

TELEVISIONS

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Over the past few years, the whole way that we watch television has started to change: from the types of screen that we use to the way the signal gets to the screen, from the way we record programmes to the time when we watch them – virtually nothing about how we watch television is the same now as it was even five years ago.

For television viewers in caravans, motorhomes, boats, trucks and other vehicles, these changes will mean either being able to watch virtually the same television programmes with the same quality of picture and sound that they get at home or, on the other hand, having to stare at a blank screen. In the future, whether you will have something to watch or nothing at all depends entirely on whether or not you have kept up with the technology. Like it or not, you are going to have to invest in some new equipment if you want to watch television in your vehicle. However, one thing you will not need to spend money on is a new television. Practically any television can be easily connected to a digital receiver even if it does not have a SCART Socket.

The main driving factor in this television technological revolution is the switch to digital transmission and, for some people, the future is now. Viewers in Whitehaven, Cumbria were the first in the country to “go digital”. In October 2007, analogue transmissions were switched off and anyone without digital reception equipment was faced with the aforementioned blank screen. The rest of the country will be switched over between 2008 and 2012, region by region.

REGION	SWITCHOVER HAPPENS IN
Border	2008 - 09
West Country, Granada	2009
Wales	2009 - 10
West, STV North	2010 - 11
STV, Central	2010 - 11
Central, Yorkshire, Anglia	2011
Meridian, London, Tyne Tees,	2011 - 12
Ulster	2012

Fortunately, switching to digital is not difficult, nor is it expensive – even for caravanners, boaters, etc. There are currently four main ways of receiving digital television:

1. Through an aerial and via a DVB-T (digital video broadcasting – terrestrial) receiver
2. Through a satellite dish and via a DVB-S (digital video broadcasting - satellite) receiver
3. Through a cable and via a DVB-C (digital video broadcasting – cable) receiver
4. Via the Internet and directly into a computer

For caravanners, obviously cable is not an option although terrestrial or even satellite digital television can be piped through cables at camp sites. For anyone who wants to be self-sufficient in terms of television reception though, an aerial or a satellite dish will be necessary. Television via the Internet is certainly viable – as will be explained later – but, at the present time will only be of interest to a small minority of people. For some people, the ability to access both satellite and terrestrial television may be the best choice but, for most, one or the other will probably suffice. So, how to choose: satellite or terrestrial? The answer depends on several factors including:

- Whereabouts in the U.K. or Europe you intend to watch television
- Which channels you want to watch
- How simple you want your television viewing to be
- How much money you want to spend

Let's look at each option in detail.

Terrestrial digital television (DVB-T)

In the U.K., DVB-T is already widely available to most of the population. This is the easiest and cheapest way for most people to receive digital television and the **Freeview** service offers more than 50 television channels & around 30 radio channels. The number of available **Freeview** channels of both television and radio is constantly changing.

In addition to Freeview, a subscription DVB-T services are available - **Top Up TV**. For a monthly fee, subscribers get a choice of a library of TV programmes as well as additional film and sports services. A special receiver is needed and this is supplied (for a one-off payment) when a subscription is taken out. It incorporates a hard-drive recorder which, amongst other benefits, gives the facility to watch one programme and record another.

It is not necessary to have an in-depth understanding of how digital television works in order to enjoy the programmes but a little knowledge – while possibly a dangerous thing – can also help you to appreciate exactly what is going on if you encounter any problems when setting up. So, here is a rough and brief guide to the subject.

Digital channels are broadcast from a network of transmitters around the U.K. All the channels – radio, television and interactive and including the ones from Top Up TV – are broadcast on six different frequencies: 1, 2, A, B, C & D. Each of these is known as a multiplex and each multiplex carries a number of different channels. To understand this, imagine that a whole load of channels are poured into the transmitter which mixes them up and then spits them out in an unrecognisable stream of data. Your television aerial picks up the signal and leads it to the digital receiver which then takes the data, processes it and re-assembles it into the same form as it was when it was originally sent to the transmitter, in other words, lots of different television & radio channels. For example, most BBC television & radio channels are broadcast on multiplexes 1 & B while BBC Radio 1, 2, 3 and 4 are broadcast on multiplex A.

Multiplexes are broadcast from the transmitters at different power levels and this explains why, in certain locations, some channels can be received and others cannot. As the analogue transmitters are turned off, the digital ones will have their power increased and this should improve reception in areas where, at present, it is patchy or even unavailable.

In the U.K. both analogue and digital television signals are normally transmitted horizontally and television aerials are positioned in the horizontal plane. However, in localised areas where reception may be difficult, low-powered transmitters are often used to supply a signal to just that small area. In such cases, the signal may be transmitted vertically in order to avoid interference with the signals from the main transmitters. Because of this an aerial has to be adjusted according to the polarisation of the transmitted signal. In such situations a directional aerial is essential as it can be positioned vertically. Most so-called “Omni-directional” aerials are designed to pick up horizontally polarized signals and are not very good at receiving vertically polarized ones.

To receive DVB-T you will need an aerial and a digital receiver – often known as a set-top box – or a television with a built-in digital receiver. However, for anyone watching television in a caravan, the aerial used is critical. With analogue television a little set-top aerial, a “flying-saucer” on the roof or even a strategically-placed coat hanger was enough to put watchable pictures on the screen, even if they were, speckled, ghostly or showing two channels at once. Digital television is an entirely different matter, providing a 100% perfect image or...nothing at all, there is no halfway house. You have either got digital or you have not and, if you do not have a suitable aerial, you will not have television at all: you will be back to staring at a blank screen. What is more, just having the correct aerial is not enough either. If you are using a directional model it must be pointed precisely towards the transmitter – even pointing the aerial 10° out can mean loss of picture. Even then, if the aerial is not at the right height, you still might not get all the available channels or, worse still, none at all. After all, there is a reason why your television aerial at home is probably mounted on your roof or, if you have one, your chimney. The higher the aerial is, the better off you are (in most cases!)

Because DVB-T is a common standard, digital television can be received throughout Europe (where available) as well. Of course, you will only get locally broadcast programmes although, in some places, these can include BBC World and CNN for example. The number of channels you can watch will also vary widely. Some countries only broadcast a few channels free: others are encrypted and require a subscription to view.

What you need to receive terrestrial digital television, DVB-T:

An aerial

Omni-directional aerials are the ones that have been fitted to caravans, boats and other vehicles for years. They usually look like a mushroom, a flying saucer or a collection of wire coat-hangers. They are convenient because they will pick up a signal from any direction – as long as the signal is fairly strong. And that is the problem with this type of aerial: if the signal is not strong enough, the picture can be very inferior (in the case of analogue) or non-existent (in the case of digital). This type of aerial is often supplied with a signal amplifier but, with digital transmissions, these amplifiers are usually of no use at all. However, if it is mounted high enough and is big enough, an omni-directional aerial can still be an efficient and easy way of receiving digital television signals.

The best way of receiving digital television signals is to use a directional aerial – the same sort that you would have at home. There are many different types, all of which have different performance characteristics and all of which may be ideal in certain situations but, for general use, in different locations, a log-periodic aerial is probably as good a bet as anything else. Log-periodic aerials look simple but, in fact, each dipole – the rods sticking out from the aerial’s spine – is tuned to a different frequency. Other advantages to log-periodic aerials are their strength, compact dimensions, and good resistance to wind.

Whatever directional aerial you use, you need to aim it in the right direction: with digital transmissions, accuracy is essential. The easy way to do this is to look for aerials on buildings and see what direction they are pointing in. If this is not possible, it is possible to use a more random approach and eventually, you might get something. But, as you will have to re-set the receiver every time you do this, it is time consuming and frustrating. The best method is to use a “signal-finder” such as the one from British manufacturer Fringe Electronics (www.fringeelectronics.co.uk Tel: 01623 643802). The signal finder is connected to the aerial and, as the aerial is turned, the signal strength is indicated on the finder by a row of LEDs. The more LEDs that are lit, the stronger the TV signal. Maplin Electronics (www.maplin.co.uk Tel: 0844 5576000) sell a less sophisticated but cheaper version (product reference A55HJ)>

A means of mounting and positioning the aerial:

As with omni-directional aerials, a directional should – in most cases - be mounted as high as possible. As previously mentioned, the higher the aerial is, the better off you are. The pole that you use can have almost as much effect on what television channels you can watch as the aerial itself!

Because digital signals can be affected by weather, atmospheric conditions and physical obstructions such as trees and buildings, it is vital that the aerial is mounted correctly. There are many ways of mounting an aerial to a caravan, a boat or any other vehicle. For some people a temporary installation is best and this method has the advantage of offering flexibility in the positioning of the aerial in order to avoid obstructions. A pole can be fixed to a jockey wheel, the ladder on a motorhome or to brackets which can be permanently attached to the vehicle and into which a pole can be mounted. Telescopic poles are available which can be extended to almost 12’ but collapse down to a manageable 4’ for storage.

However you mount your aerial, remember that height matters and, in extreme situations, telescopic poles are available which extend up to 30’ and which are attached to a plate which is secured by the vehicle’s wheel.

Aerial leads

It is recommended that you have a 25 metre length of 7mm-diameter 75ohm television coaxial cable with a standard male coaxial plug at each end.

A receiver

A DVB-T receiver is essential for reception of digital television via an aerial. You cannot use a satellite receiver with a terrestrial set-up and vice versa. Receivers – also known as set-top boxes - are often referred to as Freeview receivers but, as mentioned previously, there is also the option of Top Up TV for which a special receiver is required.

There are dozens of different receivers available and they all have very similar features and work in much the same way although with variations. For example, all set-top boxes will have some kind of E.P.G. – Electronic Programme Guide. This shows up-coming programmes and enables a timer to be set. Some models will have a 7-day E.P.G. and others may have one that covers 14 days. As with an analogue television, a digital receiver has to be re-tuned every time the location where it is being used changes. As long as the aerial is receiving signals, this is a simple task and should not take more than a few minutes.

Some receivers are available with a built-in hard-drive recorder. These units are usually called P.V.Rs (Personal Video Recorders) or D.V.Rs (Digital Video Recorders). Amongst other features, they enable the viewer to watch one channel while recording another and to store many hours of programming on the hard drive.

More and more televisions are being manufactured with DVB-T receivers built in and this removes the necessity for an external set-top box. They operate in much the same way as an ordinary receiver but, in some cases, they will not offer all the features that a set-top box would. What is more, should the receiver part of the set fail, you will be stuck without a television while it is being repaired.

Useful websites

- For more information on the digital television switchover in the U.K.:
www.digitaltelevision.gov.uk/
- For information on Freeview: www.freeview.co.uk
- For information on Top Up TV: www.topup.tv
- For information on DVB-T reception: www.bbc.co.uk/reception
- For general information on television & radio broadcasting www.ofcom.org.uk/
- For information on products for receiving DVB-T www.roadpro.co.uk
- For information on DVB-T reception www.wolfbane.com/cgi-bin/tvd.exe
- For general information on digital television: www.digitalspy.co.uk

Satellite digital television (DVB-S)

There are hundreds of satellites transmitting television signals to earth. The majority of them are in geostationary orbit 22,300 miles above the equator and they provide a reliable and efficient way of receiving television. In theory, a perfect picture is available just about anywhere where a dish has a clear view of the satellite and your location is within the satellite's broadcast "footprint".

Receiving digital television by satellite has some significant advantages over terrestrial reception. For people who have SKY television at home, watching their favourite programmes while away is the obvious thing to do. For those who are travelling out in the wilds of Great Britain & Ireland, where terrestrial television signals are weak – if available at all – satellite is the best choice. And, for people who want to watch British programmes when they are abroad, satellite is the only available option.

If you have satellite television at home you probably already have a digibox and a SKY card. However, if your satellite television system was installed by SKY and you were given the digibox free of charge or at a subsidised price, you will have signed a contract obliging you to keep the digibox connected to a telephone line for 12 months. After 12 months, there is nothing to stop you moving the unit anywhere you wish, and disconnecting it from the telephone line will not affect its ability to receive regular television programmes.

If you do not wish to subscribe to SKY or to have your digital receiver connected to the telephone for 12 months, it is possible to buy a SKY digibox or another digital receiver outright. You are then free to do what you want with it and, with the appropriate dish and ancillary equipment, you can receive hundreds of television and radio stations absolutely free of charge. These include all BBC television and radio stations, all ITV stations, SKY News, CNN, Film 4 and many others. However, because they are encrypted, if you want to watch Channel 4 and Channel 5 you will have to get a SKY digibox and a viewing card. At the time of writing, viewing cards are available either by subscribing to SKY or by purchasing one from SKY at a one-off cost of £20.00.

In the U.K. British Sky Broadcasting (usually referred to as SKY) has broadcast television via satellite since 1989 but things changed dramatically in 2008. The BBC & ITV, along with Channel 4, launched a satellite television service called "Freesat" (confusingly not the same service as "Freesat from Sky") which offered viewers a practical alternative to both SKY and to terrestrial television services such as Freeview.

Freesat will eventually carry up to 200 television & radio channels all of which, as the name suggests, will be free. Special Freesat receivers are available and these include versions with built-in hard drives and with H.D. (high definition) capability. Televisions with built in Freesat receivers are also on sale. Freesat makes satellite reception very attractive indeed for people who want satellite TV but do not want to subscribe to SKY. This group includes a lot of caravanners, truckers, boaters, and other vehicle-based viewers. Whether you choose to watch television via Freesat or via SKY, you will have to have the correct equipment.

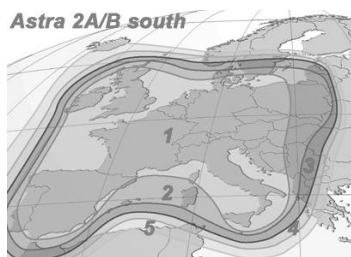
What you need to receive digital television via satellite:

A satellite dish

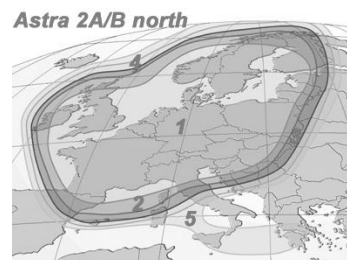
The dish is the aerial which collects the signal from the satellite. A dish is not always a dish however: it may be squarish, flattish or even dome-shaped. Furthermore, dishes come in a wide range of sizes. Portable models vary from 30cm diameter to 90cm. Larger ones – 1m and larger - are used in areas where the satellite signal is weak but, because they can take quite an effort to set up, are usually not practical unless you intend to stay in one place for a reasonable period of time. Although the size of a satellite dish can have an effect on which channels you can watch, it is not simply a matter of “bigger is better”. The design of the dish, its other components and the receiver, as well as the weather and atmospheric conditions also affect reception.

In order to work out exactly what size dish you would require to receive a signal in a particular area, it is necessary to look at a “footprint” map such as those shown here. They are provided by Astra-SES and Eutelsat who own and operate the satellites which broadcast almost all the channels that are of interest to British viewers.

Map1



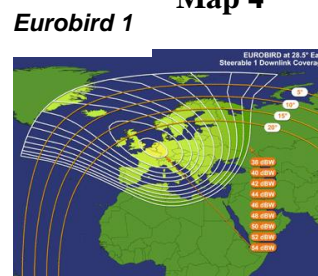
Map 2



Map 3



Map 4



Map 1 shows the “footprint” of the Astra 2 south satellite which transmits Sky News, CNN, and many more channels. BBC Radios 1, 2, 3, 4, 6, 7 and others are also transmitted on this satellite as well as many independent radio stations.

Map 2 shows the “footprint” of the Astra 2 north satellite which transmits Channel 4, Channel 5, Sky One, Sky Sports, Sky Films and much more.

Map 3 shows the “footprint” of the Astra 2D satellite which transmits ITV and most BBC television and radio programmes. It is very restricted but, with the correct equipment, stations can be received over a much wider area than would appear to be the case.

Map 4 shows the “footprint” of the Eurobird 1 satellite which transmits many of the lesser known television and radio channels, most of which are free to air, enabling anyone to receive them with any free-to-air receiver.

Note: *Officially, the inner band (1) on the Astra maps is the area covered by a 50cm dish and the outer band (5) the area covered by a 120cm dish. However, the maps seem to be a little pessimistic and, in reality, a 50cm dish should work into band 4 and an 85cm dish will usually reach to the edge of band 5 and possibly beyond. A 120cm+ dish should pick up channels well outside the footprint.*

For example, according to the footprint maps, even a 120cm dish would be unable to pick up BBC & ITV in Barcelona. In reality, most 85cm dishes will work as far south as Valencia. As with all aspects of satellite television however, almost nothing can be taken for granted. People report a perfect signal in places where, according to the broadcasters and the satellite operators, reception should be utterly impossible with the equipment being used. The maps shown here should be regarded as giving just a rough guide to what programmes can be received where.

As at the time of writing, it is not known which – if any - of the satellite footprints shown here will be used for the new Freesat service.

Because channels are constantly being added, deleted and moved from one satellite to another, it is a good idea to check on a website if you want to know what channels are currently available from a particular satellite. (See list at the end of this section)

When choosing a satellite system for mobile use, many factors must be taken into account. These will determine what sort of equipment you need and how much you will need to pay! There are three main types of mobile satellite television dishes and their pros and cons are described below:

Portable, manual dishes.

Portable systems are the cheapest type and can be small enough to easily be stowed away when not in use. They can be set up on a tripod or a pole and some dishes such as Zehnder’s Multimo are free-standing and can simply be placed on a table or even on the ground. There are also complete kits available which fit into a carrying case. Another advantage of a manual system is that, if necessary, the dish can be easily moved to avoid trees, buildings and any other obstacles that might be obstructing the signal from the satellite. Although satellite transmissions cannot penetrate wood, metal, water or human flesh, they will easily pass through many other materials, including fabric, plain window glass and the kind of plastic that caravan windows are made of. Therefore, in areas where the signal is strong, a dish can even sit on a table inside a vehicle or an awning. However and wherever a satellite dish is mounted, it must be level if locating the satellite is to be easy. A spirit level is a useful accessory and, on some tripods, is even built-in.

Dishes are available in sizes from 30cm – 1M+ in diameter and from a variety of manufacturers including **Camos, Kerstan, Maxview, Raven, Televs, Triax & Zehnder**. Standard domestic satellite dishes can be used but, for most people, their size, weight and design make them a lot less convenient

to carry and much trickier to set up than a purpose-made portable dish. Which size dish will be best depends entirely on where it is going to be used. In the U.K. and Ireland a 50cm dish will be adequate to receive all channels. If you want to watch BBC or ITV in Spain however, you need to consider a larger model. Because different dish set-ups have different characteristics (especially when it comes to automatic systems) it is not possible to state exactly which dish will or will not work in a particular place. Even in Portugal or Greece a dish as small as 30cm will work perfectly well – just as well as a dish three times bigger – but some channels will not be available as the edge of the “footprint” is so far away. Again, BBC & ITV are good examples of channels which are harder to pick up once you have ventured just a few hundred miles south of the English channel. Look at the Astra 2D footprint map to see why. SKY News, on the other hand – along with several BBC Radio stations, is transmitted from the Astra 2 south satellite and, purely because of this, can be picked up by a 30cm dish in the Algarve.

Maps and other information can be found on the Internet which will provide performance characteristics of various models and sizes of dish. There are also websites which will tell you which channels are broadcast from which satellite. Here are a few:

www.Astra2D.com
www.Brymar.co.uk
www.eutelsat.org
www.Kingofsat.net
www.Lyngsat.com
www.RoadPro.co.uk
www.satcodx.com
www.SES-Astra.com

It is possible to line up a satellite dish using just a compass and watching the television screen. However, unless you actually enjoy making life more difficult than it needs to be, it is probably best to use a piece of equipment usually called a “satfinder” which is connected between the dish and the receiver. There are several different models available, from professional units costing hundreds of pounds to basic types that cost under £25 which simply give an alert when the dish is pointing at a satellite. As there are so many satellites flying around, it can be easy to find the wrong one, a common mistake which can lead to a lot of frustration. A new model from **Camos** makes the job even simpler by identifying the satellite that has been found.

*Note: When choosing a manually adjusted dish, it is also worth bearing in mind that the larger it is, the harder it will be to line up with the satellite. Conversely, the smaller the dish, the easier it will be. A smaller dish is also much less susceptible to movement: a **Multimo** or **Kerstan mini-dish** can even be successfully used on a moored boat – within reason!*

Fixed, manually operated dishes.

Setting up a satellite dish, making sure it is pointing at the (correct) satellite, running the cables, connecting the receiver, setting the satfinder and so on is not everyone’s idea of having a good time. Although locating the satellite should be an easy enough task, some people do find it very difficult and frustrating. For these people, semi and fully automatic systems are available which – in the case of fully automatic models – reduces the set-up to pressing a couple of buttons. However, these can cost well over £1000 and a popular compromise between manual and automatic is a permanently installed but manually or electrically operated model.

Such systems comprise a dish on the roof of the vehicle and a means of controlling its position from inside. This option avoids the possibility of having to set up a dish in the rain or the dark but still requires accurate alignment with the satellite. With the dish fixed, this should not be too difficult especially if a satfinder is used.

Various sizes of dish are available and, as described earlier, which one you choose depends largely on where you intend to travel and what you want to watch or listen to.

Manufacturers include: **Camos, Globosat, Kathrein, Maxview and Teleco.**

Fully automatic, self-seeking dishes

For the ultimate in convenience, a fully automatic system is the answer. Several makes and models are available from manufacturers including **Autosat, Camos, Kathrein, Teleco and Ten Haaft**, each of which has its own unique features but, after all is said and done, does the same job. At the touch of a few buttons, all of them search for the appropriate satellite and, when they have found it, lock on. This can take a few seconds or several minutes depending on the equipment and, if you want an easy life, an automatic system can be very attractive.

Some of these automatic models are especially suitable for anyone who wants to be able to access programmes from other satellites such as Astra 1 and Hotbird. This is because they are pre-programmed to find these and other satellites. The advantage of this is that some channels and events which are not available via SKY can be accessed from another satellite. (You will need to have a receiver capable of tuning in to these other satellites – see receiver section below.) For example, if you are a tennis or a Formula 1 fan and you find yourself in central Spain during Wimbledon or when the British Grand Prix is on, you may not be able to watch/receive either BBC or ITV if you are using a portable dish. However, you could watch both events by switching to a German channel on Astra 1. Or you could switch to the Hotbird satellite and watch BBC World: this is a television version of the radio World Service and it is not available via SKY. Even SKY news is available on both Hotbird and Astra 1.

Two models of dish – from **Camos** and **K.V.H.** are designed to operate when the vehicle is in motion. Although you may not want to watch television as you are driving along a Route Nationale heading south, you may find it worthwhile to be able to listen to British radio.

A Receiver

In order to watch satellite television transmissions you must have a satellite receiver. The SKY digibox is the best known in the UK and, if you want to receive Channels 4 and 5 or if you want to watch SKY's subscription channels, you must use one, along with a viewing card. There are several different makes but they all have essentially the same features and they all perform the same task: taking the signal from the dish, unscrambling it if necessary and then translating it into a form which a television can recognise. It is connected by a co-axial cable to the dish and to the television via a SCART lead which is usually supplied. Most domestic models run on 230V but can be run without problem from a 150-watt inverter. Many other receivers are available – including 12V F.T.A. (free-to-air) models from **Camos, Maxview** and **Zehnder** and they can be used to receive hundreds of UK television and radio channels including those from BBC and ITV. They cannot be used with a SKY viewing card and so will not receive encrypted channels, including subscription channels and, at the time of writing, Channels 4 and 5.

A Viewing Card

As explained previously, without a viewing card many channels are simply unavailable via satellite. SKY's viewing card slots into the SKY digibox and gives it permission to decrypt some or all of the channels being transmitted by the satellite. Without a viewing card, many channels are still available: you will get all BBC television and radio programmes, all ITV channels, CNN, SKY News, Performance, lots of shopping, travel channels, and more.

If you decide that you have to have Channel 4 and Channel 5, SKY will send you a viewing card – after you have paid them, of course. It must then be activated before it can be used. This is done by inserting the card into the digibox - which must be connected to a dish and receiving satellite transmissions - and leaving it for up to 24 hours. When that has been done, the card should have been programmed by SKY and be ready for use. The people at SKY will explain exactly what to do and how to do it.

***Note:** SKY viewing cards are electronically matched to the digiboxes in which they are used and cannot be moved from one digibox to another. If you want to use two digiboxes, one at home and one in your caravan for example, you will have to have two viewing cards if you want to watch any of the encrypted channels. This can be arranged through SKY. Also, bear in mind that the terms and conditions for use of the card state that it cannot be taken abroad. There is no way that SKY or anyone else can tell whether a receiver is in Birmingham or Barcelona (unless the owner tells them) but this condition should be borne in mind.*

INTERNET ACCESS & TELEVISION VIA THE INTERNET

With the Internet playing an increasingly important role in almost everyone's life, getting on-line is a daily routine for many people. Even when away from home in their caravan or motorhome, Internet access can be useful or even vital. You can get on to the Internet using a mobile phone but this is often expensive, slow and unpredictable. Small screens can only show so much and, because of this, most phones can only download special cut-down versions of web pages. A Wi-Fi "dongle" will enable you to connect via a laptop and, if reception is good, upload and download speeds can be just as good, if not better, than when using a normal; telephone line; but if there is no Wi-Fi signal you will have no access.

However, Internet access systems are now available which can allow you to do just about everything in your caravan or motorhome that you would do at home or at work. Using satellites to receive and transfer data has the advantage of enabling the user to work anywhere within the satellite's footprint – depending on local conditions and the size of the dish being used. Dedicated systems such as those from **Crystop**, **Datastorm** and **Ten Haaft** are usually mounted on a vehicle's roof and provide communication to and from the satellite.

For more information on Two-way satellite Internet access:

www.ethnet.co.uk

www.roadpro.co.uk

www.ten-haaft.de

Using either of these two methods of Internet connection enables you to use another technological development: Slingbox. This brick-sized box connects to your broadband router and, if you have one, a SKY digibox (or any other satellite receiver) or DVB-T receiver. If you do not have a digital receiver, it has a basic Freeview receiver built in. All you need to do then is to connect to a television aerial. Having done this and having installed the Slingbox software on your laptop, you can then connect to your Slingbox and watch television anywhere you can access the Internet – anywhere in the world!

For more information visit: www.slingbox.com

A word of caution about internet connections provided on caravan sites. Many sites (including some Club sites) offer on-site Wi-Fi. While this is useful for general internet usage, it may not suit use with video-streaming services, Such as the BBC's iPlayer. To watch video requires a high rate of data transmission. This is easy to deliver for one or two simultaneous users, but when ten or twenty or more caravanners all want to watch at once, there is unlikely to be sufficient 'bandwidth' to support this. So do not rely on being able to watch television over such connections – you may well be disappointed.

TELEVISIONS:

You do not need a special television to receive digital television channels whether you get them from an aerial or from a satellite. You can use the big old 10" model that you have had for years or you can invest in one of the latest, state-of-the-art flat-screen models: both can be used for digital television.

There are two types of flat-screen television: plasma and LCD. Unless you have a particularly large caravan and lots of power available, an LCD model will probably be best for you. They are available in sizes from under 2" to over 40", size being measured diagonally across the screen. They use less power than older types of television and can be much more convenient to move around and store. However, they are vulnerable to damage and, if the screen should suffer a knock, it could be permanently and catastrophically damaged. They can also be very sensitive to voltage fluctuations so are often used with a small voltage regulator to avoid problems.

Models are available with built-in digital receivers, built-in DVD players and even with built-in card readers so that photos can be viewed on a big screen. More and more are "H.D. ready" meaning that they will display high definition images when high-definition broadcasts are being watched. With the BBC's Freesat service promising to transmit some programmes in H.D., this feature will become more and more relevant.

When using a television abroad, what you can watch depends on what reception method you use. If you have a satellite system you will probably be able to receive some British channels. If you have an aerial and a DVB-T receiver you may be able to pick up some local programmes. If you still do not have any kind of digital reception equipment, you can still use an aerial to watch local television being broadcast in analogue form. To do this however, you will need a multi-system television which is capable of receiving television broadcast in PAL BG and, in France, SECAM L. Check your television's instruction manual to check whether it is a multi-system model.

If you are using digital reception only, it is not actually necessary to use a television at all. A traditional television has an analogue tuner built in but, because digital signals can be processed in a separate set-top box, any monitor with the appropriate audio/video input can be used. This means that it is quite possible to use one screen for a variety of purposes including GPS navigation, rear-view screen and digital television monitor.

In the past, it was normal to look for televisions with recognisable brand names. Now, however, brand names are less and less important. Manufacturers such as Sharp, Philips, Sony, Thomson and Panasonic seem to be not at all interested in catering to the mobile market and other names are now more prominent. Some identical models are available with different names on the front and in different boxes. Do not be put off a television you like just because you have not come across the name before.

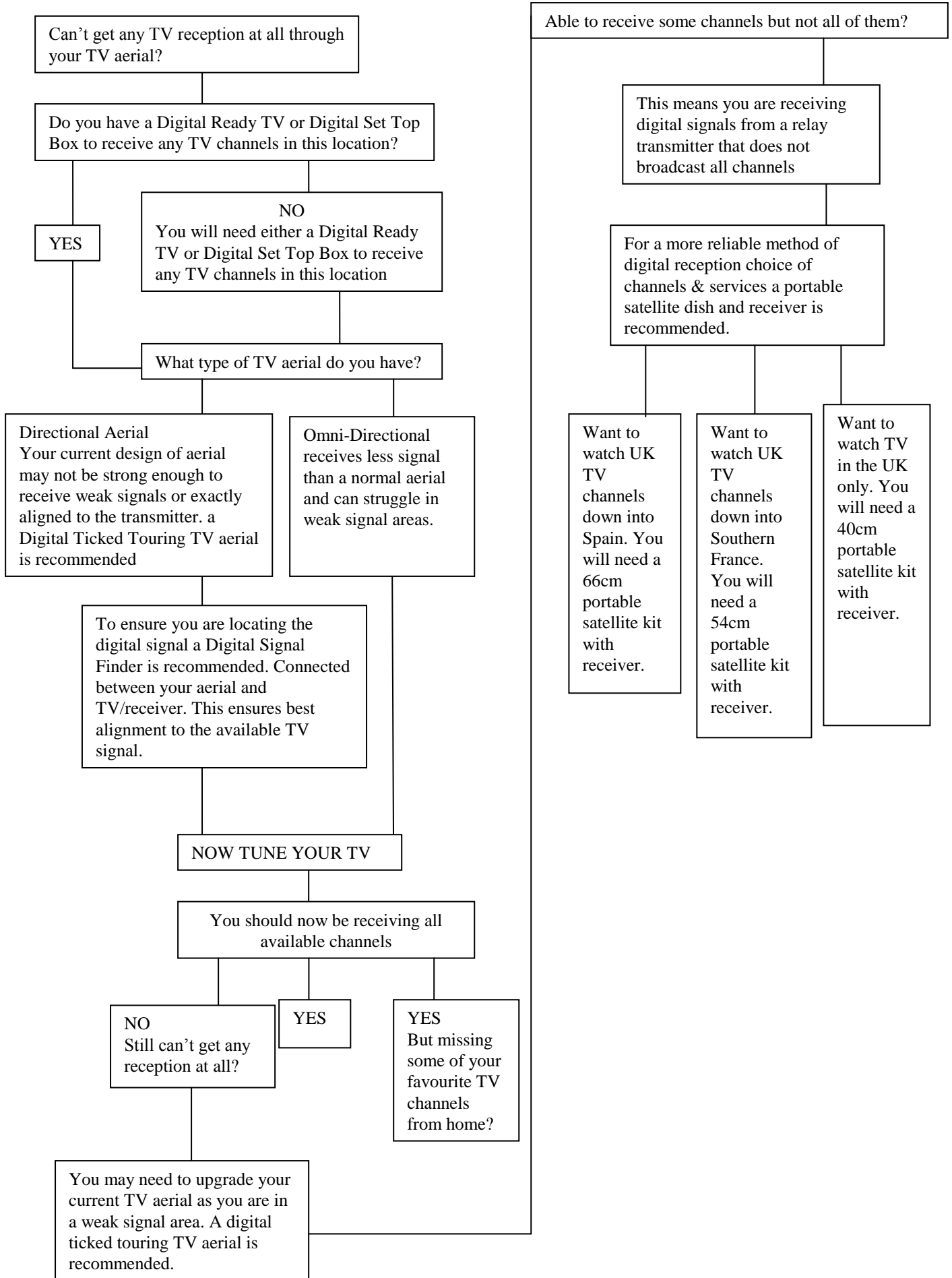
Manufacturers & distributors of specialist televisions for mobile use include:

Avtex:	www.avtex.uk.com	Tel: 02920 691066
Camos:	www.camos-multimedia.com	Tel: 01327 312233
Grade U.K:	www.gradeuk.co.uk	Tel: 01159 867151
RoadPro:	www.roadpro.co.uk	Tel: 01327 312233
Sevic:	www.sevic.com	Tel: 0870 4284636

Avtex Ltd have a technical helpline for Caravan Club members as well, (Tel 02920 691066), which is available Monday-Friday 10am-4pm, and will also provide details of your local stockist of their products via their customer services line.

The topic of television is something of a specialist subject, and hence we acknowledge the kind assistance of Roadpro Ltd in preparing it on our behalf. Television systems are, of course, available from many other suppliers as well. Roadpro are happy to offer a free advice service to Club members on reception possibilities in different areas or countries, and on options for receiving equipment to suit different vehicles.

DIGITAL SWITCHOVER TV RECEPTION



Glossary of terms

D.V.R. Digital Video Recorder: See P.V.R.

Digibox: A digital receiver, also known as a set-top box.

Digital Switchover: The period of transition during which analogue transmitters will be turned off.

DVB-S. Digital Video Broadcasting – Satellite:

E.P.G. Electronic Programme Guide: Used on all digital receivers, the E.P.G. is a means of displaying programmes and planning viewing over a period of days.

F.T.A. - Free to air: A term used when referring to television or radio channels which are transmitted without encryption, so that they can be viewed by anyone with a suitable receiver. BBC and ITV channels are transmitted Free to Air.

F.T.V. - Free to view: A term used when referring to television or radio channels which are not part of a subscription package but are still encrypted, so that a viewing card is required in order to watch the channel. U.K. Channels 4 and 5 are examples of Free to View channels.

Freesat from SKY: A free to view DVB-S service from British SKY Broadcasting

Freesat: A free to air DVB-S service from the BBC, ITV and other broadcasters

Freeview: A free to air DVB-T service

G.P.S. – Global Positioning System

H.D. - High Definition: A method of increasing the amount of detail visible on a screen. H.D. programmes can be viewed on any suitable screen but the high definition effect requires a special screen and additional equipment.

I.D.T.V. – Integrated Digital Television: This term refers to a television with a built-in digital receiver, either satellite or terrestrial.

L.C.D. - Liquid Crystal Display: The most common method of producing an image on a flat screen.

L.N.B. - Low Noise Block: The part of a satellite dish which receives the microwave signal from the satellite and converts it into a signal which can be processed by a satellite receiver. In the case of most satellite dishes, it is the mushroom-like object mounted on an arm and pointing towards the dish's centre.

P.V.R. – Personal Video Recorders: Also known as Digital Video Recorders, these are digital receivers which have a hard drive recorder built in.

SCART: A French invention designed to simplify the connection of audio-video equipment. It is an acronym of *Syndicat des Constructeurs d'Appareils Radiorécepteurs et Téléviseurs*.

Setanta TV: A subscription service available via DVB-S and DVB-T

Terrestrial TV: Television which is transmitted via an aerial

Top Up TV: A subscription DVB-T service

Viewing card: A card which enables a viewer to watch programmes which are transmitted in an encrypted form. The card is inserted into a suitable receiver and allows it to decrypt the signal.

Wi-Fi: A universally accepted wireless technology intended to enable connection of equipment to a network without the use of cables.

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