

Installing Sky Digital Satellite TV



Learn the trade secrets about satellite Television
Lots of money-saving ideas and information!

See our web site at:

<http://www.brittany-satellites.com> (UK Sky Digibox, accessories and much more)

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by
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Thanks are due specifically to:

Sean Taylor of Brittany Satellites, UK. for his help in compiling this guide

Copyright

It takes *years* to gather the information for a booklet like this and *weeks* to type it, check and re-check it.

Imagine how long it needed just to take the photographs, Retouch them, re-size and crop them, compress them and position them on the pages for our customers benefit.

It takes two minutes to steal a guide like this.

A few sad people steal it for kicks

A few think they can sell it (on Ebay)

Please remember this guide is designed for our customer use only.

[please report any breach to: info@brittany-satellites.com](mailto:info@brittany-satellites.com)

Installing Digital Satellite TV

Introduction

Most books about satellite TV are aimed at those people who want to fit a motorised system. Such books are often full of mathematical equations and technical explanations which even the time served installer neither uses nor understands.

This leaflet is a MATHS-FREE ZONE. I promise you that there is less maths in this volume than you would need to count out your beer money!

You will find simple explanations of everything you need to know. In fact you will probably understand satellite TV installation better than most installers by the time you've read this!

A complete description of how to install a satellite system is included.

In addition, you will find trade secrets exposed: Short cuts and best methods that time-served installers know from experience.

Reluctant customers?

Most people read this leaflet reluctantly, without understanding why their questions can not be answered in a simple two minute reply.

By reading all the information you will gain an understanding that will help you to carry out your own successful installation.



Installing Sky Digital Satellite TV

Install it yourself

If you intend to install the system yourself, buy a DIY kit from our store, either a sky DIY package, or a system you have built up yourself.

Shopping List

A satellite receiver with features that meet your present (and possibly future) requirements.

A dish. This may be any one of the types listed previously. Decide where it is going to be fixed and by what means. Buy an LNB to suit – fittings do vary so make sure that the LNB fits in the boom arm clamp.

(A dish can usually be sprayed with car aerosol paint to match its surroundings. The paint should be matt – not reflective – otherwise the dish can reflect the sun's heat onto the LNB and damage it. Apply the thinnest possible layer and don't do it until the system is up and

If you are using a wall-mount bracket, ignore references to "pole" etc.

- Pole conversion brackets for the dish (if required).
- Pole (if required).
- Patio mount ----->
- Combination wall/ground mount.
- T + K brackets (you need to know the stand-off length required. If the pole must stick above the eaves of the roof

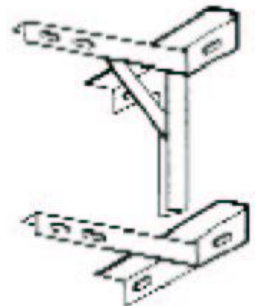
then you need to measure the width of the eaves).

- "U" bolts to clamp pole to brackets.
- Cable (H109 UK) or (17VATc France).

- "F" connectors.
- "IEC" type TV plugs and female adaptor "barrel".
- Self-amalgamating tape or boot.

- Bolts, 10mm diameter.
- "F" connector wall socket.
- Cable ties.
- 6mm Cable clips for nailing cable to wall (3 for every metre of cable).

You will need 4 inches of "Self Amalgamating Tape" to seal the cable connection to the LNB and make it waterproof - or a rubber "boot" and silicone grease .



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You will also need tools:

- Knife and wire cutters for stripping cable.
- 10mm carbide-tipped drill, 100mm.
- 10mm carbide-tipped drill, 380mm.
- Electric hammer drill.
- Spirit level, Screwdrivers, hammer.
Satellite Compass, Satellite Finder/Meter
- Protractor, ruler, string with weight tied to end.
- Ladder.

If not SKY, think about the specifications of the receiver: Will, say, 1000 channels be enough? (Don't forget all those radio channels!)

If you want to receive analogue foreign channels, will you want a separate (cheap) analogue receiver or something like an Echostar which combines both analogue and digital receiver in one box?

What about the stereo sound capability? Are you going to be able to connect the satellite receiver into your existing Hi-Fi auxiliary socket?

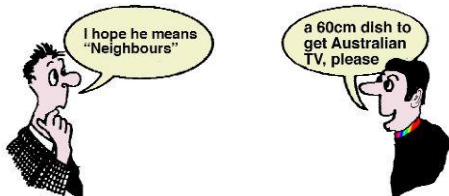
What sort of connecting lead will you need? How will you incorporate your video recorder into the system?

Will you have to use an "RF lead" or will your TV/Video accept a "SCART" connection to give better quality pictures?

Is the Conditional Access Module (CAM) suitable for the channels you want to watch or will you need an additional CAM or card? What about a Smart Card? Is it legally available in your country?

What LNB

do you need? What noise figure LNB can you afford? (A lower noise figure is *a/ways* better but, unless you are scanning the skies for very weak signals, you could settle for a more affordable one without losing picture quality on the stronger signal channels). Instead of struggling to afford a low noise LNB, can you simply use the next larger dish size?



(we can supply **affordable 0.3dB LNBs** - see store).

<http://www.brittany-satellites.com>

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Get it installed professionally

If you do not want to attempt the installation then you might find it easier to buy the equipment directly from the store. You can then arrange for us to do the installation, either at the point on sale, or at a later date, should you find difficulty with the DIY kits .

You will need to be flexible in when you will allow the installation to be done. Giving us an entire day in which to turn up is reasonable. Bear in mind that only the very first appointment in the day can be guaranteed. 9am is usually ideal. Afternoon appointments can drift by several hours if an earlier job hits a snag.

Do make it clear to the installer exactly where you expect him to put the dish, the satellite receiver and the route of the cable *before* he begins; preferably before he sets out from home so he can collect any extra brackets, cable, pole or other fixings on the way.

Our installer can't change the position of the satellite in the sky! Make sure you know which way the dish will be pointing. There's no way a dish can be fitted to a North-facing wall unless it's on a pole which allows the dish to face South over the roof. The dish *must* have a clear view of the satellite. Any obstruction (even leaves on a tree) can reduce the picture to zilch. However, the dish does *not* have to go on the front of your house. There is *almost always* some way to avoid this.

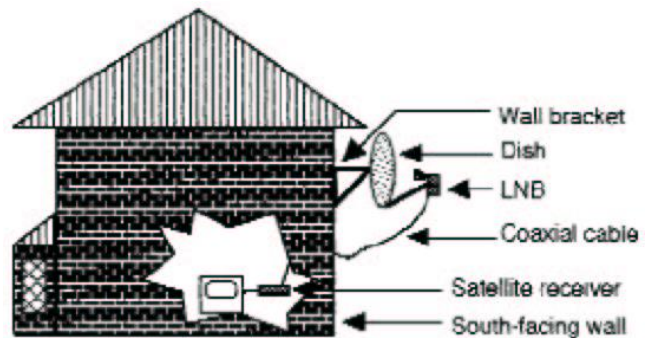
It's a good idea to tell your neighbours about your intentions – not to brag but to inform them in case there is any noise and in case they object to the sight of a dish. Neighbours can make life very difficult if they involve the local Planning Officer! Make friends with them.

Also, if the neighbour wants a satellite system, himself, you might well negotiate a reduced cost with us, since our installer will save fuel and time by doing two jobs at the same location.

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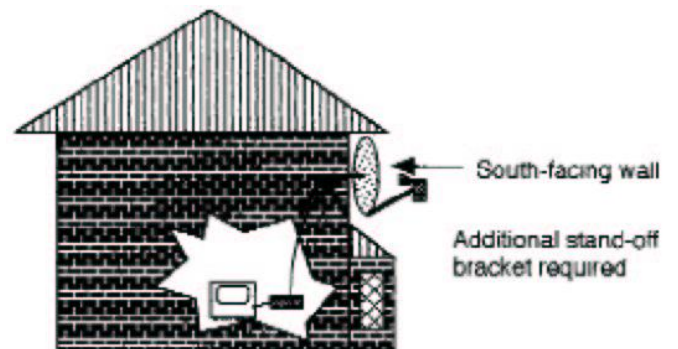
Installation Methods for Satellite TV Systems

The simplest installation can be performed where the rear wall of the property faces south. The dish can be mounted directly to the wall by means of the bracket supplied by the dish manufacturer.

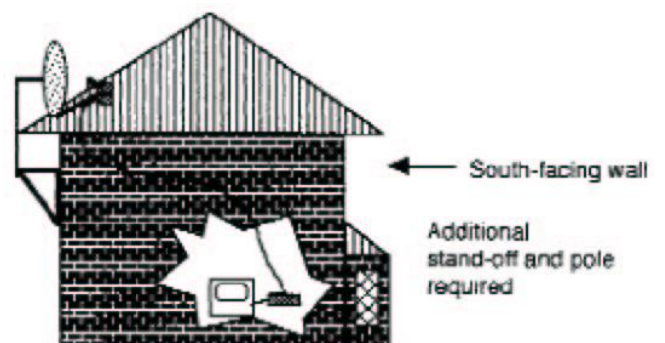


In the case of a house whose front wall faces south, it is generally preferable to mount the dish on a side wall where it is less obvious. A stand-off bracket, if needed, incurs additional expense.

Where the dish can not be mounted on the side or where the satellite is obscured by trees or brickwork then it is necessary to mount it on a pole, using a strong stand-off bracket with adequate supports to prevent movement in wind. The additional work and hardware can increase the installation cost considerably and the overall appearance may not be as neat but it is often better than having it on the front of the house to annoy your neighbours, town council and as an invitation to every prospective burglar who passes by.



The Sky "minidish" can often be fixed to the chimney or clamped to a ridge tile (not recommended) or to a pole which extends through the roof tiles. In the latter case, make absolutely certain that no rainwater can get in! It's not really designed for mounting on the side of a house at 90 degrees without extra brackets. Also consider the roof overhang!



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More Complex Installations

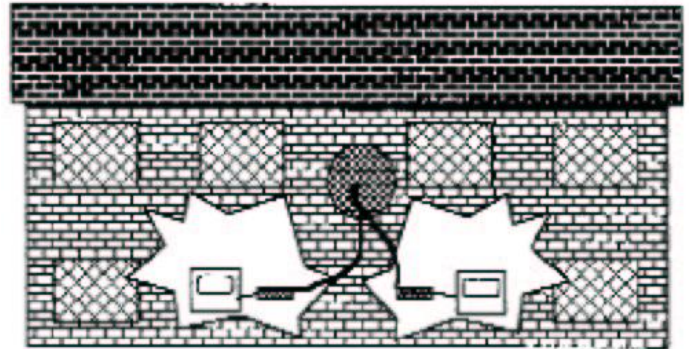
Normally only one receiver can be fed by the LNB. However, a special (and more expensive) "Twin-output LNB" may be used to feed two receivers via two coaxial cables. A "Quad-output"

LNB can feed up to four receivers. An "Octo" 8 output LNB can feed up to eight receivers. This arrangement is needed to allow different satellite channels to be watched in separate rooms.



The Twin-output LNB may be used to feed two receivers *in the same house*.

A Twin LNB with just one shared dish may be used to enable two households to watch satellite TV channels provided that the two receivers are fully isolated. The reason is that, if one receiver becomes 'live' then the other may also become 'live' at up to



450 volts, if houses are on different "phases". A compromise might be to ground the dish and LNB by means of a copper cable to an earth rod but **seek professional advice** as safety is involved.

Other satellites

If you wish to see programs from another satellite, as well as Sky Digital from Astra, then it will be necessary to fit two LNBs to your dish. One LNB collects the signal from Astra and the other collects the signal from, say, "Eutelsat". Because the dish can not point directly at *both* satellites at once, it is usually necessary to fit a slightly larger dish to compensate for the "off the beam" signal. With this arrangement you can watch *all* the Skydigital channels plus *most* of the channels from *one* of the Eutelsat satellites (dependent upon which one your dish is aimed at). A Quad-output LNB must be used if you have two "Sky Plus" units.

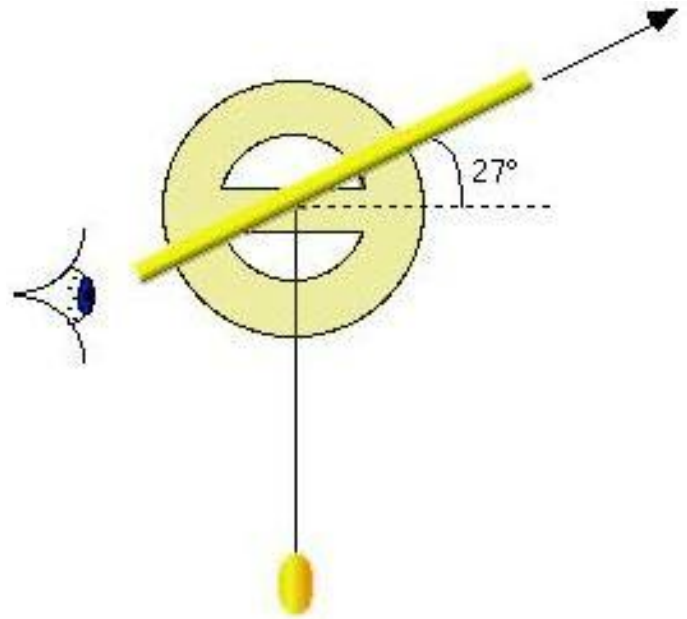
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Installing it Yourself

Firstly, please do *not* do the job by yourself; ask a friend at least to steady the ladder.

If you have a really accurate compass then the Astra satellite cluster (for Sky Digital) is located at 28.2° East of due South on the Greenwich meridian line. If you are East of that line, the satellite will appear to be further West, and vice-versa. The line of sight to the satellite position is at an angle of 20° to 26° above the horizontal in most of the UK.

You can use a protractor, plumb line and a straight-edge pointer to locate this position – not, I hasten to add, to align the dish but to make sure that there is no obstruction. This angle increases as you go south. For instance, in southern Spain it is nearer 40° . The dish must have a clear line of sight to the satellite. There is no need to make this check if you are *sure* that nothing will obstruct the dish but, even trees some distance away can cause a problem.



Finding True North with your compass

A compass is a handy instrument for setting the approximate azimuth of your dish (for example 28 degrees east of south). However, a compass shows "magnetic north" not "true north". Graduated in degrees from 0–360, the compass which we sell is a handy instrument for setting the approximate azimuth of your dish (for example 28 degrees east of south). However, a compass shows "magnetic north" not "true north".

Also, the satellite position is over the equator .. So

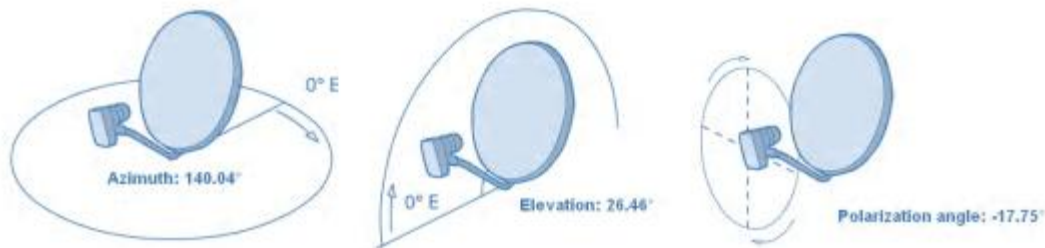
Please visit our site..

<http://www.brittany-satellites.com/sky-dish.php>

This page will give you the correct settings for the dish

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Find your latitude and longitude using this web page (click on the map till you see your nearest town and read the position below the map. Follow the remainder of the instructions, and print out the results.



Normal Compass

The best way to calibrate your compass is to wait for a clear night sky and do this:- You need to locate Polaris, the North Star*, so you can use it as a bearing of 0°. Its position varies by less than a degree from true North. It is necessary to use a plumb-bob (a weight attached to a string) at arm's length or on a stick (or fishing rod) and position yourself to align Polaris with a reference object or put a mark on a fence at least 20 meters (70 feet) away. Use the plumb-bob in the least windy conditions as possible.



OK, you have positioned yourself so that the chosen object is exactly north of you. Don't move. Place the compass on a horizontal surface *away from any metal that could be magnetised (e.g. dish) or electrical wiring*. Use the compass to check the bearing of the object relative to the compass pointer which points at magnetic north. The number of degrees difference is the "magnetic variation". Note whether it's clockwise or counter clockwise from magnetic north indicated by the compass. Place the compass near the dish position on a horizontal surface away from any steel (e.g. dish) or electrical wiring. Note the position of due south. Add or subtract the magnetic variation as necessary. (Example: if true North is 5 degrees clockwise from magnetic north, true south is 5 degrees clockwise from "S"). Then adjust the bearing according to how far you are East or West of the Greenwich meridian line through London. (In the UK you can ignore this). from the back end of the compass needle. Place a long rod or line on the ground in this direction below the dish position. Your dish LNB arm can

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now be pointed this way. Now go counter-clockwise (east) from this line by the number of degrees that the desired satellite is East of South. For 28 degrees E of S, this would be (in our example) 28—5 degrees counter clockwise approximate elevation (vertical angle) of the dish and use the signal meter for final adjustments.

Satellite Compass.

Alignment of your satellite dish is made that much easier if you have an idea of the direction of the satellite you wish to receive.

This device will save you time in locating the direction your dish should be pointing.

Available from our Store



http://www.brittany-satellites.com/catalog/product_info.php?cPath=22&products_id=94

Since the satellite is 36,000 kilometres away you do not gain anything by mounting the dish very high to receive signals.

The dish will work on the ground, provided there is no obstruction. The only reason for mounting it *off* the ground is to get a clear view of the satellite (if walls or hedges are in the way) and to keep it out of the reach of thieves, drunks, vandals, animals and, especially, small children!

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The simplest way to install a dish system is as follows:-

Take a mains extension lead with at least two sockets at the end. For safety, plug it into a RCB (Residual Current Breaker) to protect you from electric shock. This is most important when you are working outside. If you don't have one *please* buy one or borrow one. Take a portable television outside. Connect the Digibox to the television with a Scart lead. Press the [services] button to get an on-screen menu. Note that the on-screen menu "times out" after a few minutes. Plug both the TV and the receiver into the extension lead sockets and turn them ON.

Note: To use the RF output of the Digibox you must select an unused channel on the television. You *should* know the UHF number of this channel! On the Digibox remote control, press [services] [4] [0] [1] - [select] [4] to get the "RF outputs" menu on screen - still using the Scart connection. Key the two digit UHF channel number then move the onscreen cursor down and store the change. Now you can use the RF out connection from the Digibox to the TV. By default, the RF out channel of a new Digibox is set to 68. If your TV has no Scart facility then you will have to tune your TV set to UHF channel 68.

No tuning is necessary if you simply use the Scart connection. Now turn off the Digibox and unplug the two units from the mains. Take six metres of satellite cable and fit an "F" connector to each end.

To do this, follow the instructions on the next page.

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How to fit 'F' Connectors to coaxial cable

Take a knife and hold it against the plastic sleeving of the cable while you bend the cable over your index finger, holding it with thumb and middle finger. Move the knife gently back and forth until the plastic begins to split. Turn the cable and continue the split until you can remove about 25mm of plastic sleeve from the end. Be careful not to cut the braided copper wires inside! Pull off the plastic cover. Separate the braided copper wires. Cut off the exposed metal foil shield. Cut off the white plastic insulation to expose the inner wire core, leaving about 3mm of white plastic insulation. This reduces the risk of the copper strands touching the inner wire core, which must never happen! Push the copper strands back over the outer sheath. Now here's the trade secret! coat the strands with silicone grease or vaseline. (Silicone grease is better for outdoor use as it's waterproof).

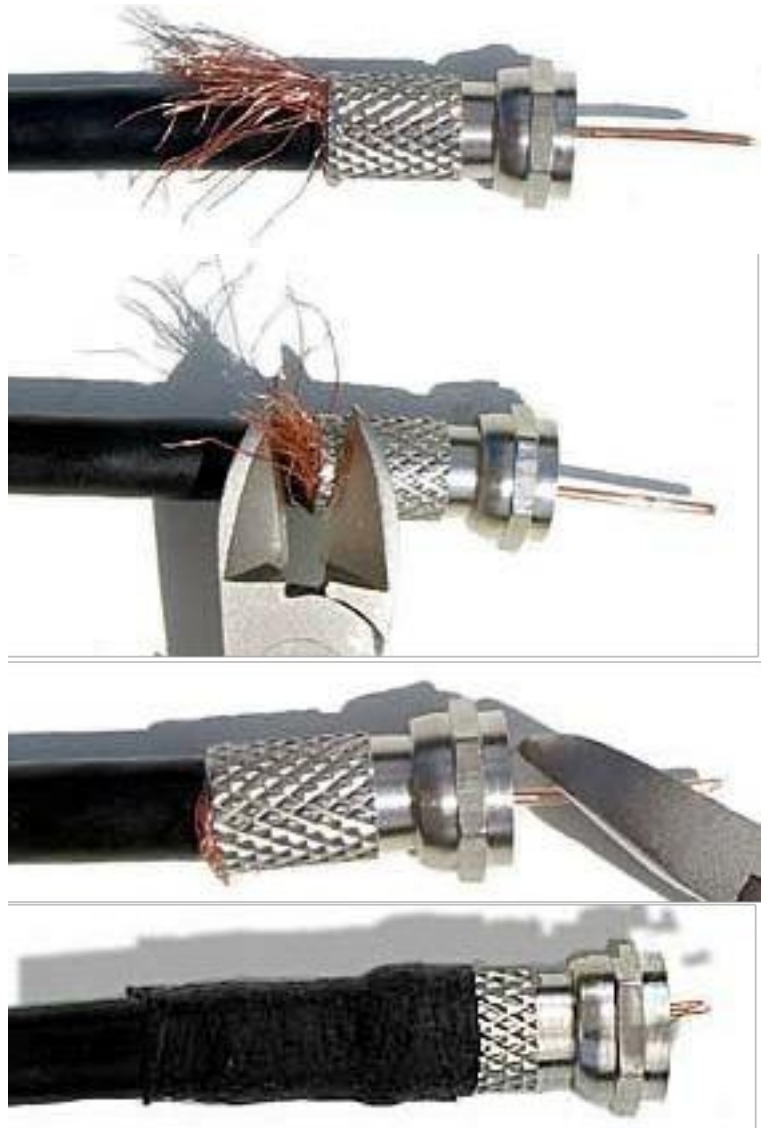


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Screw an 'F' connector over it as far as it will go. Make sure that the inner wire core can not touch the braided copper wires. Cut off the exposed copper strands.

Use sharp cutters to cut the inner wire core to leave about 3mm exposed. Make this cut at a 45 degree angle to make a point. This makes it easier to push the wire into a connector without risk of damage or bending the wire. Be careful not to cut yourself on this sharp point!

To finish off an indoor connector, you can fit a small piece of heatshrink tube or some self-amalgamating tape to cover the copper strands.



This will protect your fingers when you are handling the connector.

A push-on 'F' plug adaptor.



A right-angle 'F' adaptor.



Outdoor 'F' connectors MUST be sealed to keep water out, otherwise it will run through the cable, damaging the inside of the LNB and the satellite receiver. Water runs VERY quickly through coaxial cable by "capillary action". Be sure to use Self Amalgamating Tape or a rubber boot.



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Make sure that the copper braid can not touch the centre wire to cause a short circuit. Assemble the minidish. For any other type of dish, assemble it and fit the LNB so its body hangs downward. Make sure that the Digibox is unplugged from the mains! Screw the cable "F" connector to the LNB and the other end to the Digibox tuner input. If the Digibox is a "Sky Plus" model that has two inputs, use input "A" or "1".

Plug the Digibox and TV into the mains; turn them on and press the [services] button to get the menu screen. Press [4] [6] to see the signal

For the test alignment, you can mount the dish in its final position and work on a ladder but, to give you practice and confidence, it is often better to do this first:-

Pick up the dish assembly and rest it gently on its lower edge. Swivel it to point in the direction



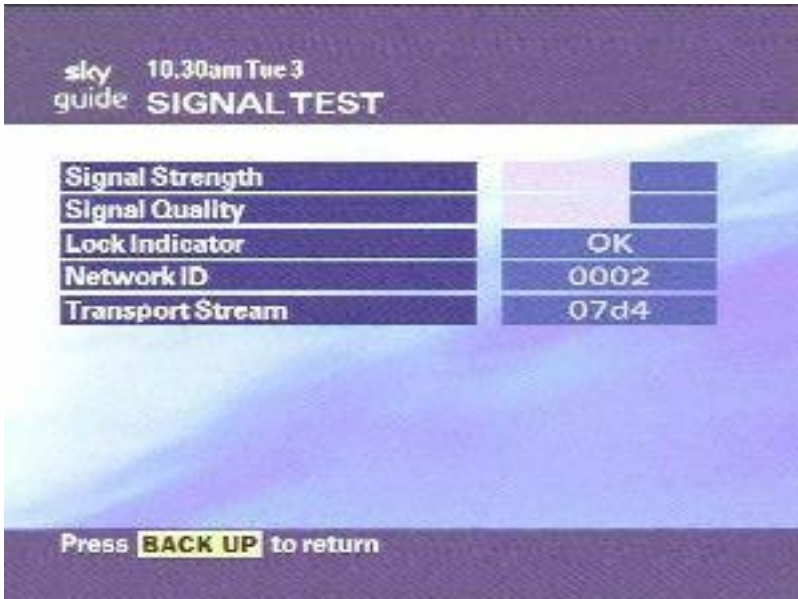
Now you **must be patient** and tilt it slowly back and forth while rotating it left or right until you see an indication on the signal menu. Make sure that the transmission is from the satellite that you want. Digital receivers can take a minute or more to "search the data stream for channel listings so give it time. The Sky Digibox will usually recognise the signal from Astra at 28.2° East of due south within about 5 seconds. You will need a signal strength of about 50% and a signal "quality" of at least 30% before the Digibox reports a "lock" condition. Once you've achieved this point, you can support the dish with bricks or rocks, ensuring that you don't alter its alignment. Pressing [tv guide] on the remote control should give the message "searching for listings". This will take a few more seconds. You should then be able to select a programme and see a picture. If you are unable to align the dish this way then please don't struggle any longer but **use the meter instead**.

Once you have the correct alignment, make a note of the precise compass bearing of the dish arm and/or put a piece of string or a pole on the ground to mark the direction.

Installing Sky Digital Satellite TV

Signal and Quality readings

These vary a lot even between identical models so don't put much faith in them. Higher is better but 50% for each is usually quite OK.



Press **Sky** then **services** then **4** then **6** to get to this menu screen.

Signal quality is a calculation that the Digibox makes, based on Bit Error Ratio (BER) or the number of errors that it detects in the data stream.

This is what you are aiming for.

Any readings of 50% or more should give you a perfectly watchable signal. If the lock indicator does NOT say "OK" then you are probably looking at a signal from the wrong satellite! I'd just like to mention that you *should* be seeing the menu screen on your TV set at this stage. If you are not then you have probably not connected the Sky Digibox to your TV correctly. Let's just look at that again.

- 1.** You do NOT need a connection from your terrestrial aerial yet. It will only serve to confuse you!
- 2.** You DO need a Scart connection from your Digibox to your TV. Make sure it's plugged into the Digibox "TV Scart" socket. If you plug it into your "VCR" socket then you will not see any menus.
- 3.** If the TV set has no Scart or phono input sockets, you will have to connect the Digibox RF Out socket to the TV aerial input socket then tune the TV until you can see this menu screen.

Note: This menu "times out" after two minutes. You may have to press that button sequence again!

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SLX Digital/Analogue meter

The beauty of this meter is that it has a switch for 22kHz signal which tells your "universal" (two-band) LNB to switch to "high band" which is where most Digital transmissions are.



The SLX Satellite Finder is a superb alignment meter powered from your satellite receiver so no power pack or batteries are needed. The unit has an onboard strength meter and an audible alignment tone to aid installation of your dish.

Technical Information:

Backlit meter scale

Back stand for freestanding operation

Audible signal strength

Adjustable level control

Adjustable sensitivity adjustment

Frequency range: 950-2250Mhz

Powered by receiver

Suitable for analogue and digital reception ([Available from our store](#))

If you point the dish at, say, Astra at 19.2'East of South (Sky analogue), the transmission strengths for both high and low band are very similar.

However, if you point the dish at Astra 28.2'E (Sky Digital) the signal on high band (22kHz "on") is very strong but on low band (22kHz "off") it is very weak. So it's easy to tell that you have aligned your dish on 28.2'E as this is the only satellite in the vicinity which gives almost no signal when you switch the 22kHz off. So you move the dish around the approximate position for 28.2'E until you get a strong signal with 22kHz "on". Now switch the 22kHz "off" and the signal should disappear. signal strength between high and low bands may disappear.

Bear in mind that a compass is for approximate dish setting, using the earth's magnetic field as a guide to the location of that little metal box floating TWENTY FOUR THOUSAND MILES AWAY in space. But there's a satellite positioned approximately every three degrees along the circle above the equator - some giving strong signals in the UK, some weak. So an error of a couple of degrees East or West will get you the wrong satellite. Also, the compass bearing is only correct if you are standing on the Greenwich meridian line. If you are East of it then the satellite will appear to be further West, and vice-versa. The Meter shows the *actual* signal from that little satellite so you can do the final alignment with ultimate accuracy.

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IMPORTANT: The meter will reduce the signal to the receiver quite drastically! This may be helpful in aligning with an analogue receiver (adjust for minimum sparklies) but a digital receiver may give NO picture with the meter in-line, even though the signal bar may be longer!

You **MUST NOT** leave the meter in line if you want trouble-free viewing. Some more-expensive-meter instructions state that the meter can be left in line but, in practice, the meter will often continue to give an audible tone and will inevitably degrade the signal - just compare the "quality" reading with the meter connected and disconnected.

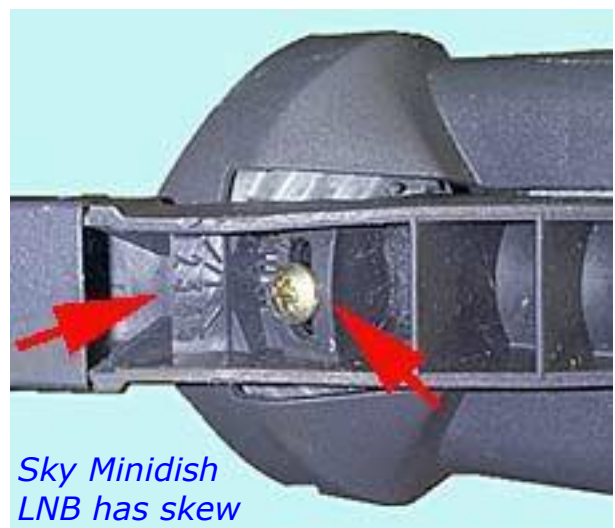
Skew Adjustment

You probably know, from looking at various TV aerials, that signals can be "polarised" to minimise interference between different stations. The aerial can be mounted with its rods either vertical or horizontal to match the aerial at the transmitting station. A horizontal aerial receives vertically polarised signals only very weakly, and vice-versa. The result is that neighbouring areas can use the same or similar channel frequencies provided that they use opposite polarisations. A similar idea is used for satellite transmissions. Every alternate transmission frequency is of opposite polarisation. This allows twice as many channels to be broadcast with minimal interference from each other.

For this to work properly, the LNB must be aligned exactly with the satellite. If the satellite is due south then vertical really is vertical and the LNB can be fixed with its cable hanging directly downwards.

However, the satellites are on an arc as we look at them from Earth; consequently, the LNB has to be twisted slightly to compensate—in effect, it's like tilting your head slightly to one side to read something that is not quite horizontal.

If you get this wrong then signals of one polarisation can interfere with signals of the other polarisation, with the result that some programmes may be missing or "breaking up", even though the measured signal strength is high.



*Sky Minidish
LNB has skew*

Installing Sky Digital Satellite TV

So, if LNB skew, or rotational position, is so important, how do you adjust it?

On the sky minidish, there is a slot and a locking screw that allows a few degrees of adjustment. The actual position depends on where you are located and how accurate your dish installation is (i.e. is it vertical). A professional installer will have either a digital satellite meter which tells him when the skew setting is correct, or a spectrum analyser on which he can see if signals of the opposite polarisation are creeping through.

The D.I.Y. installer will have to guess. A minidish with a Cambridge Industries LNB like the one in the picture will have the LNB set at almost the correct angle in the UK when the locking screw is central, at position number 3. With other types of dish, the LNB needs to be positioned so that, when you are looking at the front face of the dish, the LNB cable is angled slightly to

Focal area

Here's an interesting point. LNBs are designed to match a specific shape of dish. In the photograph, the LNB on the left is optimised to "see" an oval shaped dish, whereas the one on the right is designed to "see" a circular dish. We cut the covers off these LNBs which, outwardly, looked identical. Be careful what you buy! An LNB with a mounting spigot is for an oval dish.



Focal position

The Sky minidish is matched to its LNB so the focal position is always correct and needs no adjustment.

(The internal aerials of the LNB are precisely fixed at the focal point of the dish).

With other types of dish, the focal position

may need adjustment (if this is possible). LNBs such as the **ALPS** type have a smooth 40mm neck which allows some forward/ backward movement to set the focal position accurately. Again, this is easy with a professional meter. With a D.I.Y. meter you simply have to try to get the highest signal reading and hope that this is correct.

Alps LNB has room for focal adjustment



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Bear in mind that the individual transponder signals vary in strength, dependent on the programme content, so the overall signal tends to go up and down. Skew setting also affects the signal reading but highest isn't necessarily best so use the **"quality"** indication on the Digibox menu screen for final adjustment.

Weatherproofing LNBs



This rubber "boot" slips over the cable before you fit the "F" connector. When the "F" connector is screwed to the LNB, you can slide the boot up the cable to cover the connection. It will keep out rain more effectively if you put some silicone grease or petroleum jelly inside it. But there's a alternative:



Self-amalgamating tape bonds with itself when stretched but it doesn't stick to anything else. It has a protective plastic backing that must be peeled off (a pig of a job - if anyone knows the secret method, please let me know!) To use it properly, stretch it to twice its normal length then bind it with 50% overlap and it forms a permanent sealing

Continuing the installation: Now you have the confidence that the system works and you can apply yourself to the job of installing the dish in its permanent position. Take careful note of the dish orientation. Compare the direction in which the boom arm is pointing with a compass if you have one. If you are standing below the wall where the dish is to be mounted, mark the direction by lying a pole on the ground. This will help you to align the dish when you are up the ladder. Before touching any connections, unplug the TV and satellite receiver from the mains at the wall socket!

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Most dishes come with a wall-mounting bracket and can be swivelled East - West and up - down in elevation. Some brackets allow almost 180° of swivel so that the dish can be set at right angles to the wall, if necessary. You must check out this requirement when you buy the dish. Alternatively, you can buy a dish which can be fitted onto a pole (usually 2"/50mm diameter) which will allow you to point it in any direction. The pole can be planted in a hole which is then filled with concrete. It can also be fitted to a "Patio Mount" which consists of a short tube welded to the centre of a steel plate which has fixing holes.

The patio mount can be bolted to a concrete base on the ground or on a flat roof. The concrete base must be clamped down to resist the highest possible wind loading.

The pole can be fitted to a wall by means of a "T" shaped bracket and a "K" shaped bracket (called a "**T and K**" in the trade). However you fix the dish, it is of the utmost importance that you make sure the pole is VERTICAL. Use a spirit level and/or a plumb line but *do* make sure that it is vertical. With a fixed dish, you will not get the best reception unless the dish is mounted in a vertical plane.

The bolts which are used to hold the bracket to the brickwork use an expanding plug and go under various trade names, according to the manufacturer. "Spit", "Mungo" and "Rawlbolt" are all trade names of bolt manufacturers. Most installers use a steel bolt with a plastic plug.

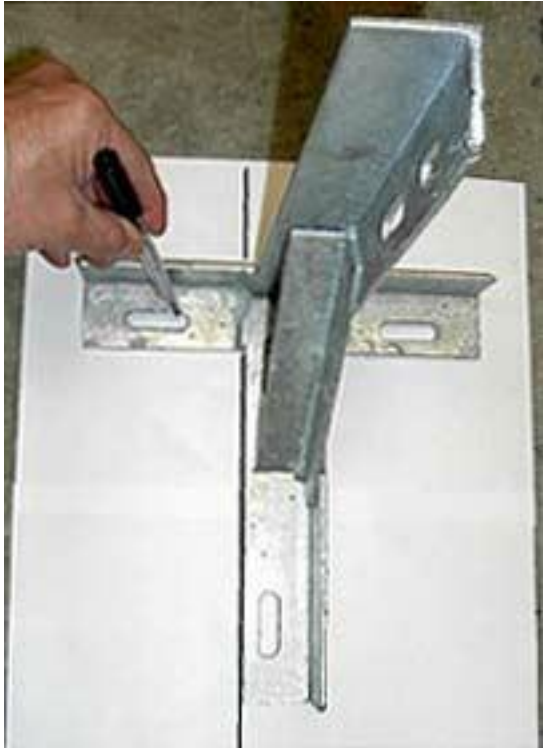
A **steel plug is NOT** recommended because it can split the brick.

The most common size requires a 10mm diameter hole to be drilled for the plug. You will need a hammer-action electric drill with a 10mm carbide-tip drill bit. If the electric drill is not battery-operated then, for safety sake, plug it into the extension lead with the RCB mentioned earlier. Do *not* drill directly through the holes in the bracket! There is a great danger that the drill bit will "snag" and you will have a large bracket swinging round on the end of your drill – no joke if you are up a ladder!



Installing Sky Digital Satellite TV

Instead, make a paper template as shown below. Be sure to include a line to indicate the vertical. You can then position the template against the wall and use a spirit level to align it against the vertical line. Hold the template in place with Blu-Tack or similar.



A template is especially important for a dish bracket or wall-mount such as this one. Get a helper to hold it so that the main tube is horizontal (use a spirit level) while you mark the hole positions on your paper template. If you are mounting the brackets on a brick wall, you must drill all of the holes in brick – not in the mortar between the bricks. Expanding bolts will not anchor firmly in mortar.

Some bricks have vertical holes. If you drill into one of these, the bolt may not hold and you may need to drill the holes slightly to the left or right.



In cold weather, the plastic plug becomes brittle so it's a good idea to drop the bolts and plugs into a pan of hot water to soften the plastic.

Push the (dry and dust-free) plastic plug into the holes that you have drilled. Oil or grease the bolt threads to make them easier to tighten. Silicone grease is recommended. If you put a button of something like Blu-Tack over the hole and also push the bolt through another "button" of Blu-Tack so that it sits below the washer, it will help to keep water out.

Installing Sky Digital Satellite TV

Be careful not to over-tighten the bolts. And if the bolt goes in at an angle, pressing hard against the bracket slot, it may snap when you try to tighten it. This can also happen if the hole is not deep enough, if you left brick dust on the bolt or in the plug, or if you failed to use grease.

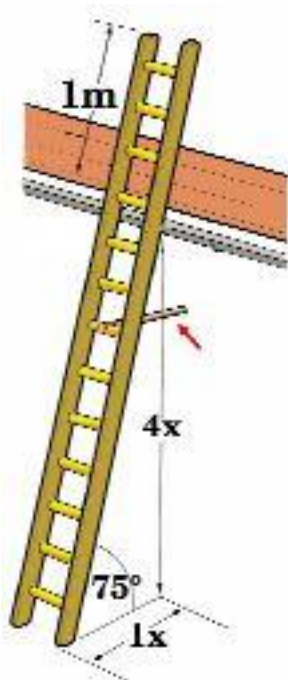
We've had people complain about "poor quality bolts" but bolts snap **ONLY** if you make the mistakes explained above.

It's a good idea to paint the brackets with ordinary outdoor oil-based paint. It will protect them from the weather and, with careful choice of colour, to camouflage them against the brickwork. If you plan ahead, you can paint them and give them time to dry before installing.

By the way; if you have never used a ladder before, now is *not* a good time to learn. Get somebody with experience to do this part of the job for you. It is most important that the ladder is sound and standing on a firm base – not soil – about 1m away from the wall for every 4m height.

Using an electric drill while standing on a ladder is dangerous. Dust can blow into your eyes (so wear goggles) and it is difficult to hold the ladder and the drill simultaneously, so be warned.

If the dish is to be mounted more than four metres above the ground then *please* get our professional to install it for you. The extreme danger of using tall ladders or of crawling up roofs can not be stressed too strongly.



The ladder should preferably have a suitable anti-slip base. Some have hinged feet with rubber underneath. In any case, the ladder should always be placed on firm ground. If the ground is soft, place it on a solid base which itself can not move. Prevent the ladder from slipping by hammering stakes into the ground or by securing with rope, sand bags or fixed blocks. The safest angle for the ladder is 75 degrees to the ground. This is achieved by making the distance between the wall and the ladder one quarter of the height from ground to roof. In addition, the ladder should extend a minimum of one metre above the edge of the roof or above the highest rung on which the worker will stand.

Installing Sky Digital Satellite TV

It should rest against a solid surface - not plastic guttering. Ladders are available with a pair of wheels near the top and these can be placed to give good stability and resistance against sideways slippage.

Once in position, the ladder should be further secured by drilling the wall and fixing a suitable bracket so that a rope or belt can be passed between the ladder rung and bracket. An expanding bolt, of the type used to mount a satellite dish, should be satisfactory (see red arrow in the sketch). Have someone "foot" the ladder while you secure it. If the ladder user will be working at a dangerous height then he should also wear a suitable harness which is anchored to the ladder or wall bracket. Never connect a harness to anything which itself is insecure!

Ladder Safety Tips

Don't work alone. It's much safer to have someone there to help you position the ladder, hand up tools, "foot" the ladder and to be available in case you injure yourself.

In case you do fall, make sure there are no tools or sharp objects below. These can do serious damage even if you slip only from the bottom rung.

Don't allow the person "footing" the ladder to wander off to bring something. Until the ladder is properly secured, you need the person to foot the ladder all the time you are on it.

Don't try to reach too far from the ladder. Reposition it or arrange for scaffolding to be erected instead.

Even if you think the job will take only 5 minutes, it's still essential to secure the ladder properly. It may seem silly to spend half an hour doing this but it's better than spending the rest of your life disabled (or dead). Don't work when the weather is bad. Wind and rain are not conducive to safety.

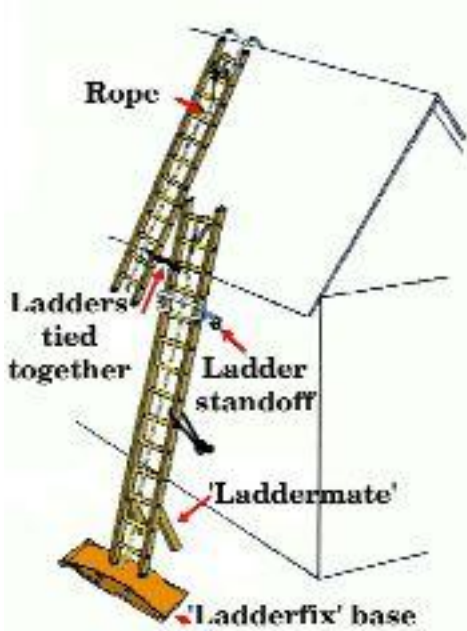
Flat Roofs

Make sure that the roof will bear your weight safely. Take especial care near the edge.

Installing Sky Digital Satellite TV

Pitched Roofs and chimney mounting

From the safety point of view, this is definitely **not** a D.I.Y. proposition. As the illustration shows, the lower ladder needs to be fixed securely in position and the roof ladder is hooked over the ridge tiles and secured to the lower ladder by strapping the stiles together.



The sketch shows the bare minimum. If sectional (extending) ladders are used then additional fixings will be required.

This information is not exhaustive and is included simply to warn you of some of the dangers involved in the use of ladders. If in doubt, employ a professional installer.

Once the bracket (and pole, if required) is fixed in position, you must fit the dish assembly to it. If the assembly is heavy, you may have to remove the boom arm and LNB then refit them to the dish when it is in position on the bracket. If you are using a Sky minidish, it can be installed as a complete assembly as it is quite light. Connect your six metre satellite cable between the LNB and receiver again. Set up the satellite receiver and TV as before (making the mains power connections last of all). Position the TV so that you can see the screen when you are next to the dish. Sometimes it is convenient to put the TV and receiver inside a bedroom window. Move the dish and locate the satellite signal as before. Clamp the dish loosely in position. To avoid "rain drop out" it is highly recommended that you use a "satellite finder" meter to finalise the alignment.

Installing Sky Digital Satellite TV

Indeed, if you have difficulty with the method described, you might need to use the meter in order to locate the satellite in the first place. At the time of writing, almost all of Sky Digital's transmissions are on high band so it is much easier to locate the satellite if you choose a satellite finder meter which incorporates a 22kHz signal generator, which will switch the "universal" LNB to high band. (as mentioned earlier)

Important: the meter is very sensitive. If its connecting cable is not making a good connection with the LNB, the meter will show a signal (interference picked up by the cable). If the dish is pointing at the ground or at a wall, the meter will show a signal (more interference from satellites, microwave door openers etc.)

Self Amalgamating Tape

Discard the six metre cable and fit an "F" connector to the remaining long cable. Connect this to the LNB and use

Selfamalgamating tape to make the joint waterproof. Peel the backing from the tape. Hold the end of the tape against the cable, 50mm away from the "F" connector. Stretching the tape, wind it around the cable with an overlap of half the tape width until the tape touches the LNB body. Continue stretching and winding until you get back to the starting point. Cut the tape from the reel at this point. The "F" connector should be covered completely by the tape which will have welded itself to form a tight rubber tube.

(The only way to remove the tape is to cut it with a sharp knife). If the LNB connection is not made watertight then water will get into the cable and ruin it. Frequently, the water runs down the cable and wrecks the satellite receiver, too. Loop the cable below the LNB then run it back along the boom arm. The loop helps water to run off and also prevents it from running down the inside of the cable if the seal is damaged. The cable should be held to the boom arm with tape or, preferably, with cable ties.



Installing Sky Digital Satellite TV

Fitting the cable

Use cable clips every 300 to 400 mm to fix the cable along the wall. Do not hammer or compress the cable itself and do not bend it tightly around corners. Any kink in the cable can reflect the signal passing through it. Sometimes only one or two satellite channels are affected and the cause can be difficult to find. Where the cable must enter the building, you need a hole. A 10mm carbide-tip drill at least 380mm in length will be needed to drill through a standard brick cavity wall. The hole should slope downward slightly from inside to outside and the cable should approach the hole from below. These measures prevent water from entering the wall. The hole should be sealed around the cable with a mastic sealant. Where the cable enters the room, it is possible to fit a screw type socket to the wall. Our installers will *not* fit these because of the expense and difficulty and the possibility that signal loss will occur (since it does occur at every joint in the cable). More important than signal loss is signal reflection, which can cause major problems with digital TV.

The best (affordable) satellite cable is called "H109" This cable has copper braid screening wrapped with copper foil. Ordinary satellite cable has aluminium foil on copper braid. Some moisture will always get through the plastic sheath and, when it does, the combination of aluminium on copper will corrode and swell. The cable will cease to perform well. This effect does not usually become evident for several years. Copper foil does, however, give slightly better screening than aluminium and, therefore, lower signal loss, which is an important consideration for a long cable run. In addition, copper foil has excellent conductivity so it *must* be used in situations where a good safety earth connection is essential (such as distribution systems through more than one property).

Installing Sky Digital Satellite TV

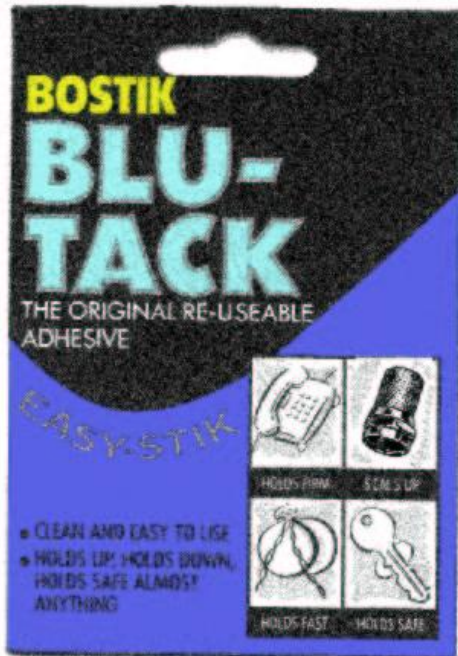
Professional Installation Tips

Never drill a hole through a window frame. It will cause **a.** severe rot in the frame **b.** extra expense to re-cable when you decide to fit double glazing.



This connector is specially designed to fit through a window opening so you can still close the window (see our store).

Always drill through the wall, with a *sharp*, 10mm masonry drill, downward from the inside. Always check that there are no gas pipes, electrical wiring, central heating or water pipes where you are about to drill. Check both sides of the wall and make sure there is nothing in the cavity. Never use a hammer action on the last 25mm of the wall – this will cause a large portion of brick face to fall off.



Always seal the outside hole around the cable with Blu-Tack, a mastic sealant, or a bathroom type sealant (which can match the brick colour) to prevent ingress of moisture.

Never cut the cable close to the wall on the inside. Allow at least two metres spare – you know that your spouse will want to move the TV set across the room next week!

Always use a good quality satellite cable such as "H109F". Cheaper cable may deteriorate over a few years and **TV cable** will be useless from the start.

Cable clips go in quicker and better if you use a small Lump Hammer rather than a claw type but make sure you do not kink the cable however you fit the clips.

Installing Sky Digital Satellite TV

Don't be tempted to carry out an installation if it is windy or in wet weather. Both effects increase the risk of injury, and water inside a cable will ensure early failure. Be patient and wait for a calm, dry day. Don't fit the dish above a doorway because rain drips will soak you for ever afterwards.

Before you plug the TV aerial cable into the satellite receiver, make sure that no water can or has got into the cable or dribbled down the outside of it. I have seen several brand new satellite receivers destroyed because condensation ran down the outside of the TV cable. If the TV cable comes via the window frame, always loop it lower than the satellite receiver.

Finally, make sure that the dish is not distorted or dented in any way, otherwise you will never get satisfactory pictures.

Laying Cables Inside a Room

Beware the dreaded gripper rods! Usually it is possible to lie the satellite dish cable neatly beneath the carpet – between the gripper rod and the skirting board. Having peeled the carpet back from the skirting board and exposed the gripper rod, carefully lie the cable into the exposed gap but be careful – those little “upside down tacks” through the rod are very, very sharp, so mind your fingers and have a good supply of elastoplast to hand! Having survived the first hazard, do be sure to fit the carpet back inch by inch. On no account allow the cable to lie on top of the nasty little spikes as the simple weight of the carpet on top of the cable will cause the spikes to penetrate right through the cable, causing a very nasty short circuit on your satellite receiver and resulting in an expensive repair before you've watched even one programme!

We're into Rubber!

A rubber hammer can be used to get dents out of carrier-delivered satellite dishes. Use a bouncing-ball action, holding the hammer loosely. It leaves no marks or scratches and costs very little from the market. Sharp dents can not be removed in this way. As the dish shape is critical, don't accept a damaged one. Check it on delivery.

Click-Click

You can buy ratchet-action ring spanners to speed-up dish assembly.

Installing Sky Digital Satellite TV

Connecting your Satellite System to TV and Video

There are two methods of connecting your satellite system up to your video recorder and television set. The most common is by means of those leads which have a TV plug on each end (often called "Patch Leads" or "R.F. Leads"). The other method is to use SCART leads (The multi-pin European standard connection system – also called "Euro connector" and "Peritel") which employ thick cables with 21 pin plugs.

While it is "technically" better to use the SCART method, the end product will not be a great deal different as far as the picture is concerned but will be much better where the sound is required to be of top quality, especially in the case of stereo transmissions. Most satellite receiver handbooks show examples of connections using both R.F. and SCART leads, but do not go into detail about the major enemy – namely "Cross Modulation" – a term which leaves a nasty taste in the mouth of most installers!



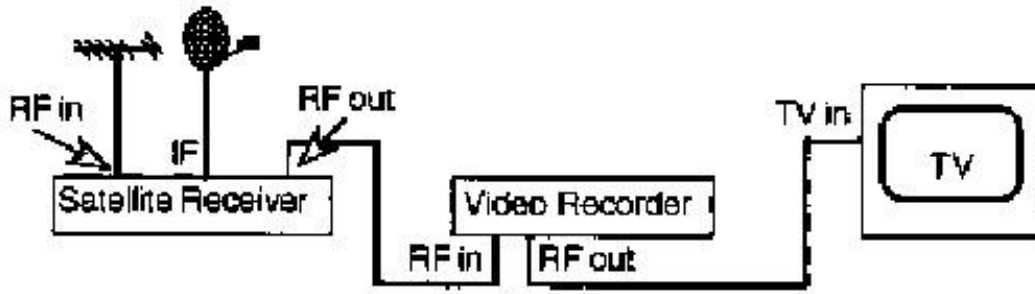
Cross Modulation ("Xmod") can be thought of as a virus that may be difficult to cure. Basically, Xmod occurs where various signals from TV stations, satellite receivers, video recorders and spurious emissions from TV sets get on top of each other, thus weakening your picture and producing generally strange forms of patterning ("Herringbone", "Venetian Blind", "Wavy Lines" and "Graininess") on the picture.

You may have seen this previously as "Foreign interference" on your TV picture during stormy summer weather.

So here are some simple guidelines to help you get perfect pictures, on the assumption that the dish is already installed accurately. We shall concentrate on the R.F. lead method of connection since this is far more likely to produce Xmod than the SCART method.

Installing Sky Digital Satellite TV

1) The basic connection layout



2) Remember the chain

First, TV aerial into satellite receiver.

Second, RF lead from satellite (RF out) into video recorder (RF in or TV in).

Third, RF lead from video recorder (RF out or TV out) to the aerial socket on the TV set.

Basically, all you need to do to achieve this is to remove the incoming TV aerial wire from the rear of the video recorder and plug it into the satellite receiver socket marked RF in or TV in. Fit another lead between the now vacant socket on your video recorder and the RF out/TV out socket on the satellite receiver. At this stage you should check that the TV and video recorder are working normally (the satellite receiver will need mains power but can be left in standby).

3) Tuning in the satellite to your TV

Select an unused channel on your TV (for example, channel 7). On no account use the channel number which you already use for the video recorder (often 0 or 6).

Now make sure the TV is switched on and this new "satellite" channel number is selected. You should see a completely blank screen.

At this stage, it is a good idea to practice tuning your TV. Refer to your TV handbook and tune this new channel to get ITV or BBC.

Find out how to STORE this channel. Test that it has stored by changing channel then back again – is it still there? Has it lost colour?

Check the sound to make sure there is no buzz (fine tune to clear this if there is a buzz and STORE the new setting).

Now that you have practiced tuning your TV, find out how to tune your video recorder by selecting a spare channel on it (for example number 7)

Installing Sky Digital Satellite TV

as you will want to be able to record the satellite programmes. Change your TV set to the normal video channel so that you can see what you are doing on the screen. Tune in ITV or BBC on the spare channel on your video recorder and STORE it. Having mastered the tuning of both your TV set and your video recorder, you are ready to bring the satellite receiver on-line.

4) Receiving Satellite

Set up a test signal from the satellite receiver. This is usually done by pressing the "services" button on your satellite receiver handset to generate a menu picture to look for. Note that the menu screen "times out" after a few minutes so you may need to press the button again, later.

On the TV set select the new unused channel and tune this until you see the menu picture. (If your TV has Automatic frequency Control — AFC — turn this *off* while you tune.) Press STORE on the TV handset. Now switch off the satellite receiver and you should have a totally blank screen. If you have any sign of a picture or fuzzy images you have the makings of "Xmod" described earlier. Switch the receiver back on and change the RF Out channel to a different number, then re-tune the TV channel to get the satellite picture back. Repeat this process as many times as necessary.

5) Recording Satellite

To bring the video recorder into play for satellite simply switch to the video channel on the TV set. Return to the video recorder and tune in channel 7 (or the spare one you have chosen for satellite) until the satellite picture appears on the TV screen. Remember to STORE it.

AND THAT'S THE JOB DONE!

Installing Sky Digital Satellite TV

Problems

- 1** Buzz on sound = re-tune TV satellite channel slightly. Be sure to turn *off* the Automatic Frequency Control (AFC) while you do it.
- 2** Black & white picture = re-tune TV satellite channel as above.
- 3** Records in black & white = re-tune video recorder satellite channel
- 4** Buzz on sound recording = re-tune video recorder satellite channel
- 5** Grainy or poor quality pictures = bad RF leads
- 6** Recorded movie pictures fade in and out or picture rolls. You are probably trying to record a "macrovision"[™] encoded film channel.

DO USE GOOD QUALITY RF LEADS – NOT CHEAP WHITE ONES FROM THE MARKET – AND KEEP THEM AS SHORT AS POSSIBLE.

If you connect your system by using SCART leads instead of RF leads, the picture quality may be better and you will benefit by having high quality stereo sound available, if required.

Note that, if you want to record a satellite channel that is possible but *you can't watch a different satellite channel at the same time* — although you can watch a terrestrial TV channel while recording from satellite— unless you have a "Sky Plus" Digibox - in which case you won't need the video recorder anyway.

Installing Sky Digital Satellite TV

The Sky-Plus Digibox

With this box, you can *watch* one programme while you *record* another. You can NOT watch two programmes at the same time.

An existing Sky subscriber in the UK can buy a Sky-Plus Digibox for £199 plus fitting charge. In addition, Sky will charge £10 per month for the ability to record programmes. (Prices may change).

For £12 per month more you can have a second smart card for a standard Digibox, which will get the same programmes as the first card.

Sky say you **MUST** connect the Sky-Plus Digibox to a telephone line. However we know it is able to work OK without.

To authorise the cards is a two step process. You authorise the card as usual (by modem for 99.9% of users) - you then have to ring a different voice number to upgrade to Sky+ for the extra £10 per month - without this you can't record at all.

The remote control handsets for the standard Sky Digibox and for the Sky-Plus Digibox are NOT interchangeable*. This is good because you can have both boxes in the same room without one remote interfering with the other box. However it's BAD because your second remote in the bedroom won't work your Sky-Plus Digibox downstairs via the "TVLink", "Digi Link" or "PowerMid". You will have to buy a second Sky- Plus remote control handset.

** But you can reset the standard remote to operate channel up/down on the Sky-Plus Digibox. See web site page for details.*

The Sky-Plus Digibox has two internal tuners and is supplied with a Quad-output LNB as illustrated here. The LNB comes with a kit of adaptors which allow it to be fitted to any of the three makes of "minidish".



Installing Sky Digital Satellite TV

It has four outputs. Two must be connected to the Sky-Plus Digibox tuner inputs via suitable coaxial cable. The other two can be connected either to a second Sky-Plus Digibox or to one or two standard Sky Digiboxes (or Free To Air receivers if that's what you want).

As with the standard minidish LNBs, this **Quadoutput LNB** is designed to give optimum Performance with an oval shaped dish, which is wider than it is tall. The red arrow points to the feed horn which has "cam" shaped scalar rings at its entrance. This feature makes the feed horn focus on the exact shape of the dish. This LNB will give *poor performance* on a Standard dish and, likewise, a quad-output LNB (below) designed for use with a standard dish will give poor performance on a minidish.



Here is a standard Quad-output LNB. Notice the circular scalar rings of the feed horn.

Skew adjustment is carried out by slackening the screws in the top of the bracket and twisting the LNB.

This adjustment is essential to align the LNB internal antennae exactly with the received polarised signals from the satellite.

If it is incorrect then horizontally- and vertically polarised signals will interfere with each other, resulting in loss of "quality" - "blocking" or "pixellisation" or "picture freezing" and complete loss of picture and sound on some channels. Another view of the Sky-plus Quad-output LNB, showing the



Installing Sky Digital Satellite TV

position of the clamp screws for **skew adjustment** and the shape of the bracket which fits to the dish arm.

By the way, the simplest way to **remove the existing LNB** is to hold a piece of wood against the feed horn cover and tap it with a hammer until it pops out of the dish arm.



Sky-Plus cable

To make installation easier, the cable that is normally used for the Sky- Plus Digibox is "Shotgun" or "double-barrel" coaxial cable type CT63.

Because of its narrow diameter, this twin cable can be pushed through the usual 9mm hole that is drilled through walls for H109, removing the need for drilling an additional hole. It needs special "F" connectors - standard ones will not provide a tight fit and must not be used. Standard "7mm" wall clips are too small and will crush the cable so the correct clips should be used.



Although this cable is double-screened with copper braid on copper foil, it is not as efficient as, say, H109 and should not be used in lengths greater than 20 metres. Nor should it be joined at any point. A straight run without "discontinuities" is essential.

In brief, "shotgun" cable can make installation easier but it needs special fittings and can not be used for long runs*. Joints and wall plates are not recommended, although they can be used if essential. Use the correct special "F" connectors

*For LNB use, keep the cable short. But for RF runs (aerial and Digibox RF output) it can be as long as 100 metres without degrading the signal significantly. You can also split the cables apart to make one single run.

Troubleshooting

Missing Channels

Missing channels can have lots of causes. It's best to list every channel that is missing and then add a note of the frequency (transponder) and polarisation (H or V) to each one. These notes will allow you to see if there is a common factor.

- Maybe all the missing channels are of one polarisation, indicating an LNB fault, a receiver LNB voltage fault or a bad cable connection.
- Or they may all be "low band" channels, indicating an LNB fault again or a faulty receiver sending a 22kHz signal (band selection) to the LNB. (Sometimes power supply interference can cause this effect).
- Or they may all be of the same frequency. This could have many causes including a faulty receiver, faulty LNB, faulty cable or connection, faulty dish or external microwave interference.
- You may be in a "fringe reception area" of Europe.
- Your smart card may be faulty - a common cause of "missing channels".

BskyB will want to do transmission tests before swapping it.

No Lock Indication

If the Digibox indicates a good signal but low quality and/or no "lock" then you have probably aligned your dish on the wrong satellite. As always, the easiest way to check is by connecting a known good Digibox to your dish. If this also fails to work, you have an installation problem.

If it *does* work, then your own Digibox is probably faulty or simply unsuitable if you are in a fringe reception area. Try connecting it to a known good dish, nearby.

For Sky Digital from Astra 2 at 28.2'E the parameters are normally:-

Default transponder - 11.778V and **Network ID** is 0002

Transport Stream is 07d4 (varies according to your selection of default transponder).

For Astra 1 at 19.2'E the Network ID is 0001

For Hotbird at 13'E the parameters are:-

Network ID = 013e and Transport stream = 1450

So you can tell which satellite your dish is aligned on by looking at the Network ID in the menu screen.

Installing Sky Digital Satellite TV

Some Digiboxes do not work correctly with certain types of LNB. The cause is uncertain but changing the LNB often solves obscure problems where the receiver works OK when connected to a different dish installation.

We can't stress too highly the importance of testing your Digibox on a known good installation and of testing your own dish installation with a known working Digibox. Although you may think this is tedious and requires asking favours of friends, it will usually give you valuable clues to the fault cause and, in doing so, save you weeks of frustration and expense. Please don't expect us to guess if you ask: "is my receiver faulty?"

Card Problems

Test the card in another Digibox. It should generate an on-screen message that the wrong card is inserted. Check that it gives some FTV programmes by selecting, say, CH4 through the menu system. If it fails to work in another Digibox, the card is faulty or has not been authorised yet.

If it works OK like this in another box then the Digibox to which the card is paired must be faulty (or may simply need a software download).

Using the Digibox outside the UK

All things considered, it's much easier simply to take your own Digibox and smart card from home!

BskyB can not condone it. They have a legal duty to protect the copyright of the programmes that they transmit. Most programmes are licensed for viewing in a specific country or region which, in the case of BskyB, is the UK.

You will not be sold a Sky viewing card *unless* you apply for it from a UK address. All viewing cards are regional - the UK postcode determines which local TV region programmes you will receive. At the time of writing "FTV" (Free To View or "Freesat") cards are available from our store . The telephone connection will not work (**and is not needed**) because it uses a UK "0800" number and you can not insert an international dialling prefix unless you have a special "dialler box".

Installing Sky Digital Satellite TV

The box requires 230 volts/50Hz power which should be fine for Europe. The RF output uses "PAL I" system so you will get no audio on a European TV unless it supports PAL I or unless you use a Scart connection instead. This also means that you will get picture but not sound if you extend the system using the RF connection to a European TV. The only way to extend it would be with an external RF modulator connected via Scart (or connect it to a video recorder via Scart and use the video recorder PAL-G RF output) or use a PAL-I compatible TV set (which many Philips and Grundig sets are)..

If you are in a fringe area where reception of the "north beam" is bad or impossible, there are two ways of fixing this. The second way is probably better in places like Tenerife, southern Spain, Portugal, Greece.

Enter [services](#) Press "4" twice you will then be in the add channel menu Change frequency 11.778 V to 12207V (the Sky News transponder).

Go to Find channels and press select

Press [yellow](#) button to store or Press "[services](#)" then press "4" then "0" then "1" then "[select](#)".

The second line down is " default transponder". Change this to 12.207 V Save new settings .

If it later changes back to the normal default of 11.778 V then your receiver **is** getting a reasonable signal from the "north beam".

Notes:

The above notes apply to "Sky" cards and "FTV" Free To View cards (which look identical - dark blue with a yellow house outline).

You do NOT need a smart card for the receiver to function normally with the totally FREE channels. You can access these Free To Air programmes and all menus without a smart card.

Installing Sky Digital Satellite TV

Final note

Before you buy a dish, check whether you need planning permission, listed building consent or owner's/ landlord's consent.

Remember, you are responsible for the appropriate siting of satellite dishes; if you have any doubt, contact the planning department of your local council or seek independent professional advice.

Checklist for Selection, Purchase, and Installation

1. Check if you need the landlord's, or owner's consent.
2. Don't allow a dish to be installed without first finding out whether or not you need planning permission or listed building consent.
3. Use reputable and authorised suppliers and installers.
4. Select a dish no larger than the minimum required for good reception.
5. Site the dish in an inconspicuous place, preferably where your neighbours and the public cannot see it.
6. Avoid breaking the skyline with the dish and, whenever possible don't site it in front of the house.
7. Select a dish that blends in with its chosen background.

Respect the environment.

The cheapest option may not be the most environmentally friendly. Don't forget that you are responsible for having it installed; poor siting may lead the council to require you to resite the dish at your own expense.

Satellite TV technology continues to evolve: you should be aware of the different kinds of system so that you can make an informed choice.

If you have any problems not covered in this guide, please let us know— enq@brittany-satellites.com