

## Troubleshooting Guide for Digital-to-Analog Converter Boxes and Digital Televisions

The digital television (DTV) transition refers to the switch from analog to digital broadcast television. All full-power television stations have stopped broadcasting in analog, and now broadcast only in digital. If you aren't receiving digital signals on your analog TV, you can purchase a digital-to-analog converter box from an electronics retailer.

If you are having difficulty receiving digital broadcast stations in your area, this troubleshooting guide provides a connections checklist and tips on reception of digital signals.

### Use an Antenna that Provides Good Reception of All Channels

- Most existing antennas used by consumers will provide good reception of DTV signals. (Before making any changes, try your existing antenna first to see if it allows you to receive all the stations you normally watch.)
- For watching DTV signals, you will need an antenna that provides good reception of both VHF signals (channels 2-13) and UHF signals (channels 14-51) to reliably receive all of the digital signals broadcast in your area.
- Many antennas are designed only for reception of either VHF or UHF signals (but not both). For example, the commonly used "rabbit ears" indoor antenna is only suitable for receiving VHF signals. To receive UHF signals, an indoor antenna should also include a wire loop or other feature for reception in that band.
- The reception capabilities of TV antennas also vary considerably, so be sure to talk to retail consultants and look at information on the packaging and/or the Internet to make sure that any new antenna you may choose provides good reception of both VHF and UHF channels. In addition, if you use an indoor antenna and receive signals on VHF channels, you may need to use an antenna with amplification.
- Many antennas currently being sold as "HDTV Antennas," perform best at receiving UHF signals; some of these models state that they provide reception of signals on channels 7-13 but actually perform less well receiving those channels. If you obtain one of these antennas, be sure it provides good reception of all the VHF channels as well as the UHF channels.

### Check Your Connections

- Check that your digital-to-analog converter box or digital television is connected properly. Make sure your antenna is connected to the antenna input of your digital-to-analog converter box or digital television. If using a digital-to-analog converter box, also ensure that the antenna output of your converter box is connected to the antenna input of your analog TV. Refer to the owner's manuals of your components if you are unsure of the proper connections.
- Ensure that your components are plugged in and have their power turned on.
- If you have a digital-to-analog converter box, tune your analog TV to channel 3. You should see a set-up menu or picture displayed on your TV screen. If you do not see a set-up menu or picture, tune your TV to channel 4. If you still do not see a set-up menu or picture, recheck your connections.

## Perform a Channel Scan

- Digital-to-analog converter boxes and digital televisions have a button, usually on the remote control, that is labeled “set-up” or “menu” or some similar term. Press that button to access the set-up menu.

Using the directional arrow buttons on your remote, scroll to the option that allows you to perform a “channel scan.” The channel scan will automatically search for digital broadcast channels that are available in your area. Consult the owner’s manual of your digital-to-analog converter box or digital television for detailed instructions on how to perform a channel scan for your device.

- Once the channel scan is complete, you will be able to tune to the digital channels received by your antenna. **You should perform a channel scan periodically to check whether additional digital channels have become available.**

## Adjust Your Antenna

- Small adjustments to your antenna can make a big difference in the number of digital channels you can receive. If you have an indoor antenna, try elevating it and moving it closer to an exterior wall of your home. After adjusting your antenna, perform another channel scan to see if your reception is improved.
- While adjusting your antenna, it may be helpful to access the “signal strength meter” on your digital-to-analog converter box or digital television 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. Refer to the owner’s manual of your device for detailed instructions on how to access its signal strength meter. Remember to do another channel scan after you have adjusted your antenna.
- Television stations broadcasting in digital use both the VHF band (channels 2-13) and UHF band (channels 14-51). Many indoor antennas use “rabbit ears” for the VHF band and a “loop” or “bow-tie” antenna for the UHF band. Make sure you are using an antenna that covers both the VHF and UHF bands and have connected it properly.

## If You are Still Having Difficulty

- If you are not receiving certain digital TV stations, this does not necessarily mean there is a problem with your antenna or digital-to-analog converter box or digital television. Check with the TV station to find out whether they are planning changes that will improve reception.
- Digital broadcasting generally provides a clear picture; however, if the signal falls below a certain minimum strength, the picture can disappear. This “cliff effect” means that if you watch analog TV stations that have static and distortion, you may have to adjust or upgrade your antenna system.
- Simple indoor antennas provide minimal performance that may not be suitable for your location. If you are unable to obtain satisfactory DTV reception with your current indoor antenna, you may wish to obtain an indoor antenna that includes features for better reception of UHF signals, as well as VHF, and/or an amplifier to boost the received signal (often referred to as an active indoor antenna).
- Generally, an outdoor antenna will get better reception than an indoor antenna. However, the performance of outdoor antennas can degrade over time due to exposure to the weather. If you are having problems, check for loose or corroded wiring, broken antenna elements and that the antenna is pointed in the right direction.



- Try to keep the length of wire between your antenna and digital-to-analog converter box or digital television as short as possible for best reception.
- “Splitters” that are used to connect a single antenna to multiple digital-to-analog converter boxes or digital televisions reduce the amount of signal available to each device. If you are having problems, check whether reception is improved without the splitter. In some cases an “active” splitter that includes an amplifier can solve the problem.
- 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.” Consider using an “attenuator” or removing amplifiers to improve your reception.
- If you decide to replace or upgrade your indoor or outdoor antenna, many types are available from electronics retail stores at a variety of prices. Web sites such as [www.antennaweb.org](http://www.antennaweb.org) provide information on the locations of broadcast towers and the types of outdoor antennas appropriate for the stations you wish to receive. If you need assistance with upgrading your antenna system, check with a local antenna retailer or antenna installer.

For more information about the DTV transition, go to [www.fcc.gov/digital-television](http://www.fcc.gov/digital-television).

### **Consumer Help Center**

For more information on consumer issues, visit the FCC’s Consumer Help Center at [www.fcc.gov/consumers](http://www.fcc.gov/consumers).

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