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THE DIGITAL TV TRANSITION

What You Need To Know About DTV



➔ What Should I Do to Be Ready?

You have three choices:

1 **Connect your analog TV to a digital-to-analog converter box.** Digital-to-analog converter boxes are in stores and have a one-time cost of \$40-\$70. To help you pay for the boxes, the U.S. Government is offering two \$40 coupons per household. For more information on the coupons, visit www.DTV2009.gov, or call 1-888-388-2009 (voice) or 1-877-530-2634 (TTY). Plus, you should not need a new antenna if you get good quality reception on analog channels 2-51 with your existing antenna. **Or**

2 **Buy a digital television (a TV with a built-in digital tuner).** You do not need a High Definition TV (HDTV) to watch digital broadcast television. You only need a digital TV (or an analog TV connected to a digital-to-analog converter box). Plus, you should not need a new antenna if you get good quality reception on analog channels 2-51 with your existing antenna. **Or**

3 **Subscribe to a paid TV service.** If your TV set receives local broadcast stations through a paid provider such as cable or satellite TV, it is already prepared for the DTV transition. Cable companies are not required to transition or switch any of their channels to digital. However, if you have an analog TV that does not receive local broadcast stations through your paid provider, you will need a digital-to-analog converter box to watch digital broadcasts on that TV.

➔ What Is The Digital TV (DTV) Transition?

Currently, many over-the-air stations are broadcasting in both analog and digital TV formats. After February 17, 2009, full-power TV stations will broadcast only in digital. The DTV transition will affect those who watch free over-the-air television (through a rooftop antenna or "rabbit ears"). If you watch over-the-air programs on an analog TV, you must take action before February 17, 2009.

➔ Why Are Broadcast Stations Switching to Digital?

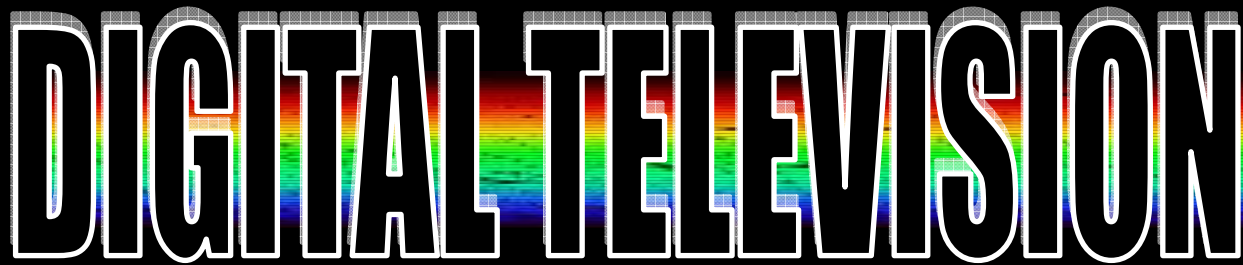
Federal law requires the switch, which will free up the airwaves for police, fire, and emergency rescue communications, allow broadcasters to offer programming with better picture and sound quality and offer more programming choices, and allow for advanced wireless services for consumers.

For More Information:

1-888-CALL-FCC (Voice)

DTV.gov

1-888-TELL-FCC (TTY)



DIGITAL TELEVISION

What Every Consumer Should Know



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Media Bureau and Consumer & Governmental Affairs Bureau
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DTV: Digital Television Background

Digital Television (DTV) is a new type of broadcasting technology that will transform television. Because DTV is delivered digitally, the television signal is virtually free of interference. And because DTV is more efficient than **analog**, broadcasters are able to offer television with improved quality pictures and surround sound. DTV will soon replace today's analog television broadcasting system.



DTV is virtually free of interference.

This booklet has been prepared by the Federal Communications Commission (FCC) to help you better understand and answer many of your questions about the transition to digital television.

DTV Why Now?

In the 1990s, Congress determined that broadcast stations must transition from analog television broadcasting to digital television broadcasting. Converting to DTV will free up parts (“bands”) of the scarce and valuable broadcast spectrum, allowing these bands to be used for public safety and emergency services, such as police, fire and medical services, and new wireless services, such as wireless broadband. Because public safety and emergency services have become even more important today, Congress established a “hard” DTV transition deadline that requires all full-power television stations to cease analog broadcasts after February 17, 2009. (The deadline for low power television and translator stations will be established at a future date.) Until then, most television stations will continue broadcasting on both their digital and analog channels. Already today, more than 1,600 television stations throughout the United States are broadcasting digital programs.

DTV Programming

Digital television offers many advantages over analog television for viewing broadcast signals. DTV is more versatile and efficient than analog television and allows stations to broadcast more programming using less spectrum. In the same bandwidth that a broadcaster currently provides one analog channel, a broadcaster may provide a super sharp “high definition” (HD) program or multiple “standard definition” DTV programs simultaneously. Providing several program streams in one broadcast signal is called “**multicasting.**” A broadcaster also can use its DTV signal to provide video and data services that are not possible with analog technology.

Television stations serving every market in the United States are currently delivering digital television programming. For a list of TV stations currently broadcasting in digital, visit <http://www.nab.org/AM/ASPCode/DTVStations/DTVStations.asp>

DTV and Your Analog TV

Today, most people still have **analog televisions**.

Analog TVs have been used since the beginning of television to receive and display programming. Your analog television will work as it does today until the transition to digital is completed. Even then, you will be able to continue using your analog television.



Analog televisions will work with a digital converter box.

If you receive TV programming over the air using a roof-top or rabbit ears antenna, you will be able to purchase a **digital converter box** (sometimes referred to as a digital-to-analog converter box) to enable your analog TV to continue working after February 17, 2009. You will also need a digital converter box for each device you have that only has an analog tuner - such as an analog-only VCR or DVD recorder. A digital converter box also may receive multicast channels and high definition programming and display them in analog picture quality.



Beginning in 2008, your household may be able to receive up to two coupons worth \$40 each toward the purchase of digital converter boxes. The National Telecommunications and Information Administration (NTIA) has responsibility for administering the coupon program. Additional information can be found at www.dtv2009.gov or call 1-888-DTV-2009.

Cable and Satellite TV Viewers

If you are a cable customer, you may need a set-top box to receive DTV signals and convert them into the format of your current analog television, even after the DTV transition is complete. If you are a satellite customer you may need a different set-top box in order to receive **high definition (HDTV)** programming. Check with your cable or satellite provider to determine if and when you will need a set-top box.

DTV uses the same antennas as analog TV.

If you already have a good VHF and UHF antenna, either indoors or on your roof, you don't have to buy an antenna that is "HD Ready." DTV broadcasters have been assigned channels in the VHF and UHF bands, between 54 and 700 MHz, where analog channels 2 to 51 are now. Therefore, as long as a DTV signal is available, your existing antenna should still work after the transition is complete.

DTV takes advantage of your home theater surround sound.

Analog television broadcasts sound just like FM stereo radio. DTV broadcasts are digital and allow many more options, including Dolby® Digital 5.1 Surround Sound, just like a DVD. With a digital converter box, the digital surround sound will be converted to analog for your current television or home theater system.

DTV Equipment

The DTV transition has two parts. Broadcasters must upgrade to digital transmission, and viewers of over-the-air TV must upgrade to digital reception. Even with a digital-to-analog converter box, your current **analog** television will not be capable of taking full advantage of DTV. To enjoy the full picture quality and benefits of DTV, you may want to purchase a new DTV set. But before you do, there are a few things to consider.

Digital TV sets are widely available

Digital TVs are widely available in stores. The Commission's digital tuner rule specifies that as of March 1, 2007, all new TVs must include digital tuners. This rule prohibits the manufacture, import, or interstate shipment of any TV or device containing an analog tuner, unless it also contains a digital tuner. Despite this prohibition on manufacture and shipment, retailers may continue to sell analog-only TVs and devices (such as video recorders) from existing inventory. As a result, at stores where these products are sold, many consumers may not be aware that this equipment will not be able to receive over-the-air-television signals after February 17, 2009.

To address this issue, the FCC has adopted a rule requiring sellers to display a Consumer Alert if they are selling TV equipment with only an analog broadcast tuner. The following text must be displayed if they are selling television equipment with only an analog broadcast tuner:

This television receiver has only an analog broadcast tuner and will require a converter box after February 17, 2009, to receive over-the-air broadcasts with an antenna because of the Nation's transition to digital broadcasting. Analog-only TVs should continue to work as before with cable and satellite TV services, gaming consoles, VCRs, DVD players, and similar products. For more information, call the Federal Communications Commission at 1-888-225-5322 (TTY: 1-888-835-5322) or visit the Commission's digital television website at: www.dtv.gov.

While analog-only receivers may serve the needs of customers who subscribe to a wired or satellite service or who play games or view DVD or VCR content, some customers may be unaware that purchasing a device with an analog-only television receiver may require additional attention in the future. Public education about the DTV transition will be a major and beneficial national undertaking, and a challenge for government and industry.

The Consumer Alert explains that a TV receiver with only an analog broadcast tuner will require a digital converter box after February 17, 2009, to receive over-the-air broadcasts with an antenna because of the Nation's transition to digital broadcasting. Analog-only TVs should continue to work with cable and satellite TV services, gaming consoles, VCRs, DVD players, and similar products. If you are uncertain whether a TV you want to buy contains a digital tuner, be sure to ask the seller.

A digital display may be an **integrated** television or just a **monitor**.

"Integrated" or **"Built-In"** HDTV or DTV sets are all-in-one sets that have built-in tuners to receive over-the-air DTV broadcasts and a screen to display the programming. Other than a standard antenna, you don't need any other equipment to receive over-the-air digital programming.

An **"HDTV Monitor"** or **"HDTV Ready"** set does not have a built-in tuner and requires you to obtain a separate receiver (such as an HD set-top box) to receive and view digital programming, including HD. Set-top boxes can be purchased at retail stores. Cable and satellite providers may sell or lease set-top boxes for their specific services.

NOTE: The set-top box described here is not the same as the digital-to-analog converter box used to convert over-the-air digital broadcasts for viewing on an analog TV set. Set-top boxes connected to monitors receive digital over-the-air broadcasts or cable or satellite signals so they may be viewed on monitors.

A digital television may be **digital cable ready (DCR)**.



Cable subscribers may want to consider a digital cable ready (**"plug-and-play"**) DTV set. These sets have the circuitry of a digital cable box built in. Current first generation plug-and-play sets are able to receive one-way programming only, including analog basic, digital basic, and digital premium cable programming. If you want to receive certain advanced digital cable services - called two-way services - like pay-per-view, video-on-demand, cable operator enhanced program guide, or interactive data enhanced television service, using a first generation set, you will need a set-top box. You may also need a set-top box to receive other cable operator-provided services, such as those that incorporate the features of a digital video recorder.

DTV Formats—Aspect Ratio

Televisions come in two aspect ratios. These ratios are 4x3 and 16x9. The **aspect ratio** is the comparison of the screen's width to its height. Traditional **analog** TV has a 4x3 aspect ratio. This means that a TV screen is 4 inches wide for every 3 inches of height. Many new digital televisions are 16x9, or "widescreen." The 16x9 aspect ratio more closely approximates the look of movies, and broadcasters have begun offering programming that takes advantage of it.

"Letterbox" is the term used when 16x9 content is viewed on a 4x3 screen. In order to display the widescreen content without distortion or missing parts of the picture, the television will place black bars at the top and bottom of the image.



"Pillar box" is the term used when 4x3 content is viewed on a 16x9 screen. In order to display the squarer traditional picture on a widescreen monitor,



black bars are placed down the sides of the screen.

"Postage stamp" is the term used when a 4x3 transmission contains widescreen images and its own letterbox bars. When viewed on a television, the image will appear as a smaller box within your screen.



DTV Formats—Resolution

Although there are as many as 18 DTV formats, only 4 formats are commonly used. The most common formats fall into three broad categories:



High Definition TV (HDTV)

HDTV in widescreen provides the highest resolution and picture quality of all DTV formats. A current analog TV picture is made up of 480 horizontal lines. An HDTV picture can have up to 1080 lines, allowing for sharp picture detail. The most common formats are 720p ("p" stands for progressive scan - see "DTV Definitions," pg.11) and 1080i ("i" stands for interlaced - see "DTV Definitions," pg.11) with either 720 progressively (non-interlaced) scanned lines or 1080 interlaced lines. Combined with digitally-enhanced sound technology, HDTV achieves a new benchmark for sound and picture quality in television.

Enhanced Definition TV (EDTV)

EDTV is a step up from analog TV and SDTV. Also called 480 progressive (480p), EDTV is widescreen 16x9 or traditional 4x3 format and provides better picture quality than SDTV, but not as good as HDTV. Traditional DVDs are encoded as 480p (although newer HD-DVD and Blu-ray players allow viewing of HDTV discs).

Standard Definition TV (SDTV)

SDTV is the baseline display and resolution for both analog and digital. Transmission of SDTV is usually in the traditional 4x3 aspect ratio, but may be wide-screen 16x9 format. SDTV and analog TV can deliver up to 480 interlaced (480i) resolution, although analog TV may be lower.

DTV Sizes and Costs

As with **analog** televisions, DTV set sizes range from very small to quite large. All TV sizes are measured diagonally across the screen. So, most DTV sets, which have an aspect ratio of 16x9, are wider, but shorter, than analog TV sets of the same diagonal screen size.

As with any new consumer electronics technology, DTV sets have become less expensive since their introduction. Prices vary depending on screen size, display technology, whether a DTV tuner is built-in, and other features. While DTV sets are still more expensive than their analog counterparts, prices have dropped dramatically.



DTV sets have wider, more rectangular screens.

DTV Screen Choices

You'll have a number of different screen choices when you look at DTVs. Some of the most common are:

Cathode Ray Tube (CRT) screens - These are traditional color television screens updated for digital. Their resolution and color capabilities vary from model to model. These screens have a very bright picture, but are limited in size, and the larger units are typically quite heavy.

Rear Projection TVs - Rear projection TVs can be much larger than standard CRTs. They create the image on a small display, but then enlarge it onto the back of the screen. Older model rear projection TVs using small CRTs to create the image were dim and hard to see from extreme angles, but new digital projection technologies like Liquid Crystal Display (LCD), Digital Light Processing (DLP), and Liquid Crystal on Silicon (LCoS) create brilliant, wide-angle pictures on ever-larger screens.

Front Projectors - Projectors are TVs that create an image by projecting it onto a wall or stand-alone screen (much like a movie theater). Projectors use the same digital projection technologies as rear projection TVs but, because the screen is separate, the image can be the size of an entire wall. Projectors are not as bright and often require the room to be dark in order to clearly see the image.

Flat Panel TVs - Flat Panel TVs are very thin and relatively light weight and are sometimes hung on the wall. Current flat panels use either LCD or plasma screen technology. Flat panel LCDs are very thin and produce extremely clear pictures. Plasma screen TVs produce images by lighting small pockets of colored gas. This technology allows the TV to create a bright, clear picture in large screen sizes while remaining only a few inches thick.

DTV At A Glance

Analog TV

- ▶ Analog broadcasts may continue through February 17, 2009.
- ▶ Analog receivers currently built into most older TVs. Single program stream, no advanced services.
- ▶ Will continue to work with cable, satellite, VCRs, DVD players, camcorders, video games, and other devices.
- ▶ Provides good pictures but with interference and noise.
- ▶ Up to 480 interlaced lines of resolution.
- ▶ 4x3 aspect ratio.
- ▶ FM stereo sound.
- ▶ Can receive only analog TV. A set-top box is needed to receive DTV.

Digital TV

- ▶ Digital broadcasts are available now in every market. After the digital transition is completed, over-the-air television will only be broadcast in digital format.
- ▶ With an integrated DTV set, only an antenna is needed to receive over-the-air DTV broadcast programming. For a monitor or analog TV, a DTV set-top box is required.
- ▶ Multicasting, electronic program guide, data streaming, and high definition available.
- ▶ Will work with cable, satellite, VCRs, DVD players, camcorders, video games, and other devices. Images will not be displayed in HDTV unless the equipment is made for it.

SDTV Standard Definition DTV

- ▶ Provides good pictures without interference.
- ▶ 480 interlaced lines of resolution.
- ▶ 4x3 or 16x9 aspect ratio.
- ▶ Multi-channel digital surround sound, including Dolby® Digital 5.1.
- ▶ Can receive both digital and analog TV. No set-top box needed if tuner built-in.

EDTV Enhanced Definition DTV

- ▶ Provides better picture resolution, clarity, and color.
- ▶ At least 480 progressive lines of resolution.
- ▶ 4x3 or 16x9 aspect ratio.
- ▶ Multi-channel digital surround sound, including Dolby® Digital 5.1.
- ▶ Can receive both digital and analog TV. No set-top box needed if tuner built-in.

HDTV High Definition DTV

- ▶ Provides best available picture resolution, clarity, and color.
- ▶ Up to 1080 lines of resolution - most common formats are 720p (progressive) and 1080i (interlaced).
- ▶ 4x3 or 16x9 aspect ratio.
- ▶ Multi-channel digital surround sound, including Dolby® Digital 5.1.
- ▶ Can receive both digital and analog TV. No set-top box needed if tuner built-in.

DTV Definitions

Analog: Traditional, less-efficient and lower quality system that uses radio frequency (RF) waves to transmit and display pictures and sound.

Aspect ratio: Screen's width as compared to its height. For example, for 4x3, the traditional TV aspect ratio, a 32-inch TV would be 25½ inches wide and 19 inches tall. A 16x9 **widescreen** 32-inch TV is closer to a movie screen than a traditional TV, and would be 28 inches wide and 16 inches tall.

Broadcast Digital-to-Analog Converter Box: A stand-alone device that receives and converts digital signals into a format for display on an **analog** television receiver.

CableCARD: Security card that **digital cable ready** TV owners must obtain from their cable company in order to view scrambled programming such as premium services.

Cathode Ray Tube (CRT) Screens: Traditional color television screens are available for both *analog* and **digital TV**. Their resolution and scanning vary from model to model. These screens have a very bright picture, but are limited in size and can be quite heavy.

Closed Captioning: Service that allows persons with hearing disabilities to read dialogue, or the audio portion of a video, film, or other presentation, on the TV screen.

Coaxial: Coaxial inputs (sometimes just called "cable") provide a simple and common way to transmit video. Now coaxial inputs are mostly used for connecting a TV set to an antenna or cable system.

Component Video: Also known as "Y Pb Pr," this connector splits the video signal into three parts. With two audio connections, this 5 wire solution is the most common way to connect EDTVs to DVD players and most HDTV **monitors** to their receivers or other set-top boxes.

Composite Video: Also called "RCA" connectors, it is the most common way to connect peripherals and other components. It consists of one yellow connector for video and two audio connectors for "right" and "left". Composite connectors cannot transmit high definition pictures, so for HDTV, another connector option, such as **HDMI** or **Component Video**, must be used.

Digital Broadcast Satellite (DBS): TV programming delivered via high-powered satellite. Signals are transmitted to a small dish (usually 18 - 24 inches across) mounted outside.

Digital Cable Ready TV (DCR): Also referred to as "**plug-and-play**," this is a DTV or other device for digital cable customers that plugs directly into the cable jack, and does not require a separate set-top box to view analog and unscrambled digital cable. Used with a CableCARD, it can receive scrambled programming such as premium services.

Digital Converter Box: Also referred to as a "digital-to-analog converter box," this is a stand-alone device that receives, decodes, and converts over-the-air digital programming into analog. When connected to an analog television, it permits digital programming to be displayed in analog.

Digital Television (DTV): Digital technology television that uses radio frequency (RF) to transmit computer code and display it as pictures and sound.

Dolby® Digital: Form of multi-channel digital sound, it provides efficient encoding and noise reduction for high quality surround sound.

Downconvert: Process by which a high resolution signal is reduced to a lower resolution for display. Usually, extra lines are simply ignored when drawing the lower resolution image, but sometimes more sophisticated methods are used.

DVI: Digital Video Interface (DVI) is a high quality digital connector. Similar to **HDMI** (see definition) and sometimes with **HDCP** (see definition), DVI can digitally transmit uncompressed high definition video, preserving perfect picture quality. Unlike **HDMI** or **Firewire** (see definition), DVI requires a separate audio connection.

Enhanced Definition TV (EDTV): Better digital television transmission than **SDTV** with at least 480p (progressive), in a 16x9 or 4x3 display and Dolby® digital surround sound. 480p is the quality of most progressive scan DVDs and players.

EPG: Electronic Program Guide (EPG) is an interactive list of upcoming TV programming that can be transmitted along with a DTV program.

Flat Panel TVs: Flat Panel TVs are thin, lightweight TVs that can be hung on a wall. Current flat panels use Liquid Crystal Display (LCD) or plasma screen technology.

Firewire: See **IEEE 1394**.

Front Projectors: TVs that create the image on a small display, then enlarge it by projecting it onto a wall or stand-alone screen (much like a movie theater). Front projectors tend to be dimmer than direct flat panels or CRTs, and often require the room to be dark to be able to see the image clearly.

HDCP: High Definition Content Protection, a technology used to prevent piracy of high quality uncompressed video, primarily over **DVI** connections.

HDMI: High Definition Multimedia Interface, a high quality digital connector. Similar to **DVI** and sometimes with **HDCP**, HDMI can digitally transmit uncompressed high definition video and audio on the same cable, preserving picture and sound quality.

High Definition TV (HDTV): The highest quality digital television, generally **widescreen** 16x9 with at least 720 **progressive** lines or 1080 **interlaced** lines and surround sound.

HDTV Monitor (also HDTV Ready): TV set with the inputs and capability to become an HDTV with the addition of an HDTV tuner, HD cable set-top box, or HD satellite receiver.

HDTV Tuner (also known as decoder or receiver): Device capable of receiving and decoding HDTV signals. HDTV tuners can either be built into a TV set (see

Integrated or Built-In) or be a stand-alone device (see **Set-Top Box**).

IEEE 1394: Also called Firewire or I-link, IEEE 1394 is a way to transmit compressed data and video between components on one cable.

Interference: Unwanted electrical signals or noise causing impairments in the video signal.

Integrated (or Built-In): HDTV or DTV set with the tuner built into the set. It does not need a separate set-top box to receive over-the-air signals.

Interlace Scan: Way to scan vertical lines onto a TV picture by scanning all the odd lines first, then filling in the even lines. (This happens in the blink of an eye.)

Letterbox: Blank bars above and below the image when viewing 16x9 aspect ratio content on a 4x3 screen. The opposite of **pillar box**.

Multicasting: DTV technology that allows each digital broadcast station to split its digital bandwidth into two or more individual channels of programming and/or data services. (For example, on channel 7, you could watch subchannel 7-1, 7-2, 7-3 or 7-4.)

Multi-Channel Digital Sound: Feature of DTV that permits numerous streams of sound to be transmitted for a given program, providing stereo, surround sound, and even other languages.

Native Resolution: Specific resolution that a television, whether or not **integrated**, or a monitor, is designed to display. All other resolutions must be either upconverted or downconverted for display.

Pan-and-Scan: Alternative to **letterboxing**, the process by which a 16x9 image is converted for display on a 4x3 television by zooming in on the picture and panning to the part of the image that is most interesting. This allows the image to fill the entire screen, but causes some portions of the image not to be displayed.

Pillar Box: Blank bars to the left and the right of an image when viewing 4x3 aspect ratio content on a 16x9 screen. The opposite of **letterbox**.

Pixel: Smallest area of a television picture capable of being sampled and transmitted through a system, and displayed on a monitor.

Plug-and-Play: See **Digital Cable Ready (DCR)**.

Postage Stamp: Occurs when an image is both letter and pillar boxed. When viewed on a television, the image will appear as a smaller box within your screen.

Progressive Scan: Way to scan vertical lines onto a TV picture by scanning all the lines consecutively (progressively). At the same number of lines, progressive scan produces a higher quality picture than **interlace scan**. All flat panel and many digital projection televisions are progressive scan, so they display progressive scan images more clearly compared to interlaced images.

Pulldown, 3-2: Process by which a movie shot in 24 frames per second (fps) is shown as an interlaced television image at 30 frames per second.

RCA Connectors: See **Composite Video**.

Rear Projection TVs: Potentially much larger than standard CRT TVs, rear projection TVs create an image on a small display, then enlarge it onto the back of the screen. Old rear projection TVs used a small CRT, while new digital projection TVs use LCD (Liquid Crystal Display), DLP (Digital Light Processing), or LCoS (Liquid Crystal on Silicon) to create brilliant, wide angle pictures.

Resolution: Amount of detail that can be seen in a broadcast image. For television, resolution is measured in horizontal lines displayed (commonly 480, 720, or 1080).

Set-Top Box: A stand-alone device that receives and decodes programming so that it may be displayed on a television. Set-top boxes may be used to receive broadcast, cable, and satellite programming.

Spectrum: Range of electromagnetic radio frequencies used in the transmission of radio, data, and video.

Standard Definition TV (SDTV): Basic digital television format closest to traditional analog TV.

Ultra High Frequency (UHF): Part of the radio spectrum from 300 to 3000 megahertz which includes TV channels 14-69. After the DTV transition, UHF TV will be changed to 470 to 698 MHz, which includes channels 14-51.

Upconvert: Process by which a digital, high definition television takes a lower definition picture and converts it into a higher definition picture. This may be done by doubling each line as it is drawn on the screen, or by using advanced algorithms to interpolate the data between each lower resolution line, filling in the missing image.

Very High Frequency (VHF): Part of the radio spectrum from 30 to 300 megahertz, which includes TV Channels 2-13, and the FM broadcast band.

Widescreen: Term used generally to describe an aspect ratio wider than 4x3. For television, refers to the 16x9 aspect ratio.

Yagi Antenna: Type of antenna, generally designed for UHF frequencies, that is ideal for receiving most DTV stations. Ranging in size from several inches to many feet, a yagi antenna is the most common design for roof-top antennas.

For More Information on DTV

Go to www.dtv.gov

or

Contact the FCC's
Consumer & Governmental Affairs Bureau

E-mail: DTVinfo@fcc.gov

Web site: www.fcc.gov/cgb

Telephone:

1-888-CALL-FCC (1-888-225-5322) voice or
1-888-TELL-FCC (1-888-835-5322) TTY

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"DTV" IS COMING (AND SOONER THAN YOU THINK!)

FCC Consumer Facts

On February 17, 2009, federal law requires that all full-power television broadcast stations stop broadcasting in analog format and broadcast only in digital format. Here's what these requirements will mean for you and your television viewing.

Why Are Broadcast TV Stations Switching to All-Digital?

Congress mandated the conversion to all-digital television broadcasting, also known as the digital television (DTV) transition, because all-digital broadcasting will free up frequencies for public safety communications (such as police, fire, and emergency rescue). Also, digital is a more efficient transmission technology that allows broadcast stations to offer improved picture and sound quality, as well as offer more programming options for consumers through multiple broadcast streams (multicasting). In addition, some of the freed up frequencies will be used for advanced commercial wireless services for consumers.

What Do I Need To Do To Be Ready For The DTV Transition?

What you need to do depends on the source of your television programming, whether you receive programming over-the-air or from a paid provider such as a cable or satellite TV company.

How Do I Receive Digital Broadcasts If I Don't Subscribe To Cable Or Satellite?

If you receive only free over-the-air television programming, the type of TV you own, either a digital TV or an analog TV, is very important. Consumers who receive only free over-the-air television may view digital programming through a TV set with a built-in digital tuner (integrated DTV) or a digital-ready monitor with a separate digital tuner set-top box. (Both of these digital television types are referred to as a DTV). The only additional equipment required to view over-the-air digital programming with a DTV is a regular antenna, either on your roof or a smaller version on your TV such as "rabbit ears."

If you have an analog television, you will have to purchase a digital-to-analog set-top converter box to attach to your TV set to be able to view over-the-air digital programming (see "What About My Analog TV?" below).

How Do I Know Whether I Own a DTV?

As of March 1, 2007, all television receivers shipped in interstate commerce or imported into the United States must contain a digital tuner. In addition, effective May 25, 2007, the Commission required sellers of television receiving equipment that does not include a digital tuner to disclose at the point-of-sale that such devices include only an analog tuner, and therefore will require a digital-to-analog converter box to receive over-the-air broadcast television after the transition date. Retailers must inform consumers by prominently displaying the following text if they are selling TV equipment with only an analog tuner:

This television receiver has only an analog broadcast tuner and will require a converter box after February 17, 2009, to receive over-the-air broadcasts with an antenna because of the Nation's transition to digital broadcasting. Analog-only TVs should continue



to work as before with cable and satellite TV services, gaming consoles, VCRs, DVD players, and similar products. For more information, call the Federal Communications Commission at 1-888-225-5322 (TTY: 1-888-835-5322) or visit the Commission's digital television website at: www.dtv.gov.

Therefore, after May 25, 2007, all television equipment being sold should contain a digital tuner, or should be identified at the point-of-sale as not having one. Be sure to look for this label if you are purchasing a new TV.

As for how to determine whether your television equipment purchased prior to May 25, 2007 is a DTV, many DTVs and digital television equipment will have labels or markings on them, or statements in the informational materials that came with them, to indicate that they contain digital tuners. These labels or markings may contain the words "Integrated Digital Tuner" or "Digital Tuner Built-In." "Receiver" may be substituted for "Tuner," and "DTV," "ATSC," or "HDTV" (high definition television) may be substituted for "Digital." If your television equipment contains any of these labels or markings, you should be able to view digital over-the-air programming without the need for a digital-to-analog converter box. (Remember, you do not need an HDTV to view free over-the-air digital programming. As long as your television equipment contains a digital tuner, you can view over-the-air digital. An HDTV is only necessary if you want to view digital programming in "high definition.")

You should also check the manual or any other materials that came with your television equipment in order to determine whether it contains a digital tuner.

If your television set is labeled as a "Digital Monitor" or "HDTV Monitor," or as "Digital Ready" or "HDTV Ready," this does not mean it actually contains a digital tuner. Thus, you still will likely need a separate set-top box which contains a tuner in order to view programs in the new digital TV transmission standard (which includes HDTV formats) on such a set.

Over-the-air digital set-top boxes can be purchased at retail stores. Cable and satellite TV providers also sell or lease digital set-top boxes for their specific services. (Note: the digital set-top box described here is not the same as the NTIA program digital-to-analog converter box, described below, used to convert free over-the-air digital broadcasts for viewing on an analog TV set.)

If your television set is labeled as "analog" or "NTSC," but is NOT labeled as containing a digital tuner, it contains an analog tuner only.

If you cannot determine whether your television set or other television equipment contains a digital tuner, you are advised to check your equipment for the manufacturer name and model number, and then contact your consumer electronics retailer, or the manufacturer, to determine whether it contains a digital tuner. This information also may be available online through the manufacturer's website.

Because most broadcast stations in all U.S. television markets are already broadcasting in digital, consumers are further advised to contact their local broadcast stations to determine the channel numbers on which the stations are broadcasting digital programming. Consumers should then ensure that their televisions are set up to receive over-the-air programming (as distinguished from the signals of a paid provider such as cable or satellite TV service), and then tune to the over-the-air digital channels to see if they can receive the digital broadcast programming.



What About My Analog TV? Will It Still Work?

After February 17, 2009, you will be able to receive and view over-the-air digital programming with an analog TV only by purchasing a digital-to-analog set-top converter box. Between January 1, 2008, and March 31, 2009, all U.S. households will be able to request up to two coupons, worth \$40 each, to be used toward the future purchase of eligible digital-to-analog converter boxes. Eligible converter boxes are for the conversion of over-the-air digital television signals, and therefore are not intended for analog TVs connected to a paid provider such as cable or satellite TV service.

The National Telecommunications and Information Administration (NTIA) is administering the coupon program. For more information, visit the NTIA website at www.dtv2009.gov. The Commission's DTV website, www.dtv.gov, also provides information for consumers on the upcoming digital-to-analog converter box coupon program. More detailed information regarding NTIA's coupon program, what digital-to-analog converter boxes will be eligible, where and when they may be purchased, and the related costs involved will be provided by the Commission and NTIA as the commencement of the coupon program on January 1, 2008, approaches.

If I Already Have an Antenna, Do I Need a New One to View the Digital Signals?

A special antenna generally is not needed to receive digital signals. You may have antenna issues, however, if your current antenna does not receive UHF signals (channels 14 and above) well, because most DTV stations are on UHF channels. In such a case, you may need a new antenna or to add a UHF section to your existing antenna system. This equipment should be available at most bricks-and-mortar and Internet consumer electronics retailers.

How Do I Receive Digital Broadcasts If I Subscribe To Cable Or Satellite?

If you receive cable or satellite television service, contact your cable or satellite provider about any additional components, such as a digital set-top box, that you may need to watch digital broadcast programming.

If I Buy a DTV, Will My VCR, DVD Player, Camcorder, Video Games, Or Other Equipment Still Work?

VCRs, DVD players, camcorders and video games will continue to work, even if they are only analog-capable. Such equipment, however, may not provide digital-quality picture and sound. Manufacturers are producing a number of different connectors to hook equipment together and improve picture and sound quality. Check with your equipment retailer to determine the types of connectors that will work with your equipment.

How Much Will DTV Improve My TV Viewing?

While picture quality will vary according to whether you watch digital programming in high definition (HDTV) or standard definition (SDTV) format, over-the-air digital programming provides a better viewing experience than over-the-air analog programming, as long as you have good quality reception through your antenna.

How Much Will a DTV Cost?

Prices vary depending on the many features and options available to consumers, including format, display technology, and screen size. Display technology choices include cathode ray tube screens, rear projection TVs, front projection TVs, and flat panel TVs. Flat panel TVs, often the most expensive, can use either a liquid crystal display (LCD) or plasma screen technology. Screen size is measured



diagonally across the screen, and the larger the screen, generally the more expensive the TV. To determine the equipment and features that are right for you, learn about DTV from our Web Site and discuss your options with your retailer.

For More Information

For more information about the DTV transition, go to www.dtv.gov, which also provides links to several other informative websites, or contact the FCC's Consumer Center by e-mailing dtvinfo@fcc.gov; calling 1-888-CALL-FCC (1-888-225-5322) voice or 1-888-TELL-FCC (1-888-835-5322) TTY; faxing 1-866-418-0232; or writing to:

Federal Communications Commission
Consumer and Governmental Affairs Bureau
Consumer Inquiries and Complaints Division
445 12th Street, SW
Washington, DC 20554.

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For this or any other consumer publication in an alternative format (electronic ASCII text, Braille, large print, or audio), please write or call us at the address or phone number above, or send an e-mail to FCC504@fcc.gov.

To receive information on this and other FCC consumer topics through the Commission's electronic subscriber service, click on www.fcc.gov/cgb/contacts/.

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01/03/08



DTV

Digital Television

Tomorrow's TV Today!



Digital Television (DTV) is a new broadcasting technology that will transform your television viewing experience. That means better quality, more choices, and more control over your television.

1

Here's what you should know about DTV before you buy:

Compare DTV picture quality.

DTV comes in several levels of picture quality. The most common are: **High Definition Television (HDTV)**, **Enhanced Definition Television (EDTV)** and **Standard Definition Television (SDTV)**. HDTV is DTV at its highest resolution. EDTV is DVD quality and SDTV is the basic digital service.

2

Compare screen types. You have a choice in DTV screens. Today, the primary options are: **Cathode ray tube (CRT) screens**—traditional television screens updated for digital; **Rear Projection TVs**—using technologies like Digital Light Processing (DLP) and Liquid Crystal Display (LCD), can create brilliant, wide angle pictures on very large screens; **Flat Panel TVs**—are very thin and produce bright, clear pictures using technologies like LCD and plasma, but may be more expensive than some other options.

3

Make sure you have all the DTV equipment you need. You can purchase an integrated digital TV or separate receiving and display components. **"Integrated"** digital televisions have built-in tuners and a monitor to display the programming. If you buy a digital **monitor** (without an integrated tuner), you will need a stand-alone tuner or a cable or satellite set-top box to watch DTV.

4



Ask what connectors you need to make sure your new DTV equipment will work with your other electronic equipment (DVD player, digital video recorder (DVR), camcorder, VCR, computer, video games, etc.). The electronic equipment you have now should work with your new DTV, but you may need new cables. Make a list of what you have now and ask your retailer what you need to connect your components.

5

"Digital cable ready" (or "plug-and-play") televisions are also available. These can be used to receive digital cable TV (and often HD over cable) without a separate set-top box. You will need a CableCARD to receive certain cable programming.

6

HDTV is not the same as DTV. Not all DTV is HDTV. If you have an HDTV display, make sure to ask about HDTV-capable equipment and talk to your cable or satellite provider to verify you have the proper set-top box to view HDTV.

More DTV and HDTV programming is being offered every day. For a list of available digital programming in your area, go to www.dtv.gov.

7

Your current analog TV will still work when TV broadcasters stop broadcasting in the analog format. After February 17, 2009, all full-power TV stations are required to cease analog broadcasts. To continue working, your analog TV will need a digital-to-analog converter box to receive broadcast signals, or must be connected to a cable or satellite service. A converter box, much like your cable box, will allow you to receive and view programming, but it won't allow you to view high definition pictures. To experience the full benefits of DTV, you will need a digital television set.

8

For More Information

Visit the Federal Communications Commission's DTV Web site at www.dtv.gov



Setting Up Your Digital-to-Analog Converter Box (Basic)

FCC Consumer Facts

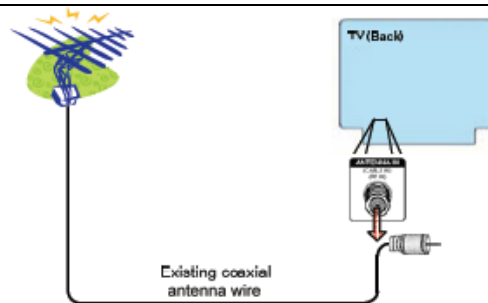
This Fact Sheet describes the installation of a digital-to-analog converter box with your current antenna and analog TV. This guide will help you prepare so that when you purchase a converter box you will know what to expect and whether you may need help setting it up.

Supplies: You will need your analog TV, the antenna you have been using (indoor or outdoor), and the coaxial wire that currently connects your antenna to your TV (as pictured on the right). Your new converter box will come with a coaxial wire and a remote control. Before you begin the installation of the converter box, you should unplug your TV.

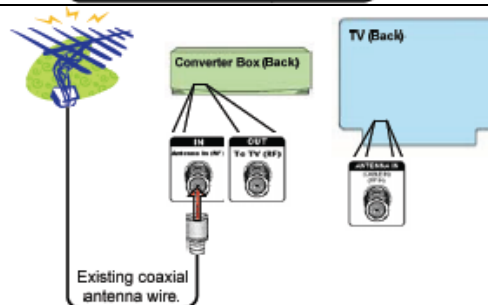


Coaxial Wire

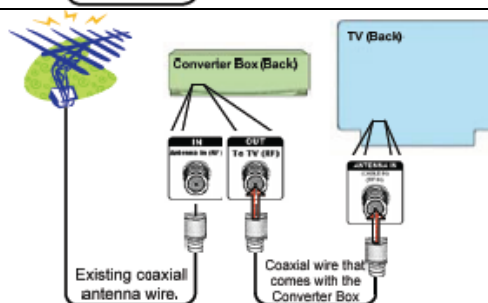
Step 1 Unplug the existing coaxial antenna wire from your TV "Antenna In (RF)" port.



Step 2 Plug the existing coaxial wire into the "Antenna In (RF)" port on your Converter Box.



Step 3 Using the coaxial wire that comes with your Converter Box, plug one end into the "Out To TV (RF)" port on the Converter Box. Plug the other end into the "Antenna In (RF)" port on your TV.



Step 4 Plug the power cords on your Converter Box and TV into a power outlet, and turn on your TV and Converter Box. Using the instructions that come with your Converter Box, tune your TV to channel 3 or 4. Using the remote that comes with your Converter Box, follow the on-screen set-up guide to scan for available DTV channels, and begin enjoying the benefits of Digital Television!

- If your Converter Box includes an "analog pass-through" feature, this set up will also allow you to receive any stations that still broadcast in analog in your area. Follow the instructions that come with your Converter Box for how to tune analog channels.
- For instructions on how to connect your converter box if it does not include an analog pass-through feature or for instructions on connecting your converter box to other components such as a VCR, go to www.dtv.gov or contact the FCC by e-mailing dtvinfo@fcc.gov; or calling 1-888-CALL-FCC (1-888-225-5322) voice or 1-888-TELL-FCC (1-888-835-5322) TTY.

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06/09/08

Setting Up Your Digital-to-Analog Converter Box (Basic with twin-lead antenna wire)

FCC Consumer Facts

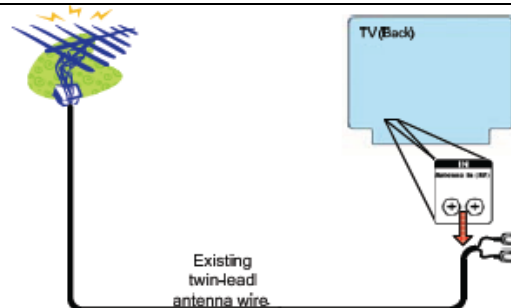
This Fact Sheet describes installation of a digital-to-analog-converter box if your TV set has twin-lead terminals for attaching the antenna, instead of a coaxial connector plug or port.



**Twin-lead
antenna wire**

Supplies: You will need your analog TV, the antenna you have been using (indoor or outdoor), the twin-lead wire that currently connects your antenna to your TV, and two adaptors or “matching transformers” as shown below. Before you begin the installation of the converter box, you should unplug the power from your TV.

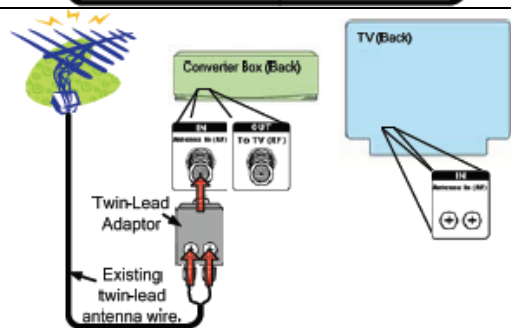
Step ❶ Unscrew the existing twin-lead antenna wire from your TV “Antenna In” twin-lead terminals.



Step ❷ Attach the existing twin-lead antenna wire to the twin-lead terminals on the twin-lead adaptor (like the image below). Then plug the adaptor’s coaxial connector into the “Antenna In (RF)” port on the Converter Box.



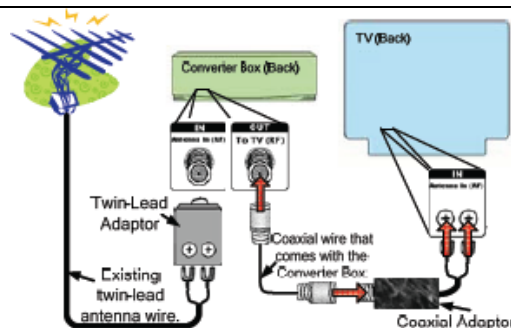
Twin-Lead Adaptor



Step ❸ Using coaxial wire, plug one end into the “Out To TV (RF)” port on the Converter Box. Plug the other end into the coaxial port on the coaxial adaptor. Then attach the twin-lead output of the coaxial adaptor to your TV “Antenna In” twin-lead terminals.



Coaxial Adaptor



Step ❹ Plug the power cords on your Converter Box and TV into a power outlet, and turn on your TV and Converter Box. Using the instructions that come with your Converter Box, tune your TV to channel 3 or 4. Using the remote that comes with your Converter Box, follow the on-screen set-up guide to scan for available DTV channels, and begin enjoying the benefits of Digital Television!

- If your Converter Box includes an “analog pass-through” feature, this set up will also allow you to receive any stations that still broadcast in analog in your area. Follow the instructions that come with your Converter Box for how to tune analog channels.
- For instructions on how to connect your converter box if it does not include an analog pass-through feature or for instructions on connecting your converter box to other components such as a VCR, go to www.dtv.gov or contact the FCC by e-mailing dtvinfo@fcc.gov; or calling 1-888-CALL-FCC (1-888-225-5322) voice or 1-888-TELL-FCC (1-888-835-5322) TTY.

06/09/08

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Setting Up Your Digital-to-Analog Converter Box With a VCR

FCC Consumer Facts

Analog TVs and VCRs can receive digital television (DTV) broadcast signals by using a “Digital-to-Analog Converter Box” that can be purchased at retail stores. If you use a single converter box and Set-Up #1, you can watch and record one channel at a time. If you use two converter boxes and Set-up #2, you can watch one channel while recording a different channel.

Set-up #1: Watch and Record One Channel at a Time

Supplies: You will need your analog TV, analog VCR, the antenna you have been using (indoor or outdoor), and the coaxial wire that currently connects your antenna to your VCR (as pictured on the right). Your new Converter box will come with a second coaxial wire and a remote control. Before you begin, you should unplug the power from your TV and VCR.



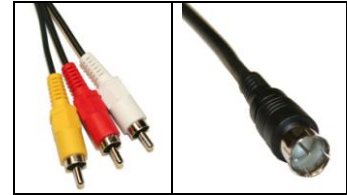
Coaxial Wire

<p>Step 1 Unplug the existing coaxial antenna wire from your VCR “Antenna In (RF)” port.</p> <p>Leave your connection from the VCR to the TV as is (either an A/V cable or Coaxial Wire).</p>	
<p>Step 2 Plug the existing coaxial wire into the “Antenna In (RF)” port on your Converter Box.</p>	
<p>Step 3 Using the coaxial wire that comes with your Converter Box, plug one end into the “Out To TV (RF)” port on the Converter Box. Plug the other end into the “Antenna In (RF)” port on your VCR.</p>	
<p>Step 4 Plug the power cords on your Converter Box, VCR and TV into a power outlet, and turn the devices on. Tune your VCR to channel 3 or 4 (follow the instructions in the converter box manual), and set your TV to display video from your VCR. Using the remote that comes with your Converter Box, follow the on-screen set-up guide to scan for available DTV channels, and begin enjoying the benefits of Digital Television! You will be able to record programming on the channel you are tuned to on your converter box.</p>	



Set-up #2: Watch One Channel while Recording a Different Channel

Supplies: You will need your analog TV, the antenna you have been using (indoor or outdoor), the coaxial wire that currently connects your antenna to your TV (as pictured on the far right), four additional lengths of coaxial wire, a set of A/V cables (as pictured on the right), a 2-way splitter, and **two converter boxes**. Your new Converter boxes will each come with a coaxial wire, a set of A/V cables (three wires with red, white and yellow plugs), and a remote control. Before you begin you should unplug the power from your TV and VCR.

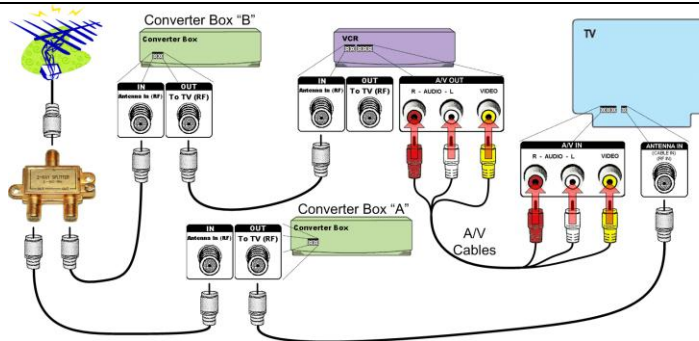


A/V Cables Coaxial Wire

<p>Step ❶ Unplug the existing coaxial antenna wire from your VCR "Antenna In (RF)" port.</p> <p>Step ❷ Unplug coaxial wire #2 from your VCR "To TV (RF)" port. Leave the other end of wire #2 plugged in to the TV.</p>	
<p>Step ❸ Plug the existing coaxial antenna wire into the "In" port on your 2-way splitter.</p>	
<p>Step ❹ Plug the loose end of wire #2 into the "Out to TV (RF)" port on Converter Box "A".</p> <p>Step ❺ Plug one end of coaxial wire #3 into one of the "Out" ports on the 2-way splitter. Plug the other end into the "Antenna In (RF)" port on Converter Box "A".</p>	
<p>Step ❻ Plug one end of coaxial wire #4 into the other "Out" port on the 2-way splitter. Plug the other end into the "Antenna In (RF)" port on Converter Box "B".</p> <p>Step ❼ Plug one end of coaxial wire #5 into the "Out to TV (RF)" port on Converter Box "B". Plug the other end into the "Antenna In (RF)" port on your VCR.</p>	



Step 9 Using your set of A/V cables, plug one end of the cables into the "A/V Out" ports on your VCR. Match the colors of the plugs to the colors of the ports, so that red plugs into red, white into white, and yellow into yellow. Plug the other end of the cables into the "A/V In" port on your TV set in the same way. If your TV does not have a red (Audio R) port, leave the red cable unplugged on both ends.



Step 9 Plug the power cords on your Converter Boxes, VCR and TV into power outlets, and turn them all on. Tune your TV to channel 3 or 4 (follow the instructions in the converter box manual) to set up Converter Box "A". Using the remote control that came with Converter Box A, follow the on-screen set-up guide to scan for available DTV channels.

Step 10 Set your TV to "Audio/Video In" and tune your VCR to channel 3 or 4 (follow the instructions in the converter box manual) to set up Converter Box "B". Using the remote that came with Converter Box "B", follow the on-screen set-up guide to scan for available DTV channels.

- If you want to record a program with your VCR, set the channel on your VCR to channel 3 or 4, and tune the converter box to the desired channel.
- If your Converter Box includes a "universal remote control" or you already have your own universal remote control, follow the instructions that come with your Converter Box to program the remote to work for the TV, VCR and the Converter Box.
- If you have a DVD Recorder or DVR, you should be able to connect it in a manner similar to the steps outlined above.

For more information about the DTV transition, go to www.dtv.gov or contact the FCC by e-mailing dtvinfo@fcc.gov; calling 1-888-CALL-FCC (1-888-225-5322) voice or 1-888-TELL-FCC (1-888-835-5322) TTY; faxing 1-866-418-0232; or writing to:

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Washington, DC 20554

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Setting Up Your Digital-to-Analog Converter Box (For Viewing Analog and Digital Broadcasts)

FCC Consumer Facts

Analog TVs can receive digital television (DTV) signals by using a “Digital-to-Analog Converter Box” that can be purchased at retail stores. If you wish to watch over-the-air programming with an antenna (such as “rabbit ears” on your TV or an antenna on your roof) from stations that broadcast in digital (such as full-power stations) **and** stations that broadcast in analog (such as low-power, Class A, or TV translator stations), you should choose one of the following options:

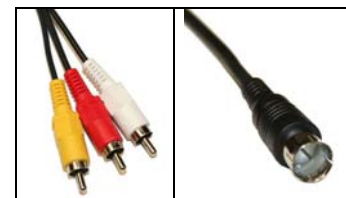
Option 1) Purchase a Converter Box that has “analog pass-through” capability and install it using our “Basic Set-Up” Fact Sheet. A current list of coupon-eligible converter boxes is available at https://www.ntiadt.gov/cecb_list.cfm. Those with analog pass-through capability are marked with an asterisk. The FCC’s Basic Set-Up guide is available at www.fcc.gov/cgb/consumerfacts/setup-converterbox.html.

or;

Option 2) Purchase any Converter Box and use either of the following set-ups.

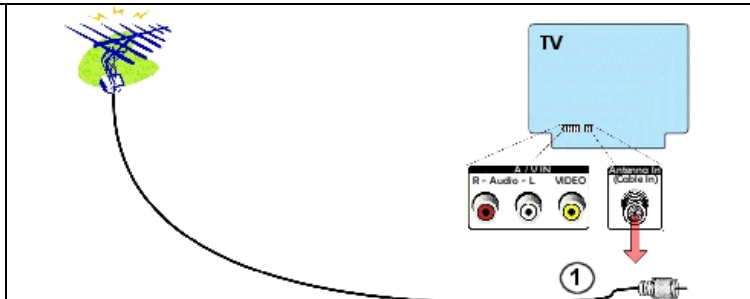
Set-up #1: Your TV has “Audio/Video In” (A/V In) ports:

Supplies: You will need your analog TV, the antenna you have been using (indoor or outdoor), and the coaxial wire that currently connects your antenna to your TV (as pictured on the far right). Your new Converter box will come with a second coaxial wire, a set of A/V cables (three wires with red, white and yellow plugs), and a remote control. If you do not already have them, you will also need to purchase a third coaxial wire and a 2-way splitter. Before you begin you should unplug your TV.

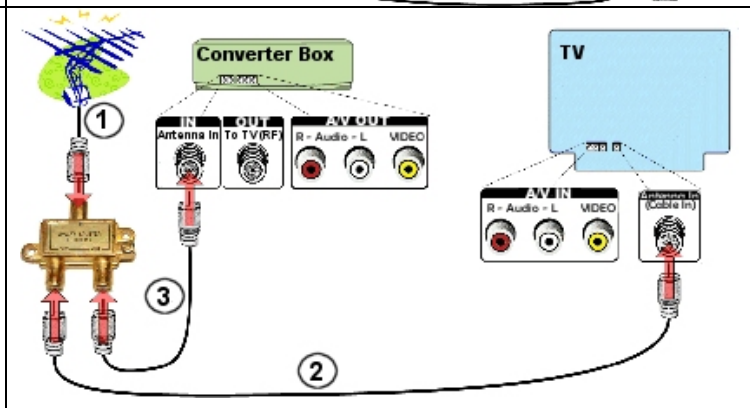


A/V Cables Coaxial Wire

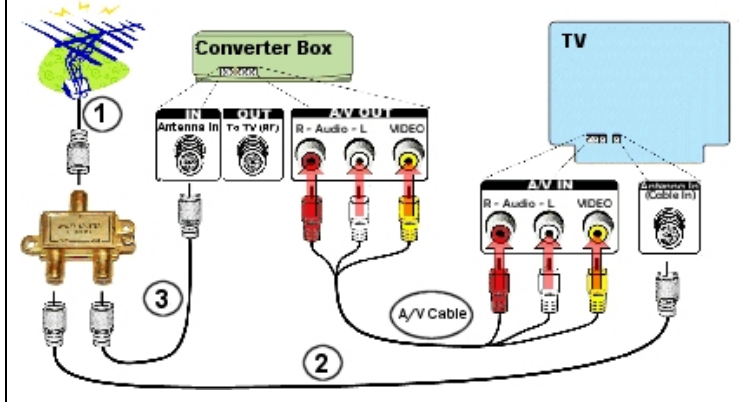
Step 1 Unplug the coaxial antenna wire (wire #1) from your TV “Antenna In (RF)” port.



Step 2 Plug wire #1 into the “In” port on your 2-way splitter.
Step 3 Using a second coaxial wire (wire #2), plug one end into one of the “Out” ports on the 2-way splitter. Plug the other end into the “Antenna In (RF)” port on your TV set.
Step 4 Using a third coaxial wire (wire #3), plug one end into the other “Out” port on the 2-way splitter. Plug the other end into the “Antenna In (RF)” port on your Converter Box.



Step 5 Using a set of A/V cables, plug one end of the cables into the "A/V Out" ports on the Converter Box. Match the colors of the plugs to the colors of the ports, so that red plugs into red, white into white, and yellow into yellow. Plug the other end of the cables into the "A/V In" port on your TV set in the same way. If your TV does not have a red port, leave that cable unplugged on both ends.



Step 6 Plug the power cords on your Converter Box and TV into a power outlet, and turn on your TV and Converter Box. To watch digital broadcasts, set your TV to "Video In." Using the remote control that came with your Converter Box, follow the on-screen set-up guide to scan for available DTV channels, and begin enjoying the benefits of Digital Television! You will be able to access all available digital broadcasts through your converter box and its remote control. To watch analog broadcasts, set your TV to "TV In." You will be able to access all available analog broadcasts through your TV's remote control.

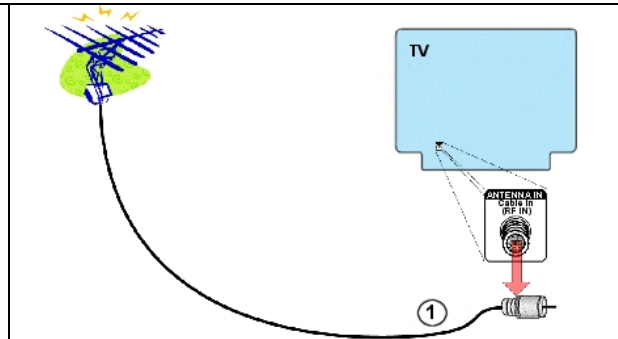
Set-up #2: Your TV has only an "Antenna In" port:

Supplies: You will need your analog TV, the antenna you have been using (indoor or outdoor), and the coaxial wire that currently connects your antenna to your TV (as pictured on the right). Your new Converter box will come with a second coaxial wire and a remote control. If you do not already have them, you will also need to purchase three additional coaxial wires (for a total of five), a 2-way splitter, and an A/B switch. Before you begin you should unplug your TV.

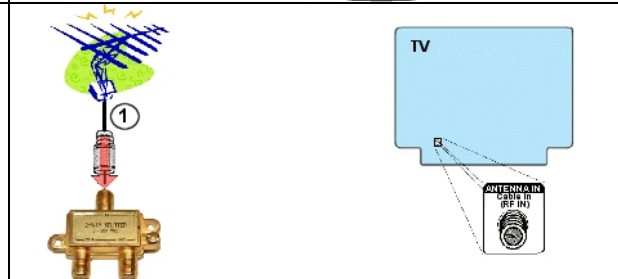


Coaxial Wire

Step 1 Unplug the coaxial antenna wire (wire #1) from your TV "Antenna In (RF)" port.

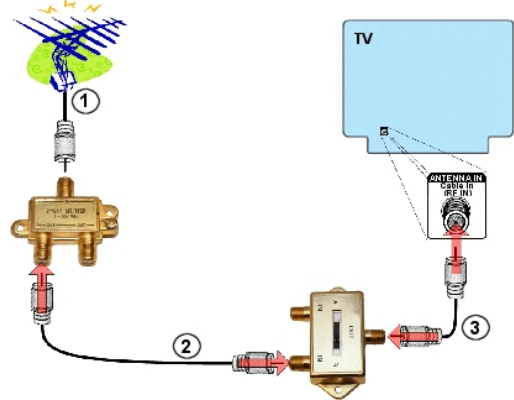


Step 2 Plug wire #1 into the "In" port on your 2-way splitter.



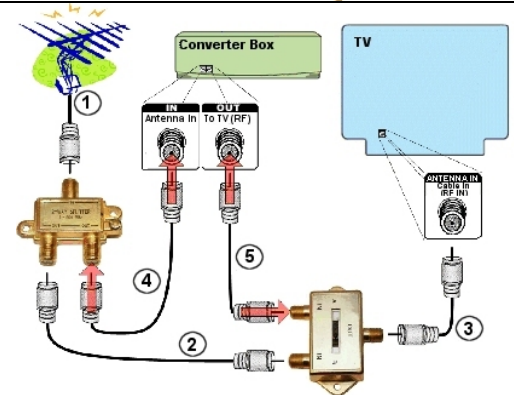
Step 3 Using a second coaxial wire (wire #2), plug one end into one of the “Out” ports on the 2-way splitter. Plug the other end into the “In B” port on the A/B switch.

Step 4 Using a third coaxial wire (wire #3), plug one end into the “Out” port on the A/B switch. Plug the other end into the “Antenna In (RF)” port on your TV set.



Step 5 Using a fourth coaxial wire (wire #4), plug one end into the other “Out” port on the 2-way splitter. Plug the other end into the “Antenna In (RF)” port on your Converter Box.

Step 6 Using a fifth coaxial wire (wire #5), plug one end into the “Out to TV (RF)” port on your Converter Box. Plug the other end into the “In A” port on the A/B switch.



Step 7 Plug the power cords on your Converter Box and TV into a power outlet, and turn on your TV and Converter Box. Set the A/B switch to position “A” and tune your TV to channel 3 (or 4) to watch digital TV. Using the remote control that came with your Converter Box, follow the on-screen set-up guide to scan for available DTV channels, and begin enjoying the benefits of Digital Television! To watch analog TV, set the A/B switch to position “B” and change the channel on your TV set.

- If your Converter Box includes a “universal remote control” or you already have your own universal remote control, follow the instructions that come with your Converter Box to program the remote to work for both the TV and the Converter Box.
- For instructions on connecting your converter box to other components such as a VCR or a DVD player, go to www.dtv.gov or contact the FCC by e-mailing dtvinfo@fcc.gov, or calling 1-888-CALL-FCC (1-888-225-5322) voice or 1-888-TELL-FCC (1-888-835-5322) TTY.

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To receive information on this and other FCC consumer topics through the Commission's electronic subscriber service, click on www.fcc.gov/cgb/contacts/

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