

Antennas and Digital Television

Ever since the transition to digital television, most consumers have had more choices in free over-the-air broadcasting. This guide provides information on TV antennas and tips for obtaining good quality reception of digital broadcasts.

Channel scan for DTV signals

Before making any changes to your current antenna or antenna system, you should perform a channel scan to see if your antenna receives the digital signals being broadcast in your area.

To run a channel scan, find the “set-up” or “menu” button on your remote control, then select the option that allows you to search for available digital broadcast channels. Once the scan is complete, you should be receiving all available digital channels in your area. In many cases, this is all you need to do to watch DTV broadcasts. You should rescan periodically to check whether additional digital channels have become available.

If you have any difficulty completing the channel scan, consult the owner’s manual of your digital-to-analog converter box or DTV for detailed instructions.

What kind of antenna do I need to receive digital TV signals?

To receive DTV signals from all stations in the area, your antenna needs to be able to receive both VHF channels (channels 2-13) and UHF channels (channels 14-51). Some antennas only provide good reception of VHF or UHF channels, but not both. For example, indoor “rabbit ears” usually need to be augmented with an additional “wire loop” or “bowtie” antenna (see images below) in order to pick up signals on UHF channels. Many of the antennas being sold as “HDTV Antennas” perform best at receiving UHF signals, but perform less well receiving VHF channels. Check with retail consultants and consumer websites to make sure that any antenna you choose provides good reception of both VHF and UHF channels.

Even if you use a digital-to-analog converter box, you will still need to use an antenna to receive DTV signals. Digital-to-analog converter boxes do not contain additional antennas or signal amplification.

Antennas for reception in different signal conditions

The antennas shown below will work for the indicated signal strength in most instances, but may not work in all cases. The type of antenna needed at a specific location may vary depending on geographic location, the height at which the antenna is used, and other local factors such as nearby buildings, trees, terrain, or home construction. Generally, outdoor antennas get better reception than indoor antennas and are strongly recommended for the most reliable reception.

Strong TV Signals



Simple indoor antennas may be sufficient for locations having strong TV signals.

Moderate TV Signals

High quality indoor antenna (check the box for information) or an outdoor antenna may be appropriate



Weak TV Signals



Outdoor antenna is appropriate. See www.antennaweb.org for guidance on the type of outdoor antenna you may need.

More reception tips

- Antennas typically need to be oriented or “aimed” to get the best signal from the desired station. DTV reception can often be improved just by changing the location of your current antenna, even as little as a few inches. For example, moving it away from other objects or placing it higher or lower can often improve reception. Be sure to move the antenna slowly to allow time for the signal received by the digital TV tuner to be displayed.
- While adjusting your antenna, it may be helpful to access the “signal strength meter” on your digital-to-analog converter box or DTV, if it has one, to determine whether your adjustments are improving the signals’ strength. The signal strength meter is usually accessed through the menu feature on your remote control; consult the owner’s manual of your device for detailed instructions on how to access it.
- Remember to do another channel scan after you have adjusted your antenna. For outdoor antennas, a rotor that re-orientes the antenna can improve performance, particularly when trying to receive stations that transmit from different locations.
- If you are near a station’s broadcast tower, reception of that station, as well as other stations, can be impeded by strong signal “overload.” If you suspect this to be the case, you may want to remove any signal amplifiers you may have or try to install an “attenuator” to reduce the amount of signal coming to your converter box or DTV.
- If you are not receiving certain DTV stations, this does not necessarily mean there is a problem with your antenna or receiver. Check with the TV station to find out whether they are planning changes that will improve reception. To check available signals where you live, use the DTV reception maps at www.fcc.gov/media/engineering/dtvmaps.

Consumer Help Center

For more information on consumer issues, visit the FCC’s Consumer Help Center at www.fcc.gov/consumers.

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