

Satellite TV for Travellers



This article is based on my own experiences, advice from others, and internet research. I do not purport to be an expert or that my comments will apply in particular circumstances. I hope that they will help those contemplating using satellite TV in their camp. My opinions where expressed relate to my usage of the equipment and to short term set-ups rather than permanent installations.

How does satellite TV work. An explanation is available at:

<http://www.aussiesatellite.com/Technical%20Support.htm#How%20the%20Satellite%20TV%20works0>

and at many other sites, but, as a quick and dirty explanation:

- a. A satellite broadcasts to a wide area, often with a scrambled (encoded) signal
- b. If you are in that broadcast area and your satellite dish is aimed directly at that satellite, the dish will reflect & concentrate the signal it is receiving to your LNB.
- c. The LNB amplifies the signal and passes it to your satellite receiver (set top box) via coaxial cable
- d. The receiver, with the aid of your Aurora Smart Card if necessary, decodes the signal and passes it to your screen display.
- e. Channels are selected using a remote with the receiver.

The advantages of using satellite TV when camping compared with the use of an antenna to receive terrestrial broadcasts include:

- A near perfect picture rather than the poor quality one often available from a nearby broadcast repeater
- Reception available almost anywhere in Australia that has an unobstructed 'view' of the satellite
- A range of channels / programs rather than the one or two from the local town repeaters

The disadvantages include:

- ❖ Cost
- ❖ Bulky satellite dish and tripod to carry
- ❖ The need for a determination to overcome frustration in completing the initial set-up (unless you pay extra for set-up assistance)

Set-up time is sometimes said to be another disadvantage but the time difference is not great unless the comparison is with an internal antenna. It can often be quicker.

Some comments on the pros and cons above:

In my opinion the advantages completely outweigh the disadvantages. Prior to satellite TV I had tried other options and given up on having TV in my camp.

Picture. With digital satellite TV you either have the picture or you don't – no hazy picture to vainly try to improve. Reception is high definition TV – very often higher quality than home reception.

Channels. For most people Optus Aurora on the Optus C1 satellite is currently the best option and that is the one discussed in this article. There are other options not discussed here – for more information on these I suggest as a starting point the link: <http://www.lyngsat.com>

ABC – 5 separate channels. Some program variations but the principal advantage is in the time shift. eg an east coast program is likely to be available two hours later on the Western Australia channel.

SBS. – 4 channels. As for ABC but with more program variations.

Special purpose and information channels – not usually much interest but occasionally a gem.

Many **radio** stations, Australian & overseas are available.

The channels above are 'free' with your one time purchase cost and registration of the Aurora Smart Card which is included in most 'package deals'. The following channels are free once your Smart Card is registered with Aurora subject to the conditions indicated.

7 Central. Channel 7 programs on EST timing. News is from Brisbane although the station is in Townsville. Available free to those living east of the WA border to those who are outside land based broadcast areas – permanently or whilst travelling. For travellers the request for registration is by fax or letter detailing itinerary and period required.

Imparja. Mainly a mix of channel 9 and channel 10 programs. Based in Alice Springs. Available to those living east of the WA border to those who are outside land based broadcast areas – permanently or whilst travelling. . For travellers the request for registration is by fax or letter detailing itinerary and period required. The maximum period currently authorised for travellers is 6 months. Some requests for access have been denied but I am unsure of the circumstances.

GWN & WIN provide similar services to 7 Central and Imparja for those living west of the WA border. If you have 7 Central & Imparja you may not receive GWN & WIN, and vice versa.

Further details are at: <http://www.lyngsat.com/packages/aurora.html>

Most receivers will accept a Selectv and some other satellite pay TV cards.

Cost. A good TV antenna for travellers can cost up to \$300 plus tripod or other stand. A satellite TV system (not including the screen) currently costs more than \$450 – and some a lot more! The packages available differ widely in price and in whether or not they include a tripod, an explanatory video cassette, a satellite finder, after sales assistance and other features. All seem to offer the essential elements - dish, LNB, cable, satellite receiver (set top box), Aurora Smart Card. Which package best meets your requirements is a personal choice.

Some packages available:

<http://www.aussiesatellite.com/Caravan&MobileHomes.htm>

<http://www.hwnt.com.au/>

http://www.satplus.com.au/category39_1.htm

<http://www.vansat.com.au/main.html>

This list is not at all exhaustive and is provided only as a sample. It is recommended that you conduct your own research so that you can be satisfied that the system you buy best suits your needs. There are many suppliers in a very competitive market. Most provide comprehensive descriptive text on setting up the system although often with the emphasis on permanent installations.

Bulky equipment. The 78cm dish frequently recommended for travelling measures about 74cm x 81.5cm and the 65cm dish is about 66cm x 70cm overall. They are both reasonably robust. The typical heavy duty loud speaker tripod, when folded, is about 115cm x 16cm x 16cm. None of these items are heavy.

Advantages of a 65cm dish include lower cost and smaller size to transport.

Advantages of the 78cm dish include: (a) it has a folding LNB arm which saves time in setting up and dismantling; (b) it has a built in protractor in the attaching bracket – most need a small modification (described later) for northern Australia but it works well; and (c) as the LNB support is centralized and not offset it is a little easier to align with a compass. Being larger it should improve the ability to receive a signal in difficult conditions.

Other considerations.

Display screen. Additional to the other costs is the actual display screen. Almost any screen with input sockets will do. Likely options are:

- **Coax cable** – will be present only if equipment includes a TV tuner. Not the best option for quality, and, if the set has automatic tuning rather than manual, it will need to be re-tuned to the receiver whenever it has been used otherwise.
- **RCA** – colour coded red, yellow & white. The satellite receiver should have these. Most domestic TV's have these now as input options. Probably not on many small DVD players due to space constraints.
- **Small phono plugs** – one x stereo for audio, one x mono for video – sometimes colour coded as for RCA. Most small players will have these but on some they will be for output only, not input. Cables are often

supplied with these sets with RCA at one end (for the satellite receiver) and phono at the other. If not, converters (RCA → phono mono, and 2 x RCA → phono stereo) are available at Jaycar – and probably other such retailers.

While bigger is often better, a smaller display can be much easier to travel with. A 7 inch, wide screen, DVD player - providing the screen is of reasonably high resolution - provides good viewing for 2 to 4 people. It doesn't need to have a TV tuner built in as the satellite receiver performs that function.

15 inch LCD TV's are now reasonably priced.

CRT TV's such as traditionally used in most homes are very good but they are bulky and heavy and will be a heavy drain on power if using 12 volt.

Power Supply.

Power usage becomes an issue if you rely on 12 volt batteries. My information is that 12V satellite receivers available are of poor quality so an inverter is needed to provide 240V power. My information is that the inverter needs to be of the pure sine wave type or a good quality modified sine wave for the satellite receiver.

An inverter, satellite receiver and a 7 inch DVD player combined draw 3 or more amps. Other combinations, even similar units different to the ones tested, could draw much more. **Depending on your battery capacity and/or your ability to recharge it this could be a significant issue that you should consider.**

Setting up the system. The package you buy will have installation instructions for the particular satellite receiver included. For your initial set-up it is recommended that you attempt to contact a member who has the same receiver for assistance – at least by email or phone but preferably on location. It is possible to do this just using supplied instructions but your dog and your family may come to wish satellite TV had never been invented. However, having done it once, subsequent set-ups are all too easy. At least one of the more expensive packages states that it eliminates those first time problems through provision of an instructional videotape.

A few generic tips to make your 'first time' a little less frustrating:

1. This site provides a listing of the data you will need to 'aim' your dish from almost anywhere in Australia (note though that the elevations listed all appear to be 3 degrees high – ie subtract 3 degrees from that shown on the table:

<http://users.bigpond.net.au/goldway/Satellite%20Aurora%20C1.pdf>

or to obtain the same information as you need it use this program either on or off line: <http://www.satsig.net/ssazelm.htm> if you know the latitude and longitude of your location.

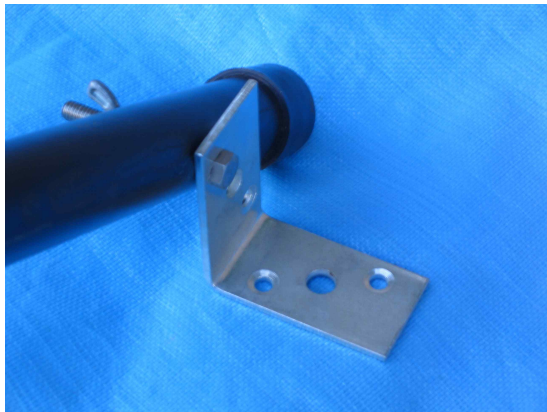
1. Set up everything at home at least once so that any initial problems are sorted out without time pressures and so that you are familiar with all equipment and connections.
2. It is possible to 'aim' your dish without the tripod being perfectly level. It is a lot easier / quicker if it is level – in my opinion it is worth taking the time to make it SO. This article includes a guide to making simple brackets to assist in this.

3. Ensure that line of sight from the dish to the satellite is not blocked by anything at all.
4. The Optus Aurora Smart Card helpfully provides a “This side up” notation. Some receivers require that side to be ‘down’.
5. You need to be receiving the Optus tuning channel before you contact Aurora and until the card is registered via the satellite.
6. Acceptance of your registration (by fax) by 7 Central and Imparja may each take 1-2 days. Your receiver must be on and receiving the satellite when they register your card via the satellite.
7. Most instructions assume a permanent installation and therefore aim for the strongest possible signal. Your installation is temporary – once you have a signal why waste time fine tuning it – the picture won’t get any better.
8. Additional equipment needed: a compass and a small level.
9. Most packages include 10m of coaxial cable. Recommended that you purchase an additional length to use on those occasions that you need to move the dish further away to get a clear line of sight to the satellite.
10. Most of the coax cable connectors are of the screw on type. You may prefer to obtain a converter (from Jaycar and similar retailers) so that your ‘field’ connections are push-on.

Tripod levelling brackets.

It is not essential but it is convenient to be able to easily peg the tripod down when necessary and also to easily level the tripod when on uneven or sloping ground.

These brackets are simple in concept and construction but they work well.



Shown above is the static bracket for the ‘uphill’ leg. Bought ‘as is’ at Bunnings and bolted through an existing hole in the leg.



This is one of the height adjustable brackets – one on each of the two remaining tripod legs. The base is half of one of the same brackets used for the static bracket. It is bolted to the end of a 200mm length of threaded rod. Holes were drilled vertically through the legs when extended. A short length of irrigation pipe passes through the leg – without this plastic sleeve the threaded rod catches on the edges of the drilled holes in the tripod leg.

78cm dish protractor & bracket modifications.

Most of these 'folding' dishes were designed for use in Europe and elsewhere far from the Equator where



With this type of dish the bracket which attaches it to the tripod remains on the tripod.

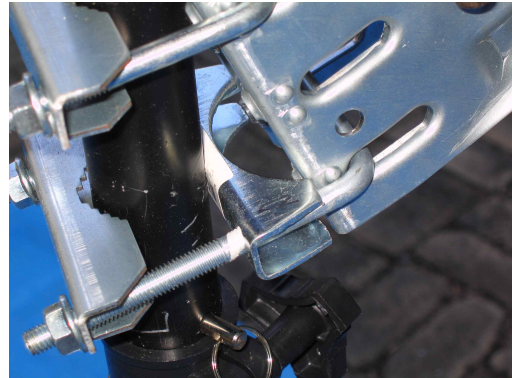


Illustrating where the dish 'clicks' into the bracket.



The protractor is inscribed on the assembly on the back of the dish which 'clicks' into the holding bracket. The wing nut holds the dish in the selected position.

the geostationary satellites orbit. The built in protractor on the back of the dish and the bracket which attaches it to the tripod do not allow for the inclination needed in the northern half of Australia.



To use the protractor in the northern half of Australia the angle of the bracket which holds the dish needs to be inclined. Here, half of a two and three eighths inch exhaust clamp is used as a spacer. With this in place the dish is inclined at 23^{degrees} more than the protractor indicates. The spacer needs to be removed for use in the more southern parts of Australia – takes a few minutes.



The provided securing bolt has been replaced with a longer full thread bolt which is locked into place with a nut & spring washer on the right side as shown. The wing nut is all that needs to be tightened when the dish is 'clicked' into the grooves in the bracket.