



Australian Government



Standard antennas for digital TV

Having the right antenna is a critical part of getting the best possible digital television reception. The type of antenna you need will depend on your local transmission arrangements for TV services in your area. You can use the information in this sheet to talk to your antenna installer about the antenna best suited to your location.

Digital antennas

There is no difference between antennas advertised as 'analog' or those advertised as 'digital'. All antennas are made to receive specific frequencies, rather than types of signals. This includes frequency, the bandwidth, and the gain or directivity of the antenna.

If the antenna you have now is designed to receive the frequencies on which the digital signals are broadcast in your area, and has a suitable gain, then you do not need to replace it.

Frequencies (or channels)

Your antenna needs to match the frequencies on which the digital TV services are being transmitted in your area. These may be in UHF or VHF and are often grouped into bands.

To find out about your local TV services, the frequencies they are transmitted on, and the expected coverage of the transmitter serving your local area go to **mySwitch**. This is a web-based tool which has been developed to provide you with the information you need to prepare for switchover in your area. You can access **mySwitch** from the Digital Ready website www.digitalready.gov.au

Your local endorsed antenna installer will also be able to tell you the transmitter site that best serves your area, and on what channels the digital services are transmitted. **mySwitch** includes links to your local Australian Government Endorsed Antenna Installers and retailers participating in the Retail Advisor Scheme, and switchover events planned for your area.

VHF—Bands I, II and III

Your existing antenna may be designed to receive a signal on a different band to the one your digital TV signal is carried on.

Channels 0, 1 and 2 are part of Band I. Digital TV is not transmitted in Band I anywhere in Australia. If you have a Band I, it will not pick up digital TV signals as they are broadcast on a different band. It is advisable to remove these antennas as they may cause interference in your system.

Band II is used for FM radio and is not used for digital television. You may have an antenna on your roof to receive radio if you are a long way from the transmitter. It is also possible that you receive your analog TV with a Band II antenna. If you have a Band II antenna, it will not pick up your digital TV signals as they are broadcast on a different band.

In the VHF range, digital television services will use channels 6 to 12 in Band III. If you are looking for a new VHF antenna you should consider one that is designed for all of these channels. Note that many existing Band III antennas are only designed to receive channels 6 to 10.

UHF—Bands IV and V

Channels 27 to 35 are grouped together and called Band IV. Channels 36 to 69 are grouped together and called Band V. These channels are all currently used for digital television in different parts of Australia, with the exception of channel 27.

Bandwidth

The bandwidth of an antenna tells you how many channels can be received by that antenna. One antenna may be able to receive all of Band IV, but not Band V; or it may only be able to receive three or four specific channels (for example, channels 30 to 34).

If digital television is transmitted on VHF in your area, it is recommended that you get an antenna that covers all of Band III—from channels 6 to 12. If digital television is transmitted on UHF in your area, it is recommended that you get an antenna that covers as much of the UHF band as possible.

There is a relationship between the bandwidth and the 'gain' (explained below) of an antenna. Usually, the wider the bandwidth (the more channels you can receive with it) the lower the gain of the antenna. If you are in a low signal strength area, you may need to sacrifice the bandwidth to increase the gain in order to receive a good signal.

Gain

Gain is critical for understanding the antenna you need. Essentially it is a measure of the ability of the antenna to receive low level signals. The gain you need depends on the signal strength or level that you receive at your house. If you have very high signal strength, your antenna can be low gain and an indoor antenna, or 'rabbit ears', may be adequate. If you have good signal strength, you may need a wideband, outdoor antenna, mounted at 5 metres from the ground (approximately at roof height). If you are in a low signal strength area, then you may need a higher gain antenna mounted on a pole up to 10 metres.

Standard system assumptions

The following table shows the assumptions that are used to plan digital television coverage. It is recommended that your antenna meets or exceeds these specifications in order to get the best digital signal. This gives the gain (in dB) and the height above ground level (in metres) used for planning. If you have trees or other obstructions immediately in front of your antenna, you will need to consider this because such obstructions are likely to impede the signal from reaching the antenna.

	Urban/Suburban	Rural
Band III	5 dB at 5 metres	8 dB at 10 metres
Band IV	8 dB at 5 metres	11 dB at 10 metres
Band V	9 dB at 5 metres	12 dB at 10 metres

We also assume that your set-top box meets the Australian Standard, that you have low loss cabling from your antenna to your wall plate (less than 5 dB of loss) and have a high quality cable from your wall plate to your TV (at least RG6 cable).

Antenna mountings sometimes need replacing (or tightening of the existing mounting) to ensure your antenna has minimal movement. It is also important that your antenna is in good condition. Rust, corrosion and missing elements can significantly compromise the effectiveness of your antenna.

High quality cable and connectors will also help to protect your digital TV reception from interference from other electrical devices (such as motors, generators, and household appliances).

Amplifiers or boosters

Masthead amplifiers (also called boosters) can also be used to improve reception. The use of amplifiers requires careful installation in order to avoid problems associated with system overload and interference.

Information is also available from the Australian Communications and Media Authority at **www.acma.gov.au**

1. Click on For the public: Consumer & community advice
2. Click on Broadcasting: Analog television & radio reception and interference
 - > Analog television reception
 - > Masthead & distribution amplifiers factsheet.

What if I've already done this and still don't have adequate reception?

If you have the necessary antenna for your area and your cabling, connectors and other equipment are all in good condition, and you still do not have adequate digital television reception you have two main options:

- If your signal is marginal or poor, you could increase the gain of your system to receive a terrestrial signal, by installing a higher gain antenna.
- Alternatively, you may need to apply to receive digital television services from the new Viewer Access Satellite Television (VAST) service. For more information about the VAST service, visit the Digital Ready website or call the Digital Ready Information Line.

Where can I find an endorsed antenna installer?

The Government has established the Antenna Installer Endorsement Scheme as part of the Australian Government's quality assurance measures to ensure consumers have access to skilled and endorsed antenna installers.

More information about the Scheme and a list of endorsed antenna installers is available from the Digital Ready website **www.digitalready.gov.au** or call the Digital Ready Information Line on **1800 20 10 13**.