

Chapter 12

Connecting your A/V Gear to the Network

In This Chapter

- * Buying A/V gear with wireless in-board
- * Plugging into wireless, with wireless A/V adapters
- * Understanding your Home Theater PC options

Without doubt, the most significant news in wireless networking @@@ outside of the general price drops that are driving growth in the industry @@@ is the movement of the 802.11-based networking outside of the realm of “computers” and into the realm of “entertainment”.

The linkage of the two environments really yields the best of both possible worlds. You can use your hard disk on your PC to store audio and video tracks for playback on your TV and through your stereo. You can stream movies from the Internet and play them on your TV. You can take pictures with your digital camera, load them on your PC, and view them on your TV. You get the picture (oops, pun).

You will simply not believe how much this is going to affect your computing and entertainment experience. It could affect which PC you buy @@@ Microsoft has teamed up with leading hardware manufacturers like HP and Gateway to offer Windows XP Media Center Edition PCs, designed to power your home entertainment system (it’s really too irresistible). It could affect how you rent movies @@@ why go all the way to Blockbuster Video when you can just download the movie over the Internet from Movielink.com with a click. It could even affect how you watch your favorite shows @@@ with PC-based personal video recorders (PVRs), you can record the shows you want to watch but always miss, because you could never figure out how to record on the VCR. Whew. That’s *some* change.

In this chapter, we’re going to expose you to some of the ways that wireless is enabling this revolution. You’re going to find that a lot of what we’ve been

talking about throughout the book will serve as the perfect foundation for linking PCs and audio/video systems.

Wirelessly Enabling Your Home Entertainment System

It does not matter if you have a \$250 television set or a \$25,000 home theater, you can wirelessly enable almost any type of audio/visual gear that you've got. Before we get into the specific options on the market today, let's discuss at a high level the wireless bandwidth requirements for the two major applications for your entertainment system -- audio and video. It's ok to talk in general terms about this because 1) the differences among the bandwidth options are fairly great, so applications fall into clear camps, and 2) we believe most APs are moving towards 802.11a/g dual mode designs, which is more than enough to handle your video and audio needs.

There are two predominant ways that audio and video files are handled with your entertainment/PC combo:

- * **Streaming:** The file is "played" on your PC and sent via a continuous signal to your stereo for live playback.
- * **File transfer:** The file is sent from your PC to your stereo system componentry, where it is stored for later playback.

These two applications are very different. The big issue here is where the file is played from. If it is played on the PC, for instance, then it is streamed to the stereo for speaker amplification. If it is played on a source stereo system component, then you just need to transfer the file. The wireless requirements are quite different.

With file transfer, a lot of transmissions take place in the background. For instance, many audio programs allow for automatic synchronization between file repositories, and that can be scheduled during off hours to minimize the impact on your network traffic when you are using your home network. And in these cases, you are not as concerned as to how long it takes, as if you were watching or listening to it live as it plays. That streaming application is very sensitive to network delays and lost data packets. You tend to notice a bad picture pretty quickly. With a file transfer, any lost data can be retransmitted at the time its loss was detected. With streaming video, there may not be time for retransmission of lost data.

As a result, a good quality 802.11b signal is fine in most instances for audio or video file transfers, and also fine for audio streaming. Whether it is ok for video streaming depends a lot on how the video was encoded and how big the

file is. The larger the file size for the same amount of running time, the larger bandwidth required to transmit it for steady video performance. As a result, people tend to talk about 802.11g and a protocols for video, simply because there is a lot of available bandwidth for any problems that may occur when sending the data over the airwaves.

Your Home Wireless A/V Center Connections

In general you're going to find, though, that there are four generic ways that you can wirelessly enable your A/V application, each somewhat dependant on where the source content resides:

The source content resides in the entertainment center:

- 1. Buy wirelessly-featured equipment.** Some gear, like the Motorola's simplefi (www.motorola.com/simplefi) comes with wireless in-board. That means that you just need to provide it with the right SSID and WEP settings and you are on your home wireless network. This typically gives the equipment access to the Internet and users remote access to the device itself over these 'Net connections. In the next section, we'll introduce you to some of the ways that present entertainment gear is getting wirelessly enabled. (Note: the current version of the simplefi uses a system called HomeRF, which was a competitor to 802.11. HomeRF is now defunct, and Motorola will be soon converting the simplefi to 802.11. If you're shopping for a simplefi, make sure you get one of these newer versions, which should be on the market by mid 2003).
- 2. Buy a wireless adapter or bridge.** Some A/V equipment is network-enabled (meaning it has some basic network interface capability like an Ethernet or USB port) but lacks wireless functionality. In these instances, you can buy a wireless adapter to interface with that port to get the device on the home network. A wireless bridge is a perfect way to get it on line. Gaming equipment, which we cover in detail in Chapter 11, commonly has an Ethernet port but no wireless capability; wireless bridges are perfect to allow multiplayer gaming over the Internet. Shortly, we'll talk about the range of wireless adapters and bridges available for the home user.

The source content resides in the personal computing center:

- 3. Buy a wireless media player.** Some A/V gear is complemented by a media player whose main goal it is to coordinate the flow of audio, video, and other data between the PC and Internet environment, and the entertainment system. A good example of this is the \$249 Prismiq MediaPlayer (www.prismiq.com), which sits atop any television, stereo,

or entertainment center and links to any computer via a wireless home network (or other Ethernet connection). It eliminates the requirement to be physically present at the PC in order to experience digital movies, MP3 audio, and digital pictures stored on the PC. The PRISMIQ MediaPlayer also connects to the Internet through the home network for relaxed, TV-based web surfing, instant messaging, personalized TV-displayed news, and easy access to emerging next-generation broadband services. We'll introduce you to some of the leading media players on the market in a few moments.

- 4. Buy a home theater PC.** A high powered PC designed to interact with the entertainment center is a perfect complement to your home. Instead of spending money on a new DVD player, why not use that CD/DVD player in your PC? In place of a bunch of home created CDs, why not just leave them on a high capacity hard disk on your PC, and let the songs play through your stereo whenever you want? We'll talk about the home theater PC shortly.

Wireless Home Entertainment Gear

The ideal would be if all your stereo equipment came with 802.11 chips on-board, so that they could just hop onto your wireless backbone and get to work. While we think that is not all that unlikely as we move forward in the years, it's not the case today.

Instead, what you find today is that a lot of home entertainment accessories are going wireless, like your MP3 players and portable speakers. One of the most major pieces of your home entertainment system going wireless is your TV's set top box. Typically to distribute video around the house, you had to wire a home with coaxial cable. The cable companies know that they don't make much, if any, money on that part of the equation, so they would just as soon run a cable into the home gateway set top box and then use wireless signals from there. Want to watch TV by the pool? No problem, your wireless TV signal can help you out. We expect that satellite, cable and telephone company video set top boxes will all sport wireless options fairly soon.

In the next chapter, we'll introduce you to the next wave of remote controls @@@ 802.11b based remotes that control signals in other rooms. Right now, these signals actually go to infrared devices that mimic an IR remote control in that room. In the near term, you'll see on-board wireless interfaces in the boxes themselves, which will again allow remote control and access to files.

But alas, for now, there are only a few pieces of audio and video gear that have standards-based wireless interfaces. You are starting to see video projectors sport 802.11b interfaces @@@ NEC Solutions (America), Inc. is shipping the first MT Series generation of portable projectors to offer the

NEC ImageXpress networking technology option. With NEC ImageXpress, the MT60 Series of projectors can communicate continuously and in real time from a PC to the projector through a wireless system via 802.11b. The wireless option makes it easy to connect to the video projector from anywhere nearby, without the hassles of cables to trip over. While this particular projector can double for home or office use, a lot of home theater projectors that are moving towards wireless connectivity too.

Yamaha has an 802.11b-enabled audio server called the MusicCAST. This system consists of a couple of pieces. The server is the centerpiece of the system, and uses a large computer hard disk and a built-in CD drive to rip (or convert to MP3) all of your CDs and store the music. The server then uses 802.11b to send streaming music files to separate receivers throughout your home. The receivers contain built-in audio amplifiers, so you can plug a set of standard stereo speakers into them, or if you have an existing stereo system in the room where the receiver is located, you can plug the receiver directly into that unit, and use the speaker's you've already got. The MusicCAST system isn't cheap @ @md the price of a server and a single receiver is about \$2800, and additional receivers (for other rooms in the house) go for about \$800 .

In most instances, you'll use one of the next three options for bringing wireless functionality to your stereo system.

Figure 12-1: The Yamaha MusicCAST enables whole home audio, through wireless.

(Wirelessly) Adapting to Home Entertainment

There's nothing worse than having a great piece of entertainment gear without the right cable to plug it in. So you can forgive Danny when he had his brand new Request, Inc. AudioReQuest system (www.request.com) with no Ethernet connection near it to plug it into. The AudioReQuest is a great example of the type of network-enabled audio gear coming down the pike. Capable of storing as many CDs as you have (you can add additional storage by their swappable hard drives or getting higher capacity units), this is the ultimate in CD listening pleasure.

You can use your TV screen as the interface to your music collection. You create playlists from albums and artists stored in the system. Loading (ripping) a CD into the system is as easy as opening the tray and closing it. The system determines whether the CD is already in your system and then looks up the name of the album and artist in its internal database of 650,000 albums; if the system can't find the CD, it checks a master database on the Internet.

It has an on-board Web server that allows access to this music from wherever he wants, in the house or over the Internet. You can also add other units to the system and network them. Danny has one unit in his house in Maine and another in his house in Connecticut, and they stay synchronized. What's more, multiple units enable you to have a back up of your collection in case your hard disk crashes.

Higher-end units also support WAV and FLAK (lossless compression @ @md meaning you'll get higher fidelity audio quality) protocols, for those who want audio fidelity. (These protocols take up more space on the hard drive, but preserve the nuances of the music.)

It's truly the future of music in the entertainment center. An entry-level Nitro system costs about \$2500 and scales up from there depending on storage capacity and extra features. This is the box you put in your home if you're serious about music!

The only problem? No wireless connectivity. Unlike most pieces of stereo equipment, the AudioReQuest has an Ethernet outlet, so it's easy to use a wireless bridge (which we discuss in chapter 11) to bring it on-board to the wireless LAN. Danny's using a D-Link (~~www.d-link.com~~) DWL-810 Wireless Ethernet Bridge (802.11b) to link it into his wireless network.

Entertainment devices such as the Microsoft Xbox and Replay TV can also connect to a network with the Wireless Ethernet Bridge via their built-in Ethernet ports.

As soon as he finishes this book, Danny's going to extend his AudioReQuest to synching with his car stereos, too @ @md over wireless computer network connections.

The Ethernet bridge works because he's got an Ethernet port on his audio server. What about situations where there is no networking outlet option at all (no USB, no Ethernet, no on-board wireless)?

Not a problem. A new slew of wireless networking gear is sporting RCA jacks @ @md the same jacks used to connect your sources into your receiver. These make it easy to connect non-audio gear into the home entertainment network.

These wireless audio transmitters will transmit audio from your PC to your stereo without the use of cables. For instance, the RCA Model RD 900W Lyra Wireless (~~www.rca.com~~, \$99) device sends crystal clear digital audio from your PC to your stereo. Just plug it into your PC's USB jack on the one end, and the entertainment center's RCA jacks on the other, and you are ready to go. Unfortunately, as of this printing, the Lyra uses 900MHz technology, not standardized 802.11 chips, to accomplish this. Thus you are tied to a particular PC (in other words, you can't hop directly onto the wireless network backbone). Jensen's Matrix Internet Audio Transmitter (~~www.jensen.com~~) Model JW901 works the same way: a 900MHz connection

between the PC and stereo. X10's Entertainment Anywhere (www.x10.com) uses a proprietary 2.4MHz signal.

Figure 12-2: The RCA Lyra Wireless option makes it easy to link any PC with any piece of stereo gear.

Linksys (www.linksys.com, \$120) Wireless Digital Media Adapter is an 802.11b-based transmitter. It resides in home entertainment centers next to the television and stereo. The device resembles the Linksys Access Point, with two 802.11b antennas. Instead of connecting to an Ethernet port, the device is equipped with audio/visual connectors. To process JPEG, MP3 and WMA digital content, the adapter uses Intel's XScale architecture PXA250 application processor. Using Universal Plug and Play (UPnP) technology, the adapter can be easily setup to work with other UPnP devices on the network such as a Linksys Wireless Router or its car networking technology (under development in early 2003). Linksys and Zandiant Technologies have teamed to develop wireless networking appliances, including wireless automotive MP3 players and other products that enable vehicles to connect with home, office and hotspot networks. Very cool. A version capable of doing video is expected by the 2003, probably based on 802.11g.

The Home Media Player

A new intermediary that has thrust itself onto the scene is the *media player*, a device whose goal is to simplify the PC-to-entertainment system interface. Simply these boxes give you a nice simple way to get at information on your PC, for play or viewing on your TV and stereo system, by giving you an on-screen display, remote control and even wireless keyboard.

The Prismiq system mentioned above is a great example of this. Using an Internet-capable home computer and linking stored media and the Internet connection itself, the PRISMIQ system can perform a variety of functions:

- * Play DVD-quality video
- * Play Surround Sound and CD-quality audio
- * Stream a library of MP3 files
- * Act as a video-on-demand set-top box
- * Display digital photos on the television
- * Provide web access on the television
- * Show live, personalized news feeds to the television
- * Connect users over the Internet to friends and family

The PRISMIQ MediaPlayer is a compact system, less than half the size of most DVD players. It can be used conveniently on any television in the house, yet has all the capabilities of a high-end audio-visual component, such as Surround Sound audio support and MPEG-1 and MPEG-2 video playback. The associated and bundled MediaManager software, which lets one or more computers in the home deliver content to the MediaPlayer, runs on Windows 98 SE, Windows ME, Windows 2000, and Windows XP. The PRISMIQ MediaPlayer supports Ethernet 10/100 natively, and has embedded driver support for a variety of PCMCIA/card bus cards for 802.11b, 802.11a, 802.11g, and HPNA.

Figure 12-3: The PRISMIQ MediaPlayer allows just about any sort of wireless connectivity through its PC card slot.

Other players are getting into the act too. HP's Digital Media Receiver (www.hp.com/go/digitalmediareceiver, \$299) 5000 Series extends digital music and photos on your PC to your TV and stereo systems. Using a standard remote control, the receiver enables you to browse through your favorite music and photos and choose what you want to view or listen to without having to go to your PC and use your mouse and keyboard. The HP Digital Media Receiver provides access to digital content from a PC on a user's wired Ethernet or wireless 802.11b home network. The photos section will appeal to those with a digital camera. Digital photography enthusiasts can access JPEG, GIF, BMP and PNG pictures and share their favorite moments with others in picture shows displayed on their TV in the living space of their choice, instead of on a PC monitor. The receiver also allows users to print the currently displayed picture on any PC-connected printer with the simple push of a button on the remote control. In addition, the product allows users to combine music and photos on the TV and stereo for a multimedia experience.

What's neat is that multiple HP Digital Media Receivers can be connected to the home wireless network so music and photos can be enjoyed throughout the home, simultaneously accessing digital files @amd including, if so desired, the exact same song or picture (say, during a party). In fact, the multiple devices can be controlled from each other to create a full-house listening experience.

Meet the Home Theater PC

When you talk about your home entertainment center, you often talk about *sources*, that is, those devices like tape decks, AM/FM receivers, phono players, CD units, DVD players, and other consumer electronics devices that provide the inputs of the content that you listen and watch through your entertainment system.

Your PC will just be another high-quality source device attached to your A/V system. But if you are going to connect it to your entertainment system, you need to have some special cards and software to enable your PC to “speak stereo”. When configured like this, you’ve effectively got what is known as a *home theater PC* (or *HTPC*, as all the cool kids refer to them). In fact, if you do it right, you can create an HTPC that funnels audio and video into your system at a higher quality level than many moderately priced, standalone source components. HTPC can be that good.

Today, there are two ways to get an HTPC @@md buy one or build one. Building an HTPC is not something you can expect to do without a fair amount of knowledge about PCs. You can find out more about HTPCs in *Home Theater for Dummies* (Pat and Danny wrote that too). It’s a lot easier to buy a ready-to-go version of the HTPC off the shelf (and we explain how later in this chapter).

Sizing up a home theater PC

Depending on your needs, a home theater PC should be able to do some or all of the following things:

- * **Store audio (music) files.** No matter the file type, HTPCs need hard disk space and software for audio files.
- * **Store video clips.** Homemade camcorder movies, downloaded movie trailers, or even downloaded full movies and shows belong on the HTPC. You need (again) hard disk space and software to make this happen.
- * **Play CDs and DVDs.** This is an easy requirement, because most PCs can at least playback CDs, but DVD is also essential in a home theater environment.
- * **Act as a PVR (personal video recorder).** This is an optional (but almost essential, we think) function that uses the HTPC’s hard disk to record television shows like a ReplayTV (www.replaytv.com) or TiVo (www.tivo.com).
- * **Let you play video games on the big screen.** With the right hardware, PCs are sometimes even better than gaming consoles (which we cover in Chapter 9) in terms of game-type stuff, such as frames per second (or things blown to bits per millisecond).
- * **Tune in to online music and video content.** You can grab a lot of really awesome content on the Internet these days. If you pay for this content (and you do have to pay for the good stuff, legally speaking), why not enjoy it on the big screen, with the good audio equipment?
- * **Provide a high-quality, progressive video signal to your display.** All PCs have a built-in video system that’s designed to display on a PC monitor. Most PCs, however, can’t display on a TV, at least not at high

quality. An HTPC needs special hardware to make this happen, which doesn't cost too much money. (This investment also gives you better performance on your PC's monitor, which is never bad.)

- * **Decode and send to your display HDTV content.** This is another optional function, but a really cool one. HDTV is the next generation of television @@@ digital television with really awesome pictures. With the right hardware inside (an HDTV-capable video card and TV tuner card), HTPCs can provide a cheap way to decode over-the-air HDTV signals and send them to your home entertainment center's display.

Coming soon: Media servers

While HTPCs and Windows XP Media Center Edition PCs are really just what their names say they are @@@ PCs @@@ there's a new generation of computer-like devices hitting the market that will do many of the same things, in a more consumer-friendly fashion. *Media servers* is what we call them (and what most people call them @@@ we're not just making this stuff up). A media server is really just a souped up version of a standalone PVR (such as a TiVo) or a standalone MP3 server (such as an AudioReQuest, www.request.com). The media server doesn't run a PC operating system and doesn't do normal PC stuff. It just serves up media (hence the name) @@@ and wireless is a key way they'll serve it up, using likely 802.11a/g wireless technology. We expect consumer electronics companies, such as Sony and Toshiba, to start selling wireless-enabled media servers any day now. In fact, Sony already has its FSV-PGX1 Portable File Server for sale in Japan. It's packed with a 20GB hard disk and wireless 802.11b LAN capability. The server supports 64/128bit WEP, as well as authentication by MAC address. It supports multiple operating systems and is manageable from a Web browser. It has a network enabled docking station too for interaction with non-wireless-equipped PCs. All this and it weighs scarcely 300 grams (that's less than a pound, if you're metric system challenged). A number of similar products are in the works by SONY and others. You'll be able to hook them into your PC network *and* into your home theater, and use them to store music, video, digital photographs, and more.

Checking out PC PVRs

We mentioned earlier in the chapter the concept of using a HTPC as a PVR (personal video recorder). This is something that is a standard feature in a Windows XP Media Center PC, and something we think you should consider adding to your home-built HTPC.

In fact, it's so useful that, even if this were the only thing you wanted to do with your HTPC, it would be worth it. You can simply install a PC PVR kit

and skip a lot of the other stuff we listed earlier (such as the DVD player, decoder, and software).

The biggest limitation to any PVR system is the amount of space on your hard disk for storing video, so you might consider a hard drive upgrade regardless of your other HTPC intentions.

A couple of the PC PVR kits on the market include the following:

- * **SnapStream Personal Video Station (PVS):** An inexpensive way into the PC PVR realm is the PVS, a software-based solution that works with your own TV capture card (there's a list on the Web site, www.snapstream.com), or comes with one for \$89 (\$50 without). PVS can control your DSS receiver or a cable set-top box and uses an online programming guide service. Saved videos on the PVS use the Microsoft Windows Media format (not MPEG), which limits the system to Windows PCs. The coolest feature of the PVS is that you can use it outside the home theater. For example, you can share files on a computer network or even download them (with a special extra bit of software) wirelessly to your Pocket PC for later viewing.
- * **Pinnacle PCTV Deluxe:** An external box, the Pinnacle PCTV (\$199, www.pinnaclesys.com) sits next to your HTPC and connects via a USB connection. The PCTV Deluxe has a built-in TV tuner that can connect to your antenna or cable system, and it records your shows as standard MPEG video. You need your own video card in the PC to display the recorded video on your TV or home theater display.
- * **ATI All-In-Wonder 9700 Pro:** If you're after the real top-of-the line in PC PVR (and HTPC video cards for that matter), you really need to check this baby out. For \$449, you get the latest and greatest PC video card, DVD acceleration, a TV tuner, PVR software, an online programming guide and HDTV support in one! As we write, this is the hottest HTPC/PC PVR device you can buy. We're sure the price will go down too!

Internet Content for Your Media Players and HTPCs

HTPCs are good as an alternative to other home theater source devices @@md for example, as a high-quality way to play back DVDs. But for most folks, they're not worth the trouble just for that purpose. What really makes an HTPC useful is its ability to provide a *portal* to all sorts of great Internet-based content. Now, if you're a real PC aficionado, you might build an HTPC just for fun. But if you're like us, you're only going to go down this road if there's something in it for you. There is!

In fact, a load of good content is on the Internet, just waiting for you to come around and get it. This is particularly true in the music realm, where legitimate (in other words, pay) music content has become a reality (after years of false starts). In the video world, the story isn't as bright yet. Movie studios have been really dragging their feet when it comes to getting content online. One movie source, Movielink, is out there now, but others have been squeezed out of business by the movie studios.

<Remember>

You're not getting much Internet content if your HTPV isn't connected to the Internet. So don't forget that a connection to your high speed Internet access (DSL or cable modem) is part of the overall equation.

Some of the most popular online content providers include:

- * **Listen.com:** Listen.com's Rhapsody online music service (www.listen.com) is a great way to feed quality music into your home theater (via an HTPC). Listen.com has made deals with all five of the major record labels and many smaller independent labels, too, which gives them a library of over 20,000 albums. For \$9.95 per month, you get unlimited, *on demand* access to all these songs, which means you can play back any of the songs in Listen.com's library at any time. There's also a radio service (for half as much) that doesn't give you the on-demand feature, but offers a bunch of differently themed radio stations. You can even pay a bit more and download music for creating your own CDs (99 cents each). The Rhapsody player (the service uses its own proprietary player) is based on Windows Media Player, so it should work with just about any HPTV remote control. You can try the service out for free for a week. We recommend that you do.
- * **MUSICMATCH MX:** Besides making our favorite Windows MP3 Jukebox, MUSICMATCH also offers an online service called MUSICMATCH MX. Like Listen.com, MUSICMATCH MX comes in two versions @amd a gold version (\$2.95 per month) that gives you radio access, and a platinum version (\$4.95 per month) that gives you on-demand access to the catalogs of over 8,000 artists. The nice thing about MX is that it's fully integrated into MUSICMATCH jukebox, so you've got a single interface to deal with.
- * **Movielink:** If you want to start getting movies from the Net, check out Movielink (www.movielink.com). Formed by five huge movie studios, this site allows you to download and play current Hollywood movies (at about the same time as they make it to DVD). You pay about \$3 per movie, and the system uses either the Windows Media Player software included with all versions of Windows or Real Networks' RealOne player (www.real.com). To use Movielink (on Windows PCs only), you simply "rent" the movie online, and it is downloaded to your PC. You have six days to watch it (and you pay even if you don't remember to watch it), and after you start playing it, you have to finish with 24 hours.

We're not sure the quality of Movielink is really up to a big screen playback, but we mention it because it's the first service of its kind. We hope more are to come!

Other wireless ways (where there's a will)

We are very obviously biased towards the 802.11x technologies, because we believe in a home wireless network backbone. We think with all the focus on standards, costs will decrease, new features will evolve, and the overall capability will continue to get better. Collectively, it simply gives you more options for the home.

That does not mean that standards are the only way to go. There are plenty of proprietary 900MHz, 2.4GHz, and 5GHz approaches @@@ as well as other frequency bands @@@ that are popular because they are just cheap to manufacture and cheap to implement. For instance, the SoundLink (www.usr.com/products/device/p-device-product.asp?sku=USR6003) Wireless Audio Delivery System (Model USR6003, list price \$105) uses FM frequency bands to link your PC and stereo over channels 88.1 or 88.3. This is basically an FM transmitter for your PC. (In *Home Theater for Dummies* , we tell you about how to use these type of transmitters to make your own drive-in!)

For another approach, check out Terk's (www.terk.com, \$99.95) Leapfrog Series WaveMaster 20 (Model LF-20S) uses the same 2.4 GHz frequency spectrum as do 802.11b and g to carry audio and video around the house. So 802.11 is not the only way, but we prefer it.