

Digital television

Digital broadcasting starts up in the Central Coast, Illawarra (Wollongong) and Newcastle areas of New South Wales

Digital television broadcasts commenced in the Central Coast of New South Wales (Bouddi, Gosford and Wyong), Illawarra (from Knights Hill) and Kotara and Merewether in the Newcastle area on 10 February 2003. This stage in the roll out of digital transmissions is by far the most critical since the initial launch of digital television in January 2001 in the major metropolitan areas.

All national and commercial television operators, with the exception of Southern Cross Broadcasting, started digital transmissions from Bouddi, Gosford and Wyong translators on the Central Coast. The ABC, SBS and NBN commenced digital transmissions from Kotara and Merewether, and Southern Cross, WIN and Prime commenced digital transmissions from Knights Hill for the Illawarra (the ABC and SBS commenced digital transmissions from Knights Hill in 2002).

The process of taking the services to both full power and full-time to provide extensive digital television coverage will be progressive and take a number of weeks. This pace will enable the broadcasters to gauge more accurately the level of interference problems being experienced and ensure that the technical advice help line is staffed accordingly.

In planning the start up and assistance for viewers, the broadcasters and the ABA are able to apply the benefits of the experience gained when digital televi-

sion services commenced in Newcastle in April 2002.

Interference

There may be an increase in the incidence of interference to the reception of existing analog television services in the Central Coast, Kotara, Merewether and Illawarra areas. The interference is anticipated because channels 37 and 38 have been allocated to two broadcasters on the Central Coast and channels 36, 37 and 38 have been allocated for digital transmissions in Kotara, Merewether and the Illawarra. Channels 36, 37 and 38 are the three most commonly used channels by ancillary devices, such as VCRs, to transmit their signals to television sets.

The signals from Knights Hill and the Bouddi translator facilities on the Central Coast provide fortuitous signals into the Sydney region. There may therefore be the same type of interference to a small percentage of viewers across the Sydney metropolitan area who connect their VCRs and television sets in this way.

Assistance for viewers

Broadcasters gave viewers advance warning and advice on the roll out by placing advertisements in the local press and making on air announcements giving the help line number and information about the assistance scheme.

Other strategies include:

- an on air campaign by all broadcasters in Newcastle, the Central Coast, Sydney and the Illawarra which encourages viewers to connect VCRs to the television set via AV sockets
- establishing a toll free help line, 1800 652 632, to provide additional information about VCR connection options
- providing a free hotline to give technical advice to viewers who need specific assistance to help address individual interference problems
- providing a subsidised home visit by a qualified technician in many circumstances, for example when viewers have used the various brochures or the telephone technical advice service but have been unable to find a solution
- providing a hotline for Central Coast viewers to request an information leaflet to assist in identifying and resolving 'adjacent channel' interference. This occurs when a new digital channel is immediately adjacent to an existing analog channel in the same area.

For more information

The ABA's web site offers information on:

- digital television
- how to retune a VCR and
- alternative VCR channel options (follow the links from www.aba.gov.au).

In addition help information is also available from the Digital Broadcasting Australia web site, www.dba.org.au, and each of the broadcasters' web sites.

Some TV terminology explained

Aspect ratio

Refers to the ratio of width to height. The aspect ratio of a wide-screen television is 16:9, while Australian viewers have been accustomed to viewing a 4:3 aspect ratio since television began in this country. The legislation does not require broadcasters to broadcast in 16:9, however the aspect ratios are an important part of the provision of SDTV and HDTV.

High definition (HDTV)

HDTV offers picture and sound quality that is much better than that offered by today's analog television: cinema quality picture and the option of surround sound. It offers up to twice the vertical and horizontal resolution of a traditional analog (PAL) signal. The higher resolution picture is particularly suited to large screen television displays.

Australian Standard AS4599-1999 covers a range of possible HDTV formats from 576 horizontal lines with progressive scanning (known as 576p) to 1080 lines with interlaced scanning (known as 1080i). The most commonly used formats are expected to be 576p, 720p or 1080i.

Letterboxing

Letterboxing means that the wider picture is shown with black bars top and bottom to compensate for the 4:3 aspect ratio of current analog televisions. Many broadcasters have chosen an intermediate format of 14:9 for their analog television service which is a compromise in that smaller black bars are shown but some material is lost from the sides of the picture, though not as much as if it had been shown in a 4:3 aspect ratio.

Multichannelling

Multichannelling is the provision of more than one separate stream of television programs by a broadcaster. A 7 MHz television channel allows the transmission of around 19.4 Mbits per second using the technical parameters set for Australia. This transmission capacity is sufficient to provide (for example) three high quality SDTV television services. Subject to

regulations, it is therefore possible for a broadcaster to provide more than one continuous, and entirely independent service, simultaneously in the same 7 MHz channel, each at least equivalent to one existing analog channel.

Both the ABC and SBS are permitted to multichannel a wide range of programs, including educational programs, regional news and current affairs, science and arts programs, children's programs, subtitled foreign programs, foreign language news and occasional dramas.

Simulcast period

Free-to-air broadcasters will simulcast (i.e. broadcast both analog and digital signals) for at least eight years. At the end of the simulcast period, the addition of a digital-to-analog converter in the form of a set-top box will allow viewers to continue to receive digital transmission with their analog sets.

The Broadcasting Services Act provides for a review into the take up of digital television services in Australia, which may have an effect on the determination of a cessation date for analog services. This review must be conducted by 1 January 2006.

Standard definition (SDTV)

SDTV is a version of digital television system, with picture quality approximately equivalent to today's analog television but with no 'snow' or 'ghosting'. In Australia, SDTV will have 576 lines in the picture, each line will contain 720 pixels, and the system will use interlaced scanning (576i). The aspect ratio of SDTV is either 4:3 or 16:9.

Some frequently asked questions & answers

What does digital TV offer?

Digital TV allows the broadcast of wide-screen, cinema quality programming with surround sound. It can also allow the provision of multiple information streams allowing the user access to enhanced programming, such as multiple camera views and, at some stage, interactive television.

From a technical point of view, it will provide better picture quality and reception. Digital television provides clearer, sharper pictures without the interference and ghosting that currently affect many viewers in built-up areas or hilly terrain.

What equipment do consumers need to receive it?

There are two broad categories of digital television reception equipment:



Digital set-top box

- a modular unit that receives the digital transmissions and decodes the video, audio and data programs for output to separate display and sound reproduction systems such as a television, hi-fi system, computer or video monitor.

With this box, viewers will be able to access most of the enhanced features of the digital signal, including clearer pictures and improved reception in built-up areas. The set-top box, however, will not cause an analog television to display a high definition picture. With the addition of a set-top box, an analog television will either display the images in the current 4:3 aspect ratio or in a 16:9 ratio (see below for further information on aspect ratios) with the addition of black bands above and below the image.

Digital television set

- an integrated receiver, decoder and display device, and combines the functions of a set-top box with a screen capable of displaying a digital signal.

A receiver built solely to receive standard definition television (SDTV) pictures cannot receive high definition television (HDTV) pictures. In contrast, HDTV-capable receivers can receive both HDTV and SDTV pictures – but there will be an increase in the cost of the receiver. Broadcasters must carry an SDTV signal at all times, which means that consumers can purchase a lower cost SDTV receiver and be sure that they will get a service at all times. (See *Television terminology* for more information on HDTV and SDTV.)

There are now a number of set-top boxes and integrated television receivers available in the market place. More information on the availability of digital television products can be found at www.dba.org.au under the Products and Retailers section.

Will consumers need new TV antennas?

In the majority of cases, existing antennas, which are appropriate for receiving the local analog television services, are maintained in good condition and are properly installed, should be adequate to receive digital television transmissions.

Digital channels have been allotted in such a way as to minimise costs to consumers. When allotting channels for a market, the ABA gave particular attention to ensuring that, as far as possible, consumers would not need to purchase an additional receive antenna.

Information on channel assignments is available from the ABA, retailers, and antenna installers as the commencement of digital television is approaching a particular area.

Will current video cassette recorders still work?

Yes. Even when analog is no longer broadcast (see simulcast period in *Television Terminology*), VCRs should continue to play back pre-recorded tapes and should record the digital broadcast via an analog output on a set-top box or digital television.

In some cases, the video output may need retuning or require the use of the audiovisual connection if the channel used by the video output is the same as that used by a digital channel in the area. In areas where this occurs, broadcasters will be providing information on how to retune. In addition a brochure is available from the web sites of the broadcasters, the ABA (www.aba.gov.au) and Digital Broadcasting Australia (www.dba.gov.au).



What happens to analog television sets?

Free-to-air broadcasters will simulcast (i.e. broadcast both analog and digital signals) for at least eight years in each area. After the end of the simulcast period, the addition of a digital set-top box will allow viewers to continue indefinitely to display digital transmissions on their analog sets.

Viewers using set-top boxes will be able to receive other features of digital, such as additional program streams. However, as most analog sets have a 4:3 aspect ratio, using a digital set-top box with a 4:3 analog television set may affect the way wide-screen transmissions are displayed. The wide-screen analog display will enhance the digital experience.

The full picture quality benefits of digital television, including HDTV pictures, will require a HDTV receiver that is capable of receiving HDTV transmissions and a screen that's capable of displaying the HDTV television signal.

So what should consumers do if they are thinking of buying a new TV set?

Get the facts – find out when digital television starts in your area and what products will be available from your local retailer.

Consider the lifespan of your new television set – how long will you keep it, and when do you propose to upgrade it next?

Be wary of television sets stating that they are 'digital ready'. Talk to your retailer and establish whether this means that they can receive SDTV or HDTV.

Consider that in the future you may need to get a digital set-top box to use with your analog television set.

