

*Transition from*

# **Analog** to **Digital** Television

*Issues for consumers and challenges to industry*

*Assembly Informational Hearing*



Committee on Arts, Entertainment, Sports,  
Tourism and Internet Media  
Betty Karnette, Chair

Staff: Dana Mitchell, Chief Consultant



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# Assembly California Legislature

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## *Informational Hearing*

*The Assembly Committee on Arts, Entertainment, Sports,  
Tourism & Internet Media*

### **Transition from Analog to Digital Television: Issues for consumers and challenges to industry**

**9 a.m. – Room 437**

**State Capitol, Sacramento, CA**

**I. Opening Remarks by Committee Chair Betty Karnette and Committee Members**

**II. Transition Overview From Viewpoint of Media**

**a. Transition 101:**

Stan Statham -- President/CEO, California Broadcasters Association

**b. Unique issues faced by cable providers and customers:**

Dennis H. Mangers -- President, California Cable & Telecommunications Association

**c. Content providers' role in educating consumers:**

Larry Deutchman, M.B.A. -- Executive Vice President of Marketing & Industry Relations, Entertainment Industries Council, Inc.

**III. Transition Issues Facing Consumers**

**a. Challenges for consumers: Coupons, technology, and language access concerns:**

Gary Passmore -- Director, Congress of California Seniors

**b. Spanish language outreach:**

Steve Stuck -- General Manager, Univision 19, Sacramento

**c. Retailers' point-of-sale issues and inventory challenges:**

Bill Dombrowski -- President and CEO, California Retailers Association

Laura Bishop -- Director of Government Relations, Best Buy Co., Inc.

**IV. E-waste issues and AB 2769 (Levine)**

Assembly Member Lloyd Levine, Chair of Assembly Committee on Utilities & Commerce

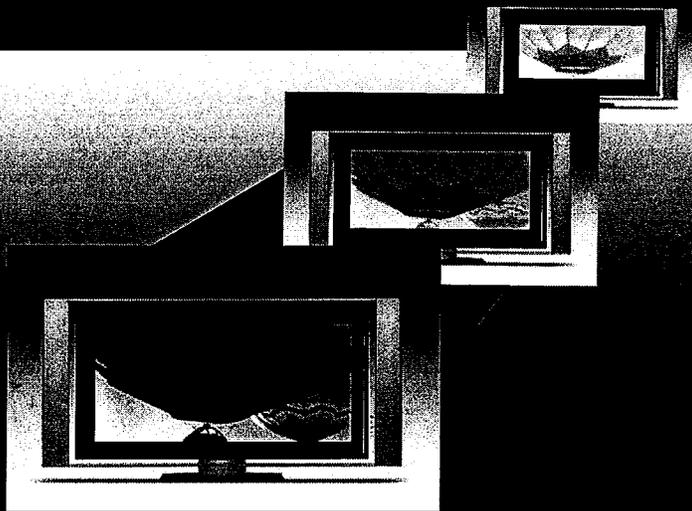
**IV. Closing Remarks**



**DTV  
BACKGROUND  
and  
OVERVIEW**

# DIGITAL TELEVISION

*What Every Consumer Should Know*

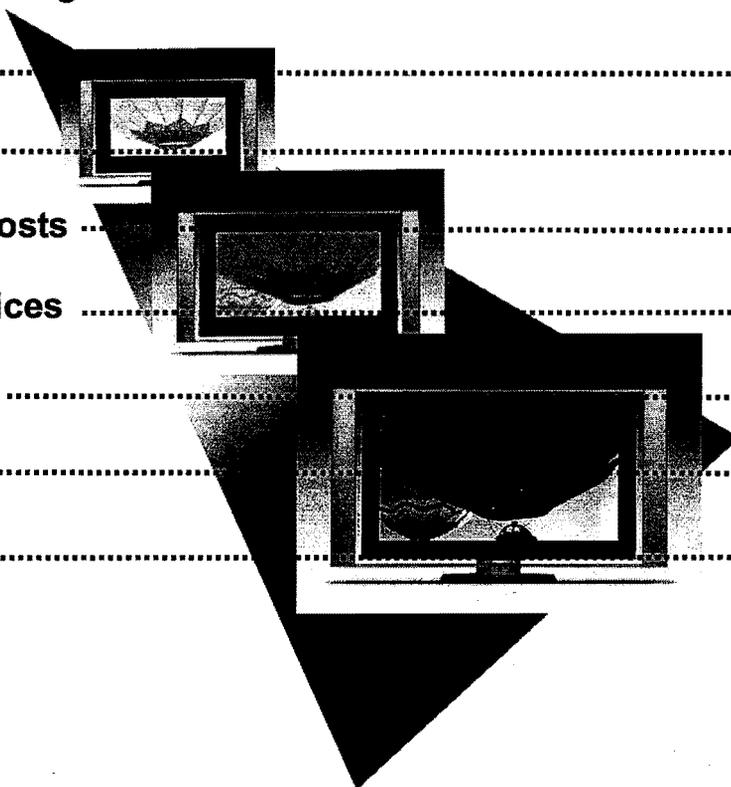


Federal Communications Commission  
Media Bureau and Consumer & Governmental Affairs Bureau  
445 12th Street, SW, Washington, DC 20554

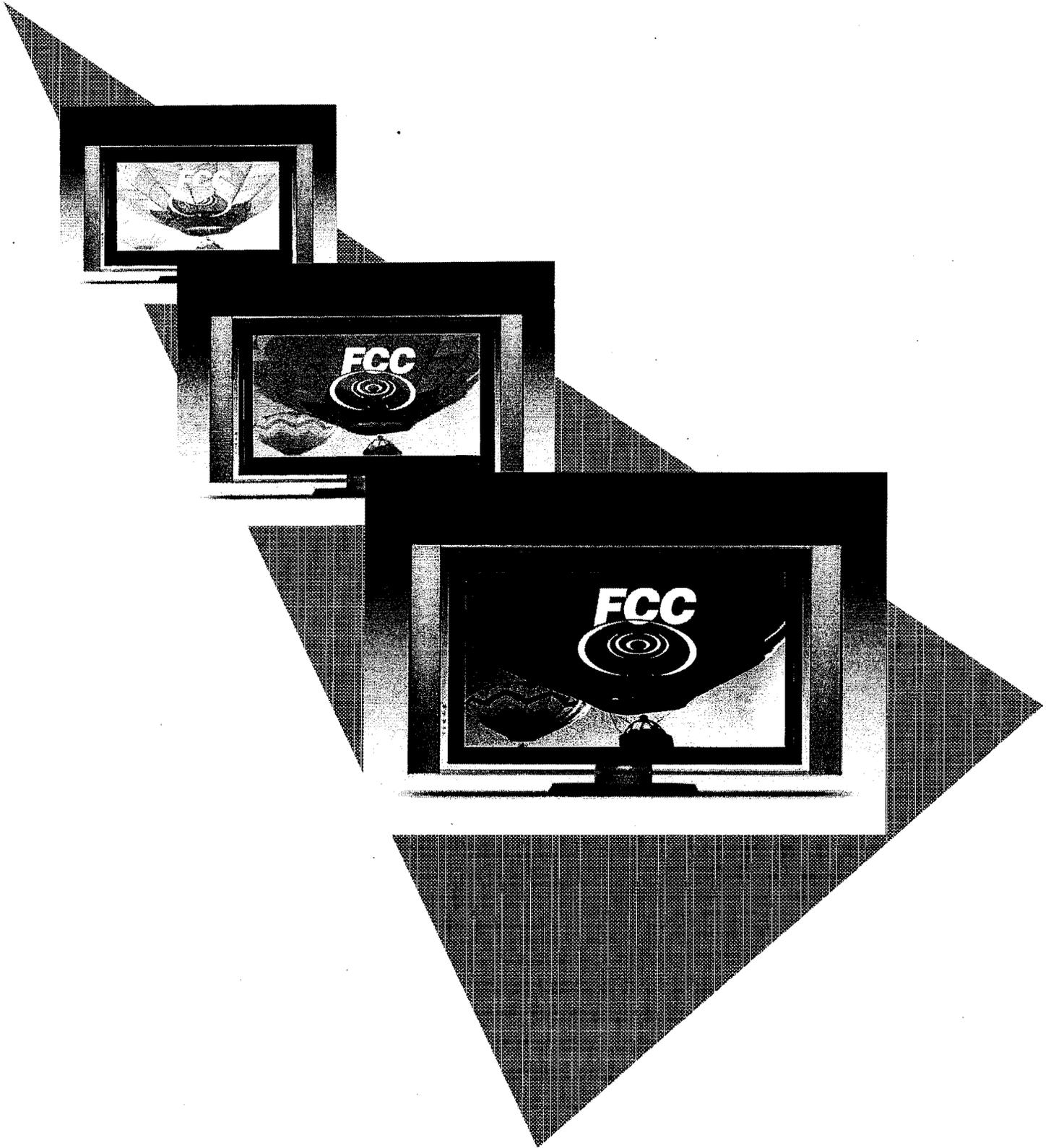
[www.dtv.gov](http://www.dtv.gov) [www.dtv.gov](http://www.dtv.gov) [www.dtv.gov](http://www.dtv.gov) [www.dtv.gov](http://www.dtv.gov)

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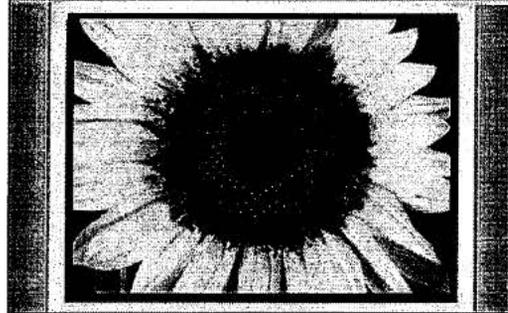


Words in **bold** type appear in the definitions section beginning on page 11.



## 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

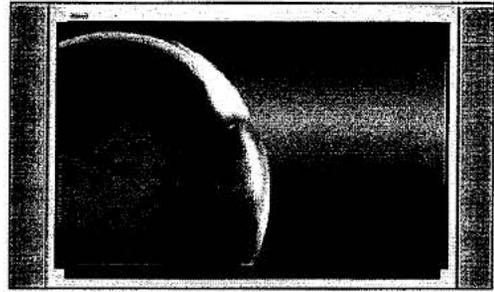
Digital television offers many advantages over analog television for viewing broadcast signals. DTV is more versatile and efficient than analog television and allows stations to broadcast more programming using less spectrum. In the same bandwidth that a broadcaster currently provides one analog channel, 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

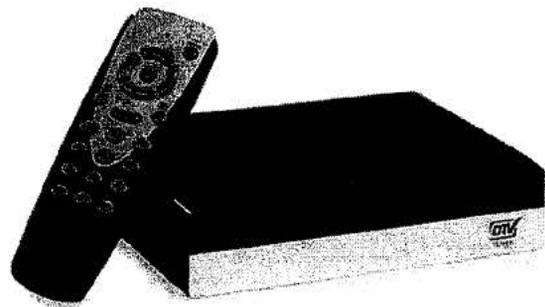
### Today, most people still have analog televisions.

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](http://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](http://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).

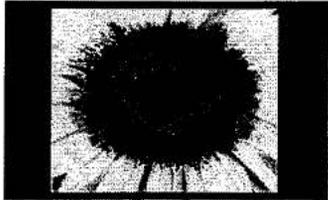


**Cable subscribers may want to consider a digital cable ready ("plug-and-play") DTV set.** These sets have the circuitry of a digital cable box built in. Current first generation plug-and-play sets are able to receive one-way programming only, including analog basic, digital basic, and digital premium 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.

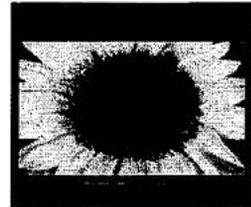
## DTV Formats—Aspect Ratio

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.

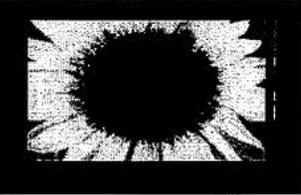
**"Letterbox"** is the term used when 16x9 content is viewed on a 4x3 screen. In order to display the widescreen content without distortion or missing parts of the picture, the television will place black bars at the top and bottom of the image.



**"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:

**HDTV**  
HIGH-DEFINITION TELEVISION

**EDTV**  
ENHANCED DEFINITION TELEVISION

**SDTV**  
STANDARD DEFINITION TELEVISION

### 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).

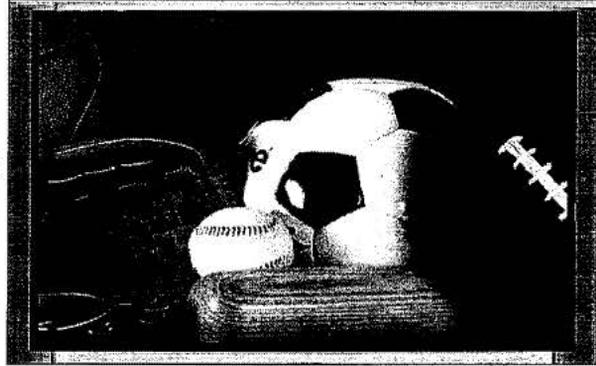
### Standard Definition TV (SDTV)

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

**or**

**Contact the FCC's  
Consumer & Governmental Affairs Bureau**

**E-mail: [DTVinfo@fcc.gov](mailto:DTVinfo@fcc.gov)  
Web site: [www.fcc.gov/cgb](http://www.fcc.gov/cgb)**

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

**Postal Mail:  
Federal Communications Commission  
Consumer & Governmental Affairs Bureau  
445 12th Street, SW  
Washington, D.C. 20554**



**Federal Communications Commission, Washington, D.C.**



# TV CONVERTER BOX COUPON PROGRAM



Do you have a TV in your home that works with the help of "rabbit ears" or a rooftop antenna?

If so, you should be aware of an important change in broadcasting coming in **February 2009**.

If you receive free TV using an antenna and your TV is not digital, you need to take action sometime before **February 17, 2009** so you can continue to receive programs after that date.

**What's this about?** The **Digital Television Transition and Public Safety Act of 2005** requires TV stations to stop broadcasting in analog and to broadcast only in digital after **February 17, 2009**. The digital transition will provide a better viewing experience for consumers and help emergency responders protect your community.

The Act created the TV Converter Box Coupon Program for households wishing to use their analog TVs after the transition. The Federal government is offering US households up to two \$40 coupons to help pay for the cost of a certified converter box. TVs connected to cable, satellite, or other pay services do not need a converter box to receive programs after February 17, 2009.

**What do I need to do?** For each analog TV you own, you need to decide *before February 17, 2009* how you would like to get programming after the change to digital.

## What are my options?

1. Buy a converter box that will plug into your current TV,
2. Buy a TV with a digital tuner,
3. Connect the analog TV to cable, satellite or other pay service.

More information can be found online at [www.DTV2009.gov](http://www.DTV2009.gov).

**How do I get a coupon?** Apply online or by phone. You may also mail in or fax a Coupon Application. You may request one coupon now and one later, but no more than two coupons per household are allowed. Coupon supplies are limited. Coupons expire 90 days after they are mailed. Requests must be received by March 31, 2009. Contact information is listed below.



**ONLINE**  
[www.DTV2009.gov](http://www.DTV2009.gov)



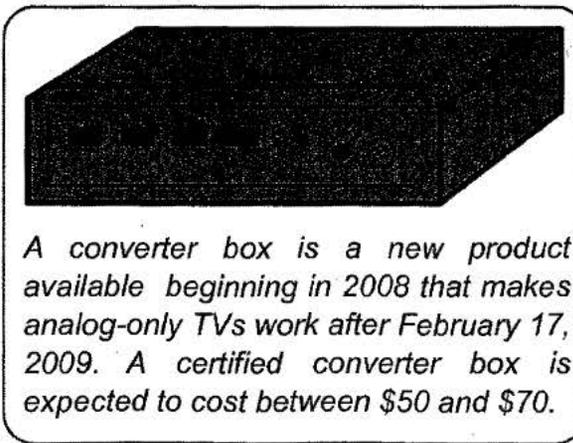
**BY PHONE**  
**1-888-DTV-2009** (1-888-388-2009)  
TTY: 1-877-530-2634 (English)  
1-866-495-1161 (Spanish)



**BY MAIL**  
**PO Box 2000**  
**Portland, OR 97208**



**BY FAX**  
**1-877-DTV-4ME2**



A converter box is a new product available beginning in 2008 that makes analog-only TVs work after February 17, 2009. A certified converter box is expected to cost between \$50 and \$70.



**TV CONVERTER BOX  
COUPON PROGRAM**  
PO Box 2000, Portland, OR 97208-2000

Apply online:  
[www.DTV2009.gov](http://www.DTV2009.gov)



Apply by phone:  
**1-888-DTV-2009** (1-888-388-2009)

Fax applications to:  
**1-877-DTV-4ME2**

Mail applications to:  
**PO Box 2000, Portland, OR 97208**

TTY: **1-877-530-2634** (English)  
**1-866-495-1161** (Spanish)

**ALL APPLICATIONS MUST BE  
SUBMITTED BY MARCH 31, 2009.**

**COUPON APPLICATION** All information must be filled out. Please type or print clearly.  
This Application is to apply for a \$40 Coupon which can be used towards the purchase of a TV converter box.

**1. Your Name and Address.**

**NAME**

First Middle Last

**HOME  
ADDRESS**

Street Address Apt #

City State Zip

**If the US Post Office does not deliver mail to your Home Address, provide as much information as you can above regarding your Home Address and provide your Mailing Address below.**

**MAILING  
ADDRESS**

*If different than above* Street Address - or - P.O. Box # Apt #

City State Zip

**2. TV Service:** Check the statement below that best describes your household.

- All or some of the TVs in my house are connected to one or more pay services, such as cable or satellite.
- None of the TVs in my house are connected to one or more pay services, such as cable or satellite.

**3. Coupons Requested:** How many coupons do you want?  ONE - OR -  TWO

**4. Signature:** By signing below, you declare that the above is true and correct.

Signature

Date



NATIONAL TELECOMMUNICATIONS AND  
INFORMATION ADMINISTRATION



**NTIA TV Converter Box Coupon Program: Sample Coupon**

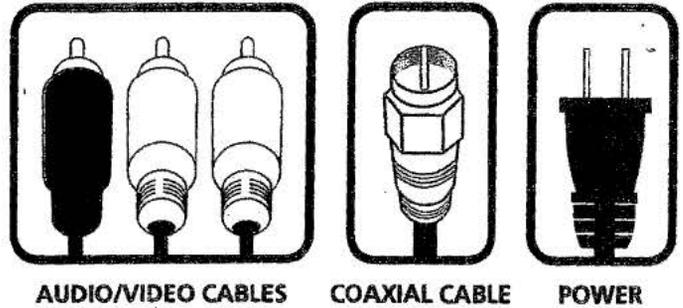


# DIGITAL TELEVISION CONVERTER QUICK START GUIDE

This guide will help you understand what a digital television converter box looks like and how easy it is to install and use. For complete instructions on a specific model of converter box, please refer to the literature included with your converter box.

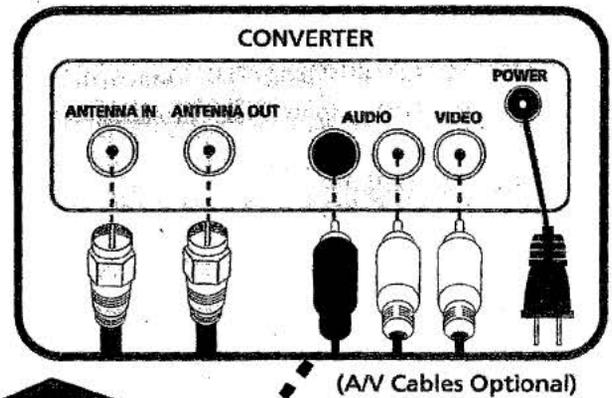
## STEP 1 - UNPACK

- A)** In the box you will find an instruction manual, a coaxial cable, a remote control with batteries and the set-top converter box. A power cable, power supply, audio/video cables and cable adaptors may be included as well.
- B)** Begin by placing the converter near the TV so it will be visible from the front.



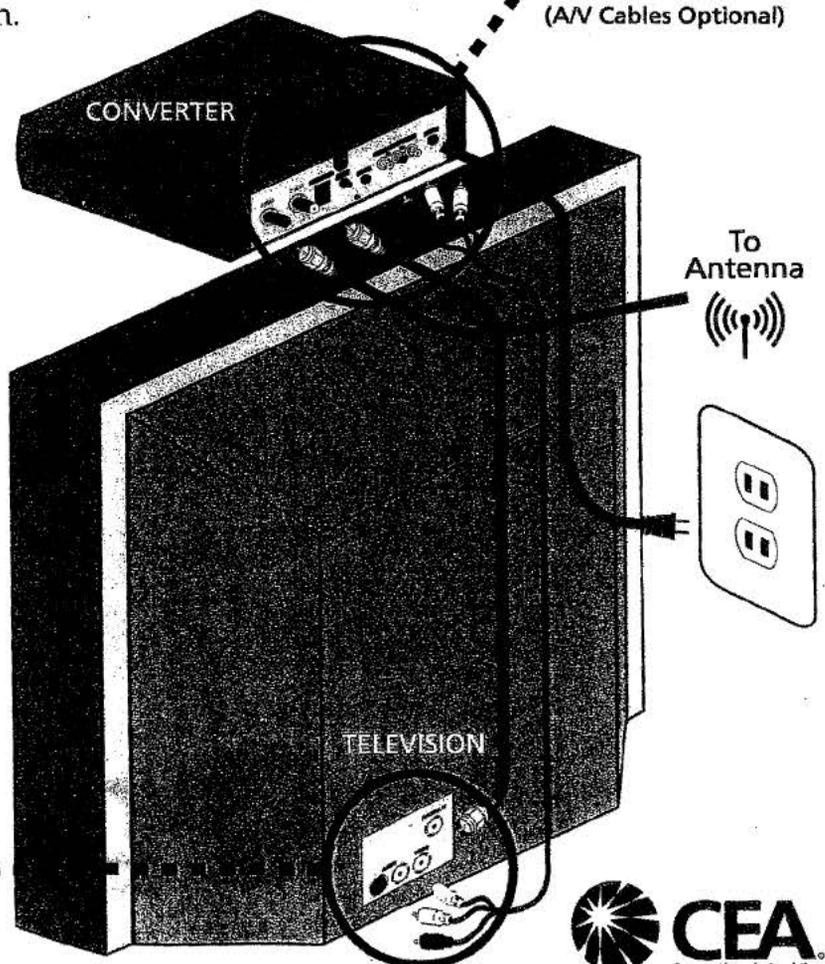
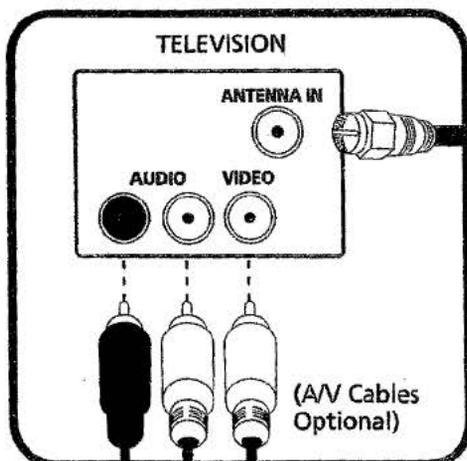
## STEP 2 - CONNECT

- A)** Disconnect your existing antenna by pulling or unscrewing the coaxial cable from the "antenna in" jack on the back of your TV.
- B)** Connect the antenna cable to the "antenna in" jack on the back of the converter box.
- C)** Use the supplied coaxial cable to connect the "antenna out" jack on the converter to the "antenna in" on the back of the television.



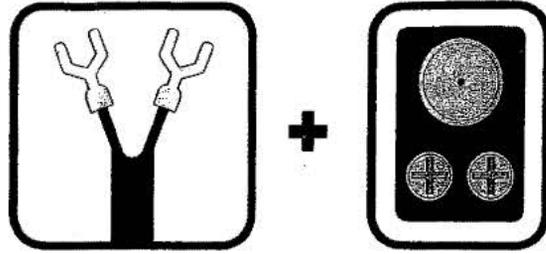
**NOTE:** The red, white and yellow auxiliary outputs can be used as an alternative to the coaxial cable if your set is equipped with corresponding inputs, or to connect a video cassette recorder (VCR).

- D)** Next, plug in the converter box power cable and install the supplied batteries in the remote control.



# DIGITAL TELEVISION CONVERTER QUICK START GUIDE

**NOTE:** If your antenna connects to your set through a thin, flat wire hooked to a pair of screw terminals instead of the threaded coaxial cable input, you will need to use an inexpensive antenna adaptor, available from your local electronics retailer.



## STEP 3 - SCAN FOR CHANNELS

---

- A)** Turn on the television and tune it to channel three. (Note: If channel three is in use in your area, consult the converter box manual for instructions on how to use channel four instead).
- B)** Point the remote toward the converter box and press the "power" button. A small light on the front of the box will indicate that the box is getting power and has turned on.
- C)** The first time the unit is powered up, it will either prompt you to scan for local channels or it will begin scanning for channels automatically. This could take several minutes but will only happen once. Once the channel scanning process is complete, your box will be ready to use.

## STEP 4 - ENJOY!

---

- A)** Press the "channel up" button on the converter box remote to explore your new digital stations. Do not be surprised if you suddenly receive many additional channels.
- B)** If any of your desired stations are missing, refer to the converter's manual for instructions on how to add additional channels.
- C)** Then, just sit back and enjoy the added features and superior quality of digital television!

For more information on the digital transition, visit [DigitalTips.org](http://DigitalTips.org) and [DTVtransition.org](http://DTVtransition.org).



1919 S. EADS ST. ARLINGTON, VA 22202

## DTV Statistics

### California Television Statistics

- Approximately 1.99 million California households use a traditional antenna and will not continue to receive free television after the conversion date.
  - *National Association of Broadcasters*
- An estimated 15% of California households do not have cable or satellite television systems and therefore will be directly affected by the upcoming national transition to digital-only terrestrial broadcast television programming. - *DTA Standards Feasibility Report, 2006*
- In 1999, Los Angeles alone had 3,392,820 cable television households (65% of television-owning households); second only to the New York City area. - *www.city-data.com*
- The Sacramento-Stockton-Modesto area had 64% cable penetration of households. - *www.city-data.com ('99)*
- The San Francisco-Oakland-San Jose area had cable in 72% of its TV-owning homes. - *www.city-data.com ('99)*
- San Diego had cable in 83% of its television-viewing households. - *www.city-data.com ('99)*

*Note:* Called the California Cable and Telecommunications Association to get a lead on finding information. The representative said she'd call me back if she found anything. **[CCTA Tel. #: 510-628-8043]**

### National Television Statistics

- Approximately 42 million homes get TV reception through an antenna. - *National Association of Broadcasters*
- According to a *Consumer Reports* survey, 15 percent of Americans live in households that rely exclusively on over-the-air programming. That is 11 percent of American adults, or approximately 23 million people, who would be unable to watch TV. - *Consumers Union Report:*  
[http://www.hearushow.org/fileadmin/sitecontent/DTV\\_HH\\_Report\\_Final.pdf](http://www.hearushow.org/fileadmin/sitecontent/DTV_HH_Report_Final.pdf)

Table 1 DMA regions with more than 1,000,000 broadcast-only HHs			
	Region Name	Broadcast Only HHs	TVHs = 90%
1	Los Angeles	958,030	5,647,440
2	Dallas-Ft. Worth	544,570	2,435,600
3	Chicago	514,840	3,489,110
4	Houston	467,040	2,050,550
5	Minneapolis-St. Paul	380,340	1,706,740
6	New York	356,680	7,391,940
7	San Francisco-Oak-San Jose	255,610	2,419,440
8	Phoenix (Prescott)	254,780	1,802,550
9	Detroit	221,900	1,825,460
10	St. Louis	220,980	1,244,370
11	Philadelphia	213,940	2,939,950
12	Salt Lake City	203,280	874,650
13	Denver	201,570	1,477,280

\*From Consumers Union Report, DMA stands for designated market area

Table 3 DMA Regions with between 100,000 and 200,000 Broadcasting HHs			
	Region Name	Household Broadcasters	HHs in DMA
15	Washington, DC (Hagerstown)	198,720	2,308,290
16	Portland, OR	194,650	1,150,320
17	Cleveland-Akron (Canton)	187,100	1,533,710
18	Sacramento-Salt Lake Modesto	177,650	1,391,790
19	Milwaukee	172,480	691,010
20	Atlanta	164,280	2,310,450
21	Tampa-St. Pete (Sarasota)	159,450	1,783,910
22	Indianapolis	156,410	1,072,090
23	Cincinnati	154,210	504,340
24	Boston (Manchester)	131,800	2,393,950
25	Baltimore	131,190	1,055,490
26	Miami-Ft. Lauderdale	129,350	1,556,020
27	Albuquerque-Santa Fe	123,740	677,740
28	Kansas City	123,190	927,060
29	Fresno-Visalia	122,350	568,730
30	Raleigh-Durham (Fayetteville)	119,590	1,039,890
31	Grand Rapids-Kalamazoo- B.Crk	115,340	739,640
32	Nashville	111,670	966,170
33	San Antonio	109,550	792,440
34	Hartford-Wiscon-Bristol-McA	108,320	338,550
35	Columbus, OH	105,170	505,690
36	Charlotte	101,240	1,065,640

From Consumers Union Report

Table 4 DMA Regions in which more than 20% of Total HHs are Broadcast Only				
	Region Name	% of HHs	HHs	TV/HH
1	Fairbanks	34.3	11,180	32,550
2	Hartford-Wiscon-Bristol-McA	32.0	108,320	338,550
3	El Paso (Las Cruces)	29.3	88,760	302,470
4	Boise	28.4	66,440	251,920
5	Salt Lake City	23.2	203,290	874,850
6	Houston	22.8	487,040	2,050,550
7	Dallas-Ft. Worth	22.4	544,570	2,435,600
8	Yuma-El Centro	21.6	24,450	113,220
9	Fresno-Visalia	21.5	122,350	568,730
10	Green Bay-Appleton	21.1	92,840	439,940
11	Minneapolis-St. Paul	21.1	380,340	1,708,740
12	Ft. Wayne	21.0	57,490	273,240
13	Duluth-Superior	20.6	35,610	172,350
14	South Bend-Ekhart	20.3	68,430	337,870
15	Laredo	20.1	13,510	67,150

From Consumers Union Report

**IN THE NEWS:  
DTV TRANSITION**

**Los Angeles Times**Protects all t  
• Cavities  
• Tartar

<http://www.latimes.com/business/la-fi-digital9apr09,1,4903720.story>  
From the Los Angeles Times

## Big audience for digital TV converters

Demand for the government's discount coupons is outpacing supply. Officials worry that many people are still unaware of next year's switch.

By Jim Puzzanghera

Los Angeles Times Staff Writer

April 9, 2008

WASHINGTON — With broadcast TV stations preparing to switch to all-digital signals early next year, about 5.3 million U.S. households have taken the government up on its offer of discount coupons for a gadget to ensure their sets will continue to get the picture.

Each U.S. household is eligible for two \$40 coupons toward the purchase of converters that sell for about \$60, and most have asked for the maximum. The National Telecommunications and Information Administration said Tuesday that 10 million coupons had been requested since the program began Jan. 1. About 856,000 households in California have submitted applications.

"We're doing a pretty good job so far," Meredith A. Baker, head of the telecommunications agency, said at a Senate hearing. "We have a lot more work to be done."

Redemption is going much more slowly, because consumers need to wait for manufacturers to roll out the boxes and for retailers such as Best Buy Co. and Wal-Mart Stores Inc. to stock them. As of Friday, 280,128 coupons had been redeemed, about 17,400 of those in California. The government started mailing the coupons in February, and Baker said the backlog of requests was being worked through.

Lawmakers continue to worry about awareness among consumers; many still don't know that the transition is coming next year, according to recent polls.

On Feb. 17, all full-power TV stations must turn off their analog signals and broadcast only in digital. Although the new method will deliver better pictures, people who use antennas and don't own newer digital sets will need a converter box or their screens will go blank.

"We all just pray this works," said Sen. Ted Stevens (R-Alaska), who is particularly concerned about rural residents who rely heavily on antennas.

As many as 20 million homes get only over-the-air signals. Cable and satellite TV subscribers will get the new signals through those systems, but millions of those homes have extra sets that use antennas. Broadcasters have estimated that 70 million U.S. televisions could need converter boxes.

The Senate Commerce Committee summoned Baker and Kevin J. Martin, chairman of the Federal

Communications Commission, on Tuesday to update them on the transition. Sen. Daniel K. Inouye (D-Hawaii), the committee's chairman, told Martin that raising consumer awareness and ensuring a smooth transition should be the top priority of the FCC and the telecommunications agency this year. He requested monthly updates.

Martin said that although awareness was rising, federal officials and a private coalition led by broadcasters still had work to do.

"Too many Americans remain confused about what they need to do about the digital transition," Martin said.

The coupons are a key to the transition, the federal government's way of helping ease the pain of the change, which is designed to free up TV airwaves for public safety use and wireless services such as high-speed Internet access.

Congress allocated \$1.5 billion to a program to deliver as many as 33.5 million converter box coupons. Resembling plastic gift cards, they are encoded and must be used within 90 days. That deadline worries Consumers Union because the boxes have been slow to hit stores. On Tuesday, the group urged federal officials to extend the deadline or allow people to reapply if their coupons expire.

People can apply at [www.dtv2009.gov](http://www.dtv2009.gov) or by calling (888) DTV-2009.

[jim.puzzanghera@latimes.com](mailto:jim.puzzanghera@latimes.com)

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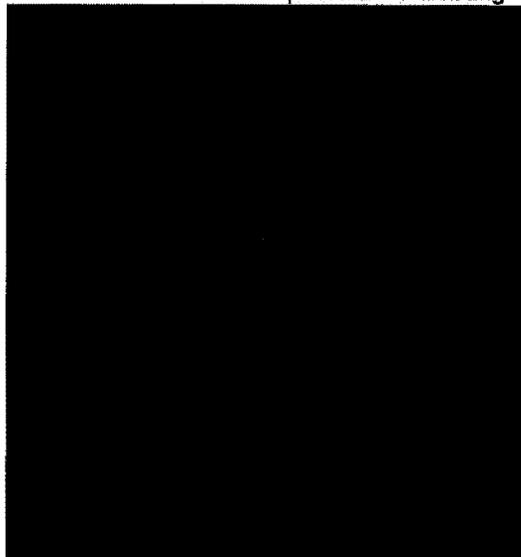
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## Misled over digital TV Group: Clerks get it wrong

By Donna Goodison | Thursday, February 14, 2008 | <http://www.bostonherald.com> | Media & Marketing



Retailers have been misleading consumers about the nation's impending switch from analog to digital TV broadcasts in 2009, according to a study released yesterday by MassPIRG.

Sales clerks at Best Buy, Circuit City, RadioShack, Target and Wal-Mart routinely gave inaccurate information about digital TV converter boxes and the government coupon program to researchers posing as consumers last October and November, according to the consumer protection group. Some tried to up-sell the secret shoppers with erroneous claims that they needed to buy digital TVs or more upscale converter boxes to continue watching TV.

Next year, the nation will transition from analog to 100 percent digital TV broadcasting. Households that watch television for free on analog TVs not connected to cable, satellite or other pay TV services will get a blank screen if they fail to pursue one of three options: Buy a basic digital TV converter box, buy a new TV with a digital tuner or subscribe to pay TV.

Purchasing a converter is the cheapest option for the estimated 22 million households with analog TVs, including 255,000 in Massachusetts. The converters go on sale this month at major retailers for \$50 to \$70, and the government is giving each household up to two \$40 coupons toward the purchase of two converters.

The secret shoppers who visited 132 stores in 10 states to test employees' knowledge of the digital TV transition found that 42 percent of sales clerks didn't know the transition date. Eighty-one percent of clerks gave out inaccurate information about the converter boxes, and 78 percent (100 percent in Massachusetts) provided inaccurate information about the coupon program.

Twenty percent of the clerks tried to sell the secret shoppers new TVs or more upscale converter boxes, with some of them wrongly claiming that high-definition TVs would be needed.

"Retailers should do a better job training their staff so that going forward, consumers that go into the stores can get the right information," said Eric Bourassa, a MassPIRG consumer advocate.

For its part, Best Buy said it started basic training of its home theater specialists in 2006. It also "mystery shops" its stores to ensure clerks are properly describing the switch and consumers' options.

Article URL: <http://www.bostonherald.com/business/media/view.bg?articleid=1073470>



[http://www.variety.com/index.asp?layout=print\\_story&articleid=VR1117983718&categoryid=14](http://www.variety.com/index.asp?layout=print_story&articleid=VR1117983718&categoryid=14)

To print this page, select "PRINT" from the File Menu of your browser.

**Posted: Tue., Apr. 8, 2008, 4:22pm PT**

## **FCC: Digital TV back on track**

### **Lawmakers worry about TV change**

By WILLIAM TRIPLET

Less than two months since his last appearance on Capitol Hill, Federal Communications Commission chairman Kevin Martin on Tuesday once again assured hand-wringing lawmakers that the nation's transition to all-digital television is on track.

While commending Martin and National Technical Information Administration acting chief Meredith Baker for their efforts so far, numerous members of the Senate Commerce Committee expressed concerns about whether enough is being done to inform viewers most at risk of losing TV reception and whether a government subsidy program will be sufficient.

Martin agreed to provide monthly updates on the status of the transition, and Baker announced that at least one rule of the subsidy program would be relaxed to help some viewers.

The hearing focused on the mandated switch to DTV, slated for Feb. 17, 2009, when broadcasters will cease all analog transmission in favor of all digital. Viewers who have either a digital TV or an analog set connected to a cable or satellite system will not be affected. But the estimated 15 million U.S. homes that have analog sets relying on over-the-air transmission will experience blank screens unless hooked to a digital-to-analog converter box.

The NTIA, which is part of the Dept. of Commerce, is supervising a program of \$40 coupons that consumers can request and use to defray the expense of the converter boxes, expected to cost between \$50 and \$70. The program allows two coupons per household.

But committee members cited reports that many Americans still don't know that either the DTV switch is coming or what to do about it. They also questioned whether the NTIA will have enough coupons for everyone who will need one, and whether it was a good idea to require that coupons be redeemed within a 90-day period, after which they expire.

Martin pointed to positive news from the Assn. of Public Television Stations, which recently released a survey showing that in the past three months, consumer awareness of the DTV switch had grown from 51% to 76%.

He acknowledged that more work needs to be done, since the survey also showed that 17.5% of people who know the transition is coming still don't know what they have to do in order to keep their TV sets working. About 10% said they didn't think they have to do anything.

Martin also noted that certain demographics are most at risk -- such as seniors and Hispanic homes -- and that the FCC has worked with more than 3,000 senior centers in 44 states to let them know what they need to do. He said the commission is also working with Univision to reach the 16% of over-the-air-dependent homes that are Hispanic.

Implying the success of NTIA's educational efforts, Baker reported that more than 10 million coupons have been requested since the program went into effect on Jan. 1. Baker said that amount "represents approximately 46% of the program's base funding."

"Approximately 48% of these households identified themselves as fully reliant on over-the-air television," Baker said.

Some 1,100 retailers with more than 11,000 outlets in all 50 states are participating in the program by carrying or planning to carry converter boxes, Baker added.

But lawmakers from rural states, like Republican Sen. Ted Stevens of Alaska, said their constituents are disproportionately vulnerable to not getting enough information or help about the transition. "What kind of fall-back plan do you have?" asked Stevens, suggesting there will be viewers who will be perplexed when their analog TV sets no longer work.

Martin replied that the FCC's focus is on ensuring all viewers survive the transition. He said he's in favor of Democratic commissioner Michael Copps' suggestion that the FCC test the transition in one market before the national switch.

Martin said he would comply with Stevens' request for monthly updates on the status of the DTV transition.

Read the full article at:

<http://www.variety.com/article/VR1117983718.html>

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## DirecTV's Digital Transition Ads May Be Confusing Viewers

By Ira Teinowitz

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Add one more point of confusion to the digital TV transition.

Satellite broadcaster DirecTV is airing misleading public service messages telling subscribers they don't need to do anything in advance of the country's Feb. 17, 2009, transition from analog to digital TV transmission.

"Television has gone through some big changes ... the transition from black-and-white to color, from small screens to giant screens, from cable to satellite. Now by law local broadcasters must transition from analog to digital. So how will this affect me?" says DirecTV's message.

"It won't. DirecTV customers have always enjoyed 100% digital picture, so I don't have to do a thing. It feels good to be ahead of the curve. Relax. You've got 100% digital DirecTV."

In fact, some DirecTV subscribers get some or all of their local channels over-the-air—DirecTV won't say how many—and will lose access to those channels if they don't get converter boxes or new digital TVs. Other DirecTV customers have secondary TV sets that may need to be connected to the DirecTV service or need converter boxes to continue to work.

While the public service ad's announcer doesn't mention at all the possibility that steps may be necessary, the message ends by displaying a Web address and, in small type, "If you are not getting your local channels through DirecTV, visit us online for more information."

On its Web site, DirecTV correctly explains the need for the boxes. The site also offers satellite receivers with built-in DTV converters.

A DirecTV spokesman defended the airing of the public service message, saying most of the company's customers get their local channels through satellite.

"The PSAs are designed to avoid confusing the vast majority of our customers, who will not be affected by the digital transition because they receive locals via DirecTV, while assisting the small number of customers who receive locals off-air by directing them to our Web site, where they have access to all the information they need to prepare for the transition," he said.

A spokesman for the Commerce Department's National Telecommunications & Information Administration, which is overseeing the transition, said the agency took no issue with the ad because of its reference to the Web site.

Officials of the Federal Communications Commission didn't return requests for comment.

[http://www.tvweek.com/news/2008/06/directvs\\_digital\\_transition\\_ad.php](http://www.tvweek.com/news/2008/06/directvs_digital_transition_ad.php)

FALL 2007  
volume three | edition three

# CONSUMER CONNECTION

## Statewide Scam Roundup: **Senior Scams** **Scammers**

**Charity: Why it  
Should Begin  
at Home**

**Rebuilding After a Wildfire?  
Beware of Scams**

**Reverse Mortgage:  
Is One Right for You?**



## High-Definition Television Deadline

# Beware of HDTV Scams and Rip-offs!



**O**n February 17, 2009, standard NTSC television broadcasting (also called analog) will cease in the United States. In order to receive a TV signal in the new high-definition (HDTV) format, you will either need an HDTV television or a digital-to-analog converter box for your analog television. Beware that scammers and criminals are posed to take advantage of the confusion over the next year as more than 300 million Americans prepare for the mandatory switch to the new broadcast format.

To ease this transition, *Consumer Connection* presents the following basic facts and links for further information:

**Q What is going to happen on February 17, 2009?**

**A** All broadcasting in the NTSC format (also called analog) will end. In order to receive a television signal, you will either need an HDTV television or a conversion box for your analog television.

**Q What should I look for when shopping for a new television?**

**A** Beware of someone selling an analog TV and representing it as an HDTV. An analog television with an internal or external converter box is HDTV compatible, but that is not the same as an HDTV. An HDTV must not only be able to receive an HDTV signal,

but should also be able to produce a high-definition display on its screen. An HDTV-compatible television can receive the HDTV signal, but then it converts it into an analog picture on the screen. Retailers have a lot of analog TVs to sell in the next year. Some may suggest that their televisions are HDTV when this is not the case.

Because of this, the Federal Communications Commission now requires that all retailers post the following on or in close proximity to all analog television sets:

#### **Consumer Alert**

This television 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 (888) 225-5322; TTY: (888) 835-5322 or visit the Commission's digital television Web site at: [www.dtv.gov](http://www.dtv.gov).

#### **Q Will the U.S. Government help pay for a digital-to-analog converter box?**

**A** The National Telecommunications and Information Administration (NTIA), part of the Federal Trade Commission, is administering the Digital-to-Analog Converter Box Coupon Program. Between January 1, 2008, and March 31, 2009, all U.S. households will be eligible to request up to two \$40 coupons to be used toward the purchase of up to two digital-to-analog converter boxes. The coupons will only be good for specific brands of boxes, and there are additional limitations. For more information, you may phone the NTIA at (888) 388-2009; TTY (877) 530-2634 English; TTY (866) 495-1161 Spanish; or visit [www.ntia.doc.gov/dtvcoupon](http://www.ntia.doc.gov/dtvcoupon) or the FCC at [www.dtv.gov](http://www.dtv.gov).

#### **Q How good of a picture will I get receiving HDTV with an analog TV and converter box?**

**A** Your picture should look about the same as it does now.

#### **Q Will the cost of HDTV be worth the extra expense?**

**A** Consumers will have to decide for themselves. HDTV offers about twice as much picture information as analog TV. Also, the HDTV format offers surround sound-type audio.

#### **Q Which screen technology is best for HDTV?**

**A** Televisions capable of receiving HDTV are available in a number of screen formats, including liquid crystal display (LCD), plasma, organic light emitting diode (OLED), and various types of rear projection. Each has its advantages and proponents. Which one is best is a personal decision.

#### **Q What about Blu-ray; is this different than HDTV?**

**A** Blu-ray is the brand of a high-definition, optical-disk, record-and-play technology. Currently, it is competing with at least one other record-and-play technology called HD DVD. These technologies are not the same as HDTV broadcast format. Generally, they should be compatible with your television, depending on the brand and its specifications.



[http://www.variety.com/index.asp?layout=print\\_story&articleid=VR1117985315&categoryid=18](http://www.variety.com/index.asp?layout=print_story&articleid=VR1117985315&categoryid=18)

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**Posted: Thurs., May 8, 2008, 3:14pm PT**

## **Wilmington to test digital switch**

### **City acts as a test market for upcoming change**

By WILLIAM TRIPLETT

The city of Wilmington, N.C., has volunteered to be a test market as an indicator of how well -- or poorly -- the nationwide switch to all-digital television may go next year, Federal Communications Commission chairman Kevin J. Martin announced Thursday.

At noon on Sept. 8, Wilmington area TV stations WWAY (ABC), WFSX (Fox), WECT (NBC), WILM-LP (CBS) and W51CW (Trinity Broadcasting) will shut off analog signals and broadcast only in digital.

"This test market will be an early transition that will give broadcasters and consumers a chance to experience in advance the upcoming DTV transition," Martin said in making the announcement. "This early test will help us minimize potential burdens for viewers and maximize their ability to benefit from it."

Martin hailed North Carolina -- his home state -- for its history as a pioneer in flight, noting the Wright brothers' success in Kitty Hawk in 1903.

"In the same vein of American spirit, I am pleased to announce that Wilmington will be the first market in the country to make the transition to digital television," Martin said.

"The commission identified Wilmington as one of only a limited number of potential test markets because all the commercial stations in the market have already completed construction of their DTV channels and are operating at full post-transition power," Martin continued. "The commission will use the test market as an opportunity to work very closely in advance with broadcasters, viewers, cable companies and others who will be affected to anticipate and address any problems."

While the FCC as well as broadcast and cable industries have been mounting educational campaigns to inform consumers about the coming switch to digital TV and what they must do to prepare for it, many officials and close observers worry that more needs to be done to facilitate a smooth transition.

Viewers most at risk are those who have analog sets that are dependent on over-the-air transmission. If they do not hook those sets to a cable or satellite system, they will need to attach a digital-to-analog converter box so that the analog sets can receive a picture after the nationwide transition, skedded for Feb. 17, 2009.

Martin said the FCC will work to make sure that converter boxes are readily available in Wilmington prior to Sept. 8. Among other things, the commission will also try to disseminate word of the early transition to area residents through on-air PSAs and by participating in large public events in the city.

The idea of a test market originated with FCC commissioner Michael Copps last March. Commending Martin for agreeing, Copps said, "This is very good news for the DTV transition. Real-world experience is an extremely important step -- although only one of many -- that will help minimize consumer disruption next February. Broadway shows open on the road to work out the kinks before opening night. The DTV transition deserves no less."

National Assn. of Broadcasters VP for the DTV transition Jonathan Collegio issued a cautionary statement:

"The FCC-initiated experiment in Wilmington can shed light on a number of issues surrounding the national DTV transition in February 2009. The results must be objectively reviewed to determine how or whether the findings can be applied nationwide."

Read the full article at:

<http://www.variety.com/article/VR1117985315.html>

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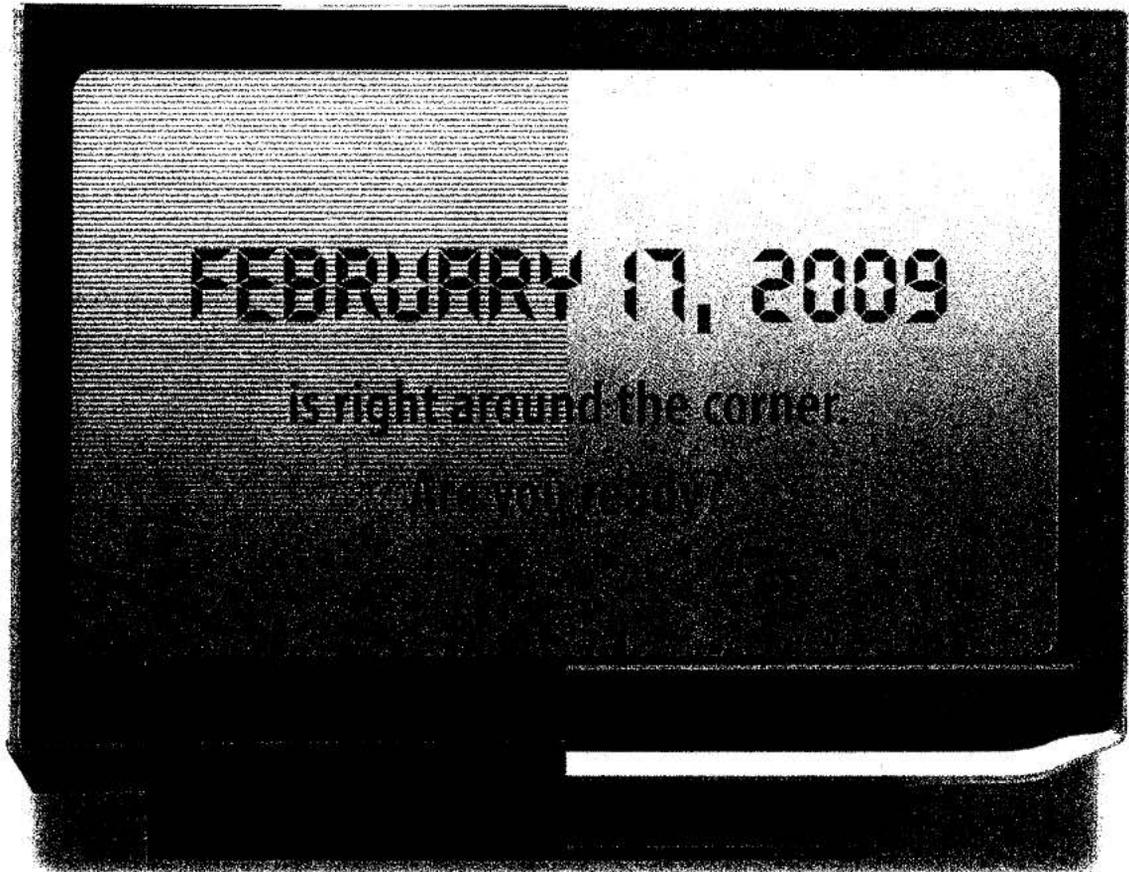
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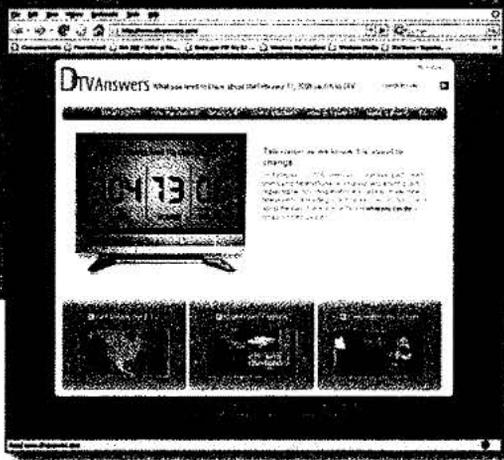


# DTVAnswers

An initiative of the National Association of Broadcasters

America's broadcasting industry is in the midst of an exciting revolution as it transitions from analog to digital television technology. Since the late 1990s, television broadcasters have been preparing for the transition from analog to digital television (DTV) scheduled for February 17, 2009, as set by Congress. *But as the transition draws near, are you ready?*

Find out at: [www.DTVAnswers.com](http://www.DTVAnswers.com)



## Preparing Consumers for the Digital Television (DTV) Transition.

By law, all American television stations will switch their broadcasting from analog to digital by February 17, 2009. Television sets connected to cable or satellite will not be affected, and will continue to receive programming after that date. But those television sets not connected to cable or satellite, or without a converter box, will not receive a television signal after the date of the switch.

### Why Transition to DTV?

Digital results in clearer pictures, more channels and even over-the-air high-definition television (HDTV) for consumers with HD television sets. It is also a more efficient way to broadcast that will free up some of the airwaves for other uses.

### How do consumers switch to DTV?

Preparing for the DTV transition can be easy and will require one of three steps by February 17, 2009:

- **DTV converter box:** Purchase a DTV converter box that plugs into an existing analog set and allows continued free television reception, which will be available for purchase in early 2008. At that time, the federal government will provide \$40 coupons that can go toward the purchase of these boxes.
- **New television set:** Purchase a new television set with a built in digital tuner.
- **Paid service:** Subscribe to cable, satellite or a telephone company service provider to continue using analog sets, if all desired local broadcast stations are carried by that service.

With more than 34 million households receiving over-the-air signals in their homes, our goal is to educate the consumer on how easy it is to switch to digital TV.

For more information on the DTV transition, please visit: [www.dtvanswers.com](http://www.dtvanswers.com)

# DTVAnswers.com

An initiative of the National Association of Broadcasters

## The DTV Transition: Background Summary

### The Law

In the Digital Television Transition and Public Safety Act of 2005, Congress set a hard deadline of February 17, 2009, for television stations to replace traditional analog broadcasts with digital broadcasts. By 11:59 p.m. on February 17, 2009, all full-power television stations must switch off their analog broadcasting signals and begin broadcasting exclusively in the digital format. This switch from analog to digital broadcasting is known as the DTV transition.

### The Difference between Analog and Digital Broadcasting

Digital television (DTV) enables television stations to provide dramatically clearer pictures and better sound quality. By transmitting the information used to make a TV picture and sound as "data bits" like a computer, television stations can also carry more information using digital broadcasting than is currently possible with analog broadcast technology. For example, DTV makes it possible for stations to broadcast multiple channels of free programming simultaneously through "multicasting," instead of broadcasting only one channel at a time. Digital technology also enables television stations to provide free, over-the-air high-definition television (HDTV) for consumers with HD television sets. The picture quality of HDTV is also better over-the-air in its purest form.

Author Thomas L. Friedman provides a useful description of digital technology in his book *The Lexus and the Olive Tree*:

*"Digitization is the wizardry by which we turn voices, sounds, movies, television signals, music, colors, pictures, words, documents, numbers, computing language and any other form of data you can think of into computer bits and then transfer them by telephone lines, satellites and fiber-optic cables around the world . . . Digitization involves reducing any sound, picture, number or letters into a different code of 1's and 0's, and then transmitting them through telecommunications to another point where those 1's and 0's are decoded for the receiver and reconstituted into something very close to the original . . . It is much easier for the device receiving such a signal to read exactly what it is . . . This is why digital copies are always so much sharper and why anything that is sent as a string of 1's and 0's from your mouth or fax or computer in New York will automatically come out as the same 1's and 0's on the other end."*

The transition to digital television will also free up some of the airwaves since digital signals use less of the spectrum than analog signals. When the transition is completed, television broadcasters will vacate part of the spectrum — the so-called 700 MHz band consisting of channels 52-69 — which the government will reclaim for other uses.



## Effect of the DTV Transition on Consumers

While the benefits of DTV are remarkable, millions of households risk losing television reception unless they take the steps to receive a digital signal.

Television viewers who receive free, broadcast television signals through antennas on television sets that are equipped with analog tuners— and who do not pay for a subscription television service — will be affected by the transition.

Of the roughly 110 million American households with televisions, approximately 17.8 percent, or 19.6 million, receive broadcast signals exclusively in their homes. Another 14.6 million households have secondary over-the-air television sets in their bedrooms or kitchens that are not connected to a subscription service.

Overall, more than 34 million households, including nearly 70 million television sets, are at risk of losing their television signals after February 17, 2009, if consumers do not make the transition to DTV.

Households	
U.S. TV Households:	110,200,000
% of TV Households:	
Broadcast-Only	17.8%
Cable/Satellite, Cable/Satellite + Over-the-air	82.2%
Broadcast-Only TV Households	19,615,600
Cable/Satellite + Over-the-air	14,670,000
Total Over-the-air Households	34,285,600
Sets	
In Broadcast-Only Households	45,508,192
In Cable + Households	
Connected Sets	236,425,284
Broadcast-Only Sets	23,551,944
Total Sets	305,485,420
Total Over-the-air-Only Sets	69,060,136

*Source of estimates: NAB Research analysis of Spring 2006 Knowledge Networks/SRI Home Technology Monitor survey; 2005-2006 Nielsen U.S. TV Household estimates.*

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## How to Make the Transition

Consumers will have three options for making the switch to DTV and continuing their television service:



- 1) Purchase a DTV converter box that will convert the digital signal into analog for an existing analog television set. Converter boxes will be available for purchase in early 2008, and are expected to cost between \$50 and \$70. At about the same time, the federal government will offer consumers \$40 coupons to go toward the purchase of these boxes.
- 2) Purchase a new TV set with a built-in digital tuner. All TVs with a digital tuner are able to receive digital signals broadcast by television stations.
- 3) Subscribe to cable, satellite or a telephone company television service provider. All of these services will allow consumers to receive digital television signals on their analog television sets.

## Converter Box Coupon Program

The government is funding a program to help consumers with the costs of upgrading to digital. As part of the Digital Television Transition and Public Safety Act of 2005, Congress approved a \$1.5 billion converter box coupon program to be administered by the National Telecommunications and Information Administration (NTIA). Between January 1, 2008, and March 31, 2009, all U.S. households will be eligible to request up to two coupons, worth \$40 each, to be used toward the purchase of up to two converter boxes. Coupons will be mailed to eligible households and will expire after 90 days of issuance. The coupons cannot be combined to purchase a single converter box, nor can they be used toward the purchase of other products.

## Antennas and DTV

With a good indoor or outdoor antenna, consumers can maximize their DTV reception. Like HDTV, the picture quality of DTV is better over-the-air, in its purest form. In general, dependable reception of DTV will require the same type of antenna that currently works to provide good quality reception of analog TV signals. A key resource to help consumers choose an antenna in order to receive free, local broadcast TV channels is available online at [www.antennaweb.org](http://www.antennaweb.org).

## How TV Stations are Preparing for DTV

Consumers do not have to wait until 2009 to take advantage of all digital has to offer. Television stations have been preparing for the transition from analog to DTV since the late 1990s, when they began building digital facilities and airing digital channels alongside regular analog broadcasts. Today, 1,624 out of 1,762 full-power television stations nationwide offer digital programming.

**The National Association of Broadcasters (NAB) has launched an aggressive consumer education campaign to ensure that no American is left unprepared for the transition to DTV. NAB's digital television (DTV) transition campaign includes:**

- **Research:** Working with some of the best survey research teams in the country to design an effective message to reach diverse audiences.
- **Earned Media:** Using earned media to have a strong, positive presence in newspapers and on television news programs.
- **Marketing and Paid Media:** Using marketing tools and advertisements to ensure consumers are aware of the transition, and making high-quality "DTV Action" television spots available for broadcasters to run in their local markets.
- **Speakers Bureau:** Enlisting local broadcasters to speak to groups in their communities about the transition and how to prepare.
- **DTV Road Show:** Coordinating a traveling media event that will reach more than 200 cities before February 2009.
- **DTV Transition Coalition:** Helping to coordinate a group of public and private organizations that are working together to ensure a successful transition to digital television.

**The digital television transition is coming, and it means a better quality television experience for those who take the steps to receive a digital signal. But consumers who don't take those steps risk losing their free television programming. It pays for consumers to get prepared now for DTV.**

For more information about the NAB's DTV transition campaign, please contact Shermaze Ingram at (202) 429-5477, or via email at [singram@nab.org](mailto:singram@nab.org).

**DTVAnswers.com**

An initiative of the National Association of Broadcasters





**On February 17, 2009  
Television will go all digital,  
all the time**

**Are you ready?**



### **What is the Digital Television Transition?**

By law, American television stations will end all analog broadcasts on February 17, 2009 and begin broadcasting exclusively in a digital format. Television sets connected to cable, satellite or a telephone company video service provider should not be affected, and will continue to receive broadcast programming after that date. But TV sets that are not connected to cable or satellite, or do not have a built-in digital tuner, will need a converter box to continue receiving and displaying broadcast television after the transition occurs.

### **How do Consumers Switch to DTV?**

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

- **Purchase a DTV converter box:** Beginning in early 2008, consumers will be able to purchase a DTV converter box that enables continued broadcast television reception on an analog TV set. At about the same time, the federal government will offer consumers \$40 coupons to go towards the purchase of these boxes.
- **Purchase a Digital TV set:** Purchase a new television set with a built-in digital tuner. All TVs with a digital tuner are able to receive digital signals broadcast by television stations.
- **Subscribe to a video service provider:** Subscribe to cable, satellite or a telephone company video service provider to continue using analog TV sets.



### **Why is America Switching to Digital Television (DTV)?**

Digital is a more efficient way to broadcast, and it will free up the airwaves for other services, including public safety. DTV also provides clearer pictures, more channels, and even free over-the-air high-definition television (HDTV) for consumers with HD television sets.



*The DTV Transition Coalition is a group of public and private organizations that are working together to assure a successful transition to digital television. The mission of the DTV Transition Coalition is to ensure that no consumer loses free over-the-air television reception in February 2009 due to a lack of information about the DTV transition.*

**For more information, visit:  
[www.dtvtransition.org](http://www.dtvtransition.org)**



**El 17 de febrero de 2009,  
la televisión cambiará a  
digital – para siempre.**

## **¿Está listo?**



### **¿Qué es la Transición de Televisión Digital (DTV, por sus siglas en inglés)?**

Según la ley, las estaciones de televisión en Estados Unidos terminarán todas las difusiones analógicas el 17 de febrero de 2009, y comenzarán a difundir exclusivamente en un formato digital. Los televisores conectados al cable, al satélite o a un proveedor del servicio de video de una compañía telefónica no se deberían ver afectados, y continuarán recibiendo la programación difundida después de esa fecha. Pero los televisores que no están conectados con cable o satélite, o que no están contruidos con un sintonizador digital, necesitarán una caja convertidora para continuar recibiendo y mostrando la televisión difundida después de que la transición ocurra.

### **¿Cómo cambian los consumidores a DTV?**

La preparación para la transición a DTV requiere una de tres opciones para el 17 de febrero de 2009:

- **Compre una caja convertidora de DTV:** Comenzando al principio de 2008, los consumidores pueden comprar una caja convertidora de DTV que permite la recepción continuada de la televisión difundida en un televisor analógico. Para entonces, el gobierno federal proporcionará cupones valorados en \$40 que los consumidores pueden usar para comprar las cajas.
- **Compre un televisor digital:** Compre un nuevo televisor construido con un sintonizador digital. Todos los televisores con un sintonizador digital pueden recibir las señales digitales difundidas por las estaciones de televisión.
- **Subscriba a un proveedor del servicio video:** Subscriba a cable, a satélite o a una compañía telefónica que provee el servicio de video para continuar el uso de los televisores analógicos.



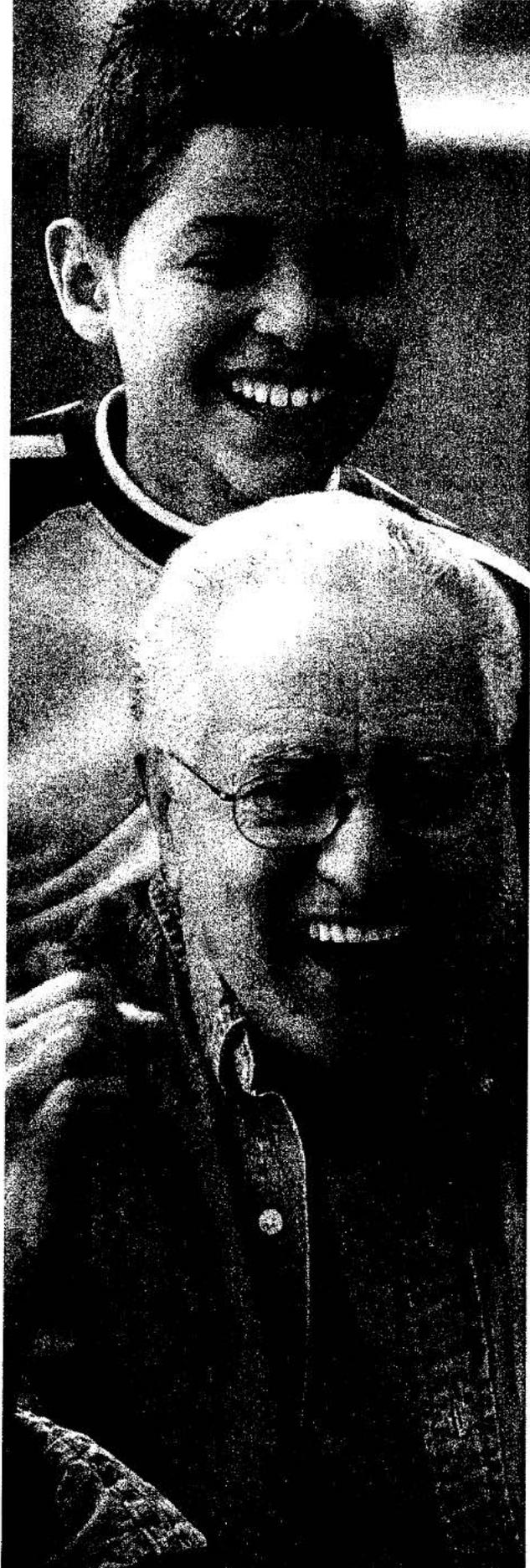
### **¿Por qué está cambiando Estados Unidos a la Televisión Digital (DTV)?**

Digital es un método más eficiente de difundir las señales de televisión al público, y liberará las ondas radiales para otros servicios, incluyendo la seguridad pública. DTV también provee imágenes más claras, mas canales e incluye la televisión gratis de alta definición (HDTV, por sus siglas en inglés) a través del aire para los consumidores que ya tienen televisores de HDTV.



*La Coalición de la Transición a Televisión Digital (DTV) es un grupo de organizaciones públicas y privadas que trabajan juntas para asegurar una transición exitosa a la televisión digital. La misión de la Coalición de la Transición a Televisión Digital es asegurarse que ningún consumidor pierda su recepción gratis de la televisión a través del aire en febrero del 2009 por carecer de información sobre la transición a DTV.*

**Para más información, visite:  
[www.dtvtransition.org](http://www.dtvtransition.org)**



On February 17, 2009,  
television stations across America  
will switch to digital broadcasting.

Is your TV ready  
for the switch?

By law, all American television stations are switching from analog to new digital broadcasts on February 17, 2009. Digital television is a more efficient technology that will provide clearer pictures, better sound, and will allow for a variety of other new television services.

But if you are one of millions of consumers who receive free TV through rooftop antennas or rabbit ears, you will need to upgrade your television set to continue receiving free television.

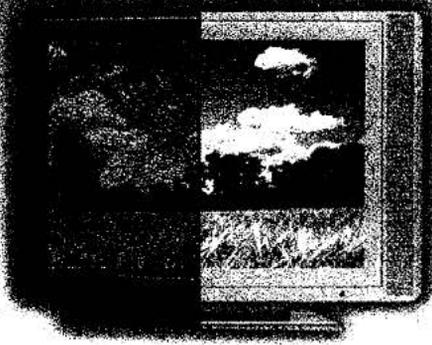
In fact, one out of every three households will be affected by the switch.

Any television sets that do not have a built-in digital tuner, or are not connected to a cable or satellite service, will need a digital converter box to continue receiving free, broadcast television after the transition occurs.

For more information about  
the DTV Transition, visit:

**DTVAnswers**

An initiative of the National Association of Broadcasters



# The switch to digital television (DTV) is coming.

*Get ready for dramatically better television.*

**By law, all American television stations must switch** their broadcasting from analog to digital by February 17, 2009. Television sets connected to cable or satellite will not be affected, and will continue to receive programming after that date. But those analog television sets not connected to cable, satellite, or a telephone company service provider, or without a DTV converter box will not receive any television signal after the date of the switch.



**DTVAnswers.com**

## What is Digital Television (DTV)?

**Digital Television (DTV) is an** innovative new type of broadcasting technology that will transform your television viewing experience. DTV enables TV stations to provide dramatically clearer pictures and better sound quality. DTV can also offer multiple programming choices, interactive capabilities and data services such as significantly enhanced closed captioning.

## Why the switch?

**Under legislation passed by Congress** – the Deficit Reduction Act of 2005 – free local broadcast television stations are required to turn off their analog channels on February 17, 2009, and continue broadcasting exclusively in the digital format.

## What are the benefits of DTV?

**Digital television allows stations to** offer a number of new and better services. In addition to providing dramatically better pictures, sound quality and high definition television (HDTV), DTV also enables TV stations to provide several channels of programming at once. This is known as "multicasting." DTV can also be used to provide data services (such as significantly enhanced closed captioning) that are not possible with analog technology.

## Who will be affected?

**Consumers who receive free** television signals through antennas on television sets that are equipped with analog tuners – and who do not subscribe to cable, satellite or a telephone company television service provider – will be affected by the transition.

**At least 19.6 million households** receive only over-the-air television signals in their homes, and approximately 70 million television sets are at risk of losing their signals after February 17, 2009, if owners of these sets do not make the easy transition to DTV.

## How can I switch to DTV?

**You can make the switch to DTV by** following one of three easy steps by February 17, 2009:

- 1. DTV converter box:** Purchase a DTV converter box that plugs into your existing analog set. A converter box will enable you to receive free television reception, and will be available for purchase in early 2008. At that time, the federal government will provide \$40 coupons that you may use toward the purchase of these boxes.

*(continued on back)*

**2. New television set:** Purchase a new television set with a built-in digital tuner.

**3. Paid service:** Subscribe to cable, satellite or a telephone company service provider to continue using your analog TV set, if all desired local broadcast stations are carried by that service.

### What is a DTV converter box?

A DTV converter box is an easy-to-install electronic device that hooks up to your analog television set and over-the-air antenna and converts the digital television signal into analog, making it viewable on your analog TV.

### When can I get a coupon for a DTV converter box?

The National Telecommunications and Information Administration (NTIA) will issue coupons for DTV converter boxes in early 2008. Households will be able to apply for up to two coupons, valued at \$40 each, which must be redeemed within three

months of receipt. Go to [www.ntia.doc.gov](http://www.ntia.doc.gov) for more information.

### Can I keep my analog TV set?

**Yes. Buying a new digital television set** is not the only option you have for navigating the DTV transition. If you wish to continue using your analog set, you must consider one of the following options to make the switch to digital television:

1. Purchase a DTV converter box, which will convert the new digital signal into the analog format for older televisions.
2. Switch to a cable, satellite or telephone company service provider to receive the new digital signal.

### How do I know if I have an analog or digital television set?

**To check whether your TV set can** receive over-the-air digital broadcast signals, take a look at your owner's manual or look on the set for an indication that it has a built-in Advanced Television Systems

Committee (ATSC) tuner. You can also go to the manufacturer's Web site and check the capabilities of the set by manufacturer model number.

### Is HDTV the same thing as DTV?

**No. HDTV is the highest quality of DTV**, but it is only one of several formats. In addition to HDTV, the most common format is Standard Definition Television (SDTV). Consumers who have high definition TV sets may receive free high definition television programming over the air using an antenna.

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

**In general, dependable reception of DTV** will require the same type of signal reception equipment that currently works to provide good quality reception of analog TV signals. If you currently need a roof-top antenna to receive television, the same antenna generally will be needed to receive DTV.

DtvAnswers

An initiative of the National Association of Broadcasters, which represents more than 8,300 free, local radio and television stations and broadcast networks across the country.



**Consumer & Governmental Affairs Bureau**[FCC](#) > [CGB Home](#) > [Consumer Publications](#) > Buying the Right TV[FCC site map](#)

# Consumer Advisory

## Buying the Right TV: What Every Consumer Should Know

### The Digital Television Transition - What is it?

The DTV transition refers to the switch from analog to digital broadcast television. Digital technology will provide improved picture quality and sound quality like that experienced at the movies. Congress set the deadline of February 17, 2009 for the DTV transition. This means that on that date all U.S. full-power television stations will stop broadcasting in analog format as they do now, and will transmit only in digital instead. (Most full-power television stations are currently broadcasting in both analog and digital.)

### What Consumers Considering the Purchase of a TV Set Should Know

When buying television sets and other TV equipment such as DVD players, consumers should know whether or not the equipment includes a digital tuner. (TV equipment that includes a digital tuner is sometimes referred to as a "digital receiver.") Consumers who want to continue to receive their local full-power broadcast television stations after February 17, 2009 must either purchase a TV set equipped with a digital tuner or purchase a digital-to-analog converter box that will convert those over-the-air digital signals into analog so that they can be displayed on an analog device. Analog-only TVs should continue to work as before with cable and satellite TV services.

### Digital-to-Analog Converter Box Coupon Program

Between January 1, 2008, and March 31, 2009, all U.S. households will be eligible to request up to two coupons, worth \$40 each, to be used toward the purchase of digital-to-analog converter boxes. As described above, these converter boxes are designed to make over-the-air digital television signals viewable on analog-only TVs, and thus are not intended for analog-only TVs hooked up to cable or satellite service. The National Telecommunications and Information Administration (NTIA) is running the coupon program. For more information, visit the NTIA Web Site at [www.dtv2009.gov](http://www.dtv2009.gov).

**Some Sets Being Sold May Have Analog Tuners Only - Look for the Label**

Although, by law, the import or interstate shipment of any TV device containing an analog tuner is now prohibited, unless it also contains a digital tuner, some stores may still have in their inventory TV equipment with only analog tuners. A television set or other TV equipment with only an analog tuner will not receive over-the-air local full-power broadcast TV station programming after February 17, 2009, unless it is connected to a digital-to-analog converter box.

The Commission has required that retailers fully 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](http://www.dtv.gov).**

Consumers are urged to look for this label when shopping for a new TV set or other TV equipment and to take into consideration the limitations of analog-only TVs when making purchasing decisions. For more information about the DTV transition, go to [www.dtv.gov](http://www.dtv.gov) or contact the FCC's Consumer Center by e-mailing [dtvinfo@fcc.gov](mailto: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 & Governmental Affairs Bureau  
Consumer Inquiries and Complaints Division  
445 12th Street, SW  
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# Consumer Advisory

## Closed Captioning for Digital Television (DTV)

### Overview

The Federal Communications Commission (FCC) is concerned that consumers may experience difficulty in receiving and/or viewing closed captioning on some digital television (DTV) programming, including high definition television (HDTV), provided by a subscription television provider, such as a cable company or a satellite television provider. These difficulties generally could arise from two causes: 1) the consumer's set-top box and/or DTV are not properly set to allow closed captions to be displayed; or 2) there are technical problems with the subscription television provider's system that prevent closed captions from being received and decoded by the set-top box and/or DTV.

### Background

Closed captioning is an assistive technology that allows persons with hearing disabilities to access television programming. Closed captioning displays the audio portion of programming as text superimposed over the video. For a television receiver to display closed captions, it must use a set-top box decoder or contain integrated decoder circuitry.

As of January 1, 2006, all "new" English language programming, defined as analog programming first published or exhibited on or after January 1, 1998, and digital programming first aired on or after July 1, 2002, must be captioned, with some exceptions.

For more information on closed captioning, closed captioning schedules, and exemptions, visit [www.fcc.gov/cgb/dro/caption.html](http://www.fcc.gov/cgb/dro/caption.html) and see the FCC's consumer fact sheet at [www.fcc.gov/cgb/consumerfacts/closedcaption.html](http://www.fcc.gov/cgb/consumerfacts/closedcaption.html).

### What You Can Do

If you have difficulties viewing closed captions on DTV programming, including HDTV,

received from your subscription television provider, you should:

- consult any consumer information and manuals/guides on closed captions for DTV programming provided by your subscription television provider;
- ensure that the captioning function on your set-top box, if applicable, is turned on;
- ensure that the captioning function on your DTV is turned on.

If you are still unable to view closed captions on DTV programming, you should contact your subscription television provider for assistance.

### **Filing A Complaint with the FCC**

If your provider is unable to help, you can file a complaint with the FCC alleging a violation of the Television Decoder Circuitry Act and the FCC's implementing rules. There is no charge for filing a complaint. If your complaint concerns the inability of your consumer equipment (for example, your television or cable box) to deliver captions, you may complain directly to the FCC. If your complaint concerns the lack of captioning on a specific program or channel (i.e., you receive captions on some channels, but not others), you must first complain to the programming distributor (meaning your subscription television service provider). For more information on filing a complaint with your programming distributor and the information to include in such complaints, see the FCC's closed captioning consumer fact sheet at [www.fcc.gov/cgb/consumerfacts/closedcaption.html](http://www.fcc.gov/cgb/consumerfacts/closedcaption.html). If you are uncertain where to file your complaint, contact the FCC's Consumer Center using the contact information provided for filing a complaint with the FCC below.

You can file your complaint with the FCC using the on-line complaint Form 2000C found on the FCC Web site at [www.fcc.gov/cgb/complaints.html](http://www.fcc.gov/cgb/complaints.html). You can also file your complaint with the FCC's Consumer Center by e-mailing [fccinfo@fcc.gov](mailto:fccinfo@fcc.gov); calling 1-888-CALL-FCC (1-888-225-5322) voice, 1-888-TELL-FCC (1-888-835-5322) TTY; faxing 1-866-418-0232; or writing to:

Federal Communications Commission  
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445 12th Street, S.W.  
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### **What to Include In Your Complaint to the FCC**

The best way to provide all the information the FCC needs to process your complaint is to complete fully the on-line complaint Form 2000C. If you do not use the on-line complaint Form 2000C, your complaint, at a minimum, should indicate:

- your name, address, email address, and phone number where you can be reached;
- whether you are filing a complaint on behalf of another party, and, if so, the party's

name, address, e-mail address, day time phone number, and your relationship to the party;

- preferred format or method of response (letter, fax, voice phone call, e-mail, TRS, TTY, ASCII text, audio recording, or Braille);
- that your complaint is about closed captioning for DTV;
- the name, address, and telephone number (if known) of the company or companies involved with your complaint;
- the date and time or other details about timing of the lack of closed captioning for DTV;
- television station call sign (WZUE), TV channel (13), location (city and state), and name of program involved; and
- a brief description of your complaint and the resolution you are seeking, and a full description of the equipment or service you are complaining about, including date of purchase, use, or attempt to use.

### For More Information

For more information about the digital television transition and HDTV, visit the FCC's Web site at [www.dtv.gov](http://www.dtv.gov) and see the FCC's consumer fact sheet at [www.fcc.gov/cgb/consumerfacts/digitaltv.html](http://www.fcc.gov/cgb/consumerfacts/digitaltv.html). You can also contact the FCC's Consumer Center using the information provided for filing a complaint.

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# Consumer Advisory

## DTV Transition Does Not Require Cable Systems to Switch to Digital

### IF YOU ARE A CABLE SUBSCRIBER, YOU SHOULD BE AWARE –

- The digital (DTV) transition applies only to full-power TV broadcast stations. It refers to the switch from analog to digital broadcast television.
- The DTV transition does not require cable companies to switch their cable systems to digital.
- For voluntary business reasons, your cable company may decide to move some cable channels from its analog tier onto a digital tier, or may switch to all-digital service and stop providing any analog service. This is not required by the government.
- As long as your cable company offers any analog service, it must provide you with your local broadcast stations so you can watch them without a cable set-top box.

The DTV transition has many benefits. It will free up frequencies for police, fire, and emergency rescue communications, provide frequencies for advanced wireless services, and allow TV broadcast stations to offer more programming with better picture and sound quality.

If you have an analog television that receives free over-the-air programming with a broadcast antenna (such as “rabbit ears” on your set or an antenna on your roof), you will need to purchase a digital-to-analog converter box in order to watch digital broadcast television. Each U.S. household is eligible to receive two \$40 coupons to be used toward the purchase of two digital-to-analog converter boxes. (For more information on the

Coupon Program, visit [www.dtv2009.gov](http://www.dtv2009.gov), or call 1-888-388-2009 (voice) or 1-877-530-2634 (TTY).)

However, if you subscribe to cable service, the DTV transition should not affect any TV sets that are connected to your cable service. The DTV transition applies only to full-power broadcast television stations – stations that use the public airwaves to transmit their programming for free to viewers through a broadcast antenna. Cable companies are not required to switch their privately-owned systems from analog service to digital service. In fact, if your cable company offers any analog service, it is required to provide you with your local broadcast stations in analog so that you can watch them on an analog TV without a cable set-top box.

Some cable companies have decided to switch to digital service. This is a business decision made by the cable companies and is not required by the federal government. Your cable company may decide to move certain cable channels off of its analog service tier and onto a digital service tier, or it may decide to switch to all-digital service at once, so that there is no analog service tier for any subscribers. If your cable company decides to move some or all of the channels it provides onto a digital service tier, it may notify you that you need to get "digital cable" equipment to continue receiving that cable service. This may include renting or purchasing a digital cable set-top box or purchasing a digital cable ready TV equipped with a "CableCARD" slot. This digital cable equipment is different from the digital-to-analog converter boxes discussed above, and digital cable equipment is not eligible for the \$40 coupons. If you have a digital TV, you may be able to view broadcast stations through your cable system without additional equipment. You should ask your cable company about the equipment options that may be available to you, including any options to purchase equipment from a retailer if you do not wish to rent equipment from your cable company.

For more information about the DTV transition, go to [www.dtv.gov](http://www.dtv.gov) or contact the FCC by e-mailing [dtvinfo@fcc.gov](mailto: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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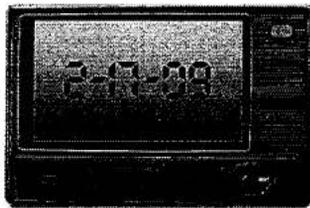
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## On February 17, 2009 Your TV May Stop Receiving Television Programming!

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### Digital Television (DTV) Transition:

On February 17, 2009, federal law requires that all full-power U.S. broadcast stations must switch from analog television broadcasting to digital television broadcasting.

### DTV Benefits for the Public (from FCC Consumer Facts):

- Provides clear pictures, quality sound and more programming and channels.
- Provides future interactive video and data services for the TV of the future.
- Allows more emergency & safety transmission.

### Who will this Affect?

If you currently rely on rabbit ears or a roof top antenna and have an analog television, after February 17, 2009, **you will no longer be able to receive television programming.**

### Three Solutions:

1. Purchase a DTV converter box that will convert the digital signal into analog in order to be transmitted digitally through your functioning VHF or UHF antenna to your analog television (see the TV Converter Box Coupon Program below).
2. Obtain a digital television and use your functioning VHF or UHF antenna.
3. Subscribe to a cable or satellite provider which will allow your analog TV to continue to function.

### TV Converter Box Coupon Program:

The National Telecommunications & Information Administration (NTIA), a federal agency, will start "The TV Converter Box Coupon Program" in January 2008.

- Each household may apply for two coupons, each worth \$40 (coupon-eligible converter boxes are expected to cost between \$50 - \$70 and will be available at electronics stores and online retailers).
- Consumers can apply to the NTIA through [www.dtv.gov](http://www.dtv.gov), toll free (888) 388-2009 or by mail.
- Coupons will be available on a first come, first serve basis, and distribution will start in early spring of 2008. This will include retail information where converter boxes are available for purchase within a five mile radius of recipients' homes.
- Coupons will **expire** after 90 days from the date that they were issued.

### For more information please contact:

The Federal Communication Commission – (888) CALL-FCC (1-888-2255-322)  
NTIA – [www.ntia.doc.gov/dtvcoupon/consumer.html](http://www.ntia.doc.gov/dtvcoupon/consumer.html)  
The TV Converter Box Coupon Program – (888) 388-2009 or go to [www.dtv.gov](http://www.dtv.gov)  
Fox Diversity Development - [www.fox.com/diversity](http://www.fox.com/diversity)



# Frequently Asked Questions

## 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.

## What is an Analog TV?

Analog TV: Analog technology has been in use for the past 50 years to transmit conventional TV signals to consumers. Most current television transmissions are received through analog television sets. Analog signals vary continuously, creating fluctuations in color and brightness.

## What is Digital TV?

Digital Television (DTV): Digital TV 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.

## How do I know if I own a DTV?

What you need to know is whether your TV set has something called a "digital tuner" already built in. If it does, your TV set is already configured to receive and display the new digital over-the-air TV signals that will be transmitted in February 2009. To check whether your TV set can receive over-the-air digital broadcast signals, take a look at your owner's manual or look on the set for an indication that it has "digital input" or "ATSC" (for Advanced Television Systems Committee, which is developing the DTV format). You can also go to the manufacturer's website and check the capabilities of the set by the manufacturer model number.

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. You will need a converter.

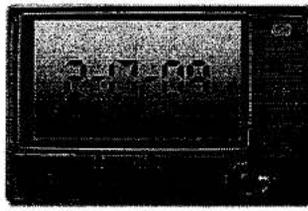
## Will my existing antenna work with DTV?

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.

## How do I know whether I need a converter?

*If you use "rabbit ears" or a rooftop antenna for TV reception, you probably need a converter. Television sets connected to cable, satellite or other pay TV service do not require converters. Televisions with digital tuners also do not need converters. Take a short quiz at the DTV Transition Web site to see whether the converter box is the right option for your household to make the digital transition at [www.dtvtransition.org](http://www.dtvtransition.org).*

For more answers to frequently asked questions, please visit the FCC's FAQ-Consumer Corner website at [www.dtv.gov/consumercorner.html](http://www.dtv.gov/consumercorner.html)



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## Vào tháng Hai ngày 17, năm 2009 TV của bạn có thể sẽ ngừng tiếp nhận những chương trình truyền hình!

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### Digital Television (DTV) Transition (Sự chuyển tiếp của kỹ thuật DTV):

Vào tháng Hai ngày 17, năm 2009, luật liên bang yêu cầu tất cả các đài truyền hình lớn trên toàn nước Mỹ phải chuyển thể thức phát sóng truyền hình analog sang truyền hình kỹ thuật số.

### Những lợi ích của DTV cho cộng đồng (tư liệu từ FCC Consumer Facts):

- Cung cấp được hình ảnh rõ ràng, chất lượng âm thanh và có thêm nhiều những chương trình và kênh truyền hình hơn.
- Cung cấp sự phối hợp qua lại giữa dịch vụ video (hình ảnh) và data (giữ liệu) cho truyền hình trong tương lai.
- Cho phép có sự phát sóng một cách an toàn và trong trường hợp khẩn cấp.

### Ai sẽ bị ảnh hưởng bởi sự kiện này?

Nếu bạn đang sử dụng ăng-ten râu hay ăng-ten trời và sở hữu một TV analog, sau tháng Hai ngày 17, năm 2009, **bạn sẽ không còn có khả năng xem được những chương trình truyền hình.**

### Ba cách giải quyết:

1. Mua một hộp DTV converter (máy đổi điện) là máy sẽ biến đổi các tín hiệu kỹ thuật số sang analog để có thể truyền tải qua ăng-ten VHF hay UHF đến TV analog của bạn (hãy xem Chương Trình Giảm Giá Cho Hộp Đổi Điện bên dưới).
2. Mua một tivi kỹ thuật số và sử dụng ăng-ten VHF hay UHF hiện thời.
3. Đăng ký vào các hãng truyền hình cáp hay vệ tinh để họ có thể duy trì được sự hoạt động cho tivi analog của bạn.

### TV Converter Box Coupon Program (Chương Trình Giảm Giá Cho Hộp Đổi Điện):

The National Telecommunications & Information Administration (NTIA), một cơ quan liên bang, sẽ bắt đầu "Chương Trình Giảm Giá Cho Hộp Đổi Điện" vào tháng Một năm 2008.

- Mỗi hộ gia đình có thể sẽ được hai phiếu giảm giá, mỗi phiếu trị giá 40 đô la (những hộp đổi điện cho chương trình này được tiên đoán là sẽ tốn từ 50-70 đô la và sẽ có bán tại các cửa hàng điện tử và trên mạng).
- Khách hàng có thể tham gia vào chương trình NTIA qua trang nhà [www.dtv.gov](http://www.dtv.gov), số điện thoại miễn phí (888) 388-2009 hay gửi bằng bưu điện.
- Phiếu giảm giá sẽ dành cho người nào tới trước thì được lấy trước, và việc phát hành những phiếu này sẽ bắt đầu vào đầu mùa Xuân năm 2008. Chương trình sẽ bao gồm những thông tin về nơi mà các hộp đổi điện sẽ được bán trong phạm vi 5 miles từ nhà khách hàng.
- Các phiếu giảm giá sẽ **hết hạn** sau 90 ngày kể từ ngày được phát hành.

### Để biết thêm chi tiết, xin liên lạc:

The Federal Communication Commission – (888) CALL-FCC (1-888-2255-322)

NTIA – <http://www.ntia.doc.gov/dtvcoupon/consumer.html>

The TV Converter Box Coupon Program – (888) 388-2009 or go to [www.dtv.gov](http://www.dtv.gov)

Fox Diversity Development - [www.fox.com/diversity](http://www.fox.com/diversity)



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## On February 17, 2009 Your TV May Stop Receiving Television Programming!

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2009년 2월 17일부터, 당신의 텔레비전은 방송 프로그램을 더이상 받아들이지 않을수도 있습니다.

### 디지털 텔레비전(DTV)로서의 전환

현 미국 연방법은 2009년 2월 17일까지, 모든 방송국이 아날로그 형식의 방송을 디지털 방송으로 변환하도록 지시하였습니다.

### 디지털 텔레비전(DTV)이 대중에게 가져다 주는 이익 (FCC 소비자 실태 보고):

- 깨끗한 영상과 소리로 향상된 질의 방송을 제공해주며, 더 다양한 프로그램과 채널을 시청자에게 선사합니다.
- 미래 지향적 상호 수신 가능한 비디오와 데이터 서비스를 텔레비전을 통하여 제공합니다.
- 비상과 안전 관련 방송 수신을 더 많이 가능하게 합니다.

### 이로 인하여 영향을 받는 사람들은 누구입니까?

현재 토끼 모양의 안테나 또는, 지붕위의 안테나를 사용하고, 아날로그 형식의 텔레비전을 소유하고 있다면, 2009년 2월 17일 이후로는 텔레비전 프로그램을 시청할수가 없습니다.

### 세가지 해결 방법:

1. 아날로그 텔레비전이 계속 수신을 받을 수 있도록 디지털 신호를 아날로그로 전환해 줄 수 있는 디지털 텔레비전 (DTV) 교체기를 구입해야 한다. (아래의 텔레비전 교체기 교환권 프로그램을 참조하세요)
2. 디지털 텔레비전을 구입해야한다.
3. 케이블이나 위성 중계 업체에 신청하면 아날로그 텔레비전을 계속 시청할 수 있다.

### 텔레비전 교체기 교환권 프로그램

미 연합 기관 중 하나인, 정보통신국 (NTIA) 은 2008년 1월부터 "텔레비전 교체기 교환권 프로그램"을 실시 합니다.

- 각 가구는 \$40에 해당하는 교환권을 두개 까지 신청할 수 있습니다. (교환권으로 받을 수 있는 교체기는 약 \$50-\$70로 예상되며 가까운 전자제품매장이나 온라인 매장을 통해서 판매됩니다)

- 소비자는 NTIA 의 웹사이트 [www.dtv.gov](http://www.dtv.gov) 나 무료 연결 전화 (888)288-2009 또는 편지로 신청할 수 있습니다.
- 교환권은 선착순으로 발부 될 것이며, 배부는 2008 이른 봄 부터 시작됩니다. 교환권에는 발급받는 사람의 집에서 약 5 마일 반경 안으로 교체기를 구입할 수 있는 매장에 관한 정보도 명시되어있습니다.
- 교환권은 발행한 날짜로부터 약 90 일 까지 유효합니다.

더 많은 정보를 필요로 하신다면 아래에 명시된 연락처에 문의 바랍니다.

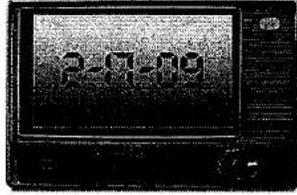


The Federal Communication Commission – (888) CALL-FCC (1-888-2255-322)

NTIA – <http://www.ntia.doc.gov/dtvcoupon/consumer.html>

The TV Converter Box Coupon Program – (888) 388-2009 아니면 [www.dtv.gov](http://www.dtv.gov)

Fox Diversity Development - [www.fox.com/diversity](http://www.fox.com/diversity)



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## **Sa Pebrero 17, 2009 Ang Inyong TV Ay Maaring Hindi Na Makakakuha Ng Mga Palabas!**

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### **Paglipat sa Digital Telebisyon (DTV):**

Sa Pebrero 17, 2009 ang batas pederal ay nag utos na lahat ng istasyon pagsahimpapawid telebisyon sa Estados Unidos ay lumipat sa pagsahimpapawid telebisyon digital mula sa karaniwang pagsahimpapawid o "analog" telebisyon.

### **Mga Kabutihan Ng DTV sa Publiko (galing sa FCC Consumer Facts):**

- Magbibigay ng maliwanag na larawan, mahusay na tunog, mas maraming programa at kanal.
- Magbibigay ng serbisiyo interaktibo at impormasyon digital para sa telebisyon ng kinabukasan.
- Magdadagdag ng kakayahan sa pagsahimpapawid tungkol sa kaligtasan at emerdyensya.

### **Sino ang Apektado?**

Kung kayo ay kasalukuyang gumagamit ng "rabbit ears" o antena sa bubong o kung mayroong kayong karaniwang telebisor, pagkatapos ng Pebrero 17, 2009, hindi na kayo makakakuha ng palabas sa inyong TV.

### **Tatlong Paglutas:**

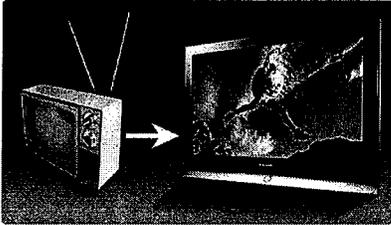
1. Bumili ng DTV kombertidor na magpapalit ng impormasyon digital sa karaniwan impormasyon para maituloy ito sa inyong umaandar na VHF at UHF antenna tuloy sa inyong karaniwang telebisor (tignan ang "TV Converter Box Coupon Program" sa ibaba).
2. Bumili ng telebisor digital at gamitin ang inyong umaandar na VHF at UHF antena.
3. Sumiskribo sa kable o satellite telebisyon na magapapatuloy ng inyong paggamit ng inyong karaniwang telebisor..

### **"TV Converter Box Coupon Program" (Programa Para Sa Telebisyon Kombertidor Kupon):**

Ang National Telecommunications & Information Administration (NTIA), isang sangay pederal, ang magsisimula ng " Programa Para Sa Telebisyon Kombertidor Kupon" sa Enero 2008.

- Bawat pamamahay ay maaring humiling ng dalawang kupon, ang isang kupon ay nangangahalaga ng \$40 ( ang mga kombertidor na maaring bilin ng kupon ay maaring humalaga ng \$50 - \$70) at lalabas sa mga tindahang elektronika at sa internet.
- Maaring humiling ng kupon sa NTIA sa [www.dtv.gov](http://www.dtv.gov), o tumawag ng walang bayad sa (888) 388-2009 o sumulat sa FCC.
- Ang mga kupon ay maaring makuha ng sinumang maunang humingi (" first come, first serve basis") at ang pamimigay ay sa simula ng mga unang buwan ng 2008.

## Lo que debe saber sobre la Transición Digital de Televisores



Algunos de ustedes sabrán que a partir del 17 de Febrero del 2009 las emisoras de televisión solo transmitirán en formato digital. Esto significa que la gente que recibe la programación de televisión gratuita por aire, tendrán que hacer la transición antes del 17 de Febrero de el próximo año.

### Tus opciones:

#### 1. – Compre una caja convertidora:

Todas las personas en los Estados Unidos son elegibles para obtener dos cupones empezando Enero del 2008. Cada cupón le ahorrara \$40.

Aplique por Teléfono: (888) 388-2009

Aplique por Fax: (877) 388-4632

Aplique por Correo: PO Box 2000, Portland, OR 97208

Aplique en el Internet: [www.DTV2009.gov](http://www.DTV2009.gov)

Los cupones servirán para la compra de las cajas convertidoras para su televisor. Cada caja cuesta alrededor de \$60.

Al recibir su cupón, solo tendrá 90 días para usarlo(s) antes de que caduque.

Los consumidores Latinos que requieren cupón(es) deberían de pedirlos lo más pronto posible para evitar más requerimientos después que los \$890 millones iniciales en fondos federales se terminen.

En la segunda fase donde el gobierno distribuya cupones, se limitarán a hogares que reciban programación de televisión gratuita y requerirán más certificación para obtenerlos.

Las cajas convertidoras estarán a la venta a finales de Febrero y a principios de Marzo del 2008.

#### 2. – Suscríbete a un servicio de video:

También puede suscribirse a un servicio televisivo por cable, satélite, o por una compañía de teléfono para el servicio de video, para poder continuar usando su televisora analógica. En otras palabras, si tiene cable, satélite, o una compañía de teléfono que le da el servicio de video, no tendrá que hacer nada, ni cambiar su televisión analógica por una digital. Pero si en el futuro desconecta este servicio, la caja convertidora será necesaria para su televisión.

#### 3. – Compre un televisor Digital:

La tercera opción es que compre una nueva televisión digital diseñada para la transición. Todas las televisiones digitales recibirán señales para todos los canales. Claro que esta es la más costosa opción, pero recuerde que no necesita comprar una nueva televisión, tiene otras dos opciones que le funcionaran también.

Para mas información del cambio de transición digital de televisores y para el programa de cupones, vaya a: [www.dtvtransition.org](http://www.dtvtransition.org) o contacte a Inez Gonzalez a [igonzalez@nhmc.org](mailto:igonzalez@nhmc.org).



**FEDERAL GAO REPORT**  
**on**  
**CONSUMER AWARENESS**  
**of**  
**DTV TRANSITION**

**GAO**

Testimony before the House  
Subcommittee on Telecommunications  
and the Internet

For Release on Delivery  
Expected at 9:30 a.m. EDT  
Tuesday, June 10, 2008

**DIGITAL TELEVISION  
TRANSITION**

**Broadcasters' Transition  
Status, Low-Power Station  
Issues, and Information on  
Consumer Awareness of the  
DTV Transition**

Statement of Mark L. Goldstein, Director  
Physical Infrastructure Issues





Highlights of GAO-08-881T, a testimony before the House Subcommittee on Telecommunications and the Internet

## DIGITAL TELEVISION TRANSITION

### Broadcasters' Transition Status, Low-Power Station Issues, and Information on Consumer Awareness of the DTV Transition

#### Why GAO Did This Study

The Digital Television (DTV) Transition and Public Safety Act of 2005, requires all full-power television station in the United States to cease analog broadcasting by February 17, 2009. Low-power stations are not required to cease analog transmissions and most will continue broadcasting in analog. Federal law also requires the National Telecommunications and Information Administration (NTIA) to subsidize consumers' purchases of digital-to-analog converter boxes. After the transition, households with analog sets that rely on over-the-air broadcasts must take action or they will lose television service, but some households might not be aware of this potential disruption. This testimony provides information on (1) technical and coordination issues facing full-power broadcast stations as they transition to digital, (2) issues pertaining to low-power broadcasting and how they affect consumers, and (3) the extent to which American households are aware of the DTV transition and likely to utilize the converter box subsidy program. GAO interviewed officials with the Federal Communications Commission (FCC) and NTIA and met with a wide variety of industry participants and other stakeholders. GAO conducted a Web-based survey of broadcasters to determine their status in transitioning to digital and issues they were encountering and commissioned a survey of the U.S. population on consumer awareness. This statement is based on GAO's body of work on the DTV transition.

To view the full product, including the scope and methodology, click on GAO-08-881T. For more information, contact Mark L. Goldstein at (202) 512-2834 or [goldsteinm@gao.gov](mailto:goldsteinm@gao.gov).

#### What GAO Found

Broadcasters have made significant progress in preparing for the DTV transition. In fact, many stations are already broadcasting their full digital signal with the only remaining step being to turn off their analog signal. As of February 2008, 91 percent of broadcasters responding to our survey reported that they were already transmitting a digital signal. Nine percent of stations in our survey had yet to begin broadcasting a digital signal, but almost all of those stations expected to be broadcasting digitally by the transition date. In finalizing the transition to digital, some stations still must resolve technical, coordination, and construction issues. Technical issues include relocating either digital or analog antennas and, in some cases, constructing new broadcast towers. Some stations are bound by financial constraints related to the costs of resolving these issues. In addition, some stations have outstanding coordination issues, such as the U.S. government reaching agreements with the Canadian and Mexican governments regarding signal interference issues and coordinating with cable and satellite providers.

Since most low-power stations will not transition to digital by February 2009, it is possible for viewers to receive programming in analog and digital after the transition. Potentially millions of viewers can receive low-power analog transmissions, including programming from the major networks, Spanish language broadcasting, and public television. To have access to both analog and digital television signals after the DTV transition, viewers could purchase a special kind of converter box that passes through an analog signal and a digital signal, or purchase other equipment. Public and private stakeholders have taken steps to educate the public about the low-power broadcasts potentially remaining in analog but some advocacy groups and others have expressed concerns that the messages intending to explain the low-power issue are instead confusing the public. Further complicating matters, many consumers do not know the difference between full-power and low-power stations or whether the signals they receive are full or low power.

Most households will be unaffected by the DTV transition and a vast majority have heard of the transition. About 84 percent of people have heard of the transition, but fewer have more specific knowledge about the transition. Those at higher risk of being affected by the transition—households viewing over-the-air television signals—have higher levels of awareness than those who will be unaffected. Over half of the population has heard of the converter box subsidy program and those households at risk of losing television service who plan to take action are likely to utilize the program. However, only a third of those indicating plans to purchase boxes and utilize the coupons know how to obtain coupons. In addition, there are indications that some consumers are confused about the transition, as 45 percent of those households who are at risk plan inadequate or no action to prepare for the transition. Conversely, amongst those unaffected by the transition, 30 percent indicated they have plans to ready themselves for the transition—despite the fact that no action will be required to maintain television service.

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Mr. Chairman and Members of the Subcommittee:

I am pleased to be here today to discuss our recently issued report on technical issues arising from the digital television (DTV) transition<sup>1</sup> — *Digital Television Transition: Majority of Broadcasters Are Prepared for the DTV Transition, but Some Technical and Coordination Issues Remain*—and our work on the extent of consumer awareness about the transition. My comments are based on our body of work on the DTV transition completed for this subcommittee.<sup>2</sup> We are continuing to review public and private sector efforts underway to implement the transition and plan to report on those issues later this year.

The Digital Television Transition and Public Safety Act of 2005 mandates that full-power analog television broadcast signals cease on February 17, 2009. After that date, households who view television on analog sets solely through the reception of over-the-air signals must take action to ensure that they have the necessary equipment, such as a digital-to-analog converter box, or subscription video service to be able to view the digital broadcast signals. If they do not take such action, they will not be able to watch television programs. The act also directed the National Telecommunications and Information Administration (NTIA) to establish a \$1.5 billion program through which households can obtain coupons for the purchase of digital-to-analog converter boxes. Beginning January 1, 2008, households could request up to two \$40 coupons toward the purchase of eligible<sup>3</sup> digital-to-analog converter boxes. While federal law mandates that all full-power stations must cease to broadcast in analog on February 17, 2009, low-power television broadcast stations are not covered by the law.<sup>4</sup> Low-power stations provide opportunities for locally-oriented television

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<sup>1</sup>GAO-08-510.

<sup>2</sup>See appendix II for our related products on the DTV transition.

<sup>3</sup>NTIA established technical and performance specifications that converter boxes must meet to be eligible for the converter box subsidy program.

<sup>4</sup>In addition to low-power stations, there are other low-power facilities that are not required by law to transition to digital by February 17, 2009. These facilities include (1) Class A television stations, which are a type of low-power station that qualify for interference protection rights and must satisfy certain requirements; (2) television translator stations, which simultaneously rebroadcast the programs of a full-power broadcast station in communities that cannot receive the signals due to large geographic barriers; and (3) television booster stations, which are low-power facilities that retransmit programming from full-power stations and are intended to serve areas of low signal strength within full-power stations' contours.

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service in small communities and these stations may continue to broadcast in analog after the DTV transition. Viewers who wish to continue watching low-power analog programming might need to take action to continue receiving analog signals after the transition. To help the public understand the DTV transition and the various options they have, FCC, NTIA, and industry stakeholders are conducting consumer education and awareness programs.

In my testimony today, I will discuss (1) the progress full-power broadcast stations have made in transitioning to digital, as well as the technical and coordination issues they face; (2) issues pertaining to low-power television stations and how they affect consumers; and (3) the extent to which American households are aware of the DTV transition and likely to utilize the converter box subsidy program.

To obtain information on the technical and coordination issues facing broadcast stations, we conducted a Web-based survey of the full-power commercial and noncommercial television broadcast stations. From a total of 1,747 broadcasters, we surveyed 1,682 stations located in the 50 states and the District of Columbia for which we could obtain contact information. To determine the extent of consumer awareness about the transition, we commissioned a telephone survey of the U.S. adult population. This survey followed a probability sampling procedure based on random selections of households and individuals. A total of 1,010 completed interviews were collected during late March and early April 2008. All percentage estimates presented have margins of error of plus or minus 6 percentage points or less. Further, we reviewed government documents and data and interviewed officials with the Federal Communications Commission (FCC) and NTIA, as well as a wide variety of industry and other private stakeholders, such as satellite and cable television providers, manufacturers, national retailers, industry associations, and consumer advocacy groups. See appendix I for more detailed information on our scope and methodology. We conducted our work in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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In summary:

- Broadcasters have made significant progress in preparing for the DTV transition. Many stations are already broadcasting their digital signal in full power with the only remaining step being to turn off their analog signal. Specifically, as of February 2008, 91 percent of broadcasters responding to our survey reported that they were already transmitting a digital signal. Nine percent of stations responding to our survey had yet to begin broadcasting a digital signal, but almost all of those stations expected to be broadcasting digitally by February 17, 2009. In finalizing the transition to digital, some stations still must resolve technical, coordination, and construction issues. Technical issues include relocating either digital or analog antennas and, in some cases, constructing new broadcast towers. Some stations are bound by financial constraints related to the costs of resolving these issues. In fact, at the time of our survey, 69 stations indicated they have yet to start construction on their final digital facilities due to financial constraints. In addition, some stations have outstanding coordination issues, such as the U.S. government reaching agreements with the Canadian and Mexican governments regarding signal interference issues and coordinating with cable providers and satellite companies.
- Since most low-power stations do not plan to transition to digital by February 2009, it is possible for some viewers to receive programming in analog (from low-power stations) and digital (from full-power stations) after the transition date. Potentially millions of viewers can receive low-power analog transmissions, including programming from the major networks (ABC, CBS, NBC, and Fox), Spanish language broadcasting, and public television. To have access to both analog and digital television signals after the DTV transition, viewers could purchase a special kind of converter box that passes through an analog signal and a digital signal, often referred to as analog pass through, or purchase other equipment. Currently, converter boxes with analog pass through are available for purchase online and at two national retailers. Public and private stakeholders have taken steps to educate the public about the low-power broadcasts potentially remaining in analog and options available to consumers, but some advocacy groups and others have expressed concerns that the messages intending to explain the low-power issue are instead confusing the public. Further complicating matters, many consumers do not know the difference between full-power and low-power stations or whether the signals they receive are full or low power.
- According to our consumer survey results, most households will be unaffected by the DTV transition and a vast majority have heard of the transition. While about 84 percent of people have heard of the transition, a

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smaller number of people have more specific knowledge of the transition date and why the transition is taking place. Those at higher risk of being affected by the transition—households viewing over-the-air television signals—have higher levels of awareness than those who will be unaffected. Over half of households have heard of the converter box subsidy program and those households at risk of losing television service who plan to take action reported that they are likely to utilize the program. However, only a third of those indicating plans to purchase boxes and utilize the coupons reported knowing how to obtain coupons. While general awareness of the DTV transition is high, there are indications that some consumers are confused or unknowledgeable about the transition, as 45 percent of those households who are at risk plan no action or inadequate action to prepare for the transition. Amongst those unaffected by the transition, 30 percent indicated they have plans to ready themselves for the transition—despite the fact that no action will be required to maintain television service.

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## Background

All full-power television broadcasters are required by law to cease broadcasting their analog signal by February 17, 2009. There are numerous benefits to transitioning to digital-only broadcast signals, such as enabling better quality television picture and sound reception and using the radiofrequency spectrum more efficiently than analog transmission. With traditional analog technology, pictures and sounds are converted into “waveform” electrical signals for transmission through the radiofrequency spectrum, while digital technology converts these pictures and sounds into a stream of digits consisting of zeros and ones for transmission. A digital receiver can make the digital picture and sound near perfect until significant fading occurs, at which point no picture can be seen.

To facilitate the digital transition, Congress and FCC temporarily provided each eligible full-power television station (both commercial and noncommercial educational stations, including public stations) with additional spectrum so they could begin broadcasting a digital signal. This companion, or paired, digital channel simulcasts the analog program content in digital format. Assignment of the paired digital channel began in 1997 and FCC completed the digital channel assignment for most stations in August 2007. A station’s final digital channel could be (1) the same channel as its paired digital channel, (2) the same channel that its analog signal uses to broadcast, or (3) an entirely new channel.

The DTV transition involves preparation on the part of American households. This preparation will require citizens’ understanding of the

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transition and the actions that some might have to take to maintain television service. The specific equipment needs for each household to transition to DTV—that is, to be able to view broadcast digital signals—depends on certain key factors. The method through which a household watches television, and whether it has already upgraded its television equipment to be compatible with digital television, will factor into the equipment needs of the household. While many households may need to take specific actions to ensure that they continue to receive television signals, others may not need to take any action. As we have previously reported, households with analog televisions that rely solely on over-the-air television signals received through a rooftop antenna or indoor antenna must take action to be able to view digital broadcast signals after the termination of analog broadcasting. Options available to these households include (1) purchasing a digital television set that includes a tuner capable of receiving, processing, and displaying a digital signal; (2) purchasing a digital-to-analog converter box, which converts the digital broadcast signals to analog so they can be viewed on an existing analog set; or (3) subscribing to a cable, satellite, or other service that provides the necessary signal to eliminate the need to acquire a digital-to-analog converter box.

The Digital Television Transition and Public Safety Act directed NTIA to establish a \$1.5 billion subsidy program through which households can obtain coupons for the purchase of digital-to-analog converter boxes. NTIA established that beginning January 1, 2008, households could request up to two \$40 coupons toward the purchase of eligible digital-to-analog converter boxes. Households requesting coupons must submit the name of the person requesting the coupon and a valid United States Postal Service address. Initially, any household is eligible to request and receive the coupons, but once \$890 million worth of coupons have been redeemed, and issued but not expired, NTIA must certify to Congress that the program's initial allocation of funds is insufficient to fulfill coupon requests. NTIA will then receive \$510 million in additional program funds, but any households requesting coupons during this second phase must certify that they do not receive cable, satellite, or other pay television service. Total possible program funding, which includes coupons redeemed, and issued but not expired, is \$1.5 billion. The last day for consumers to request coupons is March 31, 2009, and coupons can be redeemed through July 9, 2009. As required by law, all coupons expire 90 days after issuance. The fully funded program could provide 33.5 million coupons.

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While all full-power broadcast stations must cease analog broadcasts, low-power stations may continue broadcasting in analog after February 17, 2009. FCC established low-power television 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. Low-power stations provide programming from networks, syndicated programs, movies, and a wide range of locally-produced programs. According to FCC, there are more than 2,100 low-power stations in operation, some of which broadcast syndicated content of major commercial networks and public television and numerous other stations reaching a broad swath of the television viewing public. Low-power broadcast stations are not required to cease broadcasting in analog as of February 2009 and most will continue to broadcast in analog after the conclusion of the full-power transition. Because there is no mandated transition date for the low-power stations, it is unclear when these stations will transition to digital broadcasts.

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## The Vast Majority of Broadcasters are Transmitting a Digital Signal, but Some Broadcast Stations Face a Range of Technical, Coordination, or Other Issues in Completing Their DTV Transition

Most broadcasters have made significant progress in preparing their stations for the transition to digital, with approximately 91 percent of broadcasters responding to our survey reporting that they were already transmitting a digital signal. A small number of stations responding to our survey (9 percent) had yet to begin broadcasting a digital signal, but almost all of those stations expected to be broadcasting digitally by February 17, 2009. Before the transition to digital can be finalized, some stations still have to resolve (1) technical issues, such as the relocation of their digital or analog antenna; (2) coordination issues, such as the U.S. government reaching agreements with the Canadian and Mexican governments and coordinating with cable providers and satellite companies; or (3) other issues, such as the construction of broadcast towers or financial constraints that might hinder their ability to complete the steps necessary for the transition.

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## Almost All Stations are Transmitting a Digital Signal and the Majority are Operating at Full Power

Broadcast stations have made substantial progress in transitioning to DTV, with the vast majority already transmitting a digital signal. Information obtained from our survey of broadcast stations indicates that approximately 91 percent of full-power stations are currently transmitting a digital signal. Our survey further indicated that approximately 68 percent of respondents are transmitting their digital signal at full strength. In addition, 68 percent of survey respondents are currently transmitting their

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digital signal on the channel from which they will broadcast after the transition date. Twenty-three percent of stations that responded to our survey indicated they will be moving their digital signal to their analog channel. In addition, other stations need to move to a completely new channel. While almost all full-power stations are already broadcasting a digital signal, 97 stations, or 9 percent of stations responding to our survey, are not currently broadcasting digitally. Almost all of these stations, however, indicated that they plan to have their digital signal operational by February 17, 2009. Three stations responded that they were not planning to broadcast a digital signal by February 2009. According to FCC, stations that are not currently transmitting a digital signal either (1) were granted a license to operate a digital signal along with their analog signal but have yet to begin broadcasting digitally or (2) were not given a companion, or paired, digital channel and plan to turn off their analog signal at the same time that they turn on their digital signal—known as “flash cutting.” According to our survey, 5 percent of the stations (61 stations) indicated that they plan to flash cut to a digital-only broadcast. According to FCC, flash cutting may present challenges, since it will involve stations’ ending their analog television operations and beginning their digital television operations on their current analog channel or, in some cases, will require that a station change to a new channel to be fully operational. Of those stations responding to our survey that plan to flash cut, only 21 percent had begun constructing final digital facilities at the time of our survey. Furthermore, 64 percent of the flash cutters responding to our survey noted that they need to order equipment to complete their digital facilities.

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**Some Broadcast Stations  
Need to Address Technical,  
Coordination, and Other  
Issues to Support a  
Smooth Transition**

Some stations, including those already broadcasting a digital signal, still have technical, coordination, or other issues that need to be resolved before completing their transition. For example, over 13 percent of stations responding to our survey indicated that they have to install or relocate their digital or analog antennas in transitioning to digital. Some stations still needed to order equipment, such as antennas, to build their final digital facilities. According to an antenna manufacturer we contacted, it can take from 6 weeks to 9 months to design, order, and install an antenna, depending on the antenna’s complexity. This manufacturer told us that stations need to have their orders placed by June 2008 to be assured of having the equipment installed prior to the transition date. Furthermore, stations may have coordination issues to address in completing their final digital facilities. For example, some stations are awaiting agreements with the Canadian and Mexican governments regarding their signals crossing the borders of these respective countries

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before the stations can complete their digital facilities. Stations will also need to coordinate with cable providers and satellite companies to ensure that cable and satellite facilities can receive digital signals when the analog signals are turned off; most of those responding to our survey indicated that they are coordinating with or are planning to coordinate with cable providers and satellite companies. Lastly, stations that have to construct broadcast towers or have financial constraints might be affected during their transition. According to our survey, 47 stations indicated that they need to construct a broadcast tower or reinforce an existing tower to build their digital facilities. Another 69 stations responding to our survey indicated that due to financial constraints, they have not started construction on their final digital facilities or that they have not begun broadcasting a digital signal.

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**Viewers Have Options to Prevent Loss of Service from Low-Power Analog Broadcasts, but Concerns Remain About the Clarity of Information Pertaining to this Issue**

Potentially millions of viewers can receive low-power analog transmissions, including programming from the major networks (ABC, CBS, NBC, and Fox), Spanish language broadcasting, and public television. According to FCC data, 296 low-power stations broadcast one of the four major networks, 109 low-power stations broadcast a Spanish language network, and 45 low-power stations are affiliated with the public broadcasting service. Since most low-power stations will not transition to digital in February 2009, it is possible for viewers to receive programming in analog (from low-power stations) and digital (from full-power stations) after the transition date. As previously noted, one of the options households have to prepare for the transition is purchasing a digital-to-analog converter box. However, such a box could prevent the television from receiving low-power analog signals. To have access to both analog and digital television signals after the DTV transition, viewers could use a special kind of converter box that passes through an analog signal and a digital signal, often referred to as analog pass through. Absent a converter box with analog pass through capability, viewers could obtain a small device called a "splitter."<sup>5</sup> According to the National Association of

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<sup>5</sup>Households with digital televisions will also be able to receive both digital and analog signals.

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Broadcasters (NAB), installing the splitter and new wiring is similar to connecting a television to a DVD player and VCR.<sup>6</sup>

Currently, converter boxes with analog pass through are available for purchase online, and two national retailers indicated the boxes are available in their stores now. The remaining national retailers we contacted told us they would begin stocking such boxes in mid June through early September.<sup>7</sup> At least one national retailer we spoke with is carrying items (such as the splitter) which would allow consumers to view both digital and analog signals without purchasing a converter box with analog pass through. The retailers we contacted said all of their stores will be selling converter boxes with analog pass through, regardless of location or prevalence of low-power stations. Some retailers said they are analyzing market data to help them understand which markets will have increased need for these boxes. For example, one retailer told us that it is analyzing data to determine which markets will need and therefore initially receive more boxes with analog pass through, with the goal of having boxes with analog pass through in all stores later in the summer of 2008.

Public and private stakeholders have taken steps to educate the public about the low-power issue and the options available to consumers. For example, FCC issued a consumer advisory which serves as a resource guide on low-power television.<sup>8</sup> Further, FCC is urging all low-power broadcasters to immediately begin educating their viewers about this issue. FCC noted that such stations could notify their viewers that they are watching a low-power broadcast station that will continue to offer analog service after the transition date and viewers that plan to purchase a converter box should purchase a model with analog pass through. NTIA also developed a resource guide.<sup>9</sup> According to NTIA, it has provided information to operators of low-power stations so they can inform their viewers of the options they have regarding the DTV transition. NTIA said it

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<sup>6</sup>According to NAB, consumers who use an antenna splitter and/or an antenna A/B switch can then switch back and forth between analog reception directly with the television or digital through the converter box. An A/B switch and splitter and additional antenna cables are inexpensive and can be found at most consumer electronic retailers.

<sup>7</sup>We contacted all national retailers who are participating in the converter box subsidy program, except for one retailer who was unwilling to meet with us.

<sup>8</sup>The FCC guide is available online at <http://www.fcc.gov/cgb/consumerfacts/DTVandLPTV.html>.

<sup>9</sup>NTIA's resource guide is available online at <https://www.dtv2009.gov/lowpower/>.

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has encouraged converter box manufacturers to consider the needs of all viewers, including viewers of low-power stations, in the development of converter boxes. NAB and others have added information about low-power stations to their Web sites and clarified that only full-power stations are transitioning in February 2009.<sup>10</sup> However, the Community Broadcasters Association, which represents low-power stations, believes public and private education efforts about the DTV transition focus on the end of analog broadcasts and are misleading to viewers.

While public and private efforts are ongoing to inform the public about low-power stations not transitioning to digital, some have expressed concerns that the messages intended to explain this issue are instead confusing the public. Further complicating matters, many consumers do not know the difference between full-power and low-power stations or whether the signals they receive are full or low power. We heard from advocacy groups for disadvantaged populations that the messages intending to explain the low-power issue could be overly confusing. For example, one group questioned how those watching low-power stations would understand that (1) they are viewing low-power broadcasts, (2) these stations are not transitioning to digital, and (3) what actions they need to take to maintain the ability to watch low-power broadcasts. This group said many Spanish speakers are reliant on low-power stations to view Spanish language broadcasts but many in that community are not aware of the issue with low-power stations or that they are reliant on low-power stations.

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## Most People are Aware of the DTV Transition, but Many are Unprepared or Have Inadequate Plans

Most households will be unaffected by the DTV transition and a vast majority have heard of the transition. According to our consumer survey results, about 84 percent of the population has heard of the transition, but smaller numbers of people have more specific knowledge of the transition date and why the transition is taking place. Those at higher risk of being affected by the transition—households viewing over-the-air television signals—have higher levels of awareness than those who will be unaffected. Over half of the population has heard of the converter box subsidy program and those in households at risk of losing television service who plan to take action are likely to utilize the program. However, only a third of those indicating plans to purchase boxes and utilize the coupons know how to obtain coupons. While general awareness of the

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<sup>10</sup>NAB's initiative can be found at <http://www.lptvanswers.com/>.

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DTV transition is high, there are indications that some consumers are confused or unknowledgeable about the transition, as 45 percent of those households who are at risk plan no action or inadequate action to prepare for the transition.

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**About 65 Percent of Households Have All Televisions Connected to a Subscription Service, but the Remaining 35 Percent are at Risk of Losing Some or All of Their Television Service After the Transition**

Our survey categorized households into varying risk levels of being affected by the DTV transition, with most households (65 percent) unlikely to lose television service. According to our survey of consumers, approximately 15 percent of households are at risk of losing television service once the transition is complete because they rely solely on over-the-air television signals. We refer to this group as “high risk.” An additional 21 percent of households have at least one television used to watch over-the-air signals. While this group of consumers has one or more televisions connected to a subscription service such as cable or satellite, they still have at least one television used to watch over-the-air television. We refer to this group as “medium risk” because unless they take action, they could lose television service on the set or sets not connected to cable, satellite, or other subscription service. Also, our survey found that 65 percent of households have all of their televisions used for watching programming connected to a subscription service. We refer to this group as “low risk” since they are unlikely to be adversely affected by the DTV transition.

Our survey suggests that while most Americans do not believe the transition will be disruptive, some do not fully understand the ramifications the transition could have on their ability to watch television. We asked respondents how disruptive they expected the change from analog to digital to be and found that 55 percent expect the transition will not be at all disruptive. Only 10 percent of the population expects the transition to be very disruptive and even among high risk households—those who most likely must take action or lose television service—only 20 percent expect the transition to be very disruptive. Nevertheless, while most households (69 percent) believe the transition will be either not at all disruptive or not too disruptive, of this segment of the population, 54 percent had inadequate or no plans for the transition despite being at medium or high risk of losing television service.

NTIA and FCC have identified a number of at-risk populations who might be more likely to be adversely affected by the transition. These groups include seniors, low-income, minority and non-English speaking, rural households, and persons with disabilities. Those most likely to be affected by the transition are spread across all types of households throughout the

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country, but in some cases, there are particular characteristics of note regarding which types of households represent the high and medium risk groups. Our survey collected demographic information on households and found that certain subgroups of the population were more likely to be affected by the transition. For example, households at risk of losing all television service—those in the high risk group—were more likely to be in urban locations than households in the medium risk group. Households in the various income categories are spread across the different risk groups; however, the lower income group has a larger portion of high risk households. Specifically, those with income lower than \$50,000 are composed of 19 percent high risk, whereas 14 percent of households with income from \$50,000 to \$99,999 are high-risk and only 7 percent of households with income of \$100,000 and above are high risk.

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**General Awareness of the DTV Transition is High, but Detailed Knowledge is Much Lower**

Overall, about 84 percent of Americans have heard of the DTV transition according to our survey results. To test the survey respondents' level of awareness, we asked if they had heard of the DTV transition and if they knew when and why the transition was taking place. We found the percentage of people with detailed knowledge about the transition declines with the specificity of information. For example, 62 percent knew the year (2009) that the transition would take place, but only 31 percent knew the month and year (February 2009). Additionally, only 35 percent of people who indicated they were aware of the transition—29 percent of the population as a whole—could explain why the transition is taking place. The most common responses on why the transition is taking place were related to technology improvements. Twenty percent indicated the transition would bring about general technological advancements and 30 percent cited better television picture quality as the reason for the transition. Much smaller percentages of the population indicated the transition was to free up airwaves for a variety of reasons, including improved emergency communications.

Those who may be more seriously affected by the transition have higher levels of knowledge about the transition and when it will take place than those who will be less seriously affected. To determine the awareness of the households that will be most affected by the transition, we segmented survey questions by risk group. Our survey indicates that consumer awareness was higher, in most cases, across a variety of questions, for the medium and high risk groups than for the population as a whole. In particular, for the medium risk group—the largest block of affected households—90 percent indicated they were aware of the transition. In the more detailed indicator of awareness, knowledge of the transition date, 40

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percent of high risk households, 37 percent of medium risk households, and 27 percent of low risk households were aware of the month and year the transition will take place.

Our survey results indicate that some demographic groups show different levels of awareness from the overall population. We examined awareness of the transition across demographic factors, such as age, ethnicity, income, and disability and examined, additionally, the awareness of those households likely to be affected by the transition—the high and medium risk groups.

**Age:** Across various age categories, there were few differences in overall consumer awareness, but people in the middle-age group (45 to 64) have the highest rates of awareness of the DTV transition, its timing, and why it is occurring. Respondents who were 65 and older showed slightly lower levels of awareness. When looking specifically at awareness of the transition date for age groups, 29 percent of 18- to 44-year-olds, 36 percent of 45- to 64-year-olds, and 26 percent of those 65 and older knew the month and date of the transition. As for the reason for the transition, 18- to 44-year-olds had the lowest percentage of those aware of why the transition was taking place.

**Ethnicity:** By ethnicity, those self-described as white or Caucasian had higher general awareness (86 percent) than those nonwhite ethnic groups (78 percent). This trend in awareness followed for the additional specific questions about the transition and is more pronounced for the at-risk groups. When high and medium risk households were asked about why the transition was taking place, only 16 percent of nonwhite respondents were knowledgeable compared with 45 percent in the white/Caucasian group.

**Income:** Higher income was associated with greater awareness. For those individuals with incomes from \$15,000 to \$34,000, 84 percent were aware; for those with incomes ranging from \$35,000 to \$49,000, 90 percent were aware; \$50,000 to \$99,000, 90 percent were aware; and for those making over \$100,000, 94 percent were aware. On the other hand, 69 percent of those making less than \$15,000 per year were aware of the transition.

**Disabilities:** We found that 77 percent of those with disabilities were aware of the transition.

**Community type:** We found that awareness did not differ significantly in different community types. In urban, suburban, and rural/small-town groups, awareness was around 84 percent, similar to that of the

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population. There was also little variance by region of the country: the Northeast, Midwest, West, and South regions all showed similar awareness.

Our results indicate that, across all risk groups, television is the most pervasive source of information about the transition. In particular, 82 percent of the population indicated they heard of the transition by television. In addition, 45 percent said they had heard about the transition by word-of-mouth and 30 percent from newspapers or magazines. Many fewer (17 percent) had heard about the transition from the Internet and 11 percent heard about the transition from retail stores.

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**Households Planning to Take Action for the DTV Transition are Likely to Utilize the Converter Box Subsidy Program, but Many Household Plan to Take No Action to Prepare for the Transition**

Greater than half of the population is aware of the NTIA converter box subsidy program, but more detailed knowledge of the program is much weaker. Overall, awareness of the converter box subsidy program is at 55 percent. The high and medium risk groups have higher awareness, at 63 percent and 56 percent respectively, than the low risk group at 53 percent. While general awareness of the subsidy program itself is relatively high, of those households who intend to purchase a converter box and to request a coupon from the NTIA program, only 33 percent were aware of how to obtain a coupon.

Those households who indicated that they were likely to purchase a converter box reported very high rates of likelihood to request the coupons. In the high risk group, of those who intend to purchase a converter box, 100 percent of respondents said they were likely to request a coupon. In the medium risk group, 89 percent of these households said they were likely to request coupons. According to NTIA officials, the rate of those requesting two coupons is approximately 89 percent.

The intention of households to utilize the converter box subsidy program if they plan on purchasing converter boxes is clear. However, the percent of those who indicated they are likely to purchase a converter box in the first place is much lower. In the high risk group, 49 percent, and in the medium risk group, 32 percent of households are likely to purchase a converter box. Additionally, 15 percent of households in the low risk group said they would purchase a converter box when the transition takes place. This indicates not only that some households may be confused or unknowledgeable—low risk households should not need converter boxes—but that households with no need for converter boxes may utilize the subsidy program. Of the low risk households who plan to purchase a converter box, 86 percent said they would utilize the NTIA subsidy

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program. Based on an analysis of our survey, we estimate that households will request roughly 30.6 million coupons. This estimate assumes that households will follow through with their plans to request coupons.<sup>11</sup>

Despite high overall awareness of the DTV transition, many households were unprepared for the transition. We describe as unprepared for the DTV transition those in the medium or high risk groups who indicated that for the transition, they will do nothing, they do not know what they will do, or they specified some other action that will not prepare them for the transition. Our analysis determined that 35 percent in the high risk group were unprepared and 52 percent in the medium risk group were unprepared. Overall, these unprepared groups make up 16 percent of the total population. Amongst low risk households, 30 percent indicated they have plans to ready themselves for the transition—despite the fact that no action is required to maintain television service.

Thank you, Mr. Chairman, that concludes my statement. I will be pleased to answer any questions that you or other Members of the Subcommittee might have.

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## GAO Contact and Staff Acknowledgements

For further information about this testimony, please contact Mark L. Goldstein at (202) 512-2834. Other key contributors to this testimony include Andy Clinton, Colin Fallon, Ronald Fecso, Simon Galed, Eric Hudson, Bert Japikse, Aaron Kaminsky, Sally Moino, Karen O'Connor, and Andrew Stavisky.

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<sup>11</sup>We estimate that households with a landline telephone will request approximately 30.6 million coupons, ranging from 25.6 million to 35.5 million coupons. This estimate does not include non-landline households or household where telephone status could not be determined. While we could not substantiate an assumption that these households would respond similarly to landline households, if they do, this could add another 11 million coupon requests to the estimate.

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# Appendix I: Scope and Methodology

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To obtain information on the technical and coordination issues facing broadcast stations, we conducted a Web-based survey of the full-power commercial and noncommercial television broadcast stations. We asked the broadcasters questions related to their digital facilities, construction plans, and issues affecting the digital transition. From a total of 1,747 broadcasters, we surveyed 1,682 stations located in the 50 states and the District of Columbia for which we could obtain contact information. We conducted our survey from December 2007 through February 2008 and obtained completed questionnaires from 1,122 stations, for a response rate of 66.7 percent. Of those completed questionnaires, 72 percent were from commercial stations and 28 percent were from noncommercial stations.

To obtain information on issues pertaining to low-power television stations and how they affect consumers, we reviewed data from the Federal Communications Commission and interviewed a wide variety of industry and other private stakeholders, such as national retailers, industry associations, and consumer advocacy groups.

To determine the extent of consumer awareness about the transition, we commissioned a telephone survey of the U.S. adult population. Our objectives were to produce nationally representative estimates of (1) knowledge and awareness of the DTV transition and sources of that knowledge and awareness, (2) knowledge about the converter box coupon program and likelihood to request one or two coupons, and (3) attitudes about the impact of the conversion to digital television (e.g. level of disruption) Although the survey was designed to measure these issues at the population level, our intent was also to focus on several sub-populations, including (1) those most at risk of losing their television signal, (2) those with lower household incomes, (3) older Americans, (4) African Americans and Hispanics, and (5) those with disabilities. We analyzed the comparisons between these sub-populations and report on differences statistically significant at the 95 percent level. Percentage estimates have margins of error of less than 6 percent.

This survey of the American public was conducted from March 24, 2008 to April 7, 2008 by a private research firm. A total of 1,010 completed interviews were collected and calls were made to all 50 states.

Telephone surveys require assumptions regarding the disposition of non-contacted sample households that meet certain standards. For this survey the response rates were calculated using American Association of Public Opinion Research (AAPOR) Response Rate 3. Based on these assumptions, the response rate for the survey is 38 percent. A random digit

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dial (RDD) sampling frame was used that includes both listed and unlisted numbers from working blocks of numbers in the United States. Technically, it provides a near 100 percent coverage of all households with landlines however; the RDD sampling frame approach cannot provide any coverage of the increasing number of cell phone only households. The 30.6 million estimate for coupon requests (which ranges from 25.6 million to 35.5 million coupons) does not include 13.1 percent of the households that are cell phone only households or 13.3 percent of the households for which there was no telephone service or no reported telephone status. While we could not substantiate an assumption that these households would respond similarly to landline households, if they do, this could add another 11 million coupon requests to the estimate. Additionally, the number of households that decide to replace their television rather than add the converter box could increase, which may decrease the demand for converter boxes.

Because many households contain more than one potential respondent, obtaining an unbiased sample from an RDD frame requires the random selection of the individual respondent from among all potential respondents within the sampled household (as opposed to always interviewing the individual who initially answers the phone). This was accomplished using the most recent birthday method, in which the interviewer requests to speak to the household member aged 18 or older who had the most recent birthday. If the selected respondent was not reachable after three call attempts, a substitute respondent was selected from among household members 18 years of age or older who were available at the time of the call, or an appointment was set for a household member who was willing to participate at a later time.

The results of this survey reflect an estimated awareness of the DTV transition for the time frame of the survey only. Some questions in the survey ask about the respondent's knowledge or awareness of the transition and the coupon program. As consumer education about the transition and the coupon program increases, the number of people aware of the transition and the coupon program will probably increase. Additionally, the respondent may not be the person in the household responsible for obtaining a coupon or deciding how to handle the transition. As a result, the individual response may indicate that the person is unaware, but someone else in the household could be planning to take care of the issue. As a result, we may overestimate the percentage of unaware households.

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Finally, in the survey we asked respondents about likely behavior once the transition occurred. Only those who said they were likely to purchase a converter box were asked if they would request a coupon and then were asked whether they would request one or two government coupons. In our calculation of coupon demand we assume that those who do not say they are likely to purchase a coupon box will not request a coupon.

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## Appendix II: Related GAO Products

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*Digital Television Transition: Majority of Broadcasters Are Prepared for the DTV Transition, but Some Technical and Coordination Issues Remain.* GAO-08-510. Washington, D.C.: April 30, 2008

*Digital Television Transition: Increased Federal Planning and Risk Management Could Further Facilitate the DTV Transition.* GAO-08-43. Washington, D.C.: November 19, 2007.

*Digital Television Transition: Preliminary Information on Progress of the DTV Transition.* GAO-08-191T. Washington, D.C.: October 17, 2007.

*Digital Television Transition: Preliminary Information on Initial Consumer Education Efforts.* GAO-07-1248T. Washington, D.C.: September 19, 2007.

*Digital Television Transition: Issues Related to an Information Campaign Regarding the Transition.* GAO-05-940R. Washington, D.C.: September 6, 2005.

*Digital Television Transition: Questions on Administrative Costs of an Equipment Subsidy Program.* GAO-05-837R. Washington, D.C.: June 20, 2005.

*Digital Broadcast Television Transition: Several Challenges Could Arise in Administering a Subsidy Program for DTV Equipment.* GAO-05-623T. Washington, D.C.: May 26, 2005.

*Digital Broadcast Television Transition: Estimated Cost of Supporting Set-Top Boxes to Help Advance the DTV Transition.* GAO-05-258T. Washington, D.C.: February 17, 2005.

*Telecommunications: German DTV Transition Differs from U.S. Transition in Many Respects, but Certain Key Challenges Are Similar.* GAO-04-926T. Washington, D.C.: July 21, 2004.

*Telecommunications: Additional Federal Efforts Could Help Advance Digital Television Transition.* GAO-03-7. Washington, D.C.: November 8, 2002.

*Telecommunications: Many Broadcasters Will Not Meet May 2002 Digital Television Deadline.* GAO-02-466. Washington, D.C.: April 23, 2002

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**CALIFORNIA  
LEGISLATION  
AB 2769 (Levine)  
SR 24 (Romero)**

AMENDED IN ASSEMBLY APRIL 21, 2008

california legislature—2007-08 regular session

**ASSEMBLY BILL**

**No. 2769**

**Introduced by Assembly Member Levine**

February 22, 2008

*An act to add Section 1724 of the Civil Code, relating to ~~energy~~ digital television.*

legislative counsel's digest

AB 2769, as amended, Levine. ~~Energy efficiency: air conditioners.~~  
*Digital television.*

*Existing federal law requires full-power television broadcast stations in the United States to broadcast only in digital after February 17, 2009.*

*This bill would require retailers who sell electronics to post a notice regarding the transition to digital television broadcasts near the entrance to the store and to make available to consumers a brochure containing specified information regarding the transition to digital broadcasts.*

~~Existing law requires the State Energy Resources Conservation and Development Commission to investigate options and develop a plan to improve the energy efficiency of, and to decrease the peak electricity demand of, air conditioners in the state. Existing law requires the commission, on or before January 1, 2008, to prepare and submit to the Legislature a report on that plan.~~

~~This bill would state the intent of the Legislature to enact legislation to implement recommendations in the report.~~

Vote: majority. Appropriation: no. Fiscal committee: no.  
State-mandated local program: no.

*The people of the State of California do enact as follows:*

1     *SECTION 1. The Legislature finds and declares all of the*  
2     *following:*

3     *(a) On February 17, 2009, all full-power broadcast television*  
4     *stations in the United States will begin to broadcast only in digital.*  
5     *For people who already own a digital television or subscribe to*  
6     *cable, satellite, or other pay service, the transition will have little*  
7     *or no impact.*

8     *(b) However, more than 13 million United States households*  
9     *rely on over-the-air broadcast on their analog television sets*  
10    *exclusively. These people tend to rely heavily on television to keep*  
11    *them informed in times of emergency and cannot afford to lose*  
12    *their connection to broadcast television.*

13    *(c) It is the responsibility of the Legislature to ensure that*  
14    *households that rely solely on over-the-air analog television*  
15    *broadcast for their television viewing understand that the transition*  
16    *will occur on February 17, 2009.*

17    *SEC. 2. Section 1724 is added to the Civil Code, to read:*

18    1724. *(a) For purposes of this section, "retailer" means an*  
19    *establishment that sells electronics, including, but not limited to,*  
20    *televisions, to a consumer.*

21    *(b) Each retailer in the state of California shall post a notice*  
22    *near the store entrance that is clear, conspicuous, and in legible*  
23    *type from a distance of 10 feet containing the following*  
24    *information:*

25  
26    *(1) Will Your TV Work After February 17, 2009? Prepare*  
27    *for the digital transition.*

28    *(2) Know Your Options.*

29    *(A) Buy a converter box that will plug into your analog TV.*

30    *(B) Buy a TV with a digital tuner.*

31    *(C) Connect your analog TV to cable, satellite, or other pay*  
32    *service.*

33    *(3) For more information call 1-888-DTV-2009*  
34    *(1-888-388-2009) or 1-877-530-2634 (TTY) or visit*  
35    *www.DTV2009.gov.*

36

1 (c) Each retailer shall make available to the consumer upon  
2 request a brochure that at a minimum contains the following  
3 information:  
4

5 (1) An important change in broadcasting is coming in  
6 February 2009. Television broadcasting is moving from an  
7 old standard - known as "analog" - to a new standard, called  
8 "digital." After February 17, 2009, all television broadcasts  
9 will be digital. After February 17, 2009, all analog televisions  
10 getting programming "over the air" through an antenna will  
11 need to be plugged into a special television converter to  
12 receive digital broadcasts. Before you buy a new TV, consider  
13 these options:

14 (A) Keep your TV and buy a converter. If you have an analog  
15 television, you will need a digital-to-analog converter box to  
16 continue to watch broadcast television on that set. This  
17 converter box will also enable you to see any additional  
18 multicast programming that your local stations are offering.

19 (B) Buy a digital television.

20 (C) Hook up your television to cable, satellite, or other pay  
21 television service.

22 After February 17, 2009, all television broadcasts will be  
23 digital. Prepare for the digital transition. For more  
24 information, call the FCC at 1-888-225-5322 (TTY:  
25 1-888-835-5322) or visit their DTV Web site at [www.dtv.gov](http://www.dtv.gov).  
26

27 (2) The location of the nearest recycling facility that accepts  
28 electronic waste.

29 ~~SECTION 1. It is the intent of the Legislature to enact~~  
30 ~~legislation to improve the energy efficiency of, and to decrease~~  
31 ~~the peak electricity demand of, air conditioners in the state by~~  
32 ~~implementing the legislative recommendation contained in the~~  
33 ~~report prepared by the State Energy Resources Conservation and~~  
34 ~~Development Commission pursuant to Chapter 734 of the Statutes~~  
35 ~~of 2006.~~

## **Senate Resolution No. 24**

**Introduced by Senator Romero**

Relative to Digital Television Education Month.

WHEREAS, Under legislation passed by Congress, local broadcast television stations are required to turn off their free analog channels after midnight on February 17, 2009, and continue broadcasting exclusively in the free digital television (DTV) format; and

WHEREAS, DTV is the biggest event in broadcast television technology since the change from a black and white picture to color and will allow stations to offer the communities they serve dramatically clearer pictures and digital sound quality, more channels, interactive capabilities, and data services, including enhanced closed captioning for the hearing impaired; and

WHEREAS, The almost 2,000,000 viewers in California with analog television sets who receive free television signals through rooftop or "rabbit ear" antennae may lose their picture on February 18, 2009, unless they make the transition to DTV through (1) installing a DTV converter box, (2) upgrading to a digital television set, or (3) subscribing to a paid cable, satellite, or telephone company video service; and

WHEREAS, A DTV converter box is an easy-to-install electronic device that allows older television sets to receive the new digital signal; and

WHEREAS, Every California household can apply for up to two forty dollar (\$40) coupons toward the purchase of a DTV converter box at the DTV Web site and telephone center, available on the Internet at [www.DTV2009.gov](http://www.DTV2009.gov) or by telephone at (888) DTV-2009; and

WHEREAS, Coupons toward the purchase of a DTV converter must be requested by March 31, 2009, and be redeemed within three months of receipt; and

WHEREAS, Those Californians most likely to lose their television signal will be senior citizens, non-English-speaking households, the economically disadvantaged, and those living in rural areas; and

WHEREAS, Television stations are a primary source of emergency information for all Californians to receive Amber Alerts, weather warnings, and other disaster information critical to their safety; and

WHEREAS, Local television stations are using various strategies, including media briefings, speakers bureaus, public service announcements, news reports, town hall meetings, partnerships with local service organizations, and other promotional efforts to inform their viewers of the transition, but need assistance to ensure that no California television set goes dark on February 18, 2009, for lack of a converter; now, therefore, be it

*Resolved by the Senate of the State of California,* That the Senate stresses the need for local television stations, electronics retailers, and affected groups to educate constituents about the DTV transition and urges all Californians to become aware of the availability of converter box coupons so that no viewer is left without access to emergency information through their television signal; and be it further

*Resolved,* That the Senate designates May 2008 as Digital Television Education Month in the state and that public officials and the people of the state are encouraged to become informed during the month about the DTV transition by using information resources, including their local television stations, the DTV Web site and telephone center, and the DTV Answers Road Show that will be visiting communities across California; and be it further

*Resolved,* That the Secretary of the Senate transmit copies of this resolution to the author for appropriate distribution.

Senate Resolution No. 24 read and adopted by the Senate May 1, 2008.

Attest:

Secretary of the Senate

**SUBMITTED  
TESTIMONY**

**STATEMENT OF  
MARK LLOYD, VICE PRESIDENT OF STRATEGIC INITIATIVES,  
LEADERSHIP CONFERENCE ON CIVIL RIGHTS &  
LEADERSHIP CONFERENCE ON CIVIL RIGHTS EDUCATION FUND**

**AS DELIVERED ON JUNE 10, 2008 TO THE U.S. HOUSE COMMITTEE ON  
ENERGY AND COMMERCE SUBCOMMITTEE ON  
TELECOMMUNICATIONS AND THE INTERNET  
“STATUS OF THE DTV TRANSITION: 252 DAYS AND COUNTING”**

**AND PRESENTED ON JUNE 24, 2008 TO THE  
CALIFORNIA STATE ASSEMBLY  
COMMITTEE ON ARTS, ENTERTAINMENT, SPORTS,  
TOURISM AND INTERNET MEDIA**

Chairman Markey, Ranking Member Upton, and members of the Committee: I am Mark Lloyd, vice president of strategic initiatives of the Leadership Conference on Civil Rights (LCCR) and the Leadership Conference on Civil Rights Education Fund. Thank you for the opportunity to testify in today's hearing on the status of the digital television transition.

LCCR is the nation's oldest and most diverse coalition of organizations working to protect the civil rights of all Americans through legislative advocacy. And the LCCR Education Fund is the sister organization established to further the goal of equality under law through public education. LCCR consists of approximately 200 national organizations representing persons of color, women, children, organized labor, persons with disabilities, seniors, gays and lesbians, and major religious groups. Given the fact that we represent a very broad coalition of organizations, I would not suggest here that my testimony fully represents the concerns of all our coalition members. With that said, we have consulted and are actively working on the DTV transition with several members of our coalition both in Washington and in the field. In addition, LCCR is a founding

member and a steering committee member of the DTV Transition Coalition, a large coalition that includes the Federal Communications Commission, the National Telecommunications and Information Administration of the U.S. Department of Commerce, industry groups, grassroots and membership organizations, manufacturers, retailers, trade associations, civil rights organizations, and community groups. I am a former broadcaster and communications attorney and I teach the public policy of communications at Georgetown University. It is a privilege to come before you to speak on an issue I have been engaged in for over ten years.

Despite the valiant volunteer work of our members and the DTV transition coalition, the nation is not prepared for the shut-off of full-power analog television broadcasting. There is, in brief, too little funding for research, education and outreach to ensure that when February 17, 2009 arrives all Americans will continue to receive over-the-air broadcasting service. As this committee knows, millions rely on broadcasting for emergency information, school closings and the news and public affairs programming so necessary for local democratic engagement. We are concerned that the disproportionate impact of this transition will result in a greater divide between those who have access to vital information and those who do not. We at the Leadership Conference are concerned that the working poor, that senior citizens, that a disproportionate number of African-Americans, Latinos, and Asian-Americans, that people with hearing or visual limitations, and that Americans living in rural areas will lose access to the vital lifeline of over-the-air television.

Later this month the Leadership Conference will complete an extensive report on the challenges regarding the transition to digital television. We look forward to

submitting that report to this committee. The serious problems with the transition identified by the Leadership Conference include:

- Lack of viewer awareness;
- Viewer and retailer confusion;
- TV converter box coupon program problems and complexities;
- Excessive and unanticipated costs and burdens to viewers to make the transition;
- Confusion over low-power and community television stations;
- Unnecessary retailer upselling;
- Difficulties in procuring digital converters;
- Difficulties with the pass-through by digital converters, cable, or satellite of captioning and any available video description;
- No rapid response plan to deal with problems after February 17, 2009

While the federal agencies most responsible for managing this transition—the National Telecommunications and Information Administration (NTIA) and the Federal Communications Commission—and a wide range of private stakeholders in the broadcasting, cable, retail, and manufacturing industries are already working hard to address the impact of the transition, LCCR believes that the challenges involved in preparing Americans for the digital television transition are of such magnitude that while active Congressional oversight is important, strong Congressional response is required.

### **What's at Stake**

Making the transition to digital is not simply a matter of being able to watch wrestling, or *American Idol*, or reruns of *Friends*. At stake in the transition to digital

television is the ability of the nation's most vulnerable populations to maintain uninterrupted access to their key source of news and information and emergency warnings: free, over-the-air television.

The loss of this important service is especially acute for the communities that LCCR member organizations represent. In 2005, the GAO found that up to 19 percent, or roughly 21 million American households, rely exclusively on over-the-air, free television. According to the GAO, 48 percent of households that rely solely on over-the-air television have incomes under \$30,000.

These consumers will face an expensive choice to continue to receive a television signal: subscribe to cable or satellite, buy a digital television set, or purchase a digital-to-analog converter box without assistance from the government through its coupon program. All of these options cost money. Even an inexpensive converter box can cost more than a week's food budget for many low-income families and for many elderly persons living alone and on Social Security.

We are especially concerned because minority and aging households are disproportionately affected by the transition.

- According to the GAO, non-white and Hispanic households are more likely to rely on over-the-air television than are white and non-Hispanic households.
- Of the 21 million over-the-air households, one-third (or seven million people) are Spanish-language speakers, according to the testimony of Alex Nogales, President and CEO of the National Hispanic Media Coalition, before the House Subcommittee on Telecommunications and the Internet in March 2007.

- Eight million of the 21 million over-the-air households include at least one person over 50 years of age, according to the March 2005 testimony of Lavada DeSalles on behalf of AARP, before the House Subcommittee on Telecommunications and the Internet.
- One-third or more of over-the-air television viewers have disabilities, according to the American Association of People with Disabilities.
- African Americans make up 23 percent of over-the-air households, according to the National Association of Broadcasters.

LCCR believes that access to communications is a fundamental right of every American. Given the impact the transition will have on all our most vulnerable communities, LCCR applauds Congress for recognizing the need for a government compensation program to be administered by NTIA to assist with the transition. But the process that has been created raises a number of troubling concerns.

### **Problems with the Coupon Program**

We strongly support the subsidies to American consumers to assist with the transition to digital. And the coupon program in the main seems a sensible way to provide these subsidies to all Americans. But our work on the ground indicates a variety of problems. The coupon program began well before there were sufficient converter boxes on the shelves. Many who rushed to get their coupons have felt compelled to either purchase the more expensive converter boxes or to watch their coupons expire. Converter boxes are not available or are in short supply in many rural areas. We have been told that many large national retailers refuse to accept coupons for mail-order or

Internet purchases of converter boxes. And not all boxes eligible for the coupon program support video description, or provide an easy pass-through of analog signals from community broadcasters.

We applaud NTIA for showing flexibility with other problematic provisions of the program. For example, in response to widely held concerns, NTIA appears to be willing to modify the coupon program to allow nursing homes with multiple residents to apply for multiple coupons, and to show flexibility in issuing coupons to those who receive mail at a post office box.

We support the recommendations of Senators Inouye and Stevens of the Senate Commerce Committee. They want consumers to be able to use their converter box coupons to preorder the boxes so that they might order boxes that are out of stock or in limited supply and not run afoul of the expiration date. Also, they want consumers to be able to reapply for coupons if their coupons have expired, as the coupons presently have no ability to replace or reapply for expired coupons. Another problem with the 90-day expiration date is the inability of those who applied early for coupons to purchase lower priced converter boxes, such as the boxes marketed by Echostar, which will not come to market until summer.

### **Funding the Educational Effort**

First and foremost, we are deeply concerned that the \$5 million that Congress has allocated to NTIA to educate consumers about the coupon program will be woefully inadequate to support the kind of public education effort that the transition requires. In a 2007 letter to members of the FCC, House Energy and Commerce Chairman John

Dingell and Rep. Edward Markey noted that the German city of Berlin spent nearly \$1 million to educate its 3.4 million citizens about the transition to digital. The United Kingdom, a country of a little over 60 million, plans to spend \$400 million on its public education campaign. While we do not advocate spending an equivalent \$100 million to \$2 billion dollars to prepare the 300 million American consumers about the digital television transition, we do not think that the \$5 million allocated by Congress in 2005 was ever adequate to the task.

A public education campaign is not merely airing a series of public service announcement that digital television is coming. It is much more complicated here. As this committee knows, not all analog broadcasts will shut down. The important services of low power and other community broadcasters will continue to sent analog signals. The full-power television service is not simply being exchanged for a digital service. Many full power broadcasters will be sending multiple digital signals – some of those signals will be High Definition and some will not. Nor will the contour, the reach of the digital signal, exactly match the reach of the old analog signal. These are not simple messages. And that does not even take into account the educational effort about a two-stage program involving a government coupon subsidizing a digital converter box. Some consumers will need to be gently reminded that a transition will take place. Others will need more help through the process.

We at the Leadership Conference are working with the Southeast Asian Resource Action Center and the National Council of La Raza and the NAACP and the National Urban League and the National Congress of American Indians and the American Association of People with Disabilities and others to reach deep into communities, to

work with direct service providers, to get the word out. We know that AARP and others are also extending themselves to help in getting the word out. We have received no financial assistance from the FCC or NTIA to prepare our communities for this major transition and our resources are limited.

Again, the public service announcements of the National Association of Broadcasters and PBS and others are great contributions, the educational seminars of the FCC and the NTIA website are all impressive educational efforts, but they are not enough. The lack of sufficient resources within the digital television transition consumer education effort for support of nonprofit, social justice, or community-based organizations further limits the scope of much needed direct, hands on public education efforts in communities at risk. The effort to ensure that all Americans have access to over-the-air digital television should not be left to government and industry alone; the private charitable organizations that work directly with the populations most at risk need to be engaged, but they need support.

More specifically, what is needed are efforts that fund and engage grassroots groups to conduct the training workshops; develop and disseminate the informational materials that are language appropriate and in alternate forms (Braille, audiotapes, ASCII disk, large font, closed captioned); and provide the technical assistance that will help the low-income households, minorities, limited English-speaking families, seniors, and persons with disabilities who are most dependent on television make the transition.

LCCR is committed to working with our community-based member organizations, including groups that serve populations who speak languages other than English, and those that assist working families such as unions and religious organizations,

to make sure their members know about the transition and the coupon program. But we are skeptical about the success of these efforts without additional resources. We believe that the costs of the digital transition to U.S. could be paid for by a small fraction of the 20 billion dollars generated by the auctions of reclaimed spectrum.

If Congress wants the digital television transition and coupon program to succeed, it must adequately invest in an educational program that involves all relevant sectors and that truly leaves no community behind. We strongly urge Congress to supplement the amount of funding for consumer education efforts. In the end, voters will look to Congress if their televisions go dark.

### **Research, Oversight, and Rapid Response**

In addition to our concerns that those populations most in need will be least likely to know about the coupon program, LCCR is concerned that low-income and minority communities, seniors, and people with disabilities will be least likely to receive the first-come, first-served limited number of coupons.

NTIA's Digital-to-Analog Converter Box Coupon Program currently contemplates what is essentially a two-phase process. Under the first phase, while the initial \$990 million allocated for the program is available, all U.S. households—including cable and satellite customers—will be eligible to request up to two \$40 coupons to purchase up to two, digital-to-analog converter boxes. Under the second phase, if NTIA requests the additional \$510 million already authorized by Congress, then households that certify in writing they rely on over-the-air reception will be eligible for coupons.

LCCR urges Congress to ensure that the transition to digital television serves to benefit all Americans. In order to do so, there must be a way for Congress to determine that coupons are going to those who most need them.

- It is clear that we will need sufficient independent research to make sure that messages about the coupon program are effective for these populations. We will need to know who is taking advantage of the coupon program during the first phase of the process, so that NTIA knows how to respond or whether and where to deploy additional funds.
- The government can play an important role in conducting this research through the General Accounting Office, with Congress tracking the progress.

In addition to an aggressive ongoing monitoring effort, there must be plans in place to respond rapidly to those most vulnerable populations who end up losing service, so that they get the education and assistance they need. If low-income households, seniors, minorities, or persons with disabilities are cut off because funds run out, Congress must allocate additional funds to ensure that all Americans can make the transition to digital TV.

## **Conclusion**

I want to acknowledge that despite the great challenges in making sure that all Americans know about the digital television transition and the coupon program, the transition presents great opportunities. Digital TV offers viewers better quality transmission and a wider range of programming options. DTV can deliver more services to those who speak languages other than English and to people with disabilities (such as enhanced closed captioning and video description services). And by freeing up valuable spectrum the transition has the potential to open the door for more Americans to participate fully in the digital age. We at the Leadership Conference are convinced that the transition to digital television has the potential for extending the benefits of advanced telecommunications services to all Americans. We believe this is the civil rights issue of the digital age.

Thank you for both the opportunity to speak today and for your leadership as we move forward in addressing the digital television transition. I look forward to answering any questions you may have.

**TESTIMONY OF CLAUDE STOUT**

**EXECUTIVE DIRECTOR,  
TELECOMMUNICATIONS FOR THE DEAF AND HARD OF HEARING, INC.  
CHAIR, DEAF AND HARD OF HEARING CONSUMER ADVOCACY NETWORK**

**ON BEHALF OF  
THE COALITION OF ORGANIZATIONS FOR ACCESSIBLE TECHNOLOGY (COAT)**

**U.S. House of Representatives  
Subcommittee on Telecommunications and the Internet  
Committee on Energy & Commerce**

**On the Status of the Digital Television Transition**

**October 17, 2007**

**WRITTEN STATEMENT OF CLAUDE STOUT**

Chairman Markey, Ranking Member Upton, and Members of the House Subcommittee on Telecommunications and the Internet, I want to thank you for the invitation to discuss the topic of the digital television (DTV) transition. I am honored to have this opportunity to testify on an issue that affects millions of television viewers with disabilities. My name is Claude Stout, and I am both the executive director of Telecommunications for the Deaf and Hard of Hearing, Inc. (TDI) and the Chair of the Deaf and Hard of Hearing Consumer Advocacy Network (DHHCAN). I am pleased to offer my testimony today on behalf of the Coalition of Organizations for Accessible Technology (COAT), a coalition of more than 110 national, regional, and community-based organizations dedicated to making sure that as our nation migrates from legacy telecommunications, such as analog television, to more versatile and innovative digital communication technologies, people with disabilities will not be left behind.<sup>1</sup>

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<sup>1</sup> A list of COAT affiliate members supporting the COAT agenda can be found at <http://coataccess.civicspaceondemand.org/node/9>.

## **Introduction and Background**

COAT offers this statement on behalf of over 31 million individuals with hearing loss,<sup>2</sup> 10 million individuals who are blind or who have vision loss, and millions of individuals with other disabilities who benefit greatly from accessible television programming. Along with access to televised news, information, and entertainment, access to televised emergency information enables these populations to understand and appropriately respond to warnings of hazardous weather and other emergency conditions.

COAT affiliate members are excited by the promise of digital television, the better picture quality, multicasting, and the transfer of spectrum, which, among other things, will enable first responders to be more effective in emergency situations. Like most consumers, we look forward to the benefits of technological advances. Unfortunately, history has shown that all too often, people with disabilities have been left out or left behind as these advances have taken place.

In fact, we are already witnessing this phenomenon with digital television. Despite promises of a glorious future for closed captioning, access to television programming has apparently taken a step backward. Increasing numbers of individuals are seeking to purchase digital television sets or components and systems that provide digital video programming, and distributors are offering expanded digital programming – and in particular programming in the high definition (HD) format. At the same time, we are receiving increasing numbers of reports of significant technical difficulties with the pass through and display of closed captioning.

Specifically, concerns have been raised about the following:

- Caption viewers report a number of technical difficulties associated with viewing captions on DTV, including captions that are garbled, delayed, misplaced, or otherwise unintelligible;

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<sup>2</sup> Kochkin, S. MarkeTrak VII: Hearing Loss Population Tops 31 Million People, The Hearing Review, Vol. 12(7) July 2005, pp. 16-29.

- Networks whose analog channels were previously covered by the FCC's closed captioning mandates now deny coverage for their new HD channels, even when the newer channels have the same programming format as their analog predecessors;
- Viewers are having a hard time figuring out how to access closed captions and video descriptions on DTV components, including tuners supplied by television manufacturers and set top boxes provided by cable and satellite companies;<sup>3</sup>
- Consumers are struggling to resolve complaints about DTV issues with companies or with the FCC; and
- Individuals who are blind or have low vision still have negligible access to television programming because of the scarcity of video description.

I will elaborate now on each of these concerns:

### **Technical Difficulties**

Television viewers who rely on captions to understand the content of video programming join the rest of the American public in wanting to make the transition to innovative and exciting digital television. As DTV equipment has become more affordable and available, more and more of these viewers have acquired equipment that will allow them to enjoy such enhanced viewing. But time and again, these consumers have been frustrated and disappointed. Many report disappearing, delayed, garbled or otherwise unintelligible captioning on television shows that previously provided relatively problem-free captions. Specific problems have been documented, including overlapping captions (two lines of captions displayed over each other), captions appearing in the middle of the television screen (blocking faces and other important visual information on the screen), captions running off the edge of the picture, captions exceedingly small, and captions that inadvertently switch to text mode which causes 95% of the screen image to be obscured.

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<sup>3</sup> Video description is the provision of verbal descriptions of on-screen visual elements that are provided during natural pauses in dialogue.

A major difficulty for consumers in the DTV transition is determining the cause of these closed captioning problems. Indeed, experience shows that any one or a combination of factors can be a culprit in creating barriers for captioning users. For example, the failure to receive captions can be the fault of the local TV station or cable TV service that has begun broadcasting or offering digital programming, the inability to pass through captions on the program distributor's (e.g., cable company's) set top box, or a failure in the equipment used to receive and display the DTV programming, such as the receiver or its connecting components. Unfortunately, regardless of the problem source, consumers are left "holding the bag" each time they are unable to access captions.

### **Confusion over Scope of FCC Captioning Mandates**

In addition to these technical difficulties associated with the DTV transition, there is some dispute over the extent to which TV networks now covered by the captioning rules are obligated to continue providing captions as they make the shift to HDTV and other forms of digital programming.

It would appear obvious that when a standard definition (SD) analog network, whose programming has already been captioned, converts to or creates an HD channel with a programming line-up that contains a significant amount of programming that is similar to that analog network, the new HD channel would be held to the same obligations to have closed captioning as its analog predecessor. However, some broadcasters and cable networks have taken the position that their new HD channel is a "new network" that qualifies for an exemption from the FCC's captioning rules. Specifically, they point to that section of the FCC's rules that exempts

programs shown on new networks from having captions during the first four years of the network's operations.<sup>4</sup>

This interpretation of the FCC's captioning rules makes little sense. Even when the HD channel repackages its programming so that it is slightly different than its predecessor network – e.g., by slightly altering its programming schedule – the HD network should be subject to the captioning rules to the same extent as its analog predecessor, so long as the digital network is substantially similar to that predecessor. If this is were not the case, then consumers would find themselves having to wait an additional four years to see captioning on programming which, but for its HDTV status, would already have to be captioned.

This “new network” interpretation of the captioning rules offered by some SD/HD networks flies not only in the face of logic; it violates Congress's intent to ensure the uninterrupted provision of closed captions with the onset of advanced technologies. The explicit directive of the Communications Act could not be clearer in this regard. Section 330 of the Act states: “As new video technology is developed, the Commission shall take such action as the Commission determines appropriate to ensure that closed-captioning service continues to be available to consumers.”<sup>5</sup>

Even when the programming schedule of the enhanced HD network is substantially different than its analog counterpart – and the digital channel can legitimately be called a “new

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<sup>4</sup> See 47 C.F.R. § 79.1(d)(9). For example, COAT received reports of this occurring when the Discovery Channel began broadcasting over Discovery HD. We are told that in 2005, the HD channel failed to caption the same programming that had previously been captioned in its analog predecessors (i.e., Discovery, Discovery Kids). When asked about this, the company asserted compliance with the FCC's rules because it had initiated its HD programming in 2002, and still had another year before its “new network” exempt status expired. Charges of other networks simultaneously broadcasting live events on SD and HD channels, but only adding captions to the SD broadcasts similarly have been reported.

<sup>5</sup> 47 U.S.C. § 330(b).

network” – at a minimum, pre-captioned programming shown on the newer network should be re-shown with those captions.<sup>6</sup> COAT asks the Committee to request the FCC to clarify this point sooner rather than later during this digital transition period, so that TV viewers who rely on captioning will not lose access to the programming that they have been able to watch in the past.

### **User Interfaces**

It is commonplace for television viewers to select their channels and other TV settings from on-screen menus. But if you are blind or have low vision, you cannot access this information through a “point and click” remote control or even use a touch screen. Individuals who are blind or have vision disabilities are thus denied the ability to control various aspects of the DTV programming that they watch. The technical feasibility of incorporating accessible user interfaces has already been demonstrated by a few individual manufacturers. When accessible user interfaces are required on all video devices, the incremental cost of adding these features will become negligible.

Caption viewers have also reported considerable problems navigating menus, some of which are “hidden,” to activate captions after connecting their digital television equipment – equipment that typically is comprised of separate receivers, monitors, set top boxes, and recording/playback devices. Often the interface that controls captions is buried several layers into an on-screen menu that is difficult, if not impossible to find. Even those consumers who are able to figure out how to turn on captions on their home equipment have an often insurmountable task when trying to activate captioning in locations away from home. For example, it is with increasing frequency that we hear of deaf and hard of hearing consumers going to hotels and not being able to watch TV simply because there is no way for them to turn on captions. On one such occasion,

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<sup>6</sup> A similar obligation requiring video programming distributors to pass through captions of programs that were previously captioned already exists.

COAT has learned, it took a hotel technician two hours to set up captions; on another occasion, hotel staff realized that the only means of retrieving captions was by means of a single “master” remote control that the hotel owned (and did not want to leave with any one guest). The remote controls distributed to guest rooms in that hotel were apparently for the “cable box,” not the “television,” and could not activate the captions.

COAT has initiated discussions with digital television manufacturers to help them understand the extent to which the user interfaces on their television equipment may adversely impact consumers with hearing and vision disabilities – and by association, the families and friends of these television viewers. While our efforts have been rewarded by a few design changes – for example, by the addition of a designated closed captioning button on the remote controls for certain digital-to-analog converter boxes – we know from experience that the vast majority of manufacturers will not incorporate all of the necessary accessible user interfaces on their television sets or components unless mandated to do so. In the past, virtually all technology-related access features have come about only after they were mandated by federal law – for example, hearing aid compatible telephones and televisions with built-in closed captioning decoders. This is because the disability market – while growing with our ever-expanding aging population – still is not large enough, forceful enough, or wealthy enough – to have an impact on manufacturer product design. With competition the way it is, no manufacturer wants to be the only one putting resources into accessibility features.

When, however, Congress directs that access be incorporated on an industry-wide level, the competitive playing field is leveled, economies of scale force the cost of compliance down, and consumers get the access they need. To this end, we come to you today seeking mandates that would accomplish several goals. First, we ask for a requirement for digital televisions to be

designed so that individuals with disabilities can access all of their functions, including the receipt, display, navigation or selection of video programming. Among other things, this will require audio output to accompany on-screen text menus or other visual indicators used to access video programming functions, to allow control of these functions by people who are blind or have low vision. Second, Congress should require a conspicuous means of accessing both closed captioning and video description on digital television equipment. This should include provision of a button on the television's remote control that could activate closed captions, as well as the ability to control closed captions and video description on the top tier of the television equipment's set-up menu.

It is critical for both captioning and video description users to be able to effectively use the accessibility features that are added to video programming content. Put simply, it makes little sense for broadcasters to go through the time and expense of incorporating captions and video description if the beneficiaries of these features are not able to find and access them easily.

### **Barriers to Resolving Concerns**

Consumers with disabilities have also encountered significant barriers when attempting to contact distributors of video programming and manufacturers of DTV equipment with concerns about accessing closed captioning or video description. The reasons for this are many:

- Customer service representatives or technical support personnel are often unfamiliar with closed captioning and video description and simply do not understand the content and context of the consumers' concerns.
- Customer service representatives or technical support personnel are typically not familiar with telecommunications relay services that are commonly used by persons with hearing and speech disabilities, and hang up or otherwise disregard the phone call.
- Customer service representatives or technical support personnel may choose not to respond to e-mail requests, particularly in a timely manner. Such text-based communications are commonly used by persons with hearing loss.

Furthermore, many consumers with disabilities remain unaware of their right to file informal complaints with the FCC, or the Commission's ability to mediate and resolve their problems. Additionally, those consumers with disabilities who may be aware of the complaint procedures often choose not to use those procedures because they find the complaint process too difficult to navigate. This is because the process for filing informal closed captioning complaints with the FCC requires consumers to first notify distributors responsible for the delivery and exhibition of the programming at issue, cite the specific FCC regulation violated, and include detailed complaint content in order for the FCC to pursue the complaint.<sup>7</sup> The FCC's procedures also contain overly complicated timelines and unduly long response times.

As a consequence, when consumers do confront problems with their TV distributor or with the manufacturer of a DTV product or device, most of the time, in utter frustration, they give up and revert to using their "old" television receiving components. While this may be an option now, it will no longer be an option in February 2009. COAT notes that the clock is ticking loudly and these problems must be resolved before the time remaining for analog programming expires.

COAT asks the Committee to urge the FCC to overhaul its regulations governing the handling of consumer concerns and complaints on closed captioning, so that (1) the Commission and television distributors have a more rapid and efficient means of learning about problems associated with the digital transition and (2) the FCC and the DTV industry can take the steps necessary to remedy these problems before they cause consumers to lose television access.

### **Video Description**

The Communications Act of 1996 authorized the FCC to conduct an inquiry to assess the appropriate means of phasing video description into the television marketplace. Although the

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<sup>7</sup> See 47 C.F.R. § 79.1(g).

FCC's response to this grant of authority was a modest requirement that broadcasters and other multimedia video programming providers in the top 25 major national markets provide video description on four primetime programming hours per week,<sup>8</sup> this requirement was overturned in federal court a little over a year after it was adopted.<sup>9</sup> As a consequence, there are no federal requirements to make television programming accessible through video description. COAT seeks reinstatement of the FCC's video description rules so that Americans with vision loss have an equal opportunity to understand and enjoy television content.

Notwithstanding the lack of video description mandates, some networks still offer this form of accessibility on a voluntary basis. However, COAT is concerned that, as the digital television transition takes place, the lack of attention given to this form of accessibility by DTV distributors and equipment manufacturers may seriously impede the ability of video descriptions to reach consumers, even when these descriptions have been added to programming. To prevent this from occurring, COAT urges the Committee to immediately require that the DTV standard include video description, which is consistent with the recommendation made by the 1998 Presidential Advisory Committee on Public Interest Obligations of Digital Television Broadcasters:

Utilization of video description as a form of providing access has been hindered by the analog standard, which only permits delivery of descriptions via the secondary audio program channel. In contrast, digital technology offers multiple audio channels, with significantly greater bandwidth, that can more easily accommodate video descriptions. We recommend that broadcasters allocate sufficient audio bandwidth for the transmission and delivery of video description in the digital age to make expanded use of this access technology technically feasible.<sup>10</sup>

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<sup>8</sup> *Video Description of Video Programming*, Report and Order, MM Dkt. 99-339, FCC 00-258, 15 FCC Rcd 15230, amended in part at Memorandum Opinion and Order on Reconsideration, FCC 01-7, 16 FCC Rcd 1251 (2001).

<sup>9</sup> *Motion Picture Association of America, Inc. v. Federal Communications Commission*, 309 F. 3d 796 (2002).

<sup>10</sup> *Charting the Digital Broadcasting Future: Final Report of the Advisory Committee on Public Interest Obligations of Digital Television Broadcasters* (December 18, 1998) at 62.

During the period in which the FCC's video description rules were in effect, broadcasters routinely demonstrated the technical and economic feasibility of description by adding this feature to their programs. With the advent of digital television, it is easier than ever for broadcasters to build into the digital structure ways to pass video description along to viewers. However, it is imperative to take this action now while DTV is nascent, because the failure to do so may lead to greater technical and economic obstacles to providing description in the future.

## **COAT RECOMMENDATIONS**

In order to smooth the transition to DTV for people with disabilities, COAT urges Congress to mandate the following:

1. Direct the FCC to clarify that it is the responsibility of broadcast and other networks that have made the transition from an SD to HD channel or other digital programming to continue captioning programs on their HD/digital networks when the content and format of those networks is substantially similar to that of their analog predecessors. The FCC should further be directed to clarify the obligation to show pre-captioned programming with captions at all times, even when the re-exhibited programming that contained those captions is shown on a new network that is substantially different from its analog predecessor.
2. Reinstate the FCC's video description rules and ensure that digital signals have sufficient capacity to make available the transmission and delivery of video description. This will require having the FCC require programming distributors, in their coordination efforts, to ensure the proper processes for carrying video description so that it is passed through properly to the viewer.
3. Direct that digital televisions be designed so that individuals with vision and other disabilities can access all of their functions, including the receipt, display, navigation or selection of video programming. Include within this, an obligation for audio output for on-screen text menus or other visual indicators used to access video programming functions.
4. Direct manufacturers of DTV equipment to provide a conspicuous means of accessing both closed captioning and video description on digital television equipment. This should include provision of a button on the television's remote control to activate closed captions and the ability to control closed captions and video description on the top tier of the television's on-screen menu.
5. Direct the FCC to revise its complaint procedures so that consumers with hearing loss who are having difficulty accessing closed captions on DTV have a user-friendly means of seeking assistance and resolution from the FCC.

6. Direct the FCC to require broadcasters and multi-channel video programming distributors (MVPDs) covered by the FCC's captioning rules to put into place customer service practices that are easily accessible and capable of responding swiftly to consumer inquiries and complaints concerning the provision of closed captions on DTV by their stations and networks. Among other things, the FCC should require these entities to designate a point of contact to handle such inquiries and complaints, and to identify this contact on both the FCC's and the covered entity's websites, as well as in billing inserts and promotional materials. This will alert distributors to DTV problems and provide for speedier resolutions.
7. Direct the FCC to require broadcasters and MVPDs to begin comprehensive testing of the closed captioning pass-through capabilities of their DTV systems, and implement solutions wherever technological barriers are encountered during this testing process, well in advance of the transition date in February 2009. To achieve these goals, the FCC should convene a working group of broadcasters, MVPDs, DTV product manufacturers, including manufacturers and distributors of television receiving equipment and set top boxes, and captioning providers and consumers, to ensure compatibility with captioning services before bringing these to market. This group, which should include top engineering personnel from the relevant industries and the Commission, should be tasked with
  - a. identifying current and anticipated problems with the transmission and display of captions over digital programming;
  - b. evaluating and assessing their components, systems, and set top boxes for compatibility with captioning services;
  - c. developing solutions to existing and potential problems in order to ensure the capability to pass through closed captions intact to the consumer;
  - d. publishing widely solutions for pass through of captioning and video description.<sup>11</sup>

## **Conclusion**

We call upon Congress to ensure that people with disabilities – including the rapidly growing population of senior citizens who experience reduced vision and hearing with increasing frequency – are not left behind as the DTV transition takes place. On behalf of COAT, I thank the Committee for this opportunity to share our concerns and urge you to take the necessary steps to ensure a smooth transition to DTV programming for all Americans with disabilities.

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<sup>11</sup> Many of these suggestions have been submitted to the FCC in *Third Periodic Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television*, Notice of Proposed Rulemaking, MB Dkt 07-91, FCC 07-70 (May 18, 2007).

**HEARING  
PARTICIPANTS'  
BIOGRAPHIES**



**STAN STATHAM**  
915 L Street, Suite 1150  
Sacramento, California 95814  
(916) 444-2237

***President/CEO - California Broadcasters Association (Present position)***

Directs the CBA in all of its operational, educational and service activities  
Represents California's radio and television stations before regulatory agencies  
Chief broadcast lobbyist for CA in the Capitols of Sacramento and Washington, D.C.

***California State Legislator (1976-1994 retired)***

Directed several hundred campaign volunteers and legislative staff for two decades  
Chaired Assembly Television Committee  
Member, Presidential Commission on Drunk Driving since 1979  
Chairman, Partnership for a Drug Free California

***News Director and Anchorman, CBS affiliate in Northern California (1964-1976)***

Managed largest news staff north of Sacramento

***Operations Supervisor, Crocker Bank/Bank of America (1960-1964)***

Authority over accounting and personnel of branch offices  
Recruited by American Institute of Banking to teach finance courses

***Radio Personality, KROY (1962-1964)***

Disc jockey and News Director for top-rated radio station in Sacramento market

***Intelligence Analyst, United States Army (1956-1959)***

Coordinated flow of intelligence data from informants in East Berlin to the Pentagon  
Awarded highest level of U.S. security clearance



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*President*

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## **DENNIS H. MANGERS**

### **BIOGRAPHY**

Dennis Mangers currently serves as President for the California Cable & Telecommunications Association. He was Senior Vice President and principal lobbyist for 24 years.

From 1976 to 1980 he was a member of the California State Assembly representing the 73<sup>rd</sup> Assembly District.

Dennis was born in Inglewood, California, and raised in Lawndale. He graduated from Leuzinger High School and received an AA degree from El Camino Community College where he was both Freshman Class and Student Body President. He was awarded a Bachelor's degree in Elementary Education from California State University at Long Beach and a Master of Science degree in Educational Administration from the University of Southern California.

Dennis Mangers began his teaching career in the Long Beach Unified School District in 1964 and taught first, second, third and sixth grades.

An accomplished singer, Dennis was one of 18 young performers selected in 1966 in a nationwide talent search by the Los Angeles Civic Light Opera Company for a full scholarship to the USC School of Performing Arts. He went on to play featured roles in Civic Light Opera productions of My Fair Lady and The Sound of Music.

In 1968, Mr. Mangers became one of California's youngest school principals serving first the Earlimart School District in Tulare County and later the Fountain Valley School District in Orange County. In 1969 he was named International Toastmaster of the Year after defeating 8 finalists representing 90,000 Toastmasters from around the world in the International Serious Speech Competition in Cleveland, Ohio.

For the five years prior to his election to the Assembly, Dennis served as Vice-President of American Learning Corporation headquartered in Huntington Beach.

Dennis Mangers is a former member and President of the Huntington Beach Union High School District Board of Trustees and a former member of the Huntington Beach Parks and Recreation Commission.

He served in the U.S. Navy Hospital Corps on both the US Constellation and the US Hospital Ship Haven.

He is a past-member and President of the Board of Directors of CARES (Center for AIDS, Research, Education and Services), a former President of the California Confederation of the Arts, member and former President of the Board of Directors of the Sacramento Ballet, a member of the Board of Directors of The California Channel, member and former Chair of the Statewide Advisory Council to the Center for California Studies, Chair of the California State University, Advisory Committee on Human Relations, a former member of the California Citizens Commission on Higher Education, a member of the Board of Directors of the Walter Kaitz Foundation, a member of the Board of Directors of Cable Positive, a Senior Fellow and former Chair of the Board of Directors of the American Leadership Forum's Mountain Valley Chapter, Chair of the Board of Directors of the Capital Unity Council, member and former Chair of the Board of Directors of the California Musical Theatre, a member of Phi Delta Kappa, Educare, USC, Long Beach State and El Camino College Alumni Associations, and National Association of Eagle Scouts. He is an honorary life member of the PTA and honorary member of Kappa Delta Pi, Honor Society in Education.

In the Assembly, Mr. Mangers served on three Assembly Committees and two Subcommittees. He was Chair of the Subcommittee on Educational Reform, a member and Vice Chair of the Assembly Health Committee, Assembly Education Committee and the Assembly Rules Committee. In addition, he served on the Mental Health and Developmental Disabilities Subcommittee and the Select Committee on Veteran Affairs.

He also served as Chair of the State Legislative Task Force for the Improvement of Pre and In-Service Training for School Administrators.

### **HONORS & AWARDS**

- Eagle Scout
- College Student Body President
- 1969 Toastmaster of the Year - winning over 8 finalists representing over 90,000 Toastmasters from around the World
- 1994 Brad Wojcoski Award – Cable Positive's highest honor for individuals contributions to the war on AIDS
- Sacramento Arts & Business Council Award for Outstanding Individual Leadership in the Arts

- The Jing Lyman Award - American Leadership Forum's highest national award for Outstanding Leadership and Community Service
- Jewish Community Relations Council Award for promotion of diversity and tolerance in the community
- CAP/PAC Inaugural Community Service Award for advancing human and civil rights opportunities for Sacramento's gay and lesbian community
- Selected as one of the El Camino Community College's 50 most distinguished alumni
- Selected as Distinguished Alumnus of the College of Education, 2007, California State University at Long Beach
- Barbara Crockett Gallo Award for outstanding service to the Sacramento Ballet
- California Association for the Gifted and Talented Award for service and contributions to California's gifted children.
- Sacramento's Harry S. Truman Club "Give 'em Hell Harry Award"
- 1998 Vanguard Award – The Cable Television Industry's highest award for State and Regional Leadership
- Named 2005-2006 Exemplary Leader of the Sacramento Region by the American Leadership Forum – Mountain Valley Chapter

# # # #



# PRESS INFORMATION

**Larry Deutchman, M.B.A.**

**Exec. Vice President, Marketing & Industry Relations**  
**Executive Producer/Producer/Writer, *PRISM Awards***  
*Biography*

For the last 23 years, Larry Deutchman has specialized in unique cause-related marketing efforts. In his role with the Entertainment Industries Council, Inc., which he joined in 1986, he currently serves as Executive Vice President of Marketing and Industry Relations for the entertainment industry organization. He received his MBA in marketing in 2001 from California Lutheran University.

At EIC, Deutchman oversees West Coast operations, as well as heading up creative and product development, branding and marketing. He also is primary liaison to the entertainment industry, spearheading the organization's efforts to impact on the depiction of various health and social issues in entertainment. He is an executive producer for the twelfth consecutive year on the *PRISM Awards*, also serving as producer and writer for the last four years for the show which airs on the FX Network, and was the primary author of the first two editions of the depiction book *Spotlight on Depiction of Health and Social Issues* (he served as editor of Volume 1 and Volume 2 of the third edition).

He also created "The Incredible Crash Dummies," a licensed product property designed to promote safety belt use to children in an entertainment-based fashion, and drafted the style guide and creative bible for the property. He also served as inventor of the highly successful TYCO/Mattel action figure toy line based on the property. A requirement for Crash Dummy licensed products was that all products, packaging, advertising and promotional materials carry a safety belt message. Recently, the toy line was revived and has become a part of the Hot Wheels line.

Prior to his work at EIC, Deutchman was Director of Public Relations for the Greater Los Angeles Chapter of the National Safety Council. His corporate safety belt programs at the Safety Council resulted in the "Buckle Up 100 Club," comprised of 100 L.A. area companies which had each carried out a comprehensive workplace safety belt awareness initiative. While at the Safety Council, Deutchman launched a peer-to-peer movement to encourage actors to use safety belts during on-screen driving scenes, resulting in almost universal use of safety belts in TV shows, comic books and comic strips. Since joining EIC, he has led efforts to address the depiction of tobacco, alcohol and other drugs, safety belt use, AIDS prevention, organ donation and transplantation, mental health, gun violence, human trafficking, diabetes, and aging in TV and movie entertainment, conducting or overseeing over 100 briefing sessions for studios, networks and production companies.

He has written, directed, produced and/or executive produced over 200 TV specials, videos and TV and radio spots, earning a number of awards including the CINE Golden Eagle, and produced a national media event at which the world-famous Hollywood Sign was buckled up with the world's largest safety belt. He currently resides in Thousand Oaks, California with his wife and two daughters.

**Entertainment Industries Council, Inc.**

*Encouraging the Art of Making a Difference*

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Other highlights of Deutchman's professional career include:

- Chairing/Producing the Buccaneer Awards for two years as a Board Member of PIRATES, the Print Interactive Radio and Television Educational Society; producing the Tobacco in Media Symposium, Drugs and Youth Symposium, and Drugs, Violence and Youth Symposium for EIC; and executive producing the first-ever Youth Performing Arts Institute on HIV and AIDS Prevention (including recruitment of entertainment industry faculty, overseeing the gala graduation event, and producing the documentary capturing the institute which was shown during the gala).
- Developing "idea sampler" booklets on tobacco and seat belts, for adaptation and implementation at the local level, as well as a secondary school curriculum on seat belts featuring comic strips commissioned from the celebrated artists of many King Features comics. An idea sampler he developed for SCAN/NATOA was recently used to launch "The Great City Hall Tune-In," the nation's first awareness week encouraging the public to watch their local City Council meetings on government access cable channels (now in its 5<sup>th</sup> year).
- Successfully placing AIDS and drunk driving PSAs on home videos, in video stores, in movie theaters, on music video sampler reels aired in night clubs and music stores, on feature films shown in college auditoriums and in syndicated movie packages.
- Co-producing a cause-oriented infomercial called *Hollywood Gets M.A.D.D.*, hosted as a special edition of *Siskel and Ebert*, which aired on TBS and other cable networks and independent stations nationally.
- Nationally syndicating a drunk driving documentary, *Learning the Hard Way*.
- Serving as Creative Director for a statewide public service advertising campaign on alcohol and other drug abuse in Texas and one on parenting skills in Georgia. Encompassed development and production of TV, radio, print, outdoor, videos, posters, brochures, curricula, and celebrity involvement.
- Marketing and conducting numerous briefings for entertainment industry networks, studios and production companies.
- Successfully marketing drug abuse and seat belt videos to Blockbuster Entertainment for free video rental in the chain's community service section.
- Conducting a teen anti-tobacco song contest in the State of California through exclusive radio station promotions in key markets; prize giveaways and tie-in promotions in conjunction with Universal Studios Hollywood, Universal Home Video, MCA Records, Tower Records, and Cineplex Odeon Theaters; recording of the winning song at a professional music studio; and professional judging by music industry executives, composers and artists.

## **GARY PASSMORE**

Director of the Congress of California Seniors

Gary Passmore is Director of the Congress of California Seniors (CCS), a statewide senior advocacy group organized in 1977 to work on behalf of seniors and their families. Before coming to CCS in 2003, Passmore headed a public affairs consulting firm based in the Midwest for ten years after serving as Chief of Staff to the Governor of Missouri. He was a state budget official in three states and is a graduate of George Washington University and the University of North Carolina at Chapel Hill.

# **BIO**

**Steve Stuck**  
**Vice President and General Manager**  
**KUVS/Univision 19 and KTFK/Telefutura 64**

Steve Stuck is Vice President and General Manager of KUVS/Univision 19 and KTFK/TeleFutura 64, in Sacramento. Steve has held this position for three years and was previously the station's General Sales Manager. Steve has held many jobs in the broadcast, newspaper and advertising agency industries and is proud to be an employee of Univision for almost seventeen years. Steve also serves on the boards of the Ronald McDonald House Charities of Northern California and the Capital Unity Council.

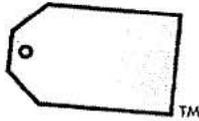
**Bill Dombrowski**  
President and Chief Executive Officer  
California Retailers Association

Mr. Dombrowski has led the California Retailers Association, one of the most respected trade associations in Sacramento, since 1994. During that time he has developed and overseen the implementation of the retail industry's legislative agenda in California, addressing such issues as credit regulation, garment manufacturing, privacy, alcohol and tobacco sales.

Prior to joining the California Retailers Association, Mr. Dombrowski spent ten years with Carter Hawley Hale Stores, Inc., later known as Broadway Stores, Inc., serving most recently as vice president of corporate affairs. In this position he was responsible for government affairs, media relations, and corporate public relations. From 1980 to 1984 he was with Hill and Knowlton, Inc., a leading public relations agency, working in the financial relations group in Los Angeles.

In September 1999, Mr. Dombrowski was appointed by Governor Davis as an employer representative to the five-member Industrial Welfare Commission, which has statutory authority to regulate wage and hour issues in the state, including the state minimum wage and industry-specific overtime exemptions. In March 2000, Mr. Dombrowski was named Chairman of the Commission.

Over the years Mr. Dombrowski has been active in a number of business and non-profit organizations, including the Business Roundtable, the California Business Roundtable, the Los Angeles Central Cities Association, and the Los Angeles Urban League. He received his degree in Journalism from the University of Wisconsin in 1976.



**BEST BUY**™

## **Laura Bishop**

*Director of Government Relations*



Laura Bishop is **director of government relations** for Best Buy Co., Inc., a multinational retailer of technology and entertainment products and services. She is responsible for the strategic direction and management of the federal and state government relations function for Best Buy. Bishop helps manage regulatory and public policy issues facing the company and assists with connecting the nearly 950 Best Buy stores nationwide with elected officials.

Before joining Best Buy in 2003, Bishop spent most of her career in the public sector. She served as Assistant Commissioner of Public Affairs for the Minnesota Department of Administration from 1999 to 2002. Prior to that, Bishop worked in Washington, DC in the White House and the U.S. Department of Education and with the U.S.

Department of State in Switzerland. Bishop began her political career working on state and federal political campaigns and working on Capitol Hill in the United States Senate.

Bishop's active community and professional involvement is highlighted by her dedication to the boards and councils on which she currently serves; including the White House Project Corporate Council, The Hubert Humphrey Institute's Center for the Study of Politics and Governance, The Minnesota Women's Campaign Fund, The Page Education Foundation Advisory Council and the Citizen's League. Bishop is also active in numerous retail association boards including The California Retail Association, The Illinois Retail and Merchants Association and the Minnesota Retail Association where she serves as Chair.

The Minnesota native holds a bachelor's degree from the University of Wisconsin – Madison and a master's degree in Public Administration from the University of Michigan.

# BIO

## ASSEMBLYMEMBER LLOYD LEVINE

Lloyd Levine has spent his life fighting to improve the quality of life for residents of the San Fernando Valley and California at large.

In 2002, he was elected to the California State Assembly to represent the over 400,000 residents of District 40. In Sacramento, he currently serves as Chair of the Assembly Committee on Utilities and Commerce and is part of Speaker Fabian Nuñez's leadership team. Besides chairing the Assembly Utilities and Commerce Committee, Levine is a member of the Aging and Long-Term Care; Judiciary; Governmental Organization; and Elections and Redistricting Committees.

Shortly after graduation from college, Levine worked tirelessly on a ballot measure to increase community college funding. In the Assembly, Levine remains committed to improving education for all Californians. In his first term, he successfully carried legislation to secure \$1 billion in funding for special education programs. Locally, with the Canoga Park community, Levine has been influential in honoring teachers through the implementation of the Walk of Hearts Foundation, which he hopes to help expand to be a statewide program.

Growing up in the Valley, Levine has dealt with the rampant transportation problems that plague Los Angeles his entire life. Recognizing the danger, economic depletion, and sheer frustration traffic in Los Angeles has caused, Levine used his influence to make improvements to the 405/101 interchange. In addition, Levine has been a champion for the Metro Orange Line that has linked the San Fernando Valley to the Metro mass transit system of Los Angeles.

While Levine is committed to tackling transportation, education and public safety policy, he has a deep passion for health and physical fitness. As a child, Levine suffered from severe asthma that symptoms were only managed through the help of an inhaler and distance running. He has participated in races as short as 1-mile to ultra marathon 50-mile races. Levine has turned his passion for health into a crusade to stop the obesity epidemic that is overcoming children and adults in California. He has carried legislation to help clinics treat obesity-related diabetes and asthma, and to help make sure student food is nutritious. He is also one of two Legislators on the California Taskforce for Youth and Workplace Wellness.

In 2004, Levine created the Assemblymember Lloyd Levine Fit & Fun Challenge in which schools compete to bring out the most students, families and teachers to walk, run, bike or skate a five kilometer course. While Levine knows that one day of exercise will not stop the epidemic, he believes that exposing students to "fun" exercise will help kids see that physical activity is not a chore.

This year, Assemblymember Levine is working on legislation to promote energy efficiency and reduce global warming, to make it mandatory to spay or neuter dogs and cats over the age of four months in California, to provide tax credits for fit businesses, to fight for better end-of-life choices for terminally-ill Californians, to ban the sale of general service incandescent light bulbs in California by 2012, to crack down on lost and stolen guns, and to protect our environment.

Assemblymember Levine, 38, earned a Bachelor of Arts degree in Studio Art from the University of California, Riverside. In 2005 Levine was given the "Outstanding Alumnus Award" for UCR. He has also completed his course work toward a Master of Arts degree in Public Policy and Administration. He resides in the San Fernando Valley.