# DIGITAL TELEVISION RECEPTION PROBLEMS

Radio&Television Investigation Service

Fact Sheet 3

This Fact Sheet, produced by the Radio & Television Investigation Service (RTIS), describes the different problems you can experience with digital TV reception, and how they may be overcome. We strongly recommend you use it in conjunction with Fact Sheet 1 entitled **Good Reception: The Basics**.

## WHAT THIS SHEET COVERS

**Digital terrestrial (Freeview) reception problems**

- Weak signals
- Too much signal (overload)
- Software problems
- Weather-related problems
- Rebooting and retuning your receiver
- External interference

**Digital satellite reception problems**

**Digital cable reception problems**

# DIGITAL TERRESTRIAL (FREEVIEW) RECEPTION PROBLEMS

Freeview reception problems can be caused by a number of things:

- Weak signal
- Too much signal (overload)
- TV or Freeview box software problems
- Weather-related problems
- External interference

Most Freeview reception problems involve missing channels, picture freezing, or pixellation (blocking) of pictures. They can affect some or all channels, often with sound break-up.

*Pixellation of digital TV picture*

Unlike analogue TV, you see broadly the same symptoms regardless of the cause. The way the symptoms behave may differ though, so it's important to be aware of these.

## Weak signals

You can often check for weak signals through a menu function on your TV or Freeview box. Signal strength and quality for each channel can be represented by coloured bars, or sometimes figures.

If your equipment shows weak signals, check your coverage at: www.digitaluk.co.uk. If the prediction shows you should be covered, your weak signals could be due to:

- Reduced transmitter power
- Aerial or downlead problem
- Problem with interconnecting leads or other device (eg. VCR/DVD)
- Nearby obstructions blocking the signal reaching your aerial. These could include buildings, cranes, trees etc
- Tuning to the wrong transmitter

## DIGITAL TERRESTRIAL (FREEVIEW) RECEPTION PROBLEMS

### What to do

- Check www.radioandtvhelp.co.uk or telephone the BBC on 03700 100 123 to see if a transmitter fault or maintenance work could be affecting your reception. Also check www.digitaluk.co.uk or telephone Digital UK on 08456 50 50 50.

- Check your TV system. Make sure all the parts - the aerial, video recorder, DVD recorder, etc - are properly connected. Connecting the aerial directly to the TV will tell you if there is a problem with one of the other leads or devices.

- Check your aerial. It may be broken or pointing (even slightly) in the wrong direction, or the downlead cable may be broken or loose. If the problem tends to occur when it rains but clears up completely after a dry spell, water may be getting into your aerial downlead.

- Look for local obstructions: buildings, cranes etc. If these appear permanent, an aerial installer may need to try a different aerial position or perhaps even a different transmitter.

- In some areas where more than one regional transmitter can be received, the *weaker* set of stations can appear in the high channel numbers (often in the 800s). This is most likely to happen immediately following Digital Switchover, or if you have performed a software update or re-install. If the regional programmes you want in the normal 'low' numbers are now in the 800s you may need to carry out a 'manual retune' having first retuned your receiver in the normal way to ensure the problem isn't a temporary one. Instructions on retuning are on page 5 of this Fact Sheet.

If nearby trees in front of the aerial seem to be affecting reception, it may be possible to raise or reposition the aerial to avoid the thickest foliage. Some types of aerial called 'grids' can give better results than standard ones but it can often be a case of experimenting. The trees may be pruned if you have authority to do so, but in extreme cases you might need to align your aerial to another transmitter, or use digital satellite or cable.

## Too much signal (overload)

This can happen if you installed an aerial amplifier to pick up weak digital signals prior to Digital Switchover. After switchover the transmitter output power will have increased substantially and, in rare cases, the signal can then be *too strong* for your receiver, giving similar effects to weak signals.

### What to do

Connect the aerial directly to the receiver, completely by-passing the amplifier. If reception is good, you no longer need the amplifier. *NB don't simply switch off the power to it, as leaving the 'dead' amplifier still in circuit will cut off most of the signal.* If the amplifier is on the masthead outside, ask a competent aerial installer to remove it. Good installers are usually members of the Confederation of Aerial Industries (CAI), or are Registered Digital Installers (RDI).

# DIGITAL TERRESTRIAL (FREEVIEW) RECEPTION PROBLEMS

## TV or Freeview box software problems

Sometimes the software in your TV or Freeview box can become confused and cause channels to break up or freeze. In some cases channels may disappear from the list, sound and vision can fall out of synchronisation, and the 'Red Button' function will no longer work. The problem could occur suddenly, or there could be a gradual build-up of different functions failing to work properly.

### What to do

- 'Reboot' your TV or box (see page 5).
- 'Retune' your TV or box by asking your receiver to do a full retune – sometimes called 'scan for channels' etc (see page 5). Note that you should not 'add channels' as this is less likely to overcome the problem. If retuning does not solve the problem, the cause is likely to be elsewhere.
- If you have a second digital TV or Freeview box, try connecting your aerial to this one instead. If it works correctly, your main equipment may be faulty and require servicing by your dealer.

Some older Digital Set Top Boxes (largely from the 1990s) have been found to behave unreliably in recent years. Some have even stopped working altogether. This is largely because they lack the computing power needed to cope with the latest generation of digital signals. Because of their age, manufacturers no longer support such receivers with new over-the-air software releases, instead recommending that they are replaced with modern ones, which are often very much cheaper than those they replace.

## Weather-related problems

These are rare on Freeview but sometimes pictures and sound can break up during stable, fine weather caused by high pressure. Certain parts of the country – particularly coastal areas – are more susceptible than others.

High pressure weather systems can cause signals to travel unusually long distances. This means that as well as local transmissions, your aerial can pick up those from distant transmitters as well. If they are on the same frequency, the result is co-channel interference. This can 'scramble' the digital signal.

### What to do

Unfortunately, there is no way to stop this special kind of interference, and broadcasters can't prevent it. Adjusting your aerial won't make any difference. If the problem is severe and persistent, satellite or cable TV may be the answer.

*N.B. We're aware that some viewers have installed Freeview even though they are not predicted to be in full coverage. In such circumstances they may be much more prone to weather effects than others. If you check for coverage using your postcode, and you are shown as not served, you may need to wait for Digital Switchover to reach your area, when coverage is likely to improve.*

# DIGITAL TERRESTRIAL (FREEVIEW) RECEPTION PROBLEMS

## Rebooting and retuning your receiver

Many problems can be overcome by rebooting and retuning your Freeview TV or receiver box. Try the reboot first.

### Reboot

1. Switch off your Freeview TV or box at the mains for one minute.
2. Switch on again.
3. If nothing happens after a few seconds the unit may be in ‘standby’, so you will need to switch on using the handset
4. Allow sufficient time for the unit to stabilise—this is usually a couple of minutes.

If the problem is still there after rebooting, a retune may be needed. There are two types of retune used to solve reception problems: full automatic, and manual. Normally a full automatic retune is recommended.

### Full automatic retune

1. With your Freeview TV or box switched on, go to the menu and select ‘setup’ or ‘installation’.
2. If you are prompted for a code, try ‘0000’ or ‘1234’.
3. Select the ‘full retune’ option. This may be called ‘first time installation’, 'factory reset', 'default settings' or 'shipping conditions'. *Do not select 'channel update' or 'add channels' or you may not solve your problem*.
4. ‘Press ‘OK’ if your equipment asks if you want to delete all your channels. Don't worry— this is normal.
5. Channels will automatically be installed. This may take a few minutes and your equipment may shut down and restart.

If you have poor reception on the ’low’ numbered channels on your remote control and find more reliable ones in the 800s, your equipment may have found weak signals from outside your area as it scanned from low to high frequencies, and inserted the stronger ones higher up in the channel list. You may even find the local news changed region at the same time as reception deteriorated. A manual retune should overcome these problems.

### Manual retune

1. Find out the Digital TV channel numbers (frequencies) for your local transmitter by checking your postcode at www.digitaluk.co.uk . There could be between 3 and 7 of these in the range 21-68. You can also phone Digital UK on 08456 50 50 50 for this information.
2. With your Freeview TV or box switched on, go to the menu and select ‘setup’ or ‘installation’.
3. Select 'manual re-tune' or 'manual search'.
4. If you are prompted for a code, try ‘0000’ or ‘1234’
5. Insert the TV channel numbers when prompted. Your instruction manual may tell you how to do this if you are unsure.
6. Press ‘menu’ or ‘exit’ to finish.
7. If you have difficulty with this procedure your local dealer may be able to help.

# DIGITAL TERRESTRIAL (FREEVIEW) RECEPTION PROBLEMS

## External interference

Diagnosing interference to Freeview signals can be difficult, as interference tends to produce the same effect on pictures and sound as other problems such as weak signals and weather-related problems. However, it usually has the characteristic of either having a definite start, after which it has been continuous, or specific times when it does happen and when it doesn't.

### What to do

To help narrow down the source of the problem, check the following:

- Ensure that weak signals, overload or weather are not the cause of the problem (see previous pages).
- Note when the problem happens – is it only at certain times – does it comes in short bursts or does it last a long time once it has started. Are only certain channels ever affected? This is most important – a very long-standing, continuous problem is unlikely to be due to external interference unless you noticed a definite start to it. It is helpful to keep a log of when the problem happens, especially if you subsequently contact the RTIS.
- Watch and listen out for any machinery operating nearby and see if, when it is turned off, the problem stops.
- Is there an effect on analogue TV (if you have it) or FM/AM radio precisely when your Freeview reception is disrupted?
- Do neighbours suffer the same problem?
- If you have more than one Freeview box or TV, is the problem more prevalent on one than the other? Designs have improved over the years, and more modern receivers are less affected by 'impulse' interference caused by motorcycles, lawnmowers and other electrical machinery than many earlier models. If you are near a busy road, or can often hear machinery, drills etc. when the reception is disrupted, it's helpful to know if your equipment is unduly sensitive. If you only have one box or TV, it may be helpful to try and borrow another, modern, Freeview box to test this out.

The table on the next page lists common causes for Freeview interference problems and suggests how you might decide which one applies to you. Symptoms are likely to be pixellation, break-up, sound interruption or complete loss of reception. **Because the effect on Freeview reception is largely the same regardless of the type of interference, the table lists the effects on *analogue TV or FM radio reception* which could be happening at the same time as Freeview is disrupted.**

***It is important that you check your own installation before using this table, or you may overlook the cause of the problem. Unless you take the trouble to try to find out what could be causing the problem, there may be little chance of finding a cure.***

The table cannot cover every possible source of interference. The RTIS are happy to discuss your problem with you if you have checked through the entire table but none of the characteristics seems to fit.

# INTERFERENCE CAUSING DISRUPTION TO FREEVIEW TELEVISION

| Source | Characteristic | Possible effect on *analogue* TV and radio reception | How to trace | Solution |
|---|---|---|---|---|
| Thermostat | From a few seconds to a minute at a time with some minutes in between bursts | Analogue TV has one or more bands of dots across screen; rough hissing or crackling on FM radio | Switch off heating systems and see if problem starts recurring after they have been switched on again – if not solved, ask neighbours to do likewise | Repair or replace offending thermostat |
| Light switches | Short random bursts | Analogue TV has a flash on picture, crack on sound. FM radio has a click | Switch lights on and off one at a time | Replace an obviously faulty switch, otherwise check aerial connections |
| Passing traffic | Short bursts, more frequent at busy times | Analogue TV has random dots all over screen; noise on FM radio with a distinct 'whine' which varies with engine speed | Open a window and listen – motorcycles tend to be worst offenders | Check aerial connections then seek advice from installer, as a different aerial or re-siting existing may help |
| Street lamps | Only happens when lights are on | Analogue TV has two or more bands of speckled dots; buzzing or 'plops' on FM | Note when each nearby lamp comes on, and when it goes off | Contact council street lighting |
| Power lines/ street step-down transformer | Often only happens in damp weather | Analogue TV has two or more bands of speckled dots; fizzing/ buzzing on AM and/or FM radio | Walk around outside with portable radio; the noise will worsen near offending power lines or transformer house | Contact power company – name and number displayed on housing or poles |
| Electric motor | Starts and stops suddenly; duration varies with appliance | Analogue TV has random dots all over screen; noise on FM radio with a distinct rough 'whine' | Listen – lawnmowers, drills, washing machine & hairdryers can often be heard. Switch off in turn any appliance in your home which uses a motor | If recent problem with existing appliance, suppressor may have failed. Re-siting TV aerial may help |
| Domestic electronic equipment | Usually continuous | Analogue TV has patterns on the picture; FM may whistle or twitter | Turn things off in turn: VCR/DVD recorder, aerial amplifier, portable phones, computers and their power supplies | Move portable equipment further from TV, otherwise contact retailer or installer |
| Transmission mast | Usually continuous | Analogue TV has patterns on the picture; FM may whistle or twitter | Look for obvious masts nearby, having first made sure the problem isn't caused by domestic equipment | Contact RTIS |
| Radio amateur / CB enthusiast | Often alternating short periods of severe interference and clear reception, then long periods totally without interference | Analogue TV has patterns or bands on the picture, often flickering in time to speech. Garbled speech coming over TV sound or FM radio, or rhythmic clicking or buzzing. Can affect HiFi systems | Look for unusual aerials on rooftops or in gardens. Sometimes walking around with a portable radio will show where the noise is loudest | Usually filtering will cure. Please see our Fact Sheet entitled Interference from Radio Communications as to how to go about obtaining this |

## DIGITAL SATELLITE RECEPTION PROBLEMS

Few problems are experienced by viewers using satellite. The most common are loss of some (or all) channels, frozen pictures, and pixellation or blocking on the picture, sometimes with sound break-up.

These problems are usually caused by a software malfunction in the receiver or a problem with the dish, perhaps its alignment, problems with the electronics (LNB) or connecting cable. Interference from an external source is extremely unusual.

Occasionally, very heavy rain, high altitude clouds of ice crystals or snow accumulating in the dish can cause poor reception. When the weather changes, the problem should cease.

Very rarely, problems can be experienced by the satellite service itself. These are either due to failures of the link to the satellite, or 'sun outages'. Sun outages are predictable and usually only last a few minutes twice a year.

### What to do

- Wait a few minutes to see if any message appears on the screen from your satellite provider. If your neighbours use satellite TV, check to see if they are affected.
- Reboot by switching off your satellite receiver from the mains for one minute and then switching the power on again. Allow the receiver a few minutes to reach full operation.
- Ensure your connecting cable is securely screwed into the back of the satellite receiver, then check that the dish still seems to be pointing correctly. It should generally be pointing in the same direction as your neighbours' dishes.

If these actions don't improve your reception, and you aren't experiencing torrential rain or heavy snowfall, you should seek the advice of your satellite retailer or installer.

## DIGITAL CABLE RECEPTION PROBLEMS

Reception problems for cable viewers are rare. Occasionally channels may be lost or there could be picture and sound problems. The cause might be a problem with the cable feed but could also include a faulty receiver (which is the property of the cable provider).

### What to do

- Reboot by switching off your cable receiver from the mains for one minute and then switching the power on again. Allow the receiver a few minutes to reach full operation.
- Check that the cable connections to your receiver, and from the receiver to your TV, are secure.

If both these actions don't improve your reception, you should seek the advice of your cable provider, having also checked that your local street cabinet has not been vandalised.