

Satelio Self Installation Pointers - Version 1.5

Before attempting the installation yourself, please take the time to read this manual COMPLETELY. You WILL save a lot of time. Also take note that pointing a dish is a precision job that requires patience. It will take about 45-90 minutes for an untrained person to point the dish.

If you do not read this manual in full beforehand, YOU WILL SPEND A FULL DAY! So make the effort and read this manual before you attempt the installation.

If you do not have a satellite finder device, something that indicates the receive level, do not waste time trying to point the dish into the dark. Chances of actually succeeding are slim. Also please note, that a Smart Phone is not a satellite finder device. You can only use a Smart Phone to give you a general idea to where the dish needs to be pointed.

In case your are **technically gifted** person, you can buy or orgnaize a satellite finder at any local installer shop and follow the guide.

In case your are **technically not gifted**, we recommend to call an installer you trust. In this case this guide will help him as well to take the "short path" to install your satellite dish on ASTRA 4A!

In order for the Satelio Decoder to be used in your environment, several things need to be in place.

- 1.) ALL DECODERS ARE SHIPPED WITH LATEST FIRMWARE. A manual flashing of the Decoder is not necessary.
- 2.) The local oscillator frequency needs to be set in the decoder.
- 3.) The dish needs to be correctly assembled.
- 4.) The LNB skew needs to be correct.
- 5.) The dish needs to be pointed to the right satellite.
- 6.) The channel list will be downloaded automatically over the air, via the satellite signal once the dish is pointed correctly.
- 7.) Possible software upgrade over the air that will reset the decoder to its default settings where it might be necessary to enter again the local oscillator frequency.
- 8.) Custom configuration like energy saving, video format and time zone.

Please do not be shocked by the long list and pages to follow. We tried to make it as detailed as possible. It is not as hectic as it looks.

The Satelio parameters on Astra4A are as follows:

Orbit Position: 4.8 Degrees East (**This is not the azimuth of your dish; refer to point 5, YOUR DISH WILL POINT TO A NNW (North North West) DIRECTION.**)

Downlink Frequency: 12565 MHz

Downlink Polarisation: Vertical

Modulation: DVB-S2 QPSK – S2

Symbol Rate: 30 000 ksymb/sec

FEC 5/6

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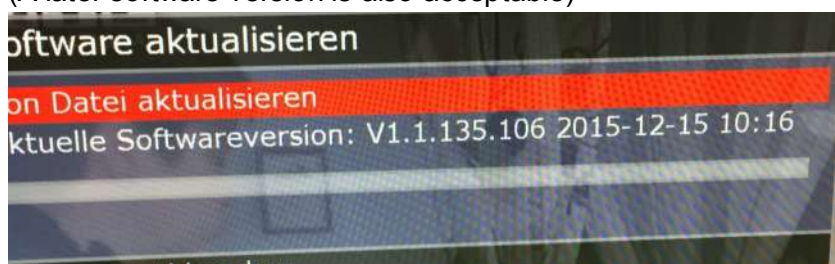
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1. Load the new firmware onto the decoder (NOTE: ALL DECODERS ARE SHIPPED WITH LATEST FIRMWARE)

The firmware holds the information required for the channel and transponder list to operate on the Astra4A Satellite. It is absolutely necessary to upgrade your decoder with the latest firmware:

1.1 To find out what firmware you have:

- a. go to *Menu – Extras – Software aktualisieren*.
- b. Look at **Aktuelle Softwareversion: It needs to state V1.1.135.106 2015-12-15**
(A later software version is also acceptable)



1.2 To upgrade:

- a. Download the latest firmware from <http://www.satelio.tv/files/soft.dff> or ask us to provide the latest firmware. The file must have a file size of about 3.2MB. If it is only couple of kB big, there was a problem in your download. Copy the file onto a **FAT 32** formatted flash drive. The decoder will not see the flash drive if it has a *NTFS* or *exFAT* file format. You cannot open the file on the computer. Just copy the file onto a flash drive.
- b. Once the software has been downloaded and saved on a flash drive, please follow the following steps:
 - i. *Menu, Extras, Software aktualisieren, Von Datei aktualisieren*, and update according to the file on your flash drive folder.
 - ii. Thereafter the decoder will reboot automatically.
- c. A Factory Reset is required for the decoder to accept the latest firmware. Please do the following steps for the factory reset:
 - i. *Menu, Konfiguration, Werkseinstellungen*, PRESS THE RED BUTTON (not the power button, the RED button next to the green button in the middle of the remote)
 - ii. Please ensure with step 1.1. that the correct software is loaded.

1.3 To confirm that everything is ok, please check the following.

- a. You must only have one channel on the decoder. i.e. when you press P+ or P- you will only see **Satelio Infokanal**. If you see more than one channel, do a factory reset again, and press the RED button.
- b. While you are on the **Satelio Infokanal**, press *Menu – Extras – Tunerinfo*, you MUST see **Astra 4A/SES 5 5.0°E** as active Satellite. (You can exit by pressing the exit button). If you see AMOS 5 or Intelsat 20, upload the new firmware again. Make sure you have the latest soft.dff file downloaded.

Figure 1 - Software version and Receive levels



2. Check the Local Oscillator Frequency

Background Info: A satellite transponder is divided into four levels; Vertical and Horizontal, and again low split and high split. Satelio transmits on the Vertical High split on Astra4A.

Unfortunately the Local Oscillator frequency for the high split varies from LNB to LNB. In some cases the Local oscillator frequency is 10.6GHz and in some cases it is 10.7GHz. Whatever your LNB states, it needs to correspond to the setting on your decoder.

2.1 Go to your LNB and look what is written there. Look for something like **L.O.: 9.75/10.6GHz** or **L.O.: 9.75/10.7GHz**. The 9.75GHz is the local oscillator frequency for the low split and is standard on all LNB devices. The number after the / (slash) is important. Do not confuse it with the frequency range, which also has a 10.7GHz stated. Refer to the figure below.

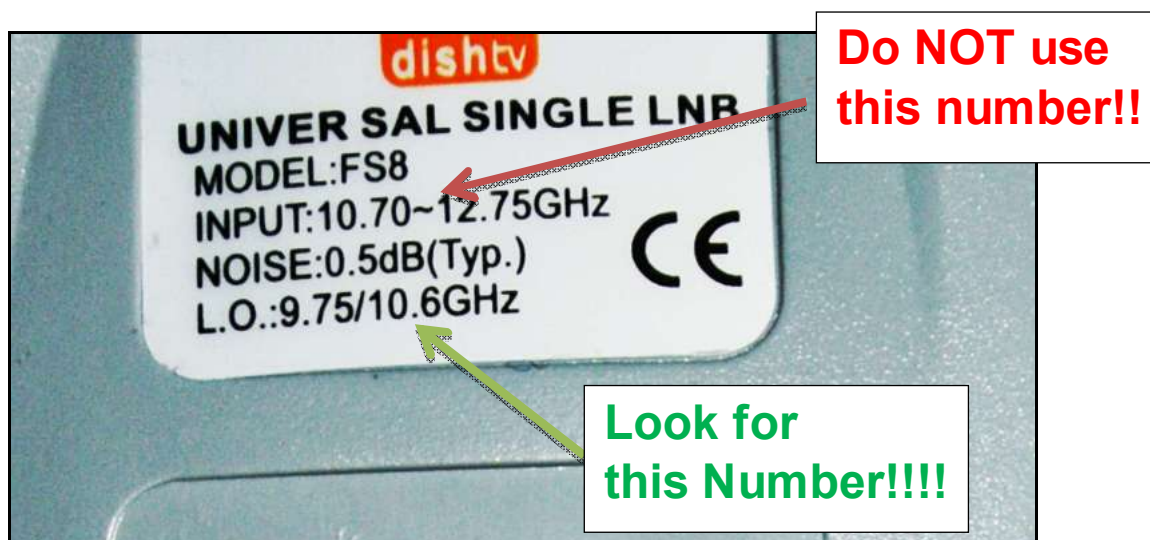


Figure 2 - LNB Labelling

2.2 Check what the setting is on in your decoder

- Go to *Menu – Konfiguration – Empfang*. Navigate down to *LNB Obere LOF* so that it is highlighted red.
- If your LNB stated **10.6** then type in **10600** OR if your LNB stated **10.7** then type in **10700**
- Then press the *Exit* button.
- Press the *red power off* button on the remote to turn the decoder off. Then press it again to switch it on again.
- Go into *Menu – Konfiguration – Empfang* and confirm that your setting was taken correctly.



3. The dish needs to be assembled correctly

This adjustment is not necessary when you migrate from the Amos 5 satellite, but might be applicable when you migrate from a DSTV pointed dish.

Background on dishes:

There are two types of dishes:

- a. Centre Focal Dishes
- b. Offset Dishes

Centre Focal Dishes (or Prime Focus Dishes) is a dish where the LNB (the LNB is the receiver where the cable is connected to on the dish) is exactly in the centre of the dish. The LNB is typically held in place with three arms as indicated in the figure below. For this type of dishes the physical elevation is the same as the electrical beam of the antenna.

Note that the elevation in degrees in the figure on the next page will vary according to installation location. It is only used as example.

Hence your dish would be about 60° elevated from a vertical line and 30° from a horizontal line as indicated in the figure on the next page.



Figure 4 - Centre Focal Dish example

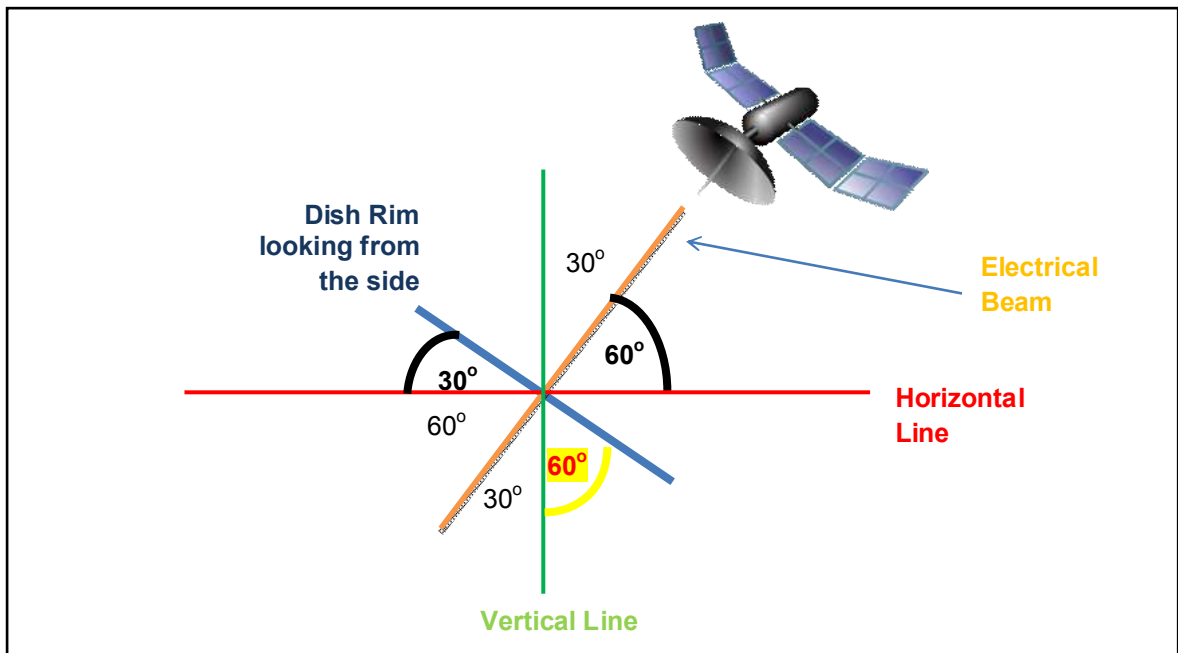


Figure 5 - Angles on Centre focal dishes

Offset dishes have an arm that comes from the bottom of the dish, and the LNB is not placed exactly in the centre of the dish. The electrical beam is about 30° offset from the mechanical elevation. This type of dish was developed so that the dish does not have to lie as flat, in order to prevent rain water and dirt to accumulate in the dish. The elevation indicator on the dish however indicates in MOST cases the **electrical beam elevation**, NOT the mechanical elevation. Hence, for an offset dish, your mechanical elevation will be about 30° from the vertical line.

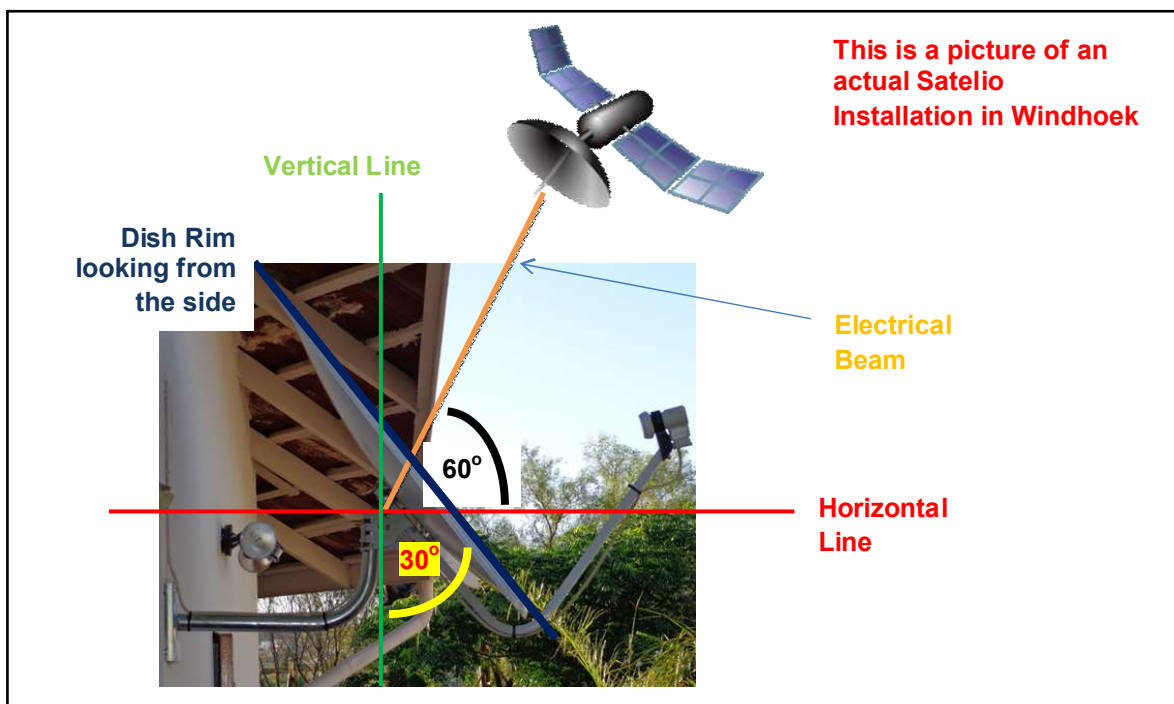


Figure 6 - Offset Dishes and angles

Dish elevation too high



Correct Dish elevation



Figure 7 - Incorrect and correct offset dish elevation (applicable for Namibia and South Africa)

Many dishes, especially the newer ones, have an option to adjust the pivot point, in order to achieve a higher tilt.

For DSTV pointed dishes, typically the lower pivot point option is taken. On many Ellies dishes this pivot point is in position A. Place the pivot point into option B.

Also note that there are two sides to read of the elevation degrees. Depending if your pivot point is A or B, use side A or B respectively. It is clearly written on the dish.

Note: This is not applicable to all dishes.

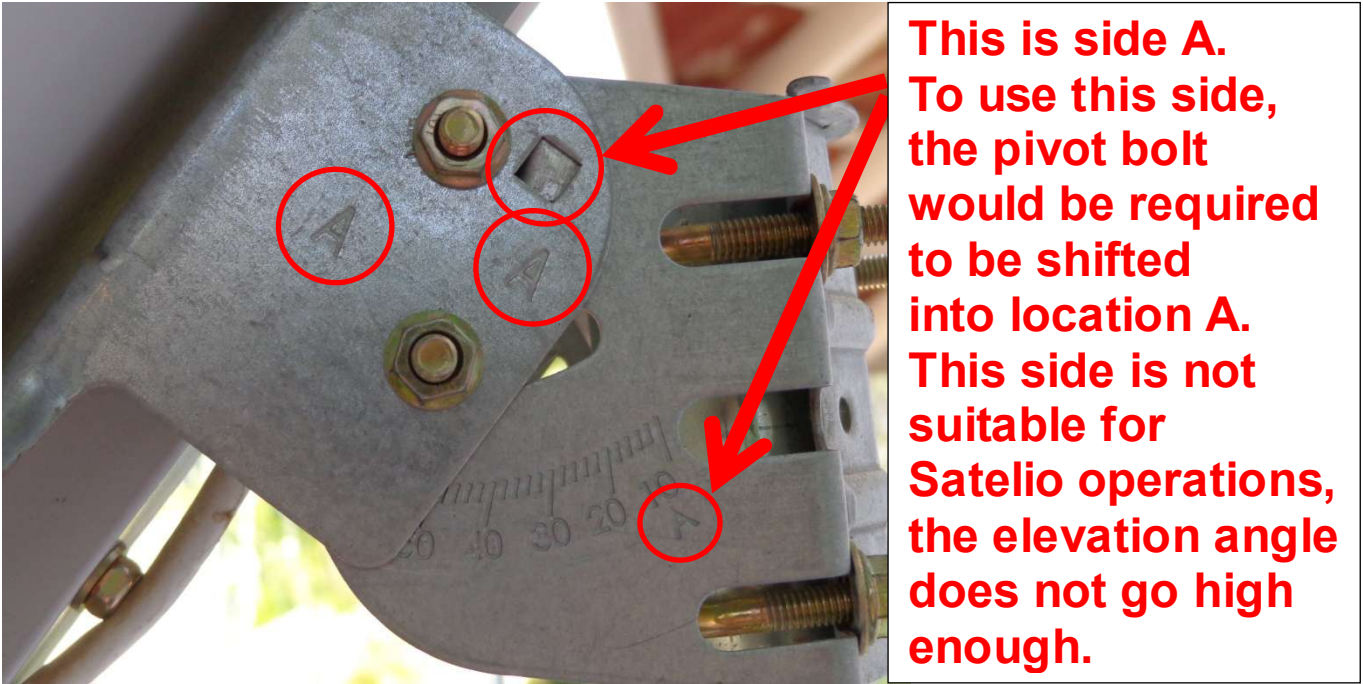
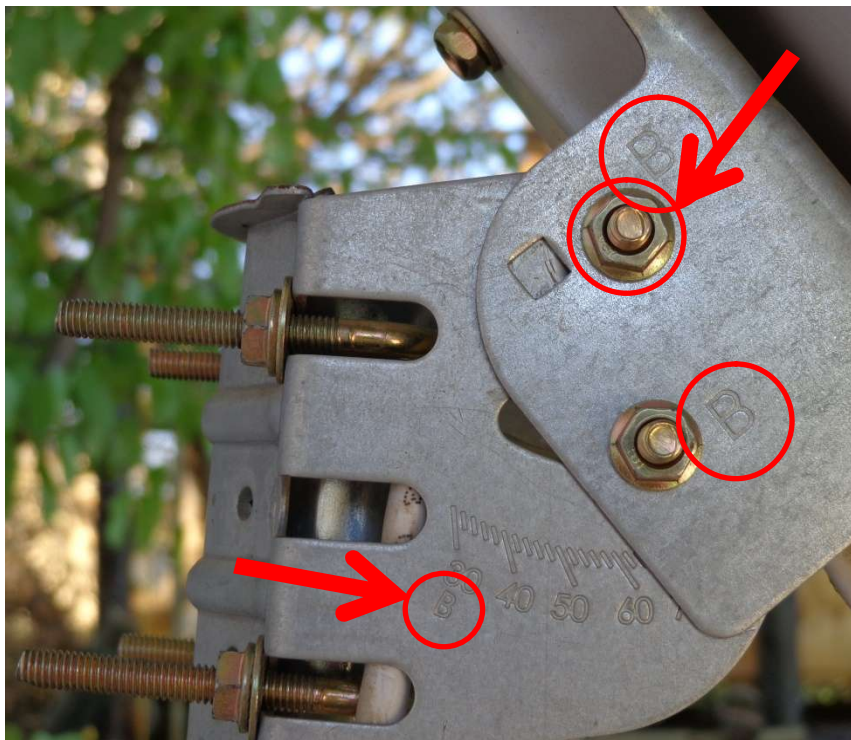


Figure 8 - Dish side view



**This is side B!
The bolt is in pivot
position B.
The elevation goes
higher than on side
A. Use this side for
Satelio
installations.**

Figure 9 - Dish side view

Please note that the elevation indicator on the dish is NOT 100% accurate. You need to play a bit, and listen to you SAT FINDER test device. Often the wall bracket or pole is also not 100% vertical.

Best is if you mount the dish to a position that allows it free turning. For Southern Africa the best location is on the north side of the house.

4. The LNB skew needs to be correct

For DSTV pointed dishes the LNB cable exit was at 4 o'clock and on Amos 5 it was at 6 o'clock. For the new Astra 4A installations in Namibia and Cape Town, turn the LNB so that the cable exit is at 7 o'clock when looking from the front into the dish. For installations in Johannesburg, the cable exit must be at 8 o'clock.

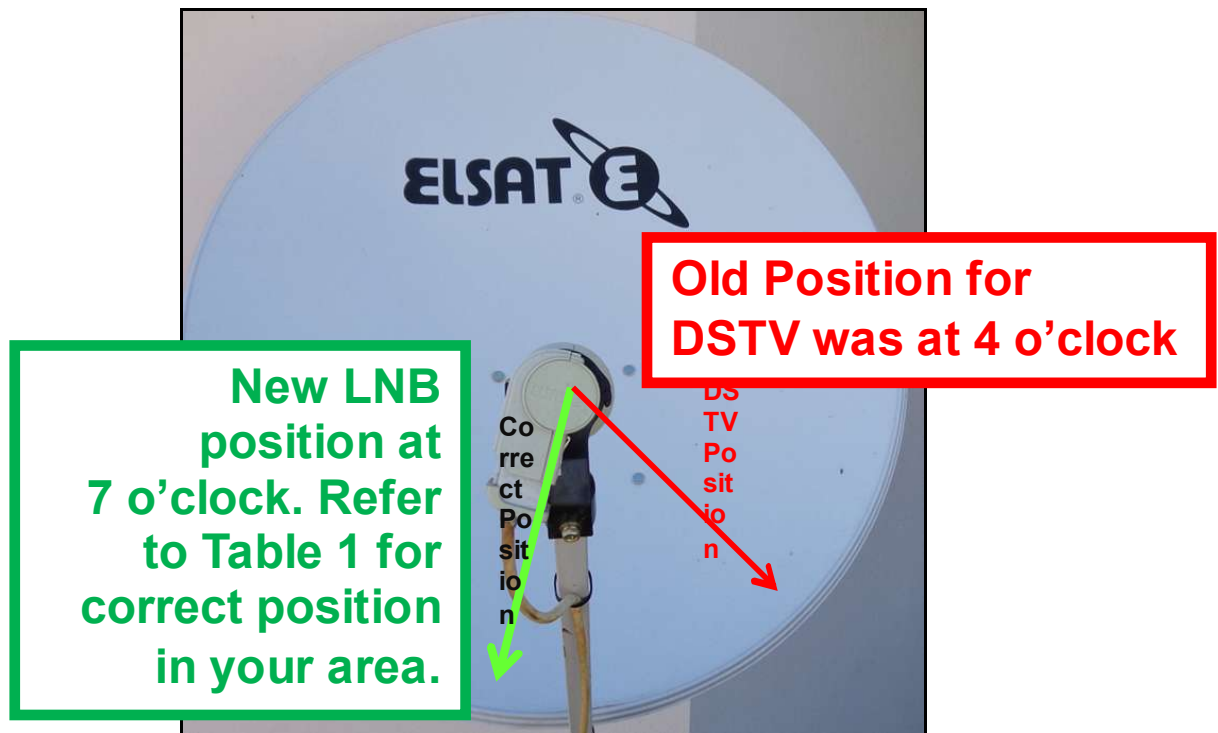
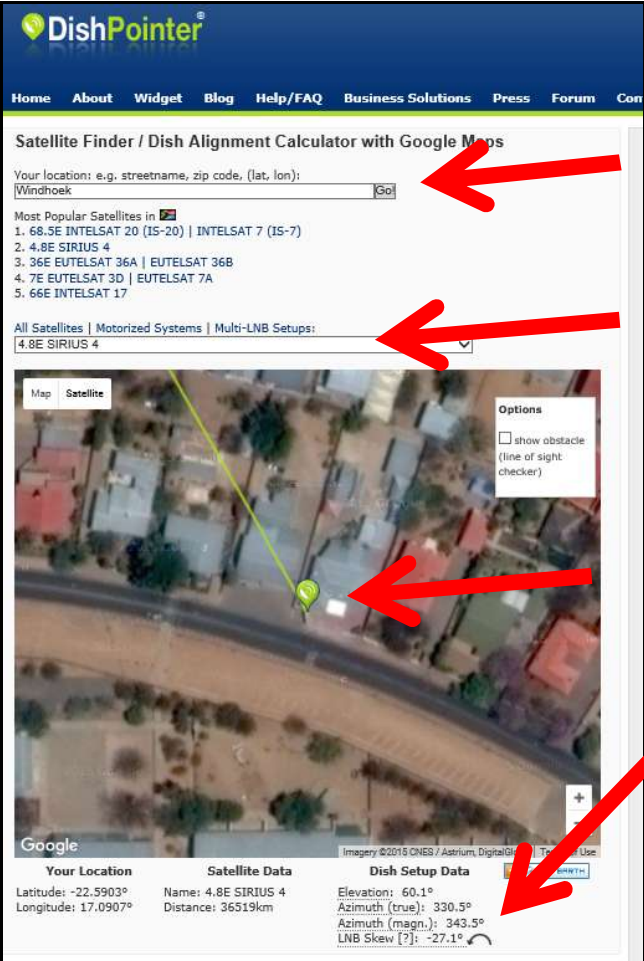


Figure 10 - LNB Skew

5. The dish needs to be pointed to the right satellite

Now we have done all the preparations and can align the dish. But before we jump onto the roof there are a few tips.

5.1 Determine the general direction: Visit www.dishpointer.com It does help a lot when you know already the general direction where to point the dish. Please use this!!!



Enter your town here

Select 4.8E Sirius 4 here

Zoom into your house, and pull the green icon to your dish position. Note the green line

Note the Elevation and Azimuth.

From Windhoek, Namibia:
Elevation: 60.1 Degrees
Azimuth: 330.5 Degrees from True North
Azimuth: 343.5 Degrees from Magnetic North

Your Location	Satellite Data	Dish Setup Data
Latitude: -22.5903° Longitude: 17.0907°	Name: 4.8E SIRIUS 4 Distance: 36519km	Elevation: 60.1° Azimuth (true): 330.5° Azimuth (magn.): 343.5° LNB Skew [?]: -27.1°

Figure 11 - www.dishpointer.com screen shot

5.2 You can also use an app on you smart phone. For androids, the app **Satellite Director** is quite good, that is available in the Google Play Store.

5.3 Make sure that your GPS on your smart phone is enabled, AND that your compass is calibrated on your phone. Also make sure that you smart phone is not in a protective cover that has a magnet in.

5.4 To calibrate the compass on an Android: Go to you dial pad where you would dial a normal telephone number. Enter ***#0*#** and you will enter automatically the android service menu. Press on the sensor icon. On the lower left side you will see a circle, with a red line with a 0. Turn you phone around and around, in the form of a figure 8 until the line is blue and a number 3 is indicated. Now your compass is calibrated and you can use the smart phone apps

Note: If you do not see the circle in the lower left side, then you smart phone does not have an integrated compass.

5.5 The Table below gives the Dish Setup Data for various towns.

Table 1 – Dish Setup Data for various towns

Town	Country	Elevation	Azimuth from True North	Azimuth from Magnetic North	LNB Cable Exit (looking into the dish)
Windhoek, Okahandja	Namibia	60.2°	330.5°	343.5°	7 o'clock
Swakopmund, Walvis Bay, Hentis Bay	Namibia	61.3°	335.8°	349.4°	7 o'clock
Lüderitz	Namibia	56.8°	337.8°	355.4°	7 o'clock
Aranos	Namibia	57.5°	328.1°	342.7°	7 o'clock
Mariental	Namibia	57.7°	330.7°	345.9°	7 o'clock
Maltahöhe	Namibia	57.9°	332.8°	348.3°	7 o'clock
Gobabis	Namibia	59.3°	326.4°	339.1°	7 o'clock
Witvlei	Namibia	59.5°	327.4°	340.1°	7 o'clock
Otjiwarongo	Namibia	62.5°	329.0°	340.0°	7 o'clock
Tsumeb, Otavi, Grootfontein	Namibia	63.0°	325.1°	334.8°	7 o'clock
Kamanjab	Namibia	64.3°	332.2°	342.9°	7 o'clock
Outjo	Namibia	63.1°	329.7°	340.5°	7 o'clock
Katima Mulilo	Namibia	59.7°	310.4°	317.9°	8 o'clock
Rundu	Namibia	62.9°	319.1°	327.2°	8 o'clock
Oshakati	Namibia	65.6°	327.8°	336.7°	7 o'clock
Oranjemund	Namibia	54.3°	336.7°	356.4°	7 o'clock
Cape Town	South Africa	47.9°	336.5°	362.0°	7 o'clock
Johannesburg	South Africa	49.9°	315.8°	335.0°	8 o'clock
Durban	South Africa	44.9°	315.3°	341.2°	8 o'clock

5.6 A good installation tip is to put the decoder and TV on full volume, and make sure that you are on channel 1 on the decoder. This way you will immediately hear music once you are on the right satellite. The **Satelio Infokanal** is a free to air channel that will immediately be visible and audible as soon as you are on the right satellite. The **Satelio Infokanal** will also play, even if the subscription package was not activated yet, or if the subscription expired. **The decoder must only show "KEIN SIGNAL". Make sure that no menu is open on the decoder. If a menu is open then the Satelio Infokanal will not play any music. Press the exit key several times to close all menus.**

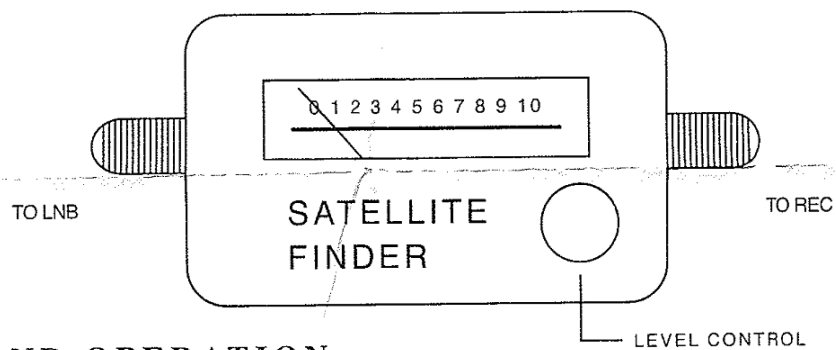
- 5.7 Connect the SAT FINDER to your LNB. The SAT FINDER has two ports. The port that shows REC goes down to your decoder via the long cable. The port that shows LNB must be connected to the LNB, via a short (0.5-1 meter) jumper cable. **Do not connect the SAT FINDER in the house at the decoder. You need to connect it at the dish, so that you can monitor the SAT FINDER while you are turning the dish.**
- 5.8 The decoder must be switched on, in order to send power to the SAT FINDER. The background light on the SAT FINDER will illuminate. If you turn the dial to max you will also hear a tone.
- 5.9 Turn the dial so that the needle is at 5. If you place your hand on the LNB, the needle will move. If it does not move you installed the SAT FINDER the wrong way around. If the needle jumps to 10, then turn it down. If the needle is around 0-2 then turn it up. You need to continuously adjust the needle position with the dial as more energy falls into the dish, to increase/decrease the sensitivity of the SAT FINDER.



Figure 12 - SAT FINDER with jumper cable

- 5.10 Follow the instructions on the next page of the SAT FINDER to peak your dish. Also listen to your TV which you should have turned to max volume as under point 5.5. As soon as you hear music you are on the right satellite. Note that the SAT FINDER will indicate any signal that falls into the dish. You need to listen to your TV to be sure you are peaking the right satellite. **Please read point 6 now also!!!!** If the music goes off then your decoder is busy with the channel list update or an automatic software update. Wait for the decoder to come online again, and fine tune then again. It might be that you have to confirm the local oscillator frequency on the decoder as described in point 2.

USER'S GUIDE



WIRING AND OPERATION:

1. Connect a jumper cable from the LNB/LNBF to the "TO LNB" connection on the Satellite Finder.
2. Connect the cable from your satellite receiver to the "TO REC" input on the Satellite Finder.
3. Make sure your satellite receiver is on. The Satellite Finder's scale should be lighted at this time and the meter reading should be around 2.
4. Set your dish to the proper azimuth and elevation settings. (This information should be supplied with your dish.)
5. Set the Satellite Finder's scale reading to about 5 by adjusting the level control found on the face of the Satellite Finder. (Turning the knob clockwise will increase the reading.)
6. Peak the signal by slowly moving the azimuth and elevation of your dish. If the Satellite Finder's reading becomes full scale, adjust the level control knob to reduce the reading to around 5. (Turning the knob counterclockwise will decrease the reading.) Continue to move the dish until you have the highest possible meter reading.
7. Remove the jumper cable and Satellite Finder and reconnect the LNB/LNBF to your receiver.

IMPORTANT NOTES:

- * To avoid a continuous full scale reading, do not use the Satellite Finder directly in front of the dish.

Figure 13 - Sat Finder Manual

- 5.11 Confirm that your signal levels are correct:
- Select the **Satelio Infokanal** (Make sure you are on the **Satelio Infokanal**, playing Hitradio Namibia in the background)
 - Go to *Menu – Extras – Tunerinfo*
 - You will see two bar graphs. Ensure that the **SIGNAL QUALITY** and **SIGNAL LEVEL** are both above 80%. If your levels are lower than 80% peak again the dish. Only small adjustments are necessary.

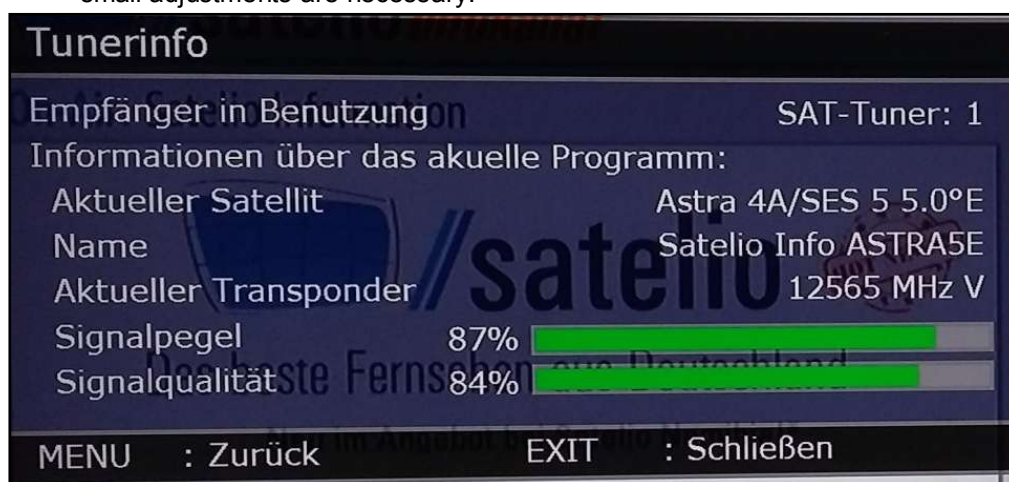


Figure 14 - Signal Level Indicator

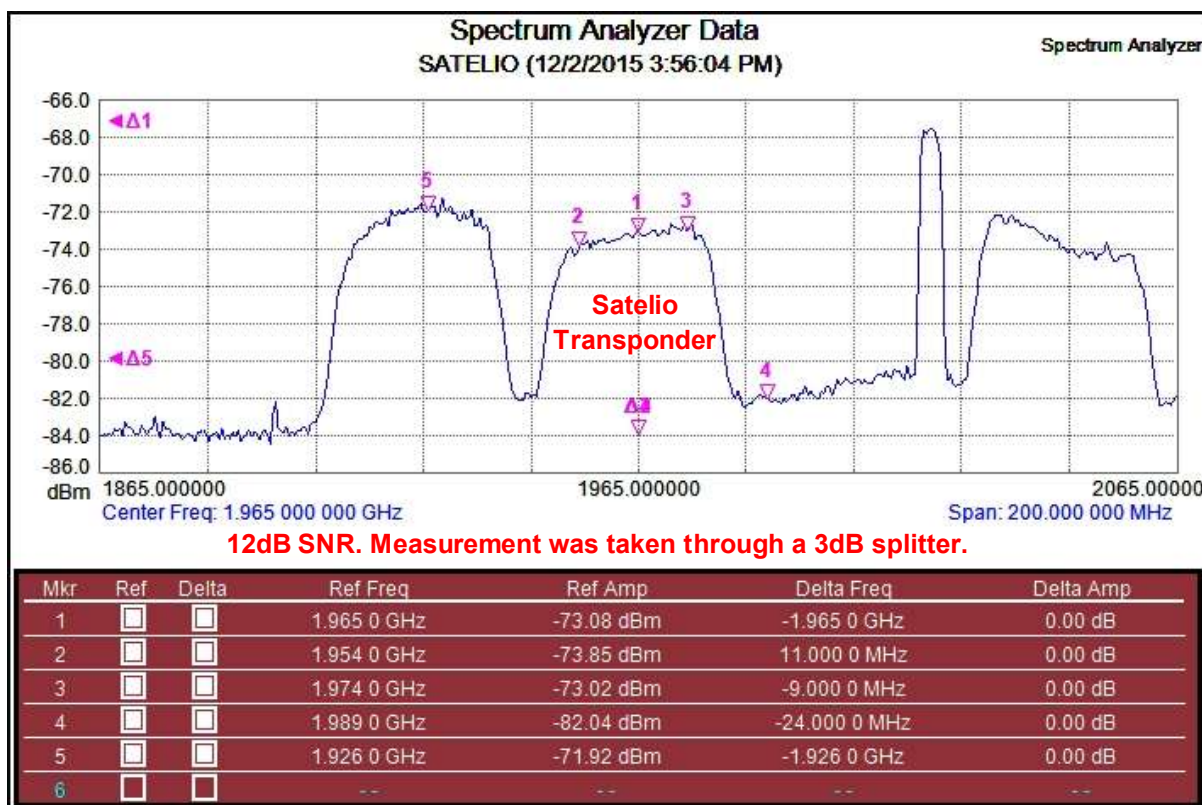


Figure 15 - Spectrum Scan - for advanced users only with professional test equipment

6. Channel List

You currently only have one channel playing, The Satelio Info Channel. Stay on this channel for a while. After a maximum period of 5 minutes an option will appear on screen, and will ask for confirmation to download the channel list.

If the notification does not appear after 5 minutes, then turn the decoder off and on again.

Press OK, else it will happen automatically after 30 seconds. The channel list will be downloaded automatically over the air, via the satellite signal.

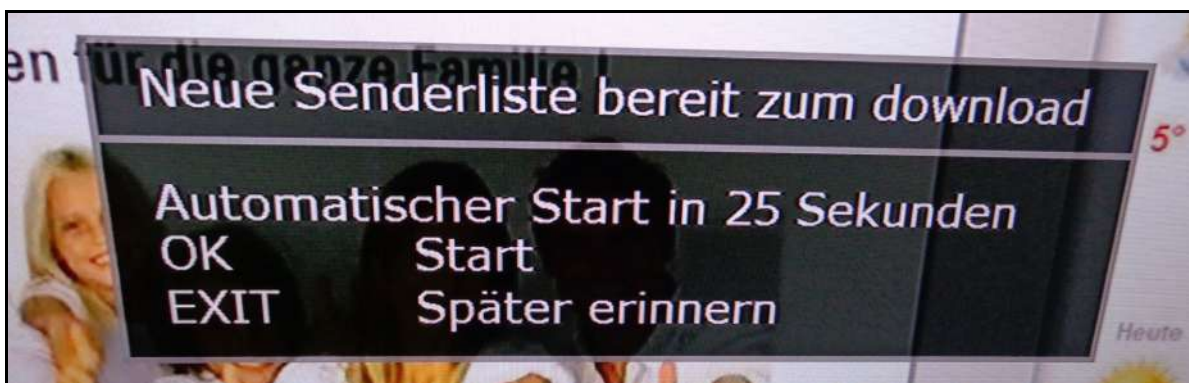


Figure 16 - Channel List Update

After the Channel List is downloaded the decoder will reset and you will have all channels available.

7. Possible Over the Air Software Upgrade

It might be that an automatic software update occurs. After a software update or a factory reset, the Local Oscillator Frequency is set again to its default value. So if you get a KEIN SIGNAL error message, first follow POINT 2 - The local oscillator frequency needs to be set in the decoder.

Was something unclear, or is there a point that requires further explanation?

We would value your feedback as we are continuously improving this installation guide.

Please send us your suggestions to namibia@satelio.com or In South Africa to info@deukom.co.za

8. Custom Configuration

There are some custom configurations that one can do.

- 8.1 **TV Format:** If you have an older 4:3 Format TV then change the video output format on the decoder, else the picture will look stretched. People look like the Cone-Head Family for example. Go to *MENU – Konfiguration, Audio, Video* : Under the option “*Format des Fernsehers*”, press the arrow on the remote facing right, select accordingly the correct format.
- 8.2 **Time:** If the time is not correct, then change the time zone on the decoder
Go to *MENU – Konfiguration, Datum und Uhrzeit* : Under the option “*Zeitzone automatic*”, please check that it is set on **Namibia or South Africa, depending on your location**, if not; please proceed in pressing the arrow on the remote facing right, and choose **Namibia or South Africa** under the selection.
- 8.3 **Automatic Standby:** If the decoder switches automatically off after 4 hours, it is an energy saving function. To disable this:
Go to *MENU – Konfiguration, Allgemein* : Under the option “*Standby Modus*”, press the arrow on the remote facing right, to change it from *Energiesparend* to *Normal*.

9. Error Codes and Possible Problems

9.1 **KEIN SIGNAL:** This means that the Satellite signal is not received by the decoder. It has nothing to do with your account status. There are three possible reasons for this error message:

- 9.1.1 The LNB Local oscillator frequency is not the same as set in the decoder. Refer to Point 2
- 9.1.2 The dish is not aligned. Realign the dish, but make sure you have a SAT FINDER. Refer to Point 4 and 5. Also check the LNB Skew. Also check the cable and LNB condition. If you like you can contact an installer listed under point 10 on the page following.
- 9.1.3 There is really heavy rain in your area, and the clouds and rain drops block the signal. Normal rain should not affect the reception of Satelio with a 90 dish, as the fade margin for rain is very good.
- 9.1.4 In some instances we found also that the LNB was faulty that caused the **KEIN SIGNAL** error.

9.2 **KEINE BERECHTIGUNG FÜR DIESEN SENDER:** This means that your account is not active. You will however still receive the **Satelio Infokanal** and the Free-To-Air Channels. Please contact us at 061-444300 to enquire why your account is not active.

If only some channels show the **KEINE BERECHTIGUNG FÜR DIESEN SENDER** error message then do a factory reset.

Menu, Konfiguration, Werkseinstellungen, PRESS THE RED BUTTON (not the power button, the RED button next to the green button in the middle of the remote)

Please note: After the decoder is switched on from the standby mode or a power cycle, it will show **KEINE BERECHTIGUNG FÜR DIESEN SENDER** for about 10 seconds. This is normal as the decoder needs to receive the decryption key via the satellite data stream. If this bothers you, you can opt to keep the decoder always on. Make sure to deactivate the automatic standby function with the following procedure:

Go to *MENU – Konfiguration, Allgemein* : Under the option “Standby Modus, press the arrow on the remote facing right, to change it from *Energiesparend* to *Normal*.

9.3 **ONLY A BLACK SCREEN:** First confirm that the right input on your TV was selected. Press *Menu*. The *Hauptmenu* will appear. If you do not see the *Hauptmenu* window you need to select the right input on your TV.

If *Hauptmenu* appears and there is still only a black screen, then the decoder got stuck and needs a power reset. Pull the black power cable out, wait 10 seconds and put it back in.

If this still did not help then do a factory reset.

Menu, Konfiguration, Werkseinstellungen, PRESS THE RED BUTTON (not the power button, the RED button next to the green button in the middle of the remote)

9.4 **THE PICTURE HAS BLOCKS:** This means that the signal that you receive is corrupted. Most likely your dish is not correctly aligned. Refer to point 5.11 and verify the receive levels. Align the dish if the levels are too low.

9.5 **THE DECODER DOES NOT RECOGNISE THE USB STORAGE DEVICE:** Your storage device (i.e. flash drive, external hard drive etc.) needs to have a **FAT32** format. The decoder will NOT recognise the storage device if it has a **exFAT** or **NTFS** format. You need to format the drive to a **FAT32** format. You can use the application available at this link to format your device to **FAT32**.

http://www.satelio.tv/files/HPUSBFW_v2.2.3.exe

You can also use the format tool of the decoder.

Menu – Konfiguration – PVR, Laufwerke – Formatieren

If your decoder does not indicate **Neues USB gerät erkannt** after you inserted the drive, then your hard disk is not compatible with the decoder. We observed this with some 1Tb hard disks. The most likely reason is that the hard disk requires additional power. You would require to purchase a powered external hard disk.

10. Installers and Dealers in Namibia

If you have problems aligning the dish, or need technical on site assistance, contact one of the approved installers in the table below. The costs for the installers and hardware will need to be paid by the client themselves.

Table 2 – Namibia Installer List

Town	Installer/Dealer	Tel	Email
Windhoek	*Jac-Mat (Premium Partner)	061 370 100	axel@jacmat.cc
Windhoek	Nick	081 124 6232	ssnick@mtcmobile.com.na
Windhoek	Frank Clear Vision	081 128 3936	clear-vision@mweb.com.na
Windhoek	Paulus	081 127 0068	
Windhoek	Andreas Brettschneider	081 244 0195	andys@iway.na
Okahandja	Garth	081 124 4376	glow.trucking@gmail.com
Okahandja	Sat-Dish Solutions	081 205 1530	okahandjasatdish@gmail.com
Coast Central	*Andreas Thiemann	085 617 0366	coast@hitradio.com.na
Coast Central	Robert Franclik TV and Audio	081 211 6167	robfransat@gmail.com
Coast Central	TV Link	064 40 6032	tvlink@mweb.com.na
Coast Central	Klaus Demtschuk Technik House	064 40 5212	demswa@africa.com
Swakopmund	*Leder Chic (Decoder supply only, no installation)	064 46 3979	admin@lederchic.net
Gobabis	*Pieter Kotze	081 243 8809	easacc@africaonline.com.na
Tsumeb	Martin WeyandWeyand's	067 22 0404	mctsw@mweb.com.na
Tsumeb	Rayner Daub	081 295 7066	info@itsolutions.com.na
Tsumeb	*Dieter Neumann – Northern Stationers (Decoder supply only, no installation)	085 2580852	nsinfo@iway.na
Grootfontein	*Stephen Weyand	081 247 5077	weyand@mweb.com.na
Luderitz	*Atlantech	063 202 250	atlantec@mweb.com.na
Outjo	*Ondu Radio	067 313 607	tiaan@onduradio.com info@onduradio.com
Otjiwarongo	*Decor Signs (Decoder supply only, no installation)	067 302 821	schloss@iway.na
Otjiwarongo	Alarmco	067 303 263	siegi@alarmconamibia.com
Omaruru	*TV Technics	064 572 800, 081 245 6838	jacques@dgroup.na , jacques.schlechter.na@gmail.com
Otavi	Michael Atkinson	067 234 757	michael@atkin.biz
Otavi	Solarglo	081 445 7670, 081 445 7669	solarglotrading@gmail.com

Dealers indicated in ***Bold** also stock decoders. Decoders are also available at the Hitradio Namibia office in Windhoek.