ASTRA 2Connect

Astra2Connect Point&Play® Setup

Version 2.3 - January 2009

ref. nr: 26042

Contents

1 Introduction

About this guide

This guide provides a step-by-step procedure to install the Astra2Connect terminal (consisting of the antenna and the IPmodem).

Before installing

Before starting to install the antenna, it is important to read the following sections:
- Safety precautions (page 4)
- Material provided in the box (page 6)
- Material you need to provide yourself (page 8)

Follow the entire procedure

When installing the antenna, it is important that you follow the entire procedure step-by step. When pointing the antenna, you may need to repeat the steps from the section **Rough pointing: horizontal (azimuth) (page 36)** onwards to obtain optimal signal reception and transmission.

Related documentation

When installing the satellite dish, you will need to refer to the following documents:
- The Antenna Pointing Information document, which contains the geographical pointing data (booklet included in the box)
- Terminal User Manual (available on the CD included in the box)

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Safety precautions

This section lists the safety precautions to follow when installing the antenna.
Safety precautions are grouped into warnings and cautions.

Local regulations

Always install the Astra2Connect antenna in accordance with applicable local regulations. Consult with a licensed electrician if in any doubt.

Warnings

A **warning** refers to an action or situation that could result in **injury, long term health hazard or death** if you do not follow the instructions.

Antenna

- RF radiation hazard: Hazardous electromagnetic field levels are generated in the area between the antenna reflector and the iLNB feed horn during transmission. Do not place any part of your body in that zone while the system is on. Take the necessary precautions to prevent access to the antenna by children or unauthorised persons.

IPmodem

- There are no user-serviceable parts in the IPmodem. Do not attempt to open the system. There is a risk of electrical shock that may result in injury and death. The IPmodem should only be opened by a technician trained and certified to service the product.

- To prevent the risk of fire or electrical shock, do not expose the indoor equipment to rain, liquids or moisture. Do not place any objects containing liquids (e.g. glasses, vases) on the system.

- Do not install the antenna and IPmodem when there is a risk of thunderstorm or lightning activity in the area.

- Do not use the in-line power supply power cord when damaged in any way.

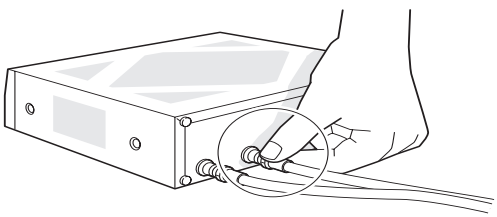
Cautions

A **caution** refers to an action or situation that could result in **equipment damage or destruction** if you do not follow the instructions.

IPmodem

- Always use the in-line power supply included with the IPmodem. Using a different power supply may cause equipment damage.
- To ensure regulatory and safety compliance, use only the provided power and interface cables or cables conform to the specifications within this manual.
- Do not open the unit. Do not perform any servicing other than described in the installation instructions. Refer all other servicing to qualified service professionals.

- Static electricity can damage the Astra2Connect modem. To avoid damaging the IPmodem with static electricity, always touch the grounded coaxial cable connector prior to touching any other part of the system.



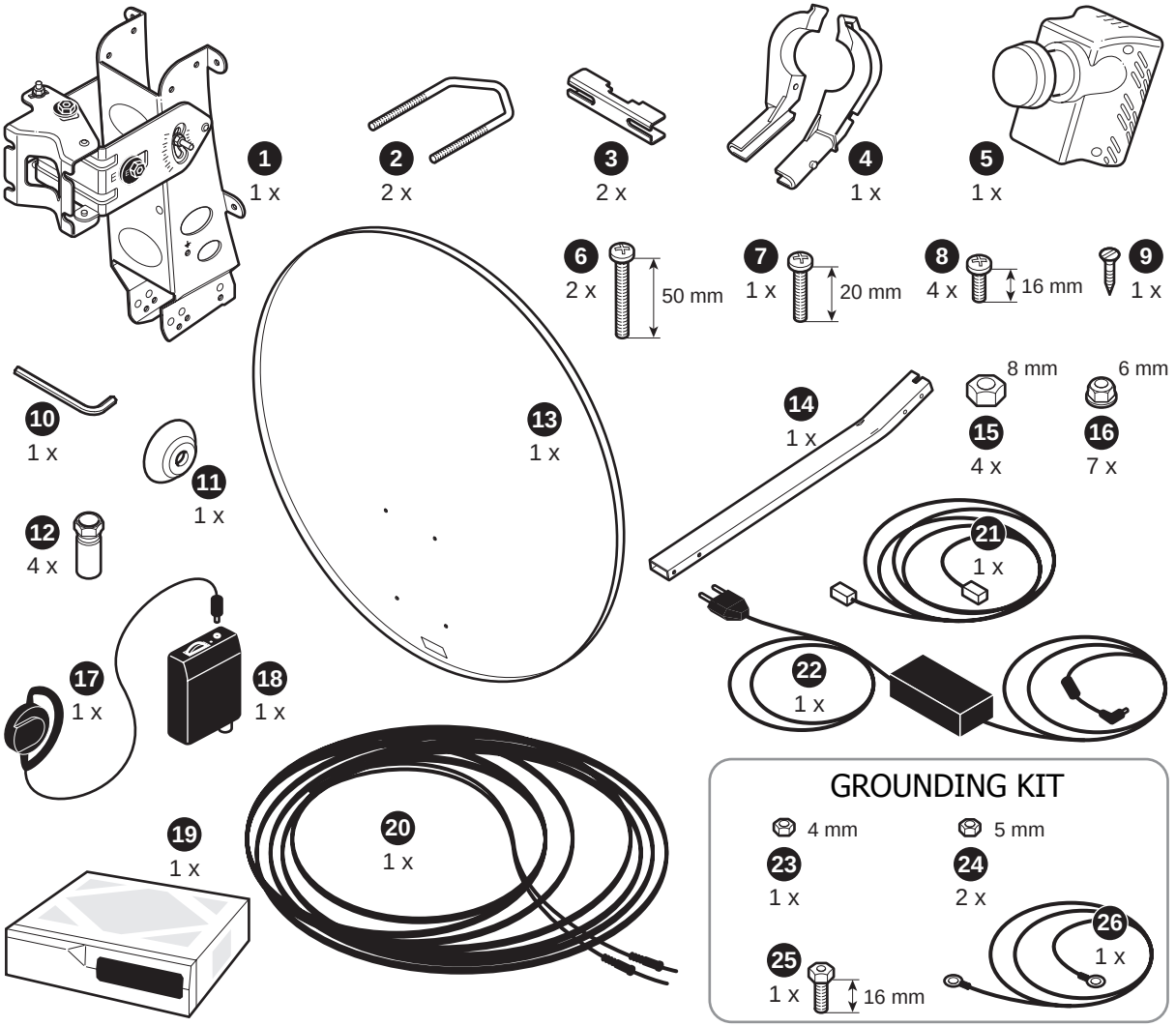
- To clean the outside of the unit, use a clean, dry cloth. To avoid equipment damage, never clean the system using fluids, detergents or chemicals. Do not use pressurised air to remove dust from the unit.
- Install an AC surge arrestor in the AC outlet to which the IPmodem is connected to avoid damage to the equipment from lightning strikes and other electrical surges.
- To prevent overheating, do not block the ventilation holes on the sides and top of the unit.

Point&Play® tool

- To avoid damage to your hearing, ensure that the volume of the Point&Play® tool is not set too loudly.

ASTRA 2Connect

Material provided in the box

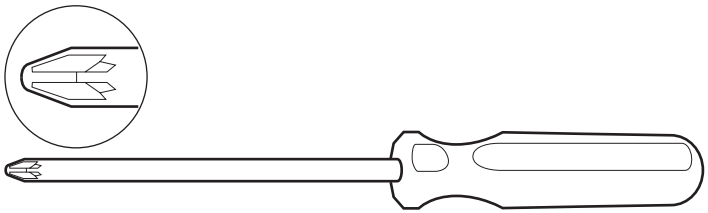


Material provided in the box: list

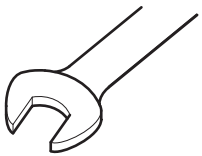
Number on figure	Item	Quantity	Number on figure	Item	Quantity
1	Masthead	1	15	Nut M8	4
2	Brackets	2	16	Nut M6	7
3	Pole clamps	2	17	Headphone	1
4	iLNB clamp	1	18	Point&Play® Tool	1
5	iLNB (Interactive Low Noise Block downconverter)	1	19	IPmodem	1
6	Screw 50 mm M6	2	20	Coax cable	1
7	Screw 20 mm M6	1	21	Network (ethernet) cable	1
8	Screw 16 mm M6	4	22	Power adapter	1
9	Parker Screw	1	23	iLNB grounding nut M4	1
10	Hex key	1	24	Masthead grounding nut M5	2
11	Cap	1	25	Grounding screw 16 mm M5	1
12	F-connectors	4	26	Grounding wire	1
13	Satellite dish	1		CD and documentation	
14	Feed arm	1			

Material you need to provide yourself

- A solid base for the antenna;
- An antenna pole;
- A Phillips head screwdriver PZ2;



- Open-end spanners of 10, 11 and 13mm;



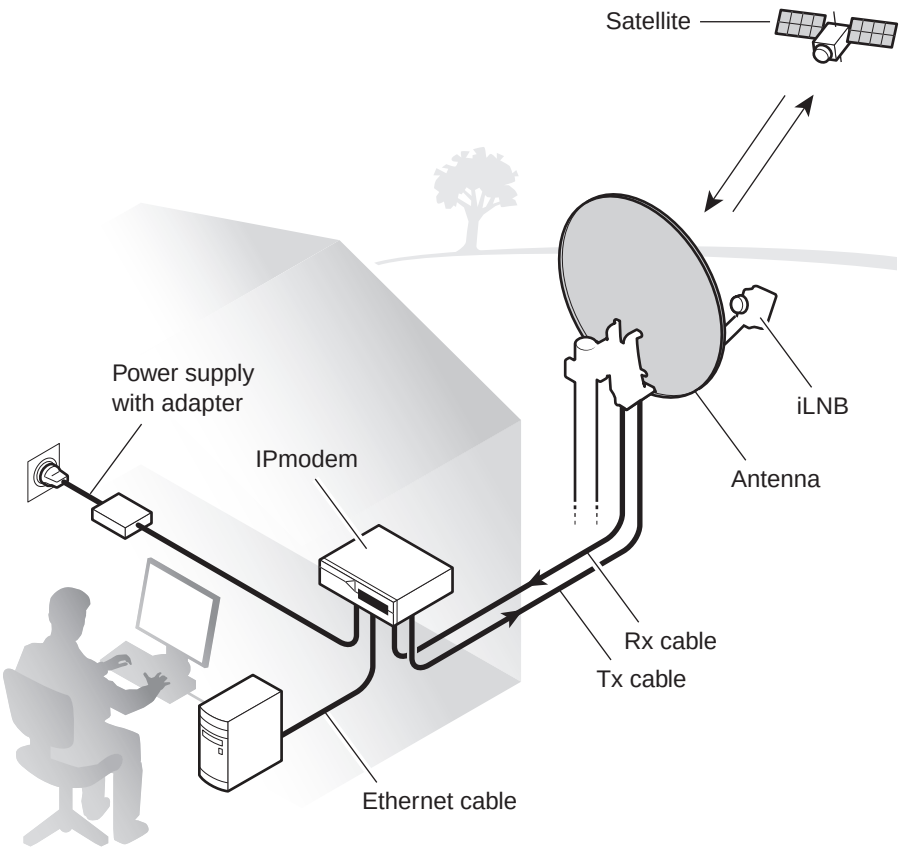
- Tie-wraps;
- A cutter;
- A reliable compass;
- A spirit level;
- Geographical pointing data, available in the **Antenna Pointing Information** document.

Antenna pole requirements

- The antenna pole must be installed on a solid base and made of **galvanised steel**.
- Minimum diameter: **40 mm**.
- Maximum diameter: **70 mm**.

Installation overview

The image below shows the results of a **typical installation** as described in the following pages. Please read these pages carefully to execute the installation.



2 Setting up the antenna

Assuming you already have a solid base (made of concrete, or firmly attached to a wall), installing the antenna includes the following steps:

Step 1 - Choosing a suitable location

Outdoors: antenna

- When setting up the antenna base, take account of the **orientation** the antenna must have. Orientation data are available in the **Antenna Pointing Information document**.
- The antenna needs a **clear view** towards the satellite (without any buildings, trees... that may hinder the signal).
- To connect the antenna to the IPmodem, you will use a coax cable. You can use the provided coax cable or a coax cable with the same specifications as described in the **Terminal User Manual** on the CD.
- The coax cable connecting the antenna to the IPmodem must not exceed 30 meters. The coax cable included in the box is 30 meters long.

About your Astra2Connect Terminal

For more information on the Astra2Connect Terminal, refer to the section Getting to know your Astra2Connect Terminal in the Manual for Astra2Connect terminal (available on the CD included in the box).

Indoors: IPmodem and computer

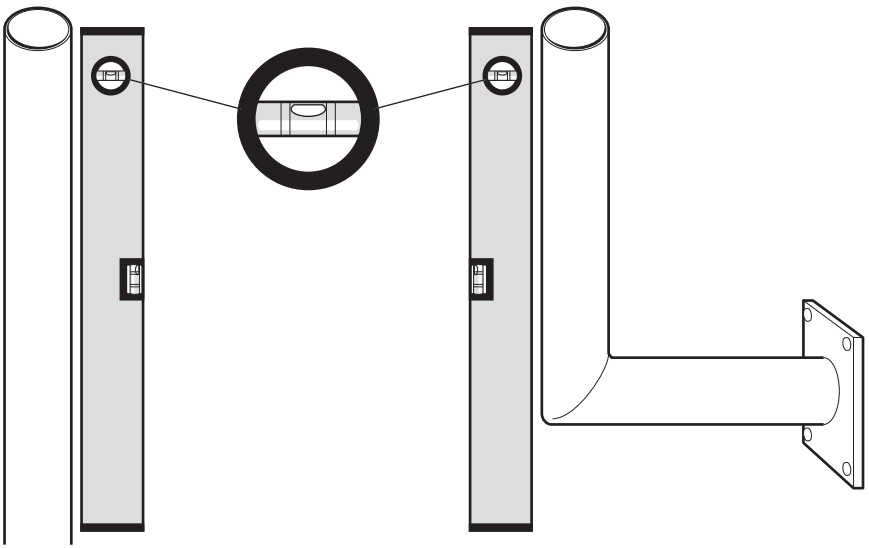
Put the IPmodem in a dry room.
Indoors, you will need to connect the IPmodem:

- To the **antenna** (with the coax cable);
- To your **computer** (with a network cable). You can use the network cable provided in the box or a cable of your choice (for example if you need a longer cable to connect the IPmodem to your computer);
- To a **wall outlet** (with the power adapter provided in the box).
  Power adapter specifications: universal input range 100-240 Volt, 50-60Hz.

These steps are described further in this document.

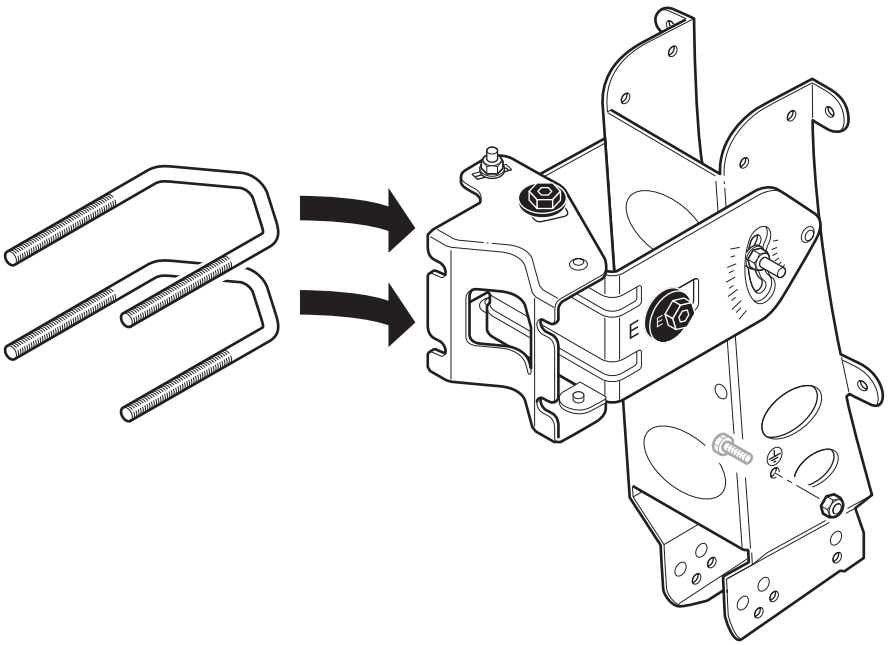
Step 2 - Mounting the antenna pole

When fixing the antenna pole on the base, use a spirit level to make sure the antenna pole stands upright.



Step 3 - Mounting the antenna

1 Fix the grounding screw with a masthead grounding nut to the masthead as shown.

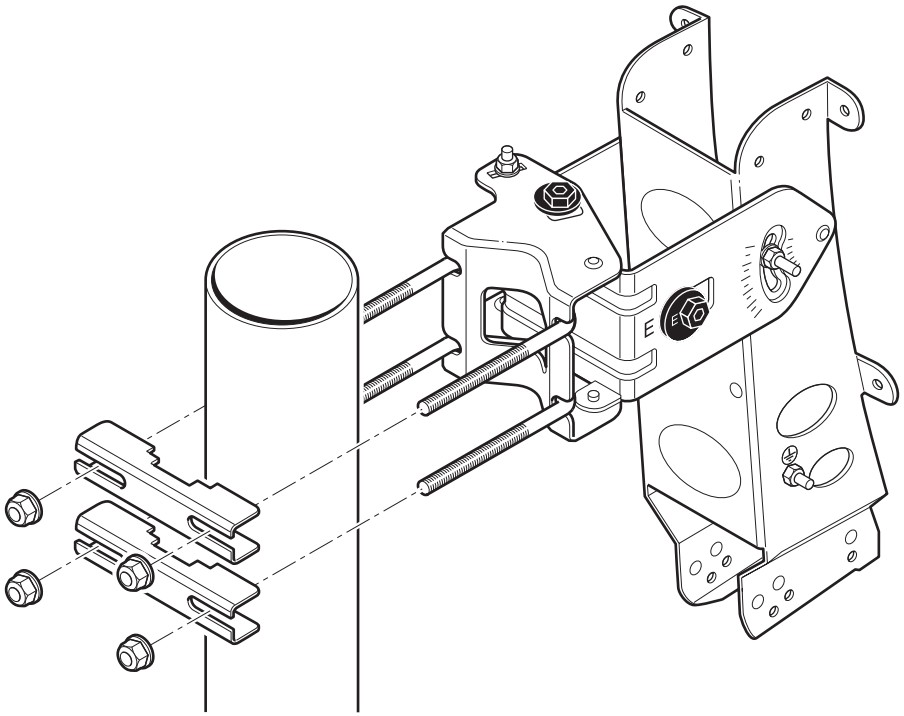


2 Insert the 2 brackets in the masthead as shown.

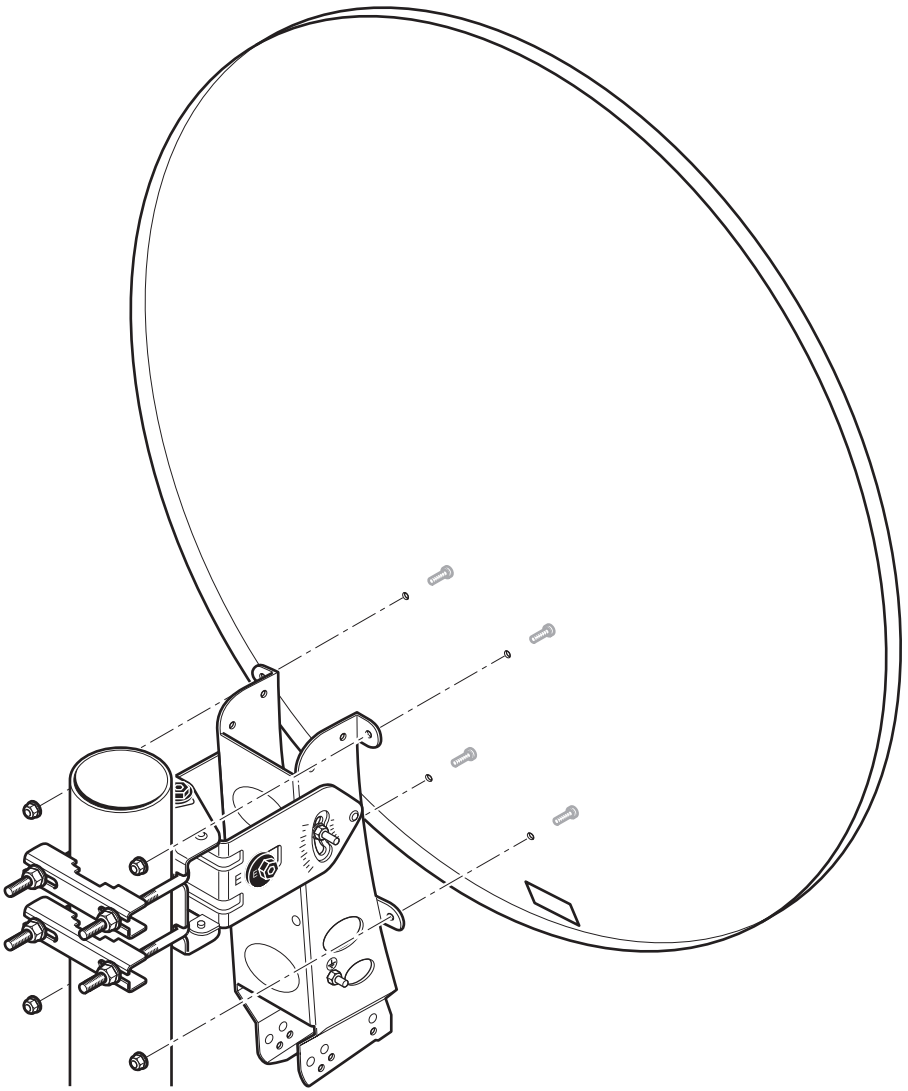
3 Use the 2 pole clamps and nuts to attach the masthead to the pole.

- If the pole is low enough, you can first assemble the masthead, brackets and clamps and slide the assembly over the antenna pole.
- If the pole is too high or does not have an open ending, you will have to fix the masthead around the pole.
- Do not attach the clamp too tightly as you will need to adjust it later on, but make sure the clamp is attached tightly enough to prevent it from sliding down the pole.

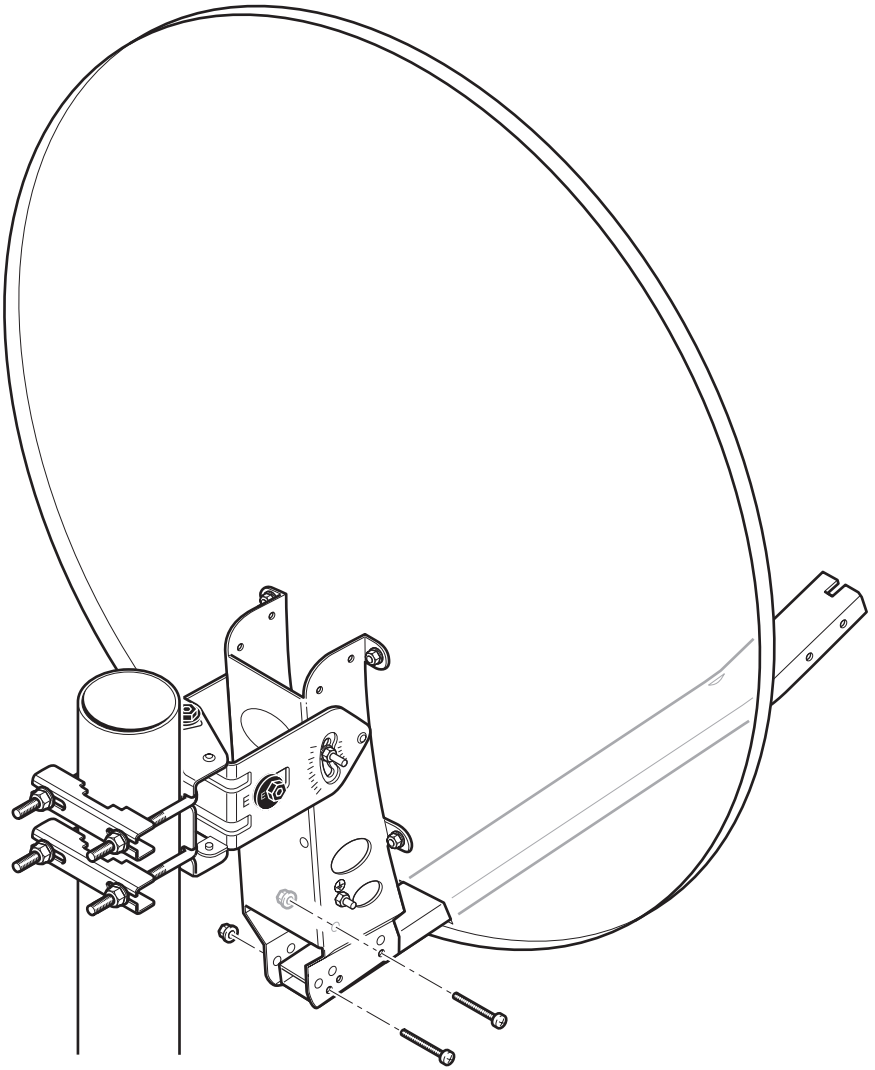
- Make sure the masthead is already pointing in the general direction of the satellite. To do so, use the pointing data available in the **Antenna Pointing Information** document.
- Make sure to attach the masthead upright to the pole.



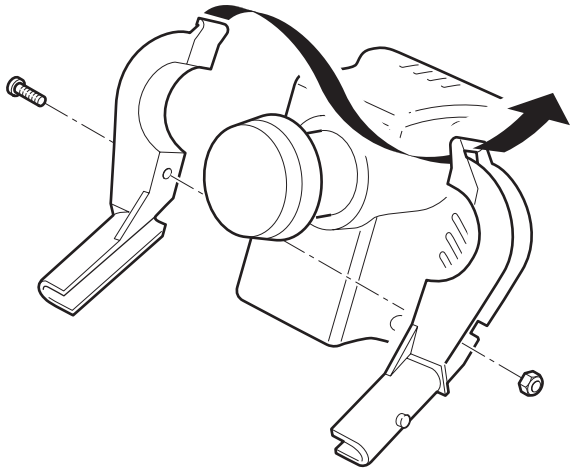
4 Attach the dish to the masthead with the appropriate screws and nuts.



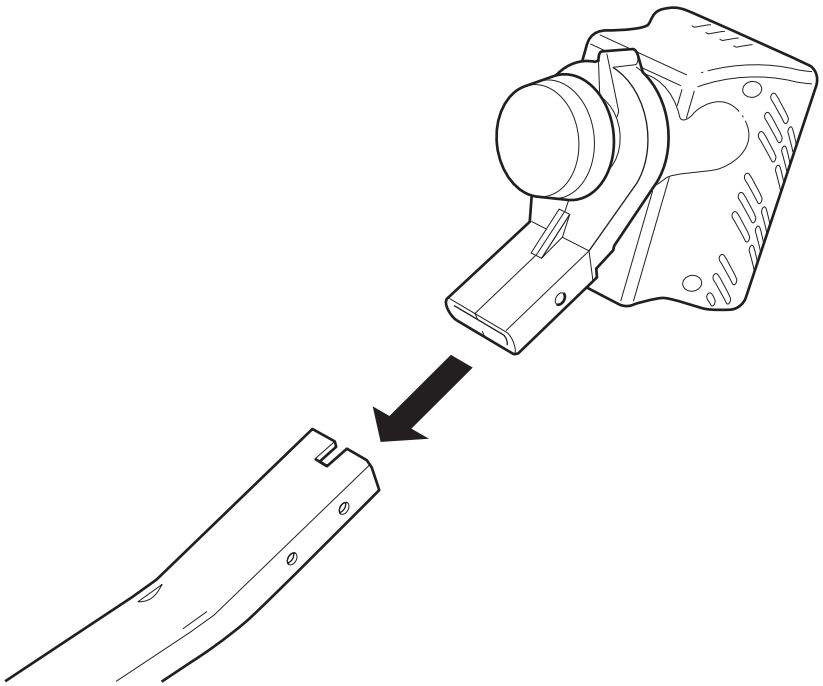
5 Insert the feed arm in the cut-away at the bottom of the dish and fix the arm with the appropriate bolts.



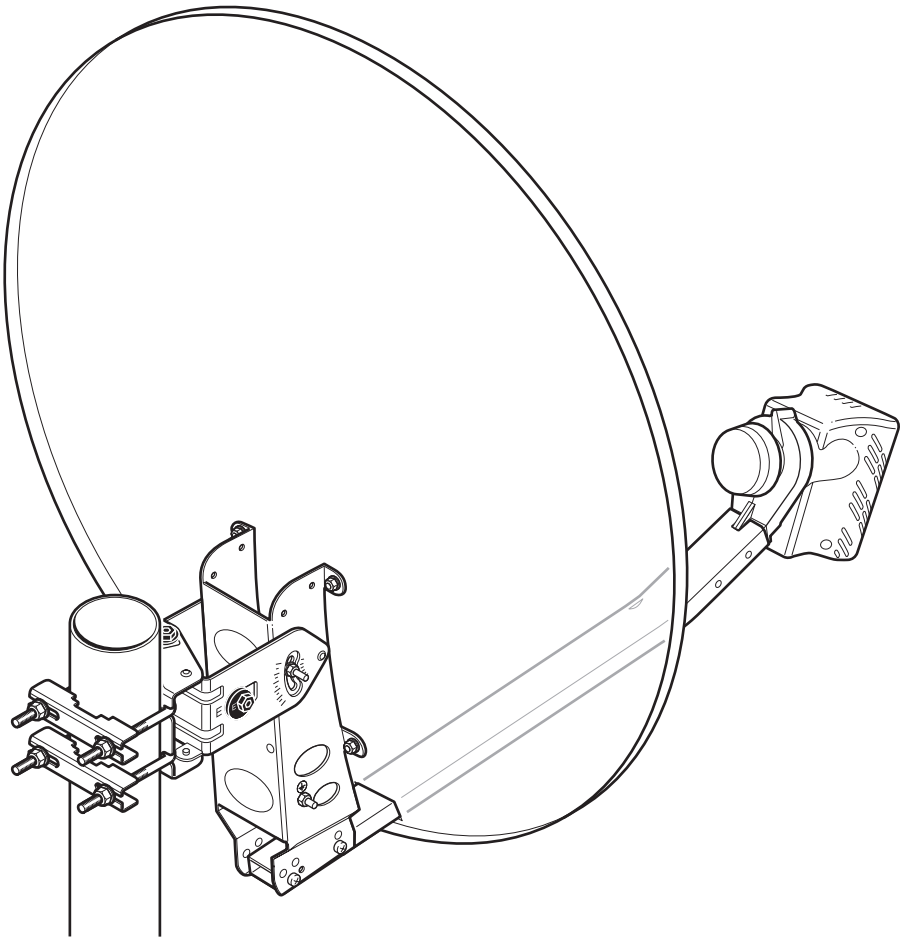
6 Attach the clamp around the iLNB using the appropriate nut and bolt.
Do not to attach the clamp too tightly as you will need to adjust it later on.



7 Slide and click the iLNB clamp into the feed arm.



The antenna is mounted. The result should look like the figure below.



Step 4 - Fixing the antenna cabling

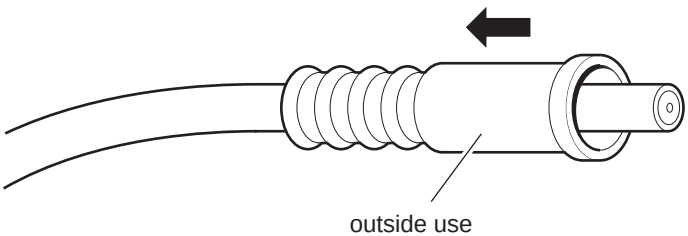
Fixing the antenna cabling includes the following steps:

- Connecting the F-connectors on the coax cable (page 21)
- Grounding the iLNB (page 23)
- Adjusting iLNB polarisation (page 24)
- Fixing the iLNB (page 26)
- Connecting the iLNB to the IPmodem (page 27)
- Connecting the IPmodem to your computer (page 28)

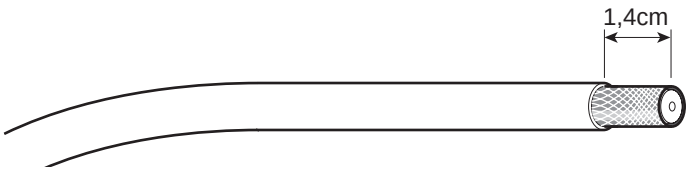
Connecting the F-connectors on the coax cable

If the connectors are not yet attached to your cable, execute following steps to attach them yourself.
You will need a cutter (and possibly pliers) to connect the F-connectors. To connect an F-connector to a cable:

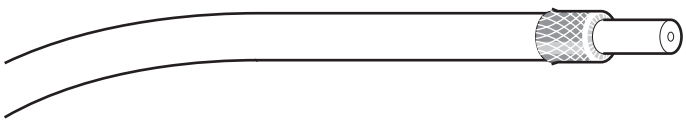
1 For the **outdoor end of the cable**, first slide the rubber boots over the coax cable.



2 Strip the coax cable as shown below. Do not remove the aluminium foil or fold it back.

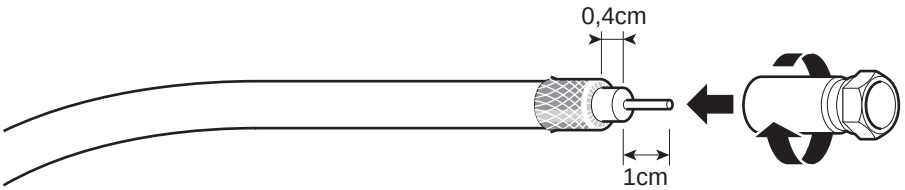


3 Fold the wire shielding backwards over the cable jacket.



4 Cut away the plastic shield. The result should look like the following figure (example showing the indoor end of the cable).

5 Screw the F-connector to the wire by hand.

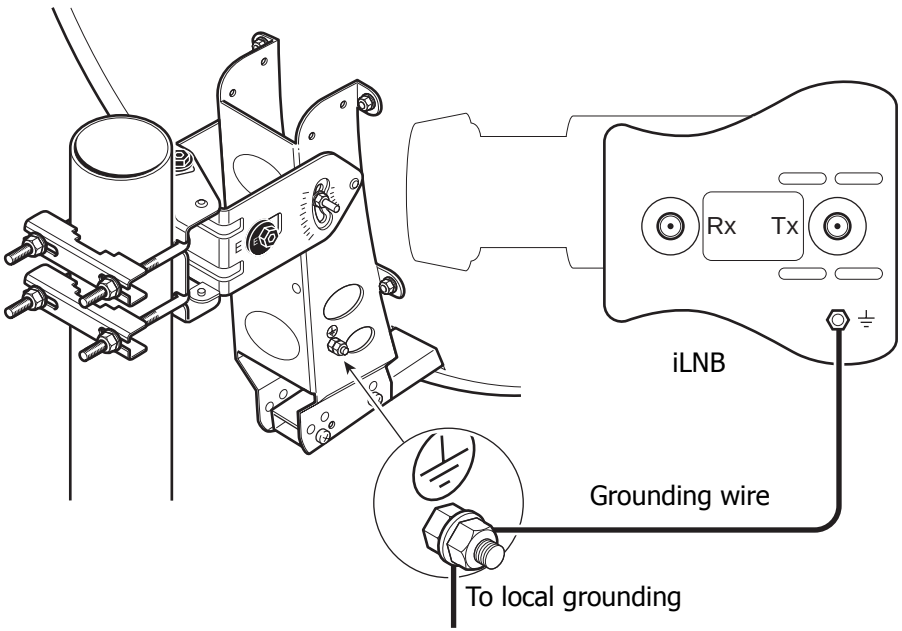


Repeat this procedure for all F-connectors not yet attached.

Grounding the iLNB

You need to **ground** the iLNB.
To ground the iLNB:

1 Connect the grounding wire [1] to the stud on the iLNB by using the iLNB grounding nut.
2 Connect the wire to the grounding screw on the masthead and fix it using the second masthead grounding nut.



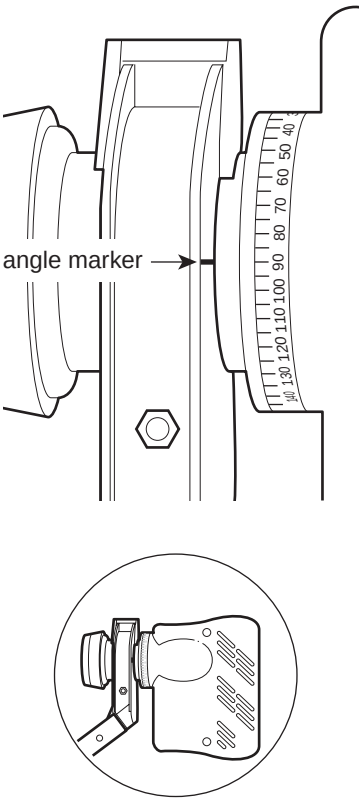
3 The masthead needs to be **grounded** according to local regulations. Consult with a licensed electrician if in any doubt.

1. Grounding wire with minimum specifications: UL style 1007/1569, PVC insulated, 300V, 80°C (C.S.A. Type TR-64) 18AWG, Yellow/Green attached to 5 mm insulation supported ring terminals.

Adjusting iLNB polarisation

Polarisation of the iLNB allows correct data reception and transmission.
To adjust iLNB (Interactive Low Noise Block downconverter) polarisation:

1 Identify the angle marker on the iLNB clamp as pointed out in picture below.

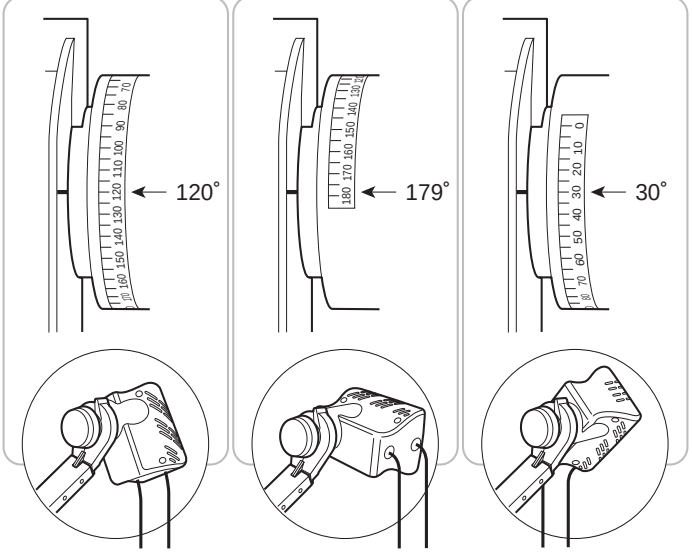


2 In the **Antenna Pointing Information** document, look up the value that applies to the city closest to your position.
An example for three cities is shown in the table below.

3 Set the iLNB to the angle you have found in the document.
In the picture below you can see the different iLNB positions for the three different cities.

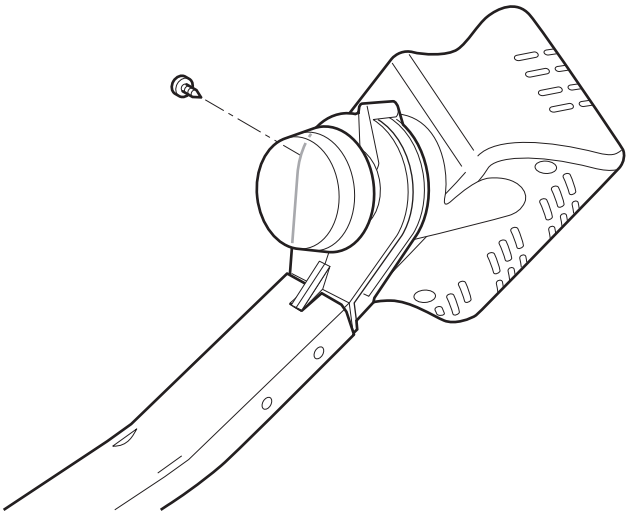
4 Lock the iLNB in the clamp by securing the bolt available on the iLNB.

City / Island	Feed Scale (°)
Your Country	
Satellite City	30°
Moon City	179°
Star City	120°



Fixing the iLNB

Fix the iLNB in the iLNB clamp using the Parker screw as shown below.

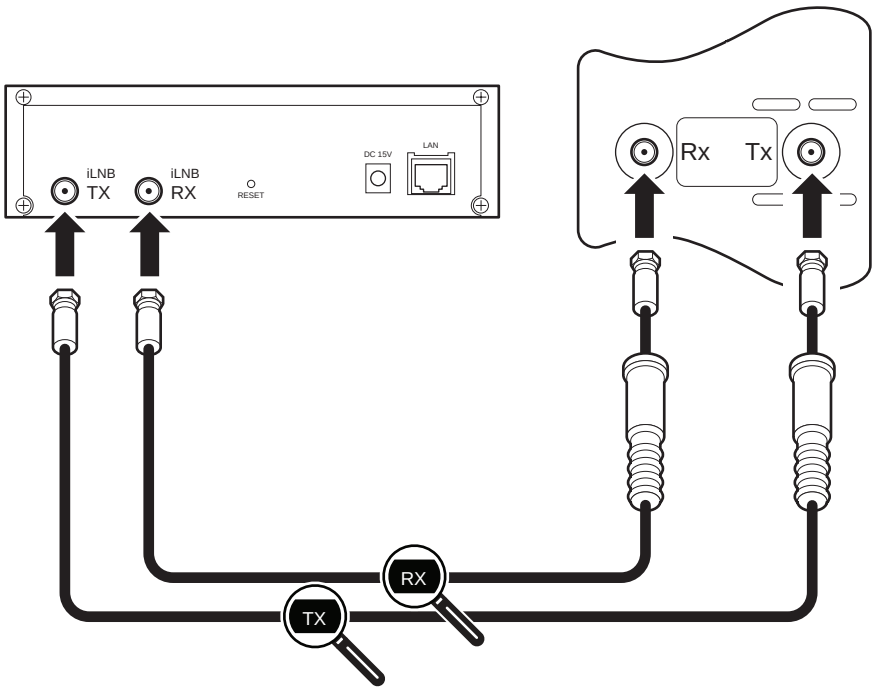


If you need to change the position of the iLNB later, first remove the Parker screw. Not doing so may result in damaging of the iLNB.

Connecting the iLNB to the IPmodem

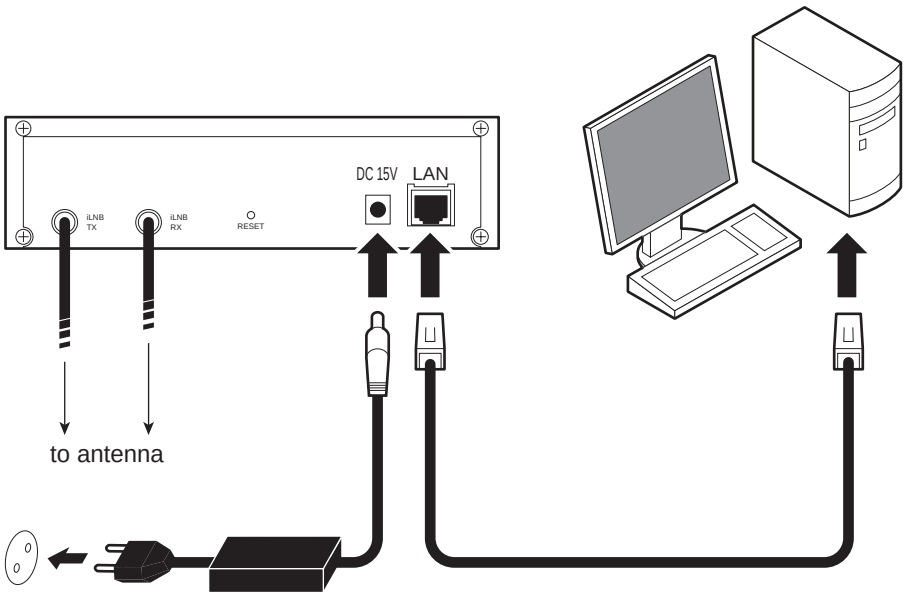
To connect the iLNB (Interactive Low Noise Block downconverter) to the IPmodem:

1. Identify the cables marked TX and RX on the coax cables (these marks are printed on the cables every 50 cm).
2. Put the TX and RX connectors in the appropriate TX and RX jacks on the iLNB. Make sure to use the outdoor connectors (with rubber boots) for the iLNB. The outdoor connections need to be waterproof.
3. Put the indoor TX and RX connectors in the appropriate TX and RX jacks on the IPmodem. The TX cable will have to be disconnected again later during the installation. Use an 11 mm spanner to fasten the connectors on the IPmodem.



Connecting the IPmodem to your computer

1. Plug the network cable in the IPmodem's and your computer's ethernet ports. You can use the network cable provided in the box or a cable of your choice.
2. Connect the power adapter provided in the box gently to the IPmodem and a **wall outlet**. The result should look like the figure below.



Step 5 - Pointing the antenna

Pointing the antenna includes the following steps:

- Setting the IPmodem software to pointing mode (page 30)
- Using the Point&Play® Tool (page 32)
- Setting up the Point&Play® Tool (page 33)
- Rough pointing: vertical (elevation) (page 34)
- Rough pointing: horizontal (azimuth) (page 36)
- Fine-pointing the antenna (page 39)
- Checking the antenna pointing (page 42)
- Finishing installation (page 43)
- Confirming antenna pointing in the software (page 44)

Attention

Do not stand in front of the iLNB or the antenna dish during pointing. Keep the space between the iLNB and the antenna dish clear.

Setting the IPmodem software to pointing mode

Before you start
The procedure below assumes:
- that your computer is DHCP enabled;
- that you will connect a single computer to the IPmodem.

If this is not the case or if you have another configuration, you will find more information in the Terminal User manual on the CD, in Appendixes **Local Network Configuration** and **Changing your IP settings**.

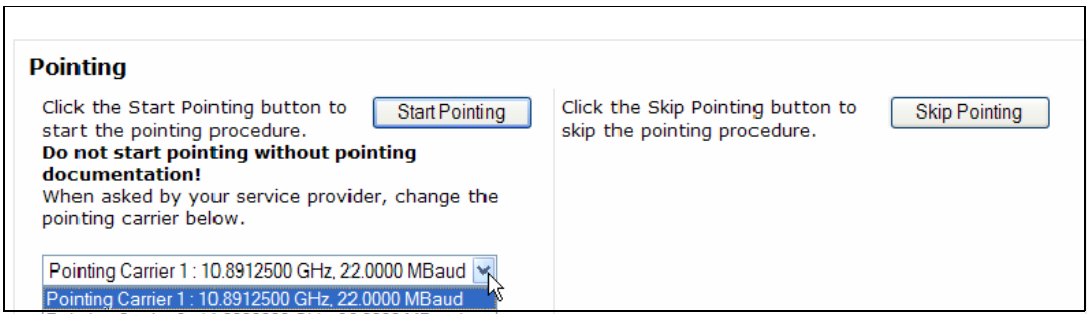
Before fine-pointing the antenna, you need to access the status page of the IPmodem.

1 Make sure the IPmodem is turned on and properly connected to your computer (with a network cable).

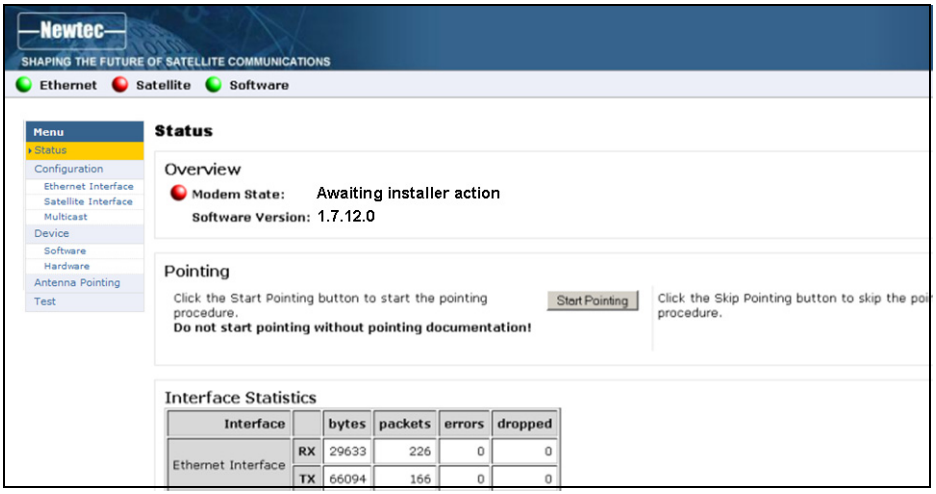
2 On your computer, start your internet browser (for example, Internet Explorer, Chrome, Mozilla Firefox, Opera, Safari...).
The status page is located on the IPmodem itself. You do not need an internet connection to access this page.

3 Type **192.168.1.1** in the address bar of the browser and press **Enter**.
The status page opens.

4 Depending on your situation:
- If the status page contains a list with **more than one pointing carrier**, keep the preselected carrier. If pointing fails during the procedure, you will need to select the other pointing carrier in the list and restart the entire procedure.



- If the satellite has **only one pointing carrier**, you will see the page below.

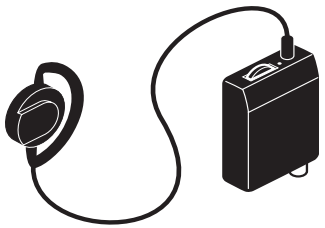


5 Click the **Start Pointing** button.
You can now start pointing the antenna.

Note
Whenever you redo the pointing procedure select **Antenna Pointing** in the menu bar. The button will be labelled **Restart Pointing** instead of **Start pointing**.

Using the Point&Play® Tool

The Point&Play® Tool will help you point the antenna correctly. During the pointing procedure, the Point&Play® Tool can produce various sounds, each having a specific meaning described below. You will thus need to put on the headphone whenever needed during the pointing procedure.



Ensure that the volume of the Point&Play® tool is not set too loudly, otherwise damage to your hearing may occur.

Possible tones are:

Correct tone

High uninterrupted tone (correct tone)

The antenna points to the correct satellite and is receiving the strongest signal: you have the optimal pointing position.

Higher interrupted tone

The antenna points to the correct satellite but does not receive the strongest signal so far. As soon as you hear this tone, you are sure that the antenna points to the correct satellite.

Low uninterrupted tone

The antenna points to a wrong satellite and receives the strongest signal so far.

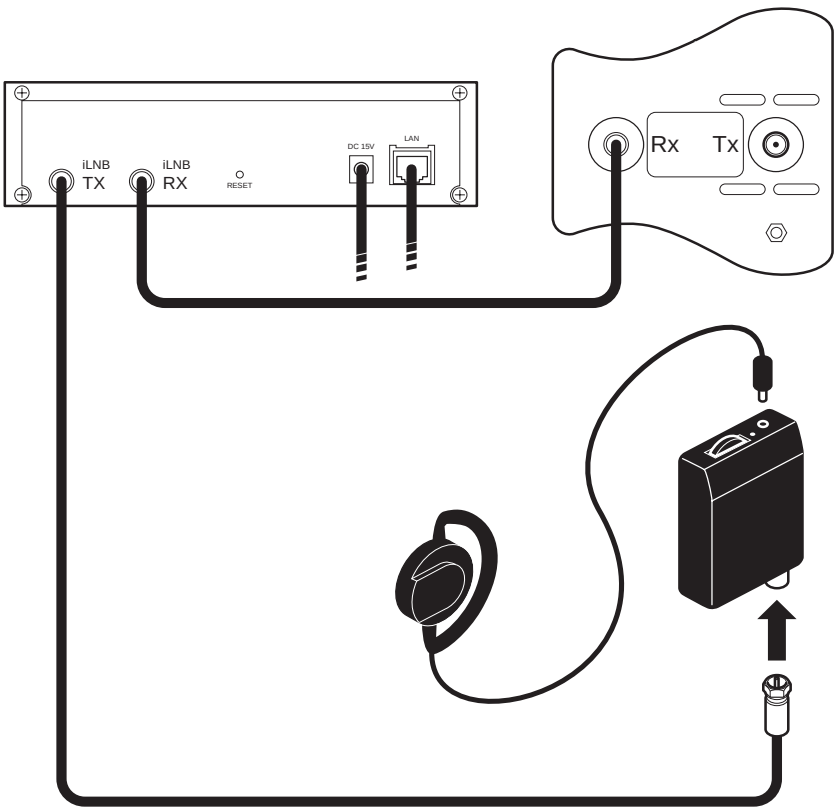
Very low uninterrupted tone

The antenna is not pointing to a satellite and has not been pointing to the correct satellite yet.

Setting up the Point&Play® Tool

To set up the Point&Play® Tool:

1. Remove the **TX** connector from the iLNB and connect it to the Point&Play® Tool.
2. Connect the headphone to the appropriate port of the Point&Play® Tool.
3. Make sure the Point&Play® Tool is turned on and the volume is high enough.

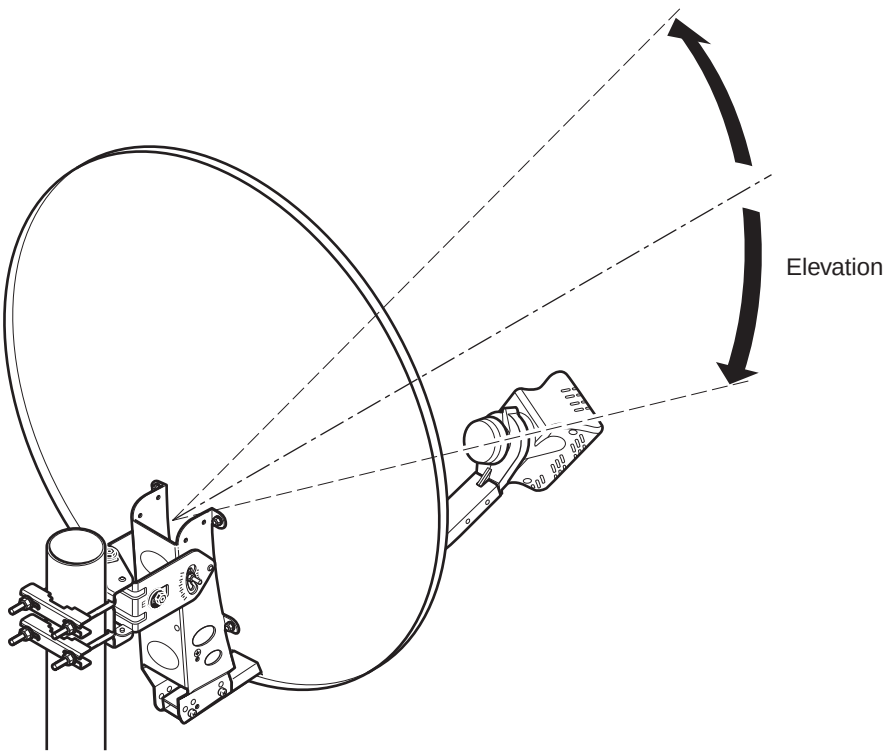


Rough pointing: vertical (elevation)

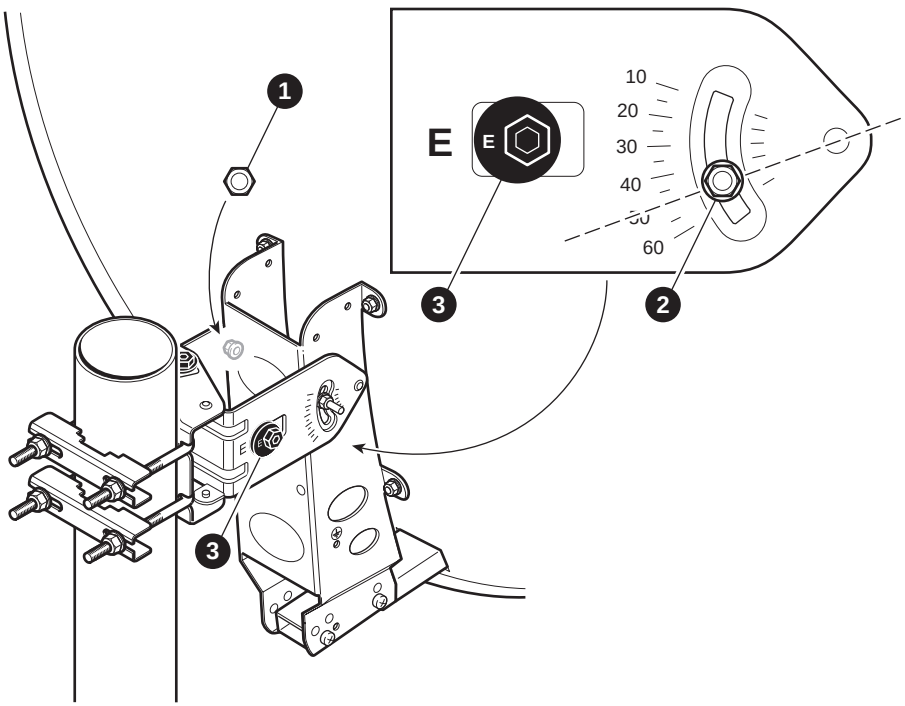
Important notes

- The procedures relating to rough horizontal and vertical pointing are described below in a sequential way. In reality, you will have to perform these two procedures simultaneously.
- Whenever the procedure tells you to loosen a securing bolt or nut, slacken it just enough to allow the corresponding element to move freely.
- While performing this vertical rough pointing, you will need to hold the antenna to prevent it from inadvertently losing its position.

1 In the **Antenna Pointing Information** document, first check the **elevation** for the city closest to your location.



2 Loosen securing bolts (1) and (2).



3 Use the hex key to rotate the eccentric E (3) until the letters E on the eccentric and the masthead point towards each other, as shown in the figure above.

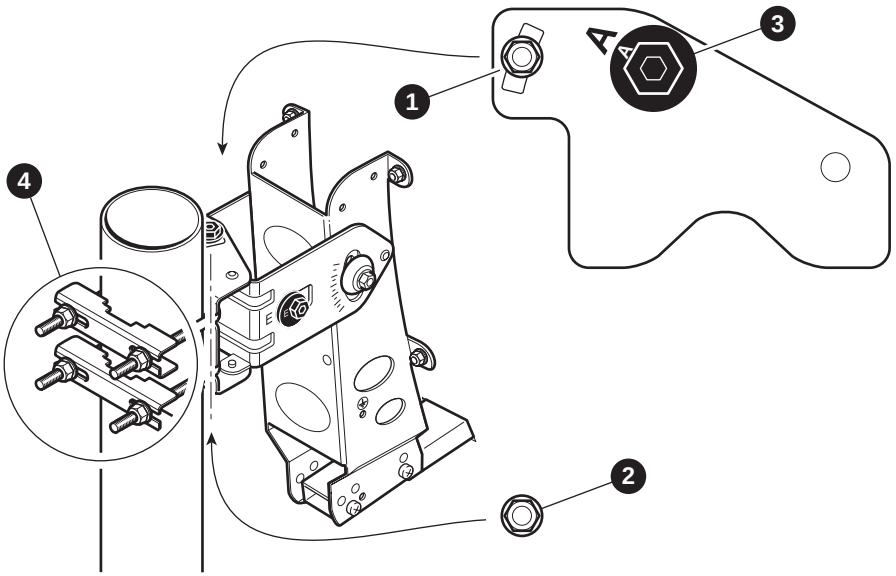
4 While keeping the eccentric E in this position (with the hex key), set the dish to the elevation you found in the document. Bolt (2) indicates the elevation. In the figure above, the elevation is set to 50°.
You can now remove the hex key from the eccentric E.

5 Secure bolts (1) and (2).
Do **not** secure the eccentric E (as you may damage it by doing so).

Rough pointing: horizontal (azimuth)

To start horizontal pointing:

1 Loosen the lock bolts (1) and (2) of the eccentric A (3).



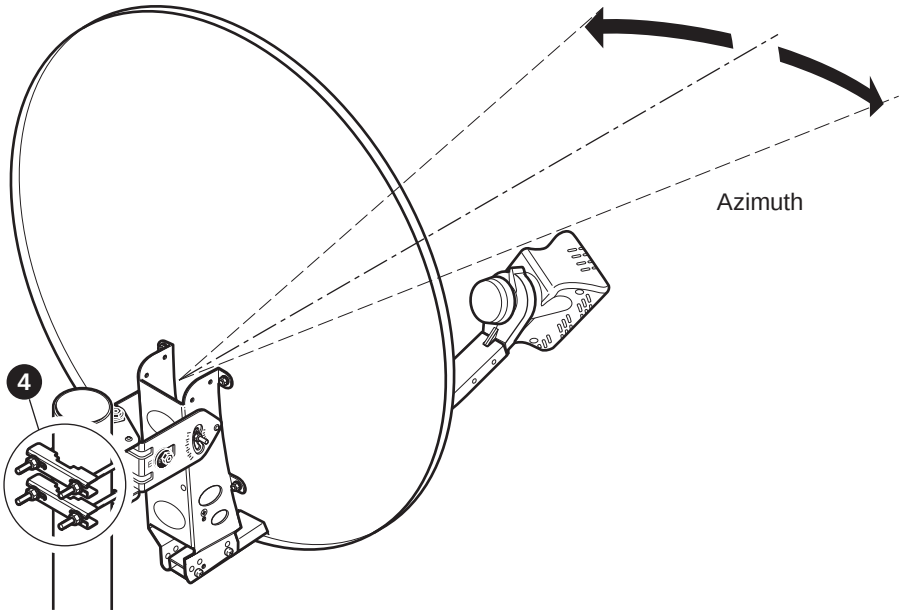
2 Rotate the eccentric (3) with the hex key until the letters A on the eccentric and the masthead point towards each other, as shown in the figure above.

3 Secure the lock bolts (1) and (2).

4 Loosen the bracket nuts (4).
You can now move the antenna horizontally. Set the antenna to the average azimuth for your country as shown in the **Antenna Pointing Information** document. Use a compass if required.

Attention

For correct functioning of the compass, do not use it closer than 1.5 meter from metal parts.



5 Slowly move the dish horizontally until you hear the highest possible continuous pitch tone. **Make sure to position the antenna in the middle of this highest tone range.**

6 As soon as you hear this continuous high pitch tone, secure the bracket nuts (4). Do **not** secure the eccentric A (as you may damage it by doing so).

No Tone

- Check if your battery is not dead.

Persistent low pitch

If you keep hearing a low pitch tone, this might indicate one of the following issues:

- Check if you have a **clear line of sight**, and no building, tree or other obstruction is blocking the path between the antenna and the satellite.
  Select a place with clear line of sight to set up the antenna. Also check if your compass is functioning correctly.

- The **pointing carrier** selected in the IPmodem status page is **not correct**.
  If so, on the IPmodem status page on your computer:
  - Click **Pointing completed**.
  - Select **Antenna Pointing** in the menu bar.
  - Click **Restart Pointing**.
  - Select the other pointing carrier in the list and restart the entire pointing procedure.

- It is indicated on the status page when you are pointed to the correct satellite. The antenna might be pointing to the **wrong satellite**.
  If so, you need to
  - repoint the antenna until you receive a signal;
  - perform the horizontal and vertical steps above until the antenna is pointing correctly towards the satellite.

Fine-pointing the antenna

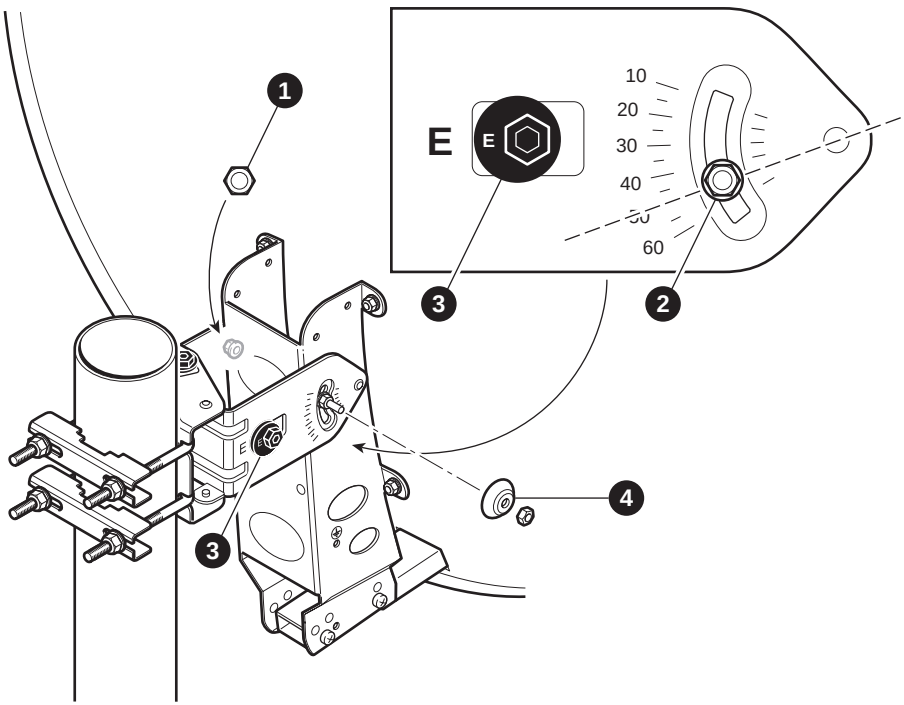
If you do not hear a continuous high pitch tone after securing the bolts, the antenna will probably have moved slightly. You then need to fine-point the antenna.

Important note

The procedures relating to vertical and horizontal fine-pointing are described below in a sequential way. In reality, you will have to perform these procedures simultaneously.

Fine-pointing: vertical

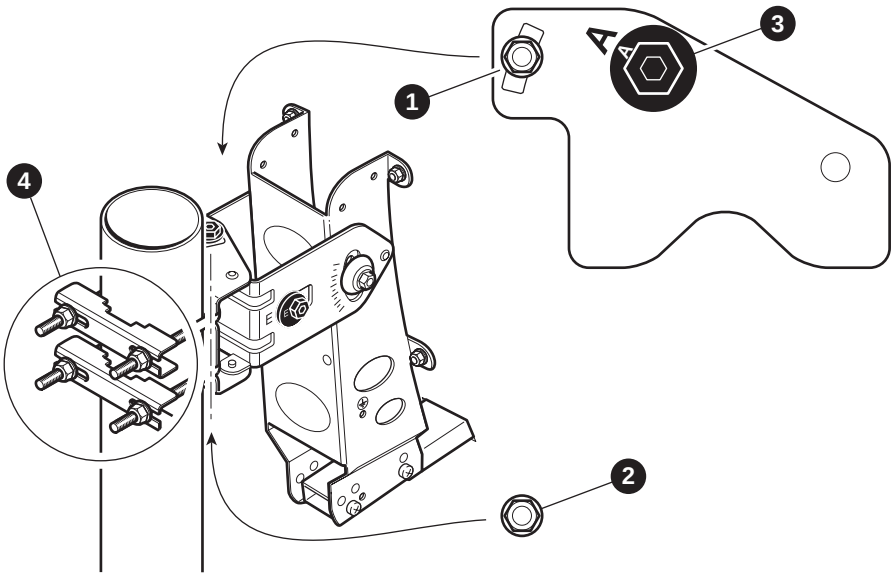
1 Loosen bolt (1).



2 Rotate the eccentric (3) until the Point&Play® Tool produces a continuous high pitch tone.
3 Secure bolt (1).
4 Place the cap (4) on bolt (2) and secure it with the appropriate nut.

Fine-pointing: horizontal

1 Loosen the horizontal lock bolt (1) and (2).

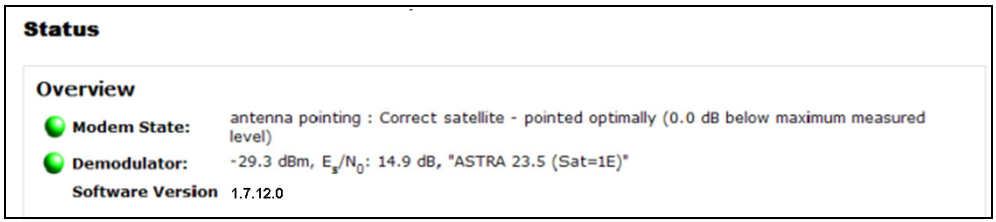


2 Rotate the eccentric (3) until the Point&Play® Tool produces a continuous high pitch tone.
3 Secure the horizontal lock bolts (1) and (2).

Checking the antenna pointing

Perform the following checks to make sure the antenna will resist external movements (wind...):

1. Make sure all bolts are **tightly secured**.
2. Shortly place your hand between the iLNB and the dish. As soon as you remove your hand, you should hear the continuous high pitch tone again.
3. Apply some pressure on the antenna to make the edges move about 3 cm on the left hand side, right hand side and at the top, then release it.
   If the antenna is still pointing correctly, you will hear the continuous high pitch tone again. If not, repeat the pointing procedure from the section **Rough pointing: horizontal (azimuth) (page 36)** until you obtain optimal signal.
4. When the antenna is pointing correctly, the message ***Correct satellite - pointed optimallly*** is displayed on the screen of your PC, as shown in the following picture.

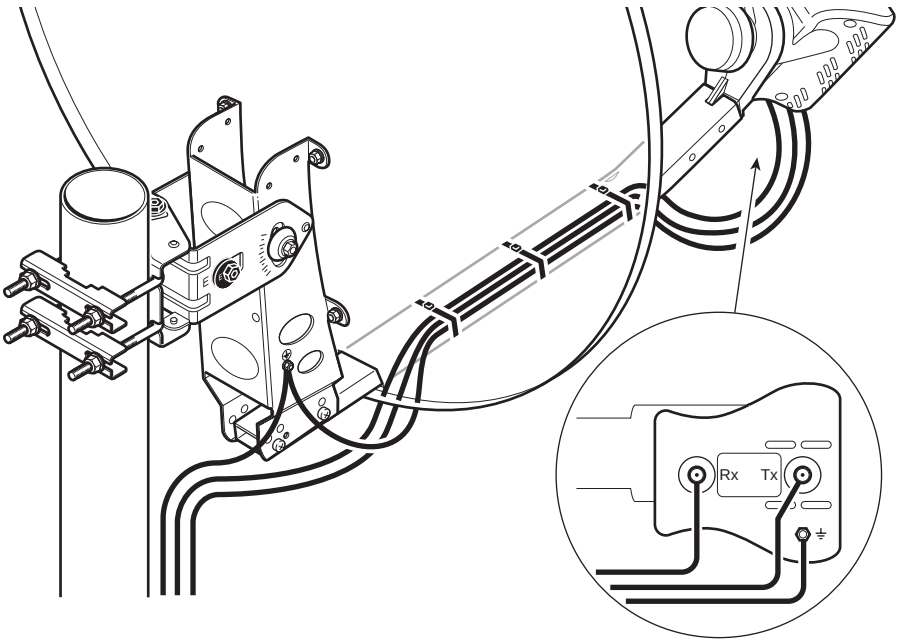


Troubleshooting

If the content of the IPmodem status page does not change anymore, refresh the page manually (Internet Explorer: menu File > Refresh; Mozilla Firefox: menu View > Reload; Chrome > Refresh arrow...).
If the status page does not reload, reboot your IPmodem as described in the Terminal User Manual.
If you keep having problems with the installation, refer to the **Terminal User Manual** on the CD (Appendix - Troubleshooting Guide).

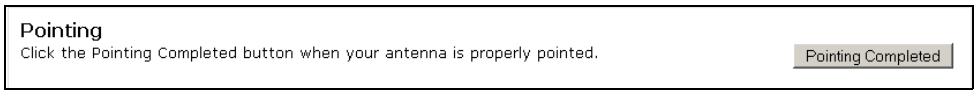
Finishing installation

1. When pointing is completed, you can turn off the Point&Play® Tool.
2. Remove the TX cable from the Point&Play® Tool and connect it to the iLNB.
3. Slide the rubber boots over the connectors.
4. Use tie-wraps to attach the cables to the feed arm.
   Make sure to leave some slack on the cables.
   The result should look like the figure below.



Confirming antenna pointing in the software

1 Back to your computer, in the status page of the IPmodem, click the **Pointing Completed** button.



Wait for ten minutes.
You are now ready to surf the internet.