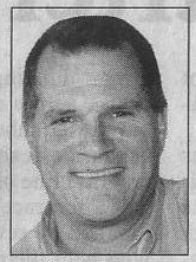
FemToCells could end weak cell signals



John Deans

Last time, we talked about putting your DirecTV DVR on your home network to download TV shows and movies over the Internet.

A few weeks ago we covered how to utilize the new cellular boosters to amplify the cell coverage in your home. On the horizon there is another networking gizmo that will be all the rage called "FemToCells."

A FemToCell is a device that connects and routes your cellular calls within your home, through your ISP (Internet Service Provider), over the Web, and out to the cellular providers network for voice communications. In other words, a FemToCell acts as a cellular tower in your own home!

You may be thinking, "Now John, why the heck would I need or even want that?" Since a growing number of people are using their cell phones at home rather than their landline telephones, cellular reliability and sound quality is becoming a real issue that has developed a completely new technology market.

Back on March 9, we covered the new zBoost YX510 cellular booster repeats the signal from inside your home to the cellular tower outside your home. This takes proper antenna placement and installation both inside and outside the house. I have installed a couple of these now at client sites and have had pretty good results.

The FemToCell however will eliminate the hard part of figuring out which side of the house to mount the external antenna and running the coax cable through the attic — not fun. This is because the FemToCell is just a box you plug into your home LAN (Local Area Network) near the center of your house and after some configuration steps you're done.

The FemToCell will basically capture the home owners' cell phone signal and route their calls through their Internet connection transparently to the caller. This means you will have four to five bars of signal strength throughout your home on your cell phone. As long as the high speed broadband is up and operational your calls should consistently go through and have good sound quality.

This is a twisted version of VoIP (Voice Over Internet Protocol) with special hardware that enables you to use your cell phone over your home Internet connection. There are some early versions of FemToCells out on the market now like the one from Sprint, but many more are headed for the market hitting the stores by this fall.

Sprint's version, introduced in September of last year, is called the AirWave which retails for $50 and has two monthly service plans of $15 for a single user and $30 for the whole family. With the family plan up to 50 users can register on the device but only three can talk on their cell phones through the AirWave simultaneously.

These Sprint Airwave FemToCells are made by Samsung and cover up to a 5,000 square-foot home. They can work through most any high speed broadband ISP like DSL, Cable and wireless like Texas Broadband, America Internet or Broadwaves as long as you can get at least 256Kbs upstream performance.

That means you have to be able to send at least 256,000 bits per second to the Internet through your ISP. You can run a test and verify both your upstream and downstream speeds at www.SpeedTest.net.

The Sprint AirWave will connect all of their CDMA (Code Division Multiple Access) cellular phones that cover the majority of their subscribers. Security is built into the AirWave by having the user to register their cell phones on the device to keep out the neighbors from 'borrowing' your free cellular connection. Text messaging and voice mail access works the same using the AirWave as it does with outside cellular towers.

Since very few of us here in Washington County have Sprint for our cellular provider, what's the big deal, right? Well, AT&T on April 27 announced that they signed a contract with ThinkPanmure for up to $500 million in FemToCells over the course of five years, and will sell the devices for as little as $100 each!

The hope is that after some heavy lab testing the trials should start this year and a big rollout should begin by the start of 2009. I'm hoping it will get under way later this year because my wife's iPhone has problems connecting even with our in-house cellular booster that works great with my iPhone — still trying to figure that one out.

One of the big problems the developers are trying to work out is how to make the FemToCell signal strong enough to cover the whole house with a signal device yet not interfere with cellular towers in the area. This may be no problem in rural areas, but in highly populated cities it can be a challenge dealing with all those frequencies.

The cutover and handoff from when a user leaves the home and goes outside is also tricky. The transfer of a live call from the in-house FemToCell to the cellular providers' public tower needs to be seamless and transparent to the caller. In other words, the call cannot drop when toggling between the public cellular network and the private FemToCell coverage area.

Finally, they have to work out the inter-carrier issues. This means what happens when some yahoo has a FemToCell from Verizon, another FemToCell from AT&T and even a third from Sprint?

They'll have to work that digital mess out but it sounds like money for me next year trying to make all this next technology work!

Surely by this time next year, these FemToCells will be making a strong market showing and weak cell signals will be a thing of the past as long as you have a good high speed broadband pipe to feed it.

Bottom line: FemToCells are yet another digital entity that will be knocking on your home's door and many techhead's will be installing them — including me.

Next week's column: ISP performance.

John Deans of DeansConsulting.com is a Brenham area computer networking consultant who can be reached at 289-2233 or John@DeansConsulting.com for questions and comments.