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## The Digital Transition

### What is the digital TV (DTV) transition?

The switch from analog to digital broadcast television is referred to as the digital TV (DTV) transition. In 1996, the U.S. Congress authorized the distribution of an additional broadcast channel to each broadcast TV station so that they could start a digital broadcast channel while simultaneously continuing their analog broadcast channel. Later, Congress mandated that February 17, 2009 would be the last day for full-power television stations to broadcast in analog. Broadcast stations in all U.S. markets are currently broadcasting in both analog and digital. After February 17, 2009, full-power television stations will broadcast in digital only.

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## **Why are we switching to DTV?**

An important benefit of the switch to all-digital broadcasting is that it will free up parts of the valuable broadcast spectrum for public safety communications (such as police, fire departments, and rescue squads). Also, some of the spectrum will be auctioned to companies that will be able to provide consumers with more advanced wireless services (such as wireless broadband).

Consumers also benefit because digital broadcasting allows stations to offer improved picture and sound quality, and digital is much more efficient than analog. For example, rather than being limited to providing one analog program, a broadcaster is able to offer a super sharp “high definition” (HD) digital program or multiple “standard definition” (SD) digital programs simultaneously through a process called “multicasting.” Multicasting allows broadcast stations to offer several channels of digital programming at the same time, using the same amount of spectrum required for one analog program. So, for example, while a station broadcasting in analog on channel 7 is only able to offer viewers one program, a station broadcasting in digital on channel 7 can offer viewers one digital program on channel 7-1, a second digital program on channel 7-2, a third digital program on channel 7-3, and so on. This means more programming choices for viewers. Further, DTV can provide interactive video and data services that are not possible with analog technology.

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## **What do I need to do to be ready for the end of analog TV broadcasting?**

Because Congress mandated that the last day for full-power television stations to broadcast in analog would be February 17, 2009, over-the-air TV broadcasts will be in digital only after that date. If you have one or more televisions that receive free over-the-air television programming (with a roof-top antenna or “rabbit ears” on the TV), the type of TV you own is very important. A digital television (a TV with an internal digital tuner) will allow you to continue to watch free over-the-air programming after February 17, 2009. If you have an analog television, you will need to purchase a digital-to-analog converter box to continue to watch free over-the-air programming after February 17, 2009. If you have a digital television, you will not need a converter box.

17, 2009. However, if you have an analog television, you will need a digital-to-analog converter box to continue to watch broadcast television on that set. This converter box will also enable you to see any additional multicast programming that your local stations are offering.

To help consumers with the DTV transition, the Government established the Digital-to-Analog Converter Box Coupon Program. The National Telecommunications and Information Administration (NTIA), a part of the Department of Commerce, administers this program. Every U.S. household is eligible to receive up to two coupons, worth \$40 each, toward the purchase of eligible digital-to-analog converter boxes. You will be able to request the coupons beginning in January of 2008. The coupons may only be used for eligible converter boxes sold at participating consumer electronics retailers, and the coupons must be used at the time of purchase. Manufacturers estimate that digital-to-analog converter boxes will sell from \$40 to \$70 each. This is a one-time cost. For more information on the Digital-to-Analog Converter Box Coupon Program, visit the NTIA's website at [www.ntia.doc.gov/dtvcoupon](http://www.ntia.doc.gov/dtvcoupon), or call 1-888-388-2009 (voice) or 1-877-530-2634 (TTY).

Cable and satellite TV subscribers with analog TVs hooked up to their cable or satellite service should not be affected by the February 17, 2009 cut-off date for full-power analog broadcasting.

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### **Do I have to wait until after February 17, 2009 to watch DTV?**

No, digital television is available now. If you watch over-the-air television today, you should be able to receive all or most of your local stations' digital signals if you have a DTV receiver. You may view high definition and multicast programming from your local stations. Check your local program listings or contact your local TV stations to find out more about the digital television available now. The FCC's special website, [www.dtv.gov](http://www.dtv.gov), has more information on digital television, or call 1-888-225-5322 (TTY:

1-888-835-5322).

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**Will the February 17, 2009 date for the end of full-power analog television broadcasting be pushed back?**

Federal law mandates that February 17, 2009 is the last day of full-power analog television broadcasting. Government agencies, industry, public interest groups, and other interested organizations are working hard to make sure that the deadline is met and that everyone is prepared for the end of full-power analog television broadcasting.

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**If I have an older analog television, will I have to throw it away after February 17, 2009?**

No. A digital-to-analog converter box will allow you to continue using your existing analog TV to watch over-the-air digital broadcasts. You do not need to get rid of your existing analog TV. In addition, analog sets should continue to work as before if connected to a subscription service such as cable or satellite TV. Also, analog sets should continue to work with gaming consoles, VCRs, DVD players, and similar products that you use now.

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## **Your Television**

**If I want a new TV, will I have to buy a High Definition TV (HDTV) to watch digital broadcast television after the transition?**

No. It is important to understand that the DTV transition is a transition from analog

broadcasting to digital broadcasting. It is not a transition from analog broadcasting to High Definition broadcasting. Digital broadcasting allows for High Definition broadcasts, but High Definition is not required, and you do not need to buy a HDTV to watch digital TV. A Standard Definition DTV (which is simply a TV with an internal digital tuner), or a digital-to-analog converter box hooked to an analog TV, is all that is required to continue watching over-the-air broadcast television. Digital broadcast television includes Standard Definition (SD) and High Definition (HD) formats. You can watch High Definition programming on a Standard Definition DTV (or on an analog TV hooked to a digital-to-analog converter box), but it won't be in full High Definition quality. It is also important to know that Standard Definition DTVs are comparably priced to similar sized analog TVs.

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#### **How can I be sure that I am buying a digital TV (DTV)?**

By law, beginning March 1, 2007, all television reception devices (including TVs, VCRs, DVRs, etc.) imported into the U.S. or shipped in interstate commerce must contain a digital tuner. Retailers may continue to sell analog-only devices from existing inventory, but must prominently display on or near the analog-only device a Consumer Alert label with this advisory:

#### ***Consumer Alert***

**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](http://www.dtv.gov).**

Therefore, all television equipment being sold should contain a digital tuner, or should be identified at the point-of-sale as not having one. Be aware of this label and the limitations of analog-only devices if you are purchasing a new TV or other TV equipment.

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### **How do I know if I already have a digital TV (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,” “Digital Tuner Built-In,” “Digital Receiver,” or “Digital Tuner,” “DTV,” “ATSC,” or “HDTV” (High Definition television). 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 High Definition programming in full HD quality.) 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 digital tuner in order to view over-the-air digital programming.

Over-the-air digital set-top boxes for Digital or HD “Monitors” 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 digital-to-analog converter box, described above, 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,” and 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 can watch DTV today. You can contact your local broadcast stations to determine the channel numbers on which the stations are currently broadcasting digital programming. You should then ensure that your television is set up to receive over-the-air programming (as distinguished from being connected to a paid provider such as cable or satellite TV service), and then tune to the over-the-air digital channels to see if your set can receive the digital broadcast programming.

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### **What is the difference between “Integrated” DTVs and DTV or HDTV “Monitors”?**

An Integrated DTV set is a television with a built-in digital tuner (also referred to as “a DTV”). A digital tuner is also sometimes called a DTV decoder or DTV receiver. If you have an Integrated DTV, you will not need any additional equipment, with the exception of a broadcast antenna (either a rooftop antenna or “rabbit ears” connected to the set), to receive over-the-air digital broadcast programming. Integrated DTVs can also receive and display analog broadcast programming, so you can continue watching analog broadcasts.

In contrast, a DTV Monitor is not capable of receiving digital broadcast programming without additional equipment; it is simply a display device without the processing capability for DTV reception. A digital or HD set-top box must be connected between the antenna and the monitor to receive and display over-the-air digital or HD programming.

If you have a digital or HD “Monitor” and would like to purchase a digital or HD set-top box to view over-the-air programming, confirm with your retailer that the set-top box is compatible with your Monitor.

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**What about my VCR, DVD player, camcorder, and gaming console? Will I be able to use them with a digital television set?**

Yes. Digital television sets are “backward compatible,” meaning existing analog equipment (VCRs, DVD players, camcorders, video games, etc.) will work on digital TV sets. However, their video will only be displayed in the maximum resolution that is available with each analog product. Manufacturers are producing a number of different connectors to hook equipment together and improve picture and sound quality when DTVs are used with existing analog equipment. Check with your retailer to determine the types of connectors that will work with your equipment.

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**How do I get DTV or HDTV programming?**

In order to receive over-the-air digital programming (as opposed to digital programming provided by a paid provider such as cable or satellite TV service), you will need: (1) a DTV (a TV with a digital tuner) or an analog TV connected to a digital-to-analog converter box and (2) a broadcast antenna (either a rooftop antenna or “rabbit ears” connected to your set). In general, an antenna that provides quality reception of over-

the-air analog TV broadcasting will work for digital TV broadcasting.

A listing of the U.S. TV stations that are broadcasting digital programming is available at <http://www.fcc.gov/mb/video/files/dtvonair.html>. Satellite TV providers and many cable systems are currently offering digital programming. Subscribers should check with their service providers to see what digital programming is available in their area.

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### **Will I need a special antenna to receive DTV over-the-air?**

In general, dependable reception of over-the-air digital TV programming will require the same type of signal reception equipment that currently works to provide good quality reception of analog TV programming. If you need a roof-top antenna to receive analog TV broadcasts, the same antenna generally will work to receive digital TV broadcasts. You should not have to purchase new antennas that are marketed as “digital ready” or “HD ready.”

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### **What will happen to the old analog TVs that will be replaced by DTVs? Will there be an effort to recycle them?**

There are recycling programs for those who choose to discard old analog TVs or other old electronic products (but remember, analog TVs can continue to be used after the transition). One such program is myGreenElectronics. Through this program you can learn about disposal options and locate recycling programs near you. Go to <http://www.mygreenelectronics.org> for more information.

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## **Cable**

**How do I know if I already have digital programming through my cable or satellite TV service?**

You may receive digital programming if you subscribe to a digital or HD package from your provider and you are viewing the digital programming on a digital set. However, the digital cable tier and satellite TV service are not necessarily DTV. Your cable or satellite TV system may be using digital technology as a more efficient way of delivering analog programming to you. If you have an analog television set, then you are probably not getting digital, even though the reception may be somewhat improved. Check with your cable or satellite TV provider to find out what kinds of programming you can receive, and what equipment you need to receive it.

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**My cable operator offers a digital cable package. Is this the same as HDTV?**

No. "Digital cable" and high definition programming on cable are not the same. If you want to watch HDTV programming on cable, you will need to subscribe to your cable provider's HDTV package and view the programming on an HDTV set. You may also need a set-top box or other equipment to view HDTV programming. Check with your cable provider to find out what kinds of programming you can receive, and what equipment you need to receive it.

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**Do cable TV networks, like CNN, MSNBC, Lifetime, etc., have to switch to digital broadcasting as well?**

No. The current requirement to switch from analog to digital only applies to full-power broadcast TV stations, which use the public airwaves to provide free over-the-air programming. However, as cable providers convert to digital transmissions over their

systems, you may need to subscribe to their digital tier to continue to receive this non-broadcast programming.

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**Can my cable system move programming to a digital tier that makes me subscribe to digital service?**

Your cable system decides when and whether to carry programming on a digital tier, which may mean that you will need digital equipment. However, all of your local stations will continue to be available in analog format for as long as your cable system offers any analog service.

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**Will cable customers with analog TVs have to buy or rent a set-top box from their cable company? If so, how much will it cost?**

First, it's important to know that the February 17, 2009 deadline for the digital television transition only applies to full-power broadcast stations. Cable companies are not required by the government to transition their systems to digital, and can continue to deliver channels to their customers in analog. Cable companies are actually required by FCC rules to continue offering local broadcast stations to their customers in analog as long as they offer any analog service. This requirement will continue for at least three years after February 17, 2009. The Commission will decide in 2011 whether the requirement should be continued beyond February 17, 2012. This means that customers who receive analog cable service (without a cable set-top box) will be able to continue to do so.

However, for business reasons (among other things, digital is much more efficient than analog), cable companies may be interested in transitioning their systems from analog delivery to digital delivery. If a cable company makes the business decision to go all-

digital (meaning it will stop offering any channels to its customers in analog), it must ensure that its analog customers can continue to watch their local broadcast stations. This may require customers with analog televisions to get a set-top box. If the cable company provides the customer with a set-top box, any costs related to it will be determined by the cable company. Therefore, it is recommended that analog cable customers contact their cable company to ask if a set-top box will be needed, when it will be needed, and if there will be a cost.

It is also important to note that a cable set-top box is different from a digital-to-analog converter box. A digital-to-analog converter box is necessary only for analog televisions that receive their programming over-the-air using a rooftop antenna or "rabbit ears" connected to the set. A digital-to-analog converter box is not necessary for a TV connected to a paid television service such as a cable or satellite TV provider. Information on any set-top boxes needed for a paid service such as cable or satellite should be obtained from the service provider.

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## **Converter Box**

### **What is the Converter Box Coupon Program?**

To help consumers with the DTV transition, the Government established the Digital-to-Analog Converter Box Coupon Program. The National Telecommunications and Information Administration (NTIA), a part of the Department of Commerce, administers this program. Every U.S. household is eligible to receive up to two coupons, worth \$40 each, toward the purchase of eligible digital-to-analog converter boxes. You will be able to request the coupons beginning in January of 2008. The coupons may only be used for eligible converter boxes sold at participating consumer electronics retailers, and the coupons must be used at the time of purchase. Manufacturers estimate that digital-to-analog converter boxes will sell from \$40 to \$70 each. This is a one-time cost. For more information on the Digital-to-Analog Converter Box Coupon Program, visit the

NTIA's website at [www.ntia.doc.gov/dtvcoupon](http://www.ntia.doc.gov/dtvcoupon), or call 1-888-388-2009 (voice) or 1-877-530-2634 (TTY).

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### **What digital to analog converter boxes are coupon eligible?**

The National Telecommunications and Information Administration (NTIA) is maintaining a list of eligible boxes at [www.ntiadtv.gov/cecb\\_list.cfm](http://www.ntiadtv.gov/cecb_list.cfm).

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### **Can I hook up more than one TV and video recorder to a single digital-to-analog converter box?**

You will need one digital-to-analog converter box for each TV set or other device (such as a VCR) that only has an analog tuner. The digital-to-analog converter box basically replaces the analog tuner in one piece of equipment. So if you want to use your analog TV and VCR at the same time (for example, to watch one program and record another simultaneously), you will need two digital-to-analog converter boxes.

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### **Will digital-to-analog converter boxes (used to convert over-the-air digital TV broadcasts for viewing on analog sets) also convert digital closed captioning?**

Yes. FCC rules require that digital-to-analog converter boxes be able to convert over-the-air digital closed captioning for display on analog TV sets. See <http://www.fcc.gov/cgb/consumerfacts/dtvcaptions.html>.

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I have an old antenna that attaches to my TV with two wires. Will I be able to use a

**converter box with this antenna?**

Yes, but you may need to get an antenna adapter (also called a “balun”) to which you will connect your antenna on one end, and then connect the balun to your converter box. You will then need a second adapter to connect to the converter box with a length of antenna wire to connect to your TV.



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## **General Questions**

**What about my portable, battery-powered analog TV? Will I be able to use it to watch broadcast TV after February 17, 2009?**

Portable, battery-powered analog TVs may be able to receive over-the-air programming after February 17, 2009 if they have the necessary plugs to allow them to be connected to a digital-to-analog converter box. Because it is not anticipated that battery powered digital-to-analog converter boxes will be produced, an external power source would also be required. [Return to Questions](#)

**What are low-power (LPTV), Class A, and TV translator stations and how does the DTV transition affect them?**

You may have noticed that Congress mandated that “full-power” TV stations will not be able to broadcast in analog after February 17, 2009. While the majority of the viewed TV broadcast stations are full-power stations, three other categories of TV stations exist – “low-power” stations, “Class A” stations, and “TV translator” stations. There is currently no deadline for these stations to convert to digital broadcasting.

The FCC created low-power television (LPTV) service in 1982 to provide opportunities for locally-oriented television service in small communities. These communities may be in rural areas or may be individual communities within larger urban areas. LPTV stations are operated by diverse groups and organizations including high schools and colleges, churches and religious groups, local governments, large and small businesses and individual citizens. More than 2,100 licensed LPTV stations are in operation. LPTV programming can include satellite-delivered programming services, syndicated programs, movies, and a wide range of locally-produced programs.

Class A TV stations are former LPTV stations that have certain interference protection rights not available to LPTV stations. These stations are technically similar to LPTV stations, but unlike LPTV stations must air at least three hours of locally-produced programming each week and comply with most of the non-technical regulations applicable to full-power stations. Approximately 600 licensed Class A TV stations are in operation.

A TV translator station rebroadcasts the programs of a full-power TV broadcast station. Translator stations typically serve communities that cannot receive the signals of free over-the-air TV stations because they are too far away from a full-power TV station or because of geography (such as uneven terrain or mountains). Many of the 4,700 licensed TV translator stations operate in mountainous or more remote areas of the country.

There are several ways to determine whether the broadcast stations you view over-the-air (with a rooftop antenna or “rabbit ears” attached to your TV) are LPTV, Class A or TV translator stations. Class A stations are required to visually or aurally identify their stations with their community of license and call sign (that includes the suffix “-CA” for Class A) at sign on, sign off, and on an hourly basis. LPTV stations also must regularly identify their station call sign. When locally originating programming, they must visually or aurally identify their call sign and community of license at sign on, sign off, and hourly. LPTV call signs may consist of four letters followed by the suffix “-LP” (for low

power) or, alternatively, five characters beginning with the letters K or W followed by two numbers (their operating channel) and two additional letters. Also, some TV translators are identified by the full-power TV stations whose signals they rebroadcast. Further, LPTV, Class A, and TV translator stations may regularly broadcast information as to their status, and may include information regarding the DTV transition.

While the February 17, 2009 deadline for ending analog broadcasts does not apply to low-power, Class A, and TV translator stations, the FCC will require these stations to convert to digital broadcasting some time thereafter. Nearly 2,000 of these stations have been authorized to construct digital facilities and some are broadcasting in digital already. The FCC is currently considering the remaining issues involved with the low-power digital transition and will make decisions regarding these stations in the future.

Viewers should look for information from their LPTV, Class A, and TV translator stations about plans to convert from analog to digital broadcasting. Viewers should also visit [www.fcc.gov](http://www.fcc.gov) for any updates on the digital transition of low-power, Class A, and TV translator stations. [Return to Questions](#)

**Will I be able to use parental controls like the V-chip with digital TV the same way I now can with my analog TV?**

Yes. The V-chip is a technology that enables parents to block television programming based on a program's rating. The ratings are encoded within the television signal. The V-chip reads the encoded rating information of each program and blocks shows according to the parents' blocking selections. FCC rules require that V-chips be built into digital televisions and other DTV reception devices just as they are in analog televisions. You can learn about the ratings system, also known as "TV Parental Guidelines," at [www.fcc.gov/vchip](http://www.fcc.gov/vchip).

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