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# BULLETIN 5002 DIGITAL TV RECEPTION – MASTER ANTENNA TELEVISION SYSTEMS

## Master Antenna Television Systems (MATV)

MATV antenna systems are TV antenna systems in which a master TV antenna is serving multiple users (ie: common to or shared by multiple users). These are mostly found in multi-unit apartment blocks, hotels, office blocks, aged care facilities and similar multi-use facilities.

An MATV system can be contrasted with a house or single unit antenna, where the TV antenna is serving only one user – each house or unit has its own TV antenna.

## Digital Transmission

All “free-to-air” TV stations are now transmitting “free-to-air” television in digital form, as well as the traditional analog transmission. The coverage and variety of digital transmission will increase progressively over the next few years. The Australian Government has set a deadline for analog “free-to-air” transmission to be terminated (switched off) by December 2013. After analog transmission is ceased in 2013, TV transmission will be in digital form only.

## Digital Television and MATV Antenna Systems

Many existing MATV antenna systems operating in Australia in multi-unit facilities, such as home units, apartment blocks, office blocks, hotels and motels, aged care facilities, etc will need to be upgraded in order to accommodate digital television.

The upgrading will be required because many existing MATV installations were designed to cater for analog TV services only and were never designed to meet the technical requirements of digital TV reception. The level of upgrading required will vary greatly depending on the existing installation, but it is perceived that many installations will require a significant refurbishment of their MATV system.

Each broadcaster’s digital TV signal will offer viewers a range of services which could include additional programs, high definition pictures, various enhanced sound modes and interactive services. These services may be expanded over time. Any new MATV system should provide to carry the entirety of these digital signals if viewers are to receive the complete range of new services.

## What are the Implications of an Unsuitable MATV System

If a facility has an existing MATV system that is not suitable for digital TV reception, the impact will be as follows:

1. As individual residents and unit-holders upgrade to digital TV by either purchasing a digital set-top-box for use with an analog TV set or purchasing a new TV set with an in-built digital receiver/tuner, their capacity to receive a "free-to-air" digital TV signal will be problematic. Depending on the circumstances, they may receive no signal (ie digital TV reception) at all or the digital picture may freeze, pixelate or break up.
2. When the analog "free-to-air" transmission is switched off all remaining residents or unit-holders will be required to upgrade to either a digital set-top-box or a new TV set with an in-built digital receiver, but they will still experience the same problems as outlined in 1. above.
3. Depending on the condition of the MATV system, once analog transmission is switched off, no one in the facility can be assured of receiving any "free-to-air" TV reception.

It is therefore important, that property owners and managers and managers of owners corporations take the steps necessary to assess existing MATV systems as soon as possible and undertake any refurbishment so that residents and unit-holders can receive the benefits of "free-to-air" digital television as they purchase the appropriate digital TV equipment.

## Is a new TV set required for Digital Television?

No, a new TV set is not required in order to receive digital television. However, because existing TV sets have an analog tuner, a digital tuner/receiver (commonly known as a set-top-box) will be required in order to receive digital transmission.

Even after the analog transmission signal is turned off, the combination of an existing analog TV set plus a digital set-top-box will ensure that digital "free-to-air" TV can be received.

If a new TV set over is purchased during the next few years, it will most likely have an in-built digital tuner. If it does have an in-built digital tuner a set-top-box will not be required.

## What should be done if there is no Digital TV reception; the picture is breaking-up or pixelating; or assistance is required with the Digital TV Installation?

If assistance is required installing a digital TV set or digital set-top-box; or if there is no digital TV signal or reception; or if the picture is breaking-up or pixelating, it is recommended that advice be sought from an experienced TV antenna installer.

**Page 3**

The TV antenna service provider will be able to test the digital signal strength using an appropriate digital signal meter and examine the MATV system, cabling and associated equipment to assess the effectiveness of the MATV system in receiving digital transmission.

The installer will then be in a position to best advise regarding the changes required to the MATV system and associated equipment in order to receive good quality digital reception in the area.

**What is a Digital Cliff or Threshold?**

With analog TV, as the signal strength is reduced, so the picture quality deteriorates. With digital transmission, the quality of the pictures remains unaffected until quite suddenly the picture will fail altogether. This point is known as the digital cliff or threshold.

It is important to ensure that a digital receiver is normally operating well above the threshold, so that variations in signal level (due to say the antenna moving in the wind or blockages moving between the antenna and the transmitter) do not tip the signal over the cliff.

**What is the Operating Window of a digital receiver/set-top-box?**

Two main factors limit the range of signal levels that should be present at the input to a digital receiver/set-top-box. The first is the minimum level of the digital signal, which must not fall below the threshold. The second is the maximum level of signal that can be applied before the receiver overloads.

All digital and analog signals at the input to the digital receiver/set-top-box must fall within this operating window. An experienced TV antenna technician with the appropriate signal strength meters can test these signal issues.

**For further information or to have your TV antenna/MATV system assessed for good quality digital reception, contact Unitech Antennas (a division of Unitech Services) on 9725 2222 or 1300 736 142 or by email at enquiry@unitech-services.com.au.**

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