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The Delphi XM Roady2 is the revolutionary new satellite radio receiver on the market today. Complete with all the features that Roady has to offer, Roady2 has some new and exciting additions... [More](#)

Radio Goes Digital

Wed Nov 10, 4:20 PM ET

Patrick Norton - ExtremeTech

Radio hasn't changed much in the past couple of decades. Sure, there was the big switch from mechanical pushbuttons, knobs and cable-driven needles to electrical pushbuttons and digital LCD screens. Stereo AM made its less-than-stunning debut. On the car audio front, a typical head unit's gone from being a radio to being a radio with a built-in cassette deck, to being a radio with a built-in CD player.

That said, AM and FM radio tuners have definitely gotten better, a fact I realized when I drove an ancient Toyota with a genuine factory radio from the late '70s, and no cassette or CD player, a few months ago.

Radio stations, I noticed, haven't changed all that much, except that more of them sound exactly the same.

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What has changed for the better is that radio is finally going digital, at least in part. First with the introduction of satellite radio a couple of years ago and now, earlier this year, with the introduction of HD Radio (see "[iBiquity Debuts HD Radio Receiver](#)") radio has started to make serious leaps and bounds for the first time since the '70s. The two systems are both digital, but that's about all they have in common. The newest is HD Radio, developed by iBiquity Digital. It promises to bring CD-quality FM and static-free AM to any station that licenses (and implements) the technology. Along with crystal-clear music or talk radio, it also can do things such as deliver data over your car stereo's head unit, including the name of the band you're listening to, news tidbits or even stock quotes. For more information, visit "[Digital Radio Days](#)".

Satellite radio offerings from [XM](#) and [Sirius](#) each distribute more than a hundred channels of music, info and entertainment via satellite, everywhere in the United States. The coverage even spills over into a fair chunk of Mexico and Canada. Want to listen to one classical station in your car when you drive from San Francisco to Long Beach Island, N.J.? Satellite radio can do that, at least until you pass through a good-sized tunnel; then it cuts out until you're out the other side. Just want to enjoy commercial-free music while you're commuting? Both satellite providers offer more than 60 different channels.

Sound good? It does to me. These new digital radio formats have me fired up about radio again. Just for fun, let's get a little deeper and see if we can't dig up a few more diamonds in the world of digital radio. We're bound to uncover a few lumps of coal, too.

Satellite Radio: Did We Mention the Monthly Fee?

Let's get the first gotcha of digital radio out of the way: Both XM and Sirius charge a monthly subscription fee. Barring a bulk purchase of multiple months (or years) at once, you'll be paying \$9.99

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per month for XM or \$12.95 per month for Sirius. You'll also need an XM or Sirius tuner, most likely a satellite radio that plugs into your car or home stereo, or some kind of box that brings satellite radio to the XM- or Sirius-ready head unit that's already in your car.

While there are many car stereos that can add in a satellite radio module, our favorite tuner forms are portable and lend themselves to easy movement from the car to the house. Delphi's XM-compatible [Delphi XM Roady2](#) earned an Editors' Choice award from PC Magazine for its iPod-like size and built-in FM modulator. That means no carrying around extra cables or cassette adapters, since you can use your FM radio to pick up the signal from the Roady2. Its modular build means you can also use it in a portable, Walkman-style carrier, or in a home base station.

The Roady2 is a touch smaller than its comparable Sirius tuner, the [Sirius Sportster](#). One advantage the Sportster offers: When you set it for your favorite football team, it'll display its logo on the monitor and automatically change the channel when your team starts playing a game.

Both of those satellite radio tuners can be had for less than \$100 on sale, plus the monthly fee. (\$9.99 for XM or \$12.95 for Sirius.) If you're willing to spend about \$200 more, you can get a boom box complete with AM/FM tuner and CD player that you can pop your XM tuner into. You can read more about it in PC Magazine's [Triple-Threat Boom Box](#).

On the new-car front, more manufacturers committed to putting compatible head units into new cars (Daimler-Chrysler and Ford offer Sirius, while Honda and GM favor XM). Sirius has some hi-fi manufactures, such as AudioVox and Kenwood making radios for your home stereo. But XM has the lead in portable hardware, with the announcement of Delphi's [MyFi](#), the first portable, self-powered satellite radio. It's expected to ship this December for \$349.

What Do You Get for the Monthly Fee?

In exchange for that monthly fee, you get an amazing array of programming. XM offers 68 commercial-free music channels out of 130 total channels. Sirius, which started the commercial-free music craze, offers 65 music channels from 120. Both offer similar music programming (dedicated channels for just about everything from dance music to bluegrass), along with a range of news and entertainment channels.

We won't get into the other offerings too deeply here, except to say that XM has exclusive rights to Major League Baseball and NASCAR ([news - web sites](#)) Radio, while Sirius holds the keys to NFL football, National Public Radio and, in 2006, Howard Stern. (If you want to learn more about the differences between Sirius and XM, see our sidebar, "Sirius vs. XM Radio: Which Satellite Service Is Better?" For more on Howard Stern and the future of satellite radio, try reading ["Can Shock Jock Jolt Satellite Radio?"](#)

What Is HD Radio, Anyway?

While satellite radio's dedicated content channels and commercial-free music are probably pulling people away from AM and FM radio (albeit slowly, since XM and Sirius combined have roughly 3 million listeners, and there are tens of millions of radio listeners in the United States), HD Radio is designed to improve your experience with your favorite local stations. It's a nationwide standard, chosen by the FCC ([news - web sites](#)) in 2002 (PC Magazine has a great [interview](#) with iBiquity's president that took place after the vote, which means that your HD Radio will work anywhere in the United States. Assuming you have HD Radio being broadcast in your area. (More on that in a moment.)

HD Radio is essentially iBiquity's IBOC (In-Band On-Channel) Digital Audio Broadcasting technology. It essentially sandwiches the regular analog transmission with a pair of sideband transmissions. These digital transmissions don't interfere with stations nearby on the dial but still manage to carry a high-quality audio copy of the regular analog broadcast, and can carry additional information the station wished to add in. (The ubiquitous example of stock quotes has been mentioned, but things such as track titles and artists' names are most common.)

Because the signals are split across two different frequencies, intelligence in the tuner can work them against each other and work around some of the traditional analog reception problems such as multipath interference (when your tuner picks up the same signal at different times after it's been bounced around, say, the buildings in your downtown area) and other causes of distortion.

iBiquity debuted the first HD Radio receiver back in January, and they're still fairly rare. According to iBiquity's site, JVC, Kenwood, Panasonic and Boston Acoustics all offer HD Radio receivers. We've had to work to find them for sale in local electronics stores, and with the suggested retail on a car head unit at \$700 to \$800, they're a bit spendy. ([The Boston Acoustics Receptor](#) will cost closer to \$149.)

There are a fair number of HD Radio stations broadcasting, at least according to iBiquity's map of HD Radio stations. Here in San Francisco, there are a fair number of HD radio stations on the air in a wide range of formats, from AM news to jazz stations to the lone local classical and country stations.

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Should you purchase an HD Radio? We'd start by checking [iBiquity's map](#) to find out whether any of your favorite stations are already broadcasting in HD. Then we'd try to find a local shop (or one of the engineers at that radio station) to give us a demo of the HD sound. If you like it and you can afford the tuner, it should be a nice upgrade.

But don't worry if you don't want to spend the money: Analog radio isn't going away anytime soon.

Patrick Norton has written more than 500 product reviews for print and online media and loves off-road racing. Patrick is best known for answering the toughest tech questions, giving product-purchasing advice and smashing dead PCs with a sledgehammer during a four-year stint when he co-hosted "The Screen Savers" on TechTV (now G4techTV), an hour-long, live TV show for geeks.

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