

## How big boys boost cellular signals

**Gearhead** By [Mark Gibbs](#) , Network World , 11/13/2008



I first [wrote](#) about my lousy cell phone service signal quality last month and discussed how an add-on antenna had improved life for me.

A cunning PR person subsequently got in touch and hooked me up with the big boy's way of improving cell phone reception: The zBoost made by [Wi-Ex](#).

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The Wi-Ex products are not femtocells, which use some kind of back-haul, usually wired, and act as cellular service access points in their own right. In contrast, Wi-Ex products are smart repeaters that relay the cellular signals using some secret sauce voodoo technology that "handles all PCS or CEL protocols and includes multiple patent-pending technologies to provide low-cost coverage while continually adapting to signals to prevent interference and remain transparent to the wireless network."

After considering whether I wanted to test these products for, oh, maybe a heartbeat, I said "yes" and a few days later received a zBoost YX510-PCS-CEL (\$399), a dual-band repeater for both 800MHz (CEL) and 1900MHz (PCS) devices. Wi-Ex also make single-band variants that are \$100 cheaper) but in a business setting you'd be advised to buy the dual-band model as there will most likely be multiple cell phone service providers in your area; at [WirelessAdvisor.com](#) you can find out which carriers in your area provide what services in which bands.

The dual-band product supports cellular networks that use CDMA, GSM, TDMA, GPRS, EDGE, 1xRTT, EVDO and HSDPA. Apparently the only cellular service not currently supported is the iDEN service from [Nextel](#).

So, installing a zBoost system: In the box is a "signal antenna" (a 14 inch long, one inch diameter cylinder with a BNC connector at one end), antenna mounting hardware, 50 feet of 75 ohm RG-6 coax, a wall wart and a zBoost base unit with mounting bracket.

Setup isn't difficult but you have to observe a few requirements: First, the signal antenna has to be mounted as high as possible -- outside or in an attic is best, outside of a window is good, and indoors on the side of a room nearest to the local cell tower is the least preferred. Second, the signal antenna should also be at least three feet from any metalwork, pipes, air conditioners, etc.

Next, the base unit should be located at least 15 feet vertically from the signal antenna and finally you are supposed to locate the base unit in the middle of the space to be serviced or on an outside wall at about four feet from the floor and at least two feet from power cords and metalwork.

I attached the antenna to the top of the metal mast that supports my weather station so that I could get as much height as possible. I then ran the coax down into the room below through an attic vent and plugged it into the base unit (you can add another 20 feet of coax if needed). Finally, I powered up the base unit, which then indicated by flashing its lights that the signal quality was good and that there weren't any installation problems. Pretty easy.

Despite the proximity of metalwork to the signal antenna I got a great signal and saw the bars on my cell phone -- a [T-Mobile](#) G1 (the famed Google-phone), which I will review in a couple of weeks -- jump from a fluctuating two to a solid four! That means that the signal strength went from -103dBm to -63dBm . . . W00t!

The zBoost can cover an area of 2,500 square feet (a circle with a radius of roughly 28.5 feet) and W-Ex offers optional upgraded outdoor and indoor antennas that can boost the coverage to 10,000 square feet (about a 56-foot radius).

This is a terrific solution for locations or building where cellular reception is poor because of obstructions or terrain. Highly recommended, and the zBoost YX510-PCS-CEL gets a 5 out of 5.

As I said, I'll be discussing the G1 soon -- if you have one please drop me a line -- I'd like to get your take on the device

The screenshot shows a NetworkWorld article page. At the top, there is a navigation bar with 'NetworkWorld' logo and links for News, Blogs & Columns, Clear Choice Tests, Videos, Events, and More. Below this is a secondary navigation bar with categories like Security, LANs & WANs, VoIP, Infrastructure Management, Wireless, Software, Data Center, SMB, and Toolshed. The main article title is 'How big boys boost cellular signals' by Mark Gibbs, dated 11/13/2008. The article text discusses the author's experience with a zBoost antenna and Wi-Ex products. To the right of the article is an AT&T advertisement with the text 'Change your mobile workforce to a force to be reckoned with.' Below the article, there are sections for 'Most Read' (listing 15 amazing Web apps, Smartphone smackdown, Euphemisms for 'you're fired', Six free Apple iPhone downloads, and Cool Yule Tools), 'Videos', 'Latest News', and 'Whitepapers' (featuring 'A Guide to Troubleshooting Application Problems'). A 'Related Content' sidebar on the left lists items like 'Worm Risk Spurs Critical Microsoft Patch' and 'Microsoft's exploit predictions are less than half right'.