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# Gene's Antenna Service

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## Gene's Digital Offair Signal Testing Opinions

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Some folks study the INTERNET awhile and visually pick a spot to install their antenna and hope for the best. If the signals are strong enough, this method works. **In this area**, we are dealing with lots of weak channels and this approach often does not work on all the digital channels. Some channels will either not work at all or will be intermittent with occasional pixelization interspersed with total dropout. TV signals vary daily and hourly in this area by as much as 10 to 12 db. Most digital TV tuners and DTV converter boxes lose their picture and/or sound at around -23dbmv which we call "Threshold". With analog signals the picture might vary during a show but remain watchable. Digital signals are more temperamental. When you drop below "Threshold" the signal goes off entirely. The response from these customers is that the signal was good until it wasn't. Welcome to the Digital TV world. In the following **example** we have certain signals measured on an overcast day which is usually optimum in this area. When we have hot weather or fog or moving clouds we will very often lose 10db.

	Reference levels Overcast day	Low signal day	Bigger Antenna Low signal day	Optimum Location of antenna Low signal day	Bigger Antenna and Optimum location Low signal day
	Small Antenna	Typical 10 db loss Small Antenna	Typically 3 db gain	Typically 5 db gain Small Antenna	Typically 8 db gain
Ch-9	-6 dbmv = good	-16 dbmv = good	-13 dbmv = good	-11 dbmv = good	-8 dbmv = good
Ch13	-10 dbmv = good	-20 dbmv = good	-17 dbmv = good	-15 dbmv = good	-12 dbmv = good
Ch-16	-18 dbmv = good	-28 dbmv = <b>Picture gone</b>	-25 dbmv = <b>Picture gone</b>	-23 dbmv = <b>Pixelating</b>	-20 dbmv = good
Ch-29	-13 dbmv = good	-23 dbmv = <b>Pixelating</b>	-20 dbmv = good	-18 = good	-15 dbmv = good
Ch-34	-16 dbmv = good	-26 dbmv = <b>Picture gone</b>	-23 dbmv = <b>Pixelating</b>	-21 = good	-18 dbmv = good

Location of the antenna is more important than anything else. Most folks are familiar with cell phones. In a tough area the signal varies as you walk around and people usually move the phone until they find acceptable reception. TV signals are very similar and vary all over a roof. There are "sweet spots" as well as dead spots. My approach is to test the TV signal with a real antenna and a meter. I first try the customers preferred location and if any channels are marginal I keep testing until I find the best location on their house. Since I'm measuring with a meter I can see how far above or below "Threshold" each channel is and I keep trying locations until I have a reasonable safety margin which allows us to tolerate most signal changes. This also gives me an idea how large an antenna I need to use, which channels will work, and whether I need to add an amplifier.

### Directions for Do-It-Yourselfers

Rent my test antenna with 100' of known good coax for \$10 and test your preferred location. Have a buddy hold the antenna while you run the coax to the TV or converter box. Hook it directly using my test coax. Later you can run through your existing coax and if you have a degradation, at that point, you know you have to troubleshoot or replace your coax. Run the 'auto program' and then see if all the channels you desire are working. If your TV has a signal strength meter, see how strong each channel is. If not, rotate the antenna 20 degrees either direction from the best direction to see if any of them disappear and get an idea how much margin you have. If any of them have disappeared you don't really have enough margin and I suggest you try other locations until you find a stronger spot. Yes, this is more difficult to judge without a meter but it is the best you can do without hiring me. After you do this testing, talk to us and we can give you advice on which antenna and mounting brackets to use. If you buy an antenna from us we give you the \$10 test antenna rental off the purchase price. You have lost nothing but time by being careful and checking out your site ahead of time this way. The main thing to remember with Digital TV -- if the signal pixelates or disappears at times, you have to 'increase the size' of the antenna or 'optimize the location' or both. I use amplifiers on lots of jobs. An amplifier will keep a signal from degrading due to long cables or extra TV's but it will not improve your original signal so it is not a rescue device for a poorly placed antenna.