



► **TOPIC: DTV Basics**

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Q: What is digital television (DTV)?

A: Digital television (DTV) is a new type of broadcasting technology that is transforming television as we now know it. By transmitting the information used to make a TV picture and sound as "data bits" (like a computer), a digital broadcaster can carry more information than is currently possible with analog broadcast technology. The difference between analog and digital broadcasting is similar to that between compact discs and cassette tapes.

Digital TV offers a better viewing experience with vastly improved picture and sound quality. DTV is also more efficient than analog TV technology so broadcasters will be able to produce additional signals using the DTV system.

Q: What is analog television?

A: Analog television service is the traditional method of transmitting TV signals and has been the standard broadcast technology since the inception of television. Analog television service isn't as efficient as DTV. It uses up much more valuable spectrum that - once the DTV transition is completed - will be provided to public safety organizations, such as first responders including fire and police departments. Remaining spectrum will be auctioned off for the production of new services.

Analog broadcasting will continue until the end of the transition period, which currently is set for February 17, 2009. Most television stations will continue broadcasting their programming in both analog and digital signals until then.

Q: What are the benefits of digital television?

A: Digital technology allows the transmission of pictures with higher resolution for dramatically better picture and sound quality than currently available. DTV also allows the transmission of several TV programs at once - called "multicasting." DTV technology can also be used to provide interactive video and data services that are not possible with "analog" technology.

An equally important, but often overlooked benefit of DTV is that it will free up scarce and valuable spectrum for public safety and new wireless services. This is possible because the modern technology of DTV is more efficient than analog TV technology, allowing for many new and critical uses of this very limited resource.

Q: What is the digital TV transition?

A: The digital TV (DTV) transition is the switch from traditional analog TV to digital TV, a modern technology with many benefits. February 17, 2009 is the deadline by which traditional analog TV service will be shut off. The DTV service will be what remains. Most television stations are currently broadcasting their programming in both analog and digital until February 17, 2009. Analog television sets receiving free, over-the-air programming will still work after that date, but owners of these TVs will need to acquire converter boxes to change digital broadcasts back into the old analog format. Converter boxes will be available from consumer electronics retailers at that time. If you're a cable or satellite subscriber, you aren't likely to be affected by the DTV transition, but you may want to check with your cable or satellite provider if you have questions about your service.

Q: When will the DTV transition be complete?

A: The final transition is February 17, 2009. At that point, broadcasting of the current "analog" channels will end and the spectrum that had been used for analog transmission will be put to other uses. Until the transition to DTV is complete, television stations will continue broadcasting on both their digital and analog channels.

Q: Will I need a new TV?

A: Your current television will work as it does now until analog broadcasting stops. Even after the transition is over, your current TV will not become obsolete. A set-top converter box can be used to receive broadcast DTV signals and change them into the format of your current television. In addition, if you use your analog set with a pay service like cable or satellite, it should continue to work as it always has.

Q: How do I get a set-top converter box for my analog television?

A: By early 2008, set-top converter boxes will be available for purchase at electronics retailers. The cost of the box is expected to range from \$50-70.

Beginning on January 1, 2008, U.S. households can request up to two coupons for the converter boxes, which will be valued at \$40 each. Coupons will be mailed via the U.S. Postal Service, and consumers will have approximately three months to redeem them. Consumers who wish to retain their analog television sets may also switch to a cable, satellite or telecommunications service provider.

Q: What is the Digital-to-Analog Converter Box Assistance Program?

A: On February 18, 2009, broadcast television stations will stop analog broadcasting and complete the transition to digital broadcasting. If you don't subscribe to cable or satellite services, you'll need either a television set capable of receiving DTV programming, or a digital-to-analog converter box.

Digital-to-analog converter boxes will make DTV signals viewable on analog TV sets. These converter boxes will be available in retail stores during the transition. The National Telecommunications and Information Administration (NTIA) of the U.S. Department of Commerce is developing rules that will allow households to obtain coupons that can be applied toward the purchase of digital-to-analog converter boxes. For more information on the Digital-to-Analog Converter Box Assistance program, visit [NTIA's DTV Coupon FAQ](#).

Q: How can I prepare for the DTV transition?

A: Preparing for the DTV transition is easy and requires one of three steps by February 17, 2009:

- Purchase a new television set with a built in digital tuner.
- Purchase a digital-to-analog converter box that plugs into an existing television. The boxes, which are expected to cost between \$50 - 70 will be available for purchase in 2008. Beginning on January 1, 2008, U.S. households can request up to two coupons valued at \$40 each. Each coupon can go toward

the purchase of a single set-top converter box that will allow you to continue watching free "over-the-air" television on an analog set.

- Subscribe to a cable, satellite or telecommunications service provider if all desired local broadcast stations are carried by that service.

Any of these steps will ensure that "over-the-air" television consumers will continue to receive programming.

Q: What is the difference between integrated DTVs and DTV monitors?

A: An Integrated DTV set is a digital television with a built-in DTV receiver. If you have an Integrated DTV and live in an area served by a DTV broadcast station, you won't need any additional equipment, with the exception of an antenna to receive over-the-air DTV broadcast programming. Integrated TVs can usually receive and display current analog signals.

In contrast, a DTV-Ready *monitor* isn't capable of receiving over-the-air DTV broadcast programming without additional equipment. A DTV set-top decoder must be connected between the antenna and the monitor to receive and display over-the-air DTV programming.

Confirm with your retailer that the DTV receiver or set-top decoder is compatible with the DTV monitor that you're purchasing. Most monitors have a built in analog receiver and can display regular analog TV programming. They can also display standard resolution video from DVD players and VCRs.

Q: What do DTV sets look like and what will they cost?

A: Most DTV sets have wider, more rectangular screens than current analog TVs. This widescreen format allows for images that are more like those shown in a movie theater. Like current TV sets, a range of sizes is available.

As with most new consumer electronics technologies, DTV sets have become less expensive since their introduction. Prices are expected to continue to decrease over time and will vary depending on screen size, display technology, and other features.

Q: Will I need a special antenna to receive DTV over-the-air?

A: In general, dependable reception of DTV will require the same type of signal reception equipment that currently works to provide good quality reception of analog TV signals. If you now need a roof-top antenna to receive television, the same antenna generally will be needed to receive DTV. For specific information on using an antenna to receive local television broadcast channels visit www.antennaweb.org.

Q: Do I already have DTV via digital cable or satellite?

A: You may have DTV if you subscribe to the digital package and get digital programming. *But*, digital cable and satellite service aren't necessarily "DTV." Your cable or satellite system may be using digital technology as a more efficient way of delivering programming to your analog TV set. If you have an analog television set, then you aren't viewing true DTV, even though the signal you're watching may be somewhat improved. In order to view true DTV and enjoy all the attributes of digital television service, you must view television signals on a new DTV set.

Similarly, in order to view programs in high-definition (HDTV), you must be equipped with a TV set capable of displaying pictures in high-definition. Your cable or satellite set-top box or the CableCARD from your cable company must provide HDTV channels. Otherwise, you must have an antenna that can receive digital HDTV signals over the air. Check with your cable or satellite provider if you have questions about your service.

Q: What about my VCR, DVD player and camcorder? Will I be able to use them with an HDTV or DTV set?

A: HDTV and DTV sets are "backward compatible," meaning existing analog equipment (VCRs, DVD players, camcorders, video games, etc.) will work on digital TV sets, but not in high definition. Their video will be displayed in the maximum resolution that is available with each product.

Q: Are DTV and HDTV the same thing?

A: No. HDTV, or high-definition television, is the highest quality digital television (DTV) available, offering more than five times the sharpness of today's analog television, along with digital surround sound capability. DTV is also available as EDTV (enhanced definition TV) or SDTV (standard definition TV), each with improved pictures and sound over today's analog televisions.

Q: How does digital TV use closed captions?

A: Analog TV has only one format for closed captions in which the captions are encoded invisibly in the analog TV signal. Digital TV can support two formats. The second format is newer and offers more choices of font, color, and size, which can result in better visibility and ease of use. Digital TV carries captions of either format as data along with the digital audio and video content, but unlike analog TV, the captions are not embedded in the video signal. It is up to the originator of the programming to provide the captions for any given program and to select the format. When the captions are decoded and displayed, the resulting text and symbols appear on the screen. The caption decoding function, by U.S. government mandate, is included in all digital TVs that have a screen size 13 inches or larger. It is also included in all separate, stand-alone digital TV tuners (e.g., set top boxes or "STBs"). In either case, the digital TV tuner reads the closed caption data, interprets it, and writes it into the video so it becomes visible when the video is displayed on a screen. (More specifically, the captions are written on top of the video images.)

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