to separate TV viewing and video-game playing from your household's other activities, you could simply clean out an unused room, stick a TV/DVD combo set in it, hook up a couple of stereo speakers, and maybe add a chair or two. At the other extreme, you could undertake a full-blown home improvement project, complete with acoustically "deadening" wallboards and carpeting, wall-mounted speakers, a wall-mounted screen, burnished-leather loge seats, a plush crimson theater curtain, and a retro-decorated lobby out in front complete with an old-time popcorn maker. Such an installation probably involves a professional consultant and installer.

What TV set works best: Choose as big and as elaborate a system as you can afford (and can fit the room).

Living Room

Some households don't have an entire room to devote to a home theater, or choose to devote such a room to other priorities. For such a room, don't pick a display that overwhelms. As a boom box is more appropriate for a college dorm room than a \$10,000 audiophile system, so is a 20- to 40-inch direct-view TV with built-in binaural speakers more appropriate for a living room than a mammoth projection set. You also might not want to place surround-sound speakers, and all their wires, in a multipurpose room where tiny tots and house pets might trip over them.

CHOOSE YOUR HARDWARE

Once you know where your set's going, you can choose the right set for the setting—a [Direct-View Set](#) (either [Tube](#) or [Flat Screen](#)), or a [Projection](#) set.

I suggest that you first read this section to get an overview of the many available options. As you read, make a note of choices that you want to rule out—for instance, you might rule out a CRT because it is an older, heavier technology, or you might rule out a digital light processing (DLP) one because it is too expensive and too large.

After that, you will probably still have several choices that you'd be willing to consider purchasing. To further narrow the options, visit a couple of stores and look at the TVs on display. Try to evaluate them based on these criteria:

- Black levels
- Image sharpness
- Image brightness, particularly in a living-room situation

You may find that one technology works best for your eyes, or that a store is having a particularly good deal that day on a particular model.

TIP As you narrow down which specific models you wish to seriously consider, you should also think about how important the sound system is to you and take note of the types of sound systems available. The section [Set Up the Sound System](#) has some notes on this topic.

You should also skim [Set Up Your TV](#) and [Add Peripherals](#) to learn about cables, receivers, connectors, and other small bits of hardware than you may need.

DECIDE WHERE TO BUY YOUR TV

Just as digital TVs offer more choices than ever before, so does the art of obtaining them. The friendly downtown TV-appliance store has largely given way to bigger, more efficient operations.

You'll probably find that major chains, specialty stores, and online retailers have similar pricing, at least on non-clearance prices for identical models. But different retailers have clearance discounts on different models at different times. Also, online retailers and discount chains often carry larger selections of minor-brand products, which can be less expensive than the major advertised brands. Retailers also differentiate themselves with added-value services (delivery, installation, extended warranties).

TIP Wherever you buy your set, it will be a major purchase, perhaps the biggest you'll make this year on a credit card. Make sure the card you use offers purchase protection (lest the hardware have an unexpected deficiency, such as dead pixels) and *price protection* (lest the set suddenly become hundreds cheaper right after you've bought it).

Major Chain Stores

Your first stop may be the major chain store. Among the advantages to major chains: They show all the display technologies we've talked about in operation (that's important, since what TV technology to buy is as much an aesthetic decision as anything else). You can drive home with your purchase. You know where to go for service issues. Among the disadvantages to major chains: Customer service can be spotty. Salespeople, when they are available, might be more interested in what they want to sell than in what you want to buy.

These chains also offer online shopping, but product selection and pricing may be different online than in the chains' brick-and-mortar outlets. (Radio Shack, in particular, offers far more DTV products on their Web site than in stores.)

SET UP YOUR TV

Now that you have the hardware and a place to put it, let's put it all together.

Connect the Cables

HDTV and progressive-scan DVD images require extra bandwidth, which requires different wires than the relatively thin black cables you used to attach a VHS player to your old analog TV. Your hardware vendor or cable-satellite company should supply you with the right cables, but sometimes this doesn't happen. (Certain progressive-scan DVD players don't come with the cables needed to send a progressive-scan image to your set.)

Here are some of the more prominent types of cables you might buy or need, in ascending order of transmission quality:

- **Composite video:** This is the connector supplied for decades with analog VCRs and camcorders. As you can see in **Figure 4**, it includes a single yellow *RCA plug* (named for RCA, the company that developed it in the late 1940s) for the picture, plus white and red plugs, respectively, for the left and right audio channels. The bandwidth of a composite video signal is about 3.6 MHz; audio bandwidth is about 20 KHz. This is adequate for connecting many legacy peripherals, such as VHS tape players, to your DTV—but just adequate. If those peripherals have outlets for any of the other connectors in this list, use them instead.

FIGURE 4



Three color-coded RCA cables plug in to a composite video port.

FIND HDTV PROGRAMMING

The greatest TV hardware in the world is pretty much worthless without anything to play on it. As a computer needs its software, a TV needs its programming. And as with computers, the hardware makers have had to convince the software developers (networks and stations) to make the investment in new programs. Without enough HDTV shows, few people would buy HDTV sets. Without enough HDTV sets in use, few producers would make HDTV shows.

TIP The Internet is becoming an interesting source of video content, including some in HD. [Download video from the Internet](#) has more info.

Broadcast Networks and Local Channels

The broadcast networks were among the first to jump on the HD programming bandwagon. Their audience sizes had steadily dropped in the 1990s, as more viewers turned to cable and satellite channels, home video, video games, or non-TV pursuits altogether. By adopting HDTV, at least some of the time, they hoped to stem the defections.

Just as it took broadcasters years to put all their shows into color, it's taking years for them to put all their shows into HD. Here's their progress thus far:

- **Prime time shows:** The first network shows to go HD were filmed prime time shows. They were the most expensive shows to produce (except for some sports events with huge broadcast-rights fees). Yet they were also among the easiest shows to convert to HD. It was easy to switch film cameras to HD's wider screen image. Now, the networks are increasingly producing comedies, and even a few dramas, directly on HD video.

As of early 2007, you can assume that almost every evening dramatic or comedy series on a major broadcast network is in HDTV. (The main exceptions: Fox's animated shows.) Most videotaped prime-time reality shows and news magazines are still made in old-fashioned NTSC, and digitally up-converted on the networks'

ADD PERIPHERALS

The long-hyped digital convergence of home media is finally under way. Digital TV is the key to bringing this unification to your own home. In this section I briefly explain how to bring your TV-based and computer-based systems together in perfect harmony.

Consider an A/V Receiver

Instead of attaching all your audio and video inputs to the different connectors on your digital TV set, or daisy-chaining them in a potentially signal-degrading sequence from one machine to another, you can buy an A/V receiver to act as the hub of your home entertainment network. All your sources (DVD, VCR, cable or satellite box, CD player) go into the A/V receiver and back out to your DTV monitor and speakers. Almost all HTIB packages include an A/V receiver. Some A/V receivers include *ambience processing*, a bit of digital trickery to provide fake surround effects to music CDs.

Here are some pros and cons to using an A/V receiver:

- **Pros:** Stronger signals, cleaner connections, fewer remote controls, and consistent decoding of surround sound. Some home-theater experts claim you shouldn't hook up surround speakers without an A/V receiver to route signals to them, even if your DTV set or DVD player has separate surround-speaker outlets.
- **Cons:** Less flexibility. It's an extra expense (\$200–\$1,000 for some current models) you might not absolutely need, particularly if you're using only two speakers.

Consider a DVD Player

Until either Blu-ray or HD-DVD players and discs find more consumer acceptance, today's DVDs are the best tangible source of video you can get. The tens of thousands of DVD titles released in the past 9 years (yes, it's only been that long) will still play on your digital TV gear, especially in widescreen and surround sound, and will look crisper and more detailed than they ever did on an analog TV.

DISPOSE OF YOUR OLD SET

You've now assembled your spectacular new TV gear. But now you have an old analog TV just sitting there. Instead of joyously beaming hit shows and classic movies out at you, it's shut off, unplugged, and unloved, waiting for you to do something with it. Here's what to do.

Discard or Recycle It

Don't stick your old set in a trash can or Dumpster. It's a waste of reusable materials, and adds potentially toxic matter (including lead and various metals) to landfills and water tables. In some localities, it's illegal to dump TV and computer equipment in the regular trash. Discard it properly, at an electronics recycling depot in your area. To find one, try one of these Web sites:

- <http://www.freecycle.org/>
- <http://rethink.ebay.com/>
- <http://www.ehso.com/cssrecycling/hhewastewhere.htm>

Hewlett-Packard, Dell, and Sony now offer return-for-recycling programs for electronic products. See:

- <http://www.hp.com/hpinfo/globalcitizenship/environment/return>
- <http://www.dell.com/content/topics/global.aspx/corp/environment/en/recycling>
- <http://www.sony.com/recycle>

Sell It or Give It Away

Don't expect a huge payoff for your analog TV on an auction Web site or at a garage sale, thanks to the massive deflation in home electronics prices over the past decades. (Exception: A few classic models have become collectors' items, such as the stylized Philco Predicta sets from the late 1950s.)

If you don't need the money, consider donating your set to a local charity thrift store that can sell it, or to a nonprofit agency that can use it—a nursing home, low-income housing provider, school, arts agency, or even a conceptual artist working on a "Kill Your TV"

CASE STUDIES

Here are some true-life tales from a few Macintosh personalities who've set up their own digital TV installations. Dan and Andy share the details of their tech-laden systems, while Chad shares a tale of consumer woe.

Dan Frakes

Most of our family TV watching—perhaps 10 to 15 hours a week—takes place on a 34-inch Sony CRT HDTV monitor. When we bought the TV a few years ago, flat-panel models were still ridiculously expensive, and a CRT was (and still is) much better than a flat-panel at scaling non-HD content for a widescreen display (a useful feature given the paucity of HD broadcasts). Although the TV is bulky and heavy, it has an amazing picture—still better than many current flat-panel displays.

Connected to the TV are a TiVo Series2 (I'd love a Series3, but I won't pay \$800), a DVD player, a VCR, a Comcast Digital Cable box (for HD channels, since our TV doesn't have a built-in HDTV tuner), and—most recently—an Apple TV.

The TiVo is on our home network, which lets us transfer shows between that TiVo and the one in our bedroom, and also lets me download TiVo-recorded content to my Mac. Having the TiVo on the network also allows for remote scheduling.

In terms of “home theater” audio, things change every few months as I test different products for work. Right now, we've got a ZVOX 325 single-box audio system (<http://zvoxaudio.com/>), which doesn't provide true **surround sound** but is quite good for its size and fits nicely under the TV. (It also sounds very good with music from the Apple TV.)

The biggest obstacle to using all this gear has been the myriad remotes—explaining to everyone in the family how to change the input settings on the TV, and then which remote to use for which source, has been a frequent task. However, I've been testing a Logitech Harmony remote (<http://www.logitech.com/>), and although it has a few minor annoyances, it's been a huge hit in the household. You program the remote, using your computer, to control “activities,” which are then listed on the remote's LCD screen. For example, one

LEARN MORE

To learn more about topics covered in this book, consult the following resources.

Buyers' Guides

- **CNET's TV Buying Guide** (What gear is in the marketplace now, and what gear might be most appropriate for you): http://reviews.cnet.com/4520-7608_7-1016109-2.html
- **HDTV Knowledge at Digital Home Canada** (An intro to the technology, and a buying guide emphasizing models sold in Canada): <http://www.digitalhomecanada.com/hdtv/>

Home Theater Set Up and How-To

- *Secrets of Home Theater*
by Mike Wood, published by New Riders/Peachpit Press

This book's cover bares the logo of the late, lamented cable channel TechTV, but the information within it (about the minutiae of turning that spare room into a DTV palace) remains fresh.
- **Audio/Video Interiors** (Tips for both home theater and living-room media installations): <http://www.audiovideointeriors.com/>
- **Home Theater Focus** (Simple, easy-to-understand introductions to DTV and home theater purchase, setup, and operation): <http://www.hometheaterfocus.com/>
- **"Let Your PC Record Your Favorite TV Shows"** (From 2005, a still-relevant quick intro to using a computer as a digital video recorder): http://www.usatoday.com/tech/columnist/kimkomando/2005-10-17-tv-pc_x.htm

Digital TV Technology

- **AV Science Forum** (Ongoing discussions on all topics relating to digital entertainment): <http://www.avforum.com/>
- **Awkward TV and Apple TV Hacks** (Hardware hackers share fun, unauthorized things they've learned to do with the Apple TV.): <http://www.awkwardtv.org/> and <http://www.appletvhacks.net/>

GLOSSARY

In this glossary, you'll find definitions for a number of television-related terms, which also appear in the main text of the book in blue, italic formatting. If you are reading this book online, you can click blue, italic text to move to the glossary page that defines it and then return to where you were using a menu command or keyboard shortcut, as noted in **Table 6**.

Table 6: Navigating to the Glossary and Back		
Viewing Software	Menu Command	Keyboard Shortcut
Adobe Acrobat 6–8	View > Go To > Previous View	Command-Left arrow
Adobe Acrobat 5	Document > Go To > Previous View	Command-Left arrow
Preview	Go > Back	Command-[

anamorphic: On DVD, an encoding standard that uses horizontally rectangular pixels to achieve widescreen images.

aspect ratio: The shape of a TV or film image, expressed as width:height.

ATSC: Advanced Television Systems Committee, a business and government consortium formed by the FCC to create standards for next-generation TV systems.

A/V receiver: A hardware device that connects and controls multiple pieces of a home theater system, particularly speakers.

Blu-ray: A high-definition DVD format developed by Sony and Philips, launched in late 2006.

broadcast flags: Software codes embedded in DTV signals that regulate or prevent the copying or recording of shows.

CableCard: A small, flat metal envelope (with a microchip inside) that attaches to a special port on DTV sets and replaces many of the functions of a set-top box. (See the tip [Take a \(Cable\) Card?](#) p. 46).

calibration: Professional adjustment of audio/video hardware.

ABOUT THIS BOOK

In contrast to traditional print books, Take Control ebooks offer clickable links, full-text searching, and free minor updates. We hope you find them both useful and enjoyable to read.

About the Author



Clark Humphrey is editor of the *Belltown Messenger* (<http://www.belltownmessenger.com/>), a Seattle newspaper, as well as a former staff writer for the *Stranger* and the *Comics Journal*. He wrote, among other things, the 1995 book *Loser: The Real Seattle Music Story*, available from his Web site at <http://www.miscmedia.com/>. (His site was a blog years before the word was coined.)

Author's Acknowledgments

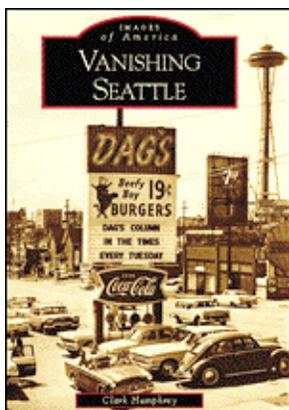
Tonya Engst suggested I write this. Lea Galanter caught some of my worst typos, and made sure everything was understandable. Adam Engst, Tom Negrino, Chris Pepper, Steve Sande, Don Sellers, and Garry Margolis provided valuable suggestions, which helped make this book more complete. Karen Anderson suggested I could become a Take Control author (<http://themysterioustraveler.blogspot.com/>).

Thanks to the providers of great tele-visual entertainment, past and present, who helped make the medium what it is today—including, but not limited to, Ward and Scott, Hanna and Barbera, Goodson and Todman, Ball and Arnaz, Aykroyd and Belushi, Carsey and Werner, Lynch and Frost, and so many others.

Music that helped me through this writing includes the compilations *Hanna-Barbera's Pic-A-Nic Basket* (Rhino); *Classic TV Game Show Themes* (Varese); *Music for TV Dinners* (Scamp); *TV Land Presents Favorite TV Theme Songs* (Rhino); *Ultra-Lounge Vol. 7: Crime Scene* (Capitol).

In memoriam to the real *TV Guide* (1953–2005).

Shameless Plug



Be sure to read my latest print book, *Vanishing Seattle*. It's a photographic memoir of the Jet City's less-sophisticated, funkier past. You can purchase it from Arcadia Publishing at <http://www.arcadiapublishing.com/> or from my own site at <http://www.miscmedia.com/>.

About the Publisher

Publishers Adam and Tonya Engst have been publishing Mac-related content since they first created their online newsletter, *TidBITS*, about Macintosh- and Internet-related topics in 1990. *TidBITS* has been in continuous, weekly production since then. At the TidBITS Web site you can subscribe to *TidBITS* for free, join in TidBITS Talk discussions, or search many years of news, reviews, and editorial analysis (<http://www.tidbits.com/>).



Adam and Tonya are known in the Mac world as writers, editors, and speakers. They are also parents to Tristan, who thinks ebooks about clipper ships and castles would be cool.



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Thank you to Chris for fresh eggs and rhubarb. Production enhanced with tunes from the Beautiful South.

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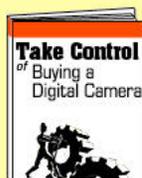
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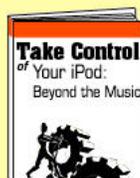


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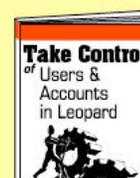


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