

CARO®+



Vision

INSTRUCTIONS FOR USE

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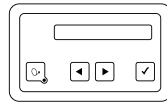
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1. OPERATING THE SYSTEM



1.1 Menu guidance at control panel

The menu guidance of the CARO®+ systems adjusts itself to individual status of the external unit, showing only the steps that the system allows to be performed.

Search ASTRA1 = Display of the current operating status

- ⏏ = Stop antenna motion
- ✓ = Displays current search transponder, timeout, return to display
- ◀▶ = Scroll through the control level

ASTRA1 = Display of the current satellite

- ⏏ = Antenna retracts
- ✓ = Displays signal strength, timeout, return to display
- ◀▶ = Scroll through the control level

Sat search = Unfold the antenna

- ⏏ = Antenna unfolds
- ✓ = Antenna unfolds
- ◀▶ = Scroll through the control level

Continue search? = Option to continue the preceding action, e.g. search

- ⏏ = Antenna retracts
- ✓ = Continue search
- ◀▶ = Scroll through the control level

Follow-up optimisation = Option for the repeated optimisation

- ⏏ = Return to display
- ✓ = Start optimisation
- ◀▶ = Scroll through the control level

Stop = Stops the system

- ⏏ = Stop antenna motion
- ✓ = Stop antenna motion
- ◀▶ = Scroll through the control level

1. OPERATING THE SYSTEM

Retract = Retract the antenna

- ⏏ = Retract
- ✓ = Retract

Open Sleep = Antenna remains unfolded when the system is switched off

- ⏏ = Back
- ✓ = System switches back into Open-Sleep mode
- ◀▶ = Scroll through the control level

Continue retraction? = Option to continue the preceding action, i.e. retraction

- ⏏ = Antenna retracts
- ✓ = Antenna retracts
- ◀▶ = Scroll through the control level

Satellite swap = Branch-off into satellite swap menu

- ⏏ = Stop antenna motion
- ✓ = Opens the satellite swap menu, timeout, return to display
- ◀▶ = Switches through the list of satellites
- ⏏ = Return to main menu
- ✓ = Confirms the current selection, timeout, return to main menu
- ◀▶ = Scroll through the control level

Settings = Branch-off into settings menu

- ⏏ = Stop antenna motion
- ✓ = Opens the settings menu, see 1.2, timeout, return to display
- ◀▶ = Scroll through the control level

1. OPERATING THE SYSTEM

1.2 Settings

These settings can be made at the control panel or via the app.

Settings		
Satellite settings		
	Manual search	
		Azimuth
		Elevation
		Skew option
	Manual transponder	
		Frequency
		Polarisation
		Symbol rate
		FEC rate
		Modulation rate
		ONID
		Active
	Receiver control	
		Switch-on delay
		Switch-off delay
	DiSEqC allocation	
		Mode
		Mode
	Sat 1 (manual)	
		DiSEqC position
		Satellite
	Sat 2 (manual)	
		...
	Sat 3 (manual)	
		...
	Sat 4 (manual)	
		...
	DiSEqC status	

1. OPERATING THE SYSTEM

Left / right changes the azimuth (in increments of 1°)
 Left / right changes the elevation (in increments of 1°)
 Left / right changes the skew angle (in increments of 1°)

Frequency in MHz
 High / low
 Symbol rate
 Selection from a list of applicable FEC rates
 "QPSK", "QPSK-S2" or "8PSK"
 Network ID
 "Yes" or "No". The display shows "Manual mode" when a manual transponder is active.
 "Off", "Automatic" or "OpenSleep" (LNB Off switches the system into sleep mode with the antenna remaining unfolded)
 Delay until the next check of the LNB voltage for power-up (3–90 sec.)
 Delay until the next check of the LNB voltage for power-down (1–30 sec.)

Four presets can be selected: "ten Haaft" (default), "manual" (Sat 1 – 4), "NL Canal Digitaal" and "NL Joyne" (two Fastscan presets)

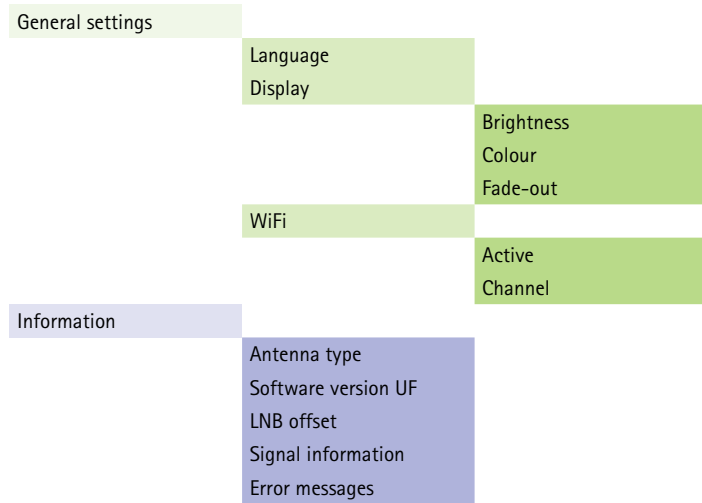
"Off" or 0 – 255 (position number of satellite)
 Name of satellite to be shown for this position

... as with "Sat 1"

... as with "Sat 1"

... as with "Sat 1"

1. OPERATING THE SYSTEM



1. OPERATING THE SYSTEM

Left / right changes the language (languages list)

Brightness 20% – 100%

Colour 0% – 100%

Fade-out time 2–60 sec.

"Yes" or "No"

Channel number

Display of corresponding data

Display of corresponding data

Display of corresponding data

Signal level, BER, ONID/TSID, ... (depending on technical conditions and availability -> tuning to effective signal)

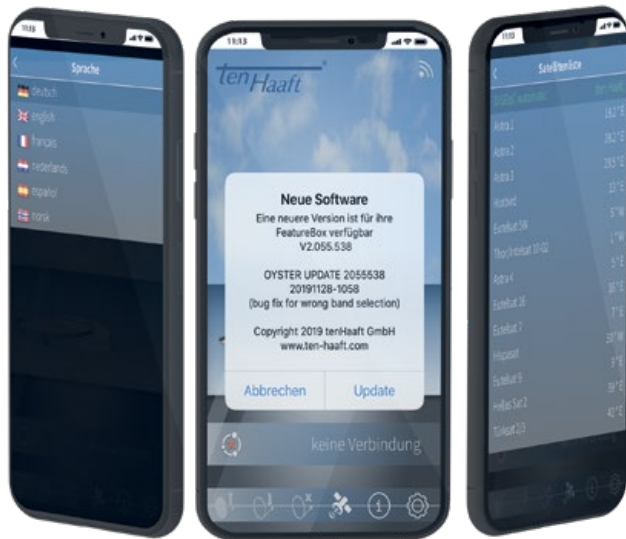
Scrolling through the error protocol list

1. OPERATING THE SYSTEM

1.3 ten Haaft® app – download, installation and first software update

All ten Haaft mobile satellite systems can be operated in a particularly user-friendly way with the corresponding app. It is not only possible to operate the basic functions of the system, such as extending and retracting the antenna, but also to make very detailed system settings or call up information about the current operating status of the system conveniently via the screen of your smartphone.

A major advantage of the ten Haaft® app is the intuitive software update function for the satellite system. Regular software updates are essential for the smooth operation of the satellite system, as functionally important databases are brought up to date. You are automatically notified of available updates when starting the ten Haaft app. The download and installation of the software is then largely automated and only requires a few taps on the screen by the user.

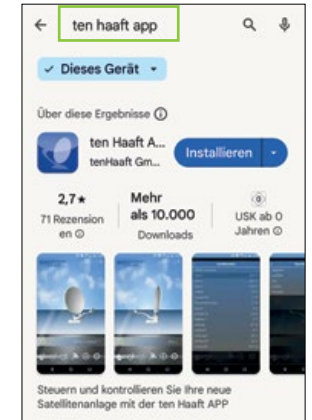


1. OPERATING THE SYSTEM

Visit the Apple App Store or the Google Play Store and search for "ten Haaft". Download the app free of charge and open it.

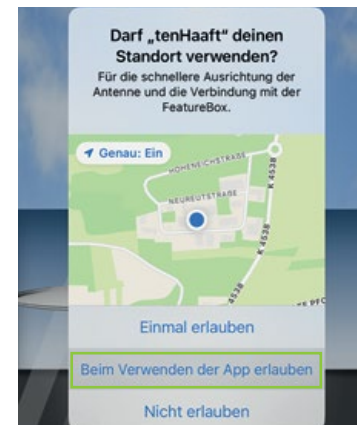


iPhone

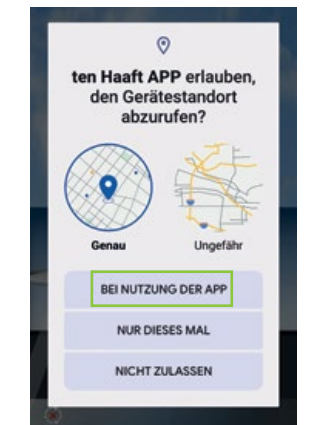


Android

During installation, the app requests access to location sharing. This authorisation needs to be granted at least while using the app. The app can also use the location data to automatically inform your satellite system of the current location so that the satellite can be found more quickly. Some smartphone operating systems may not even allow you to use the app without location sharing.

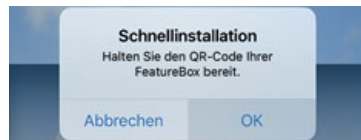


iPhone



Android

1. OPERATING THE SYSTEM

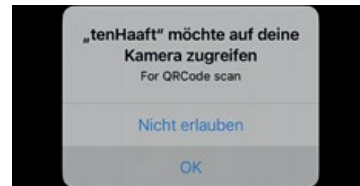


The app will prompt you for a few details during the installation process, such as whether you have the QR code for the FeatureBox. Please note that your FeatureBox will be shipped with three identical labels. This label contains the Wi-Fi name/SSID and the Wi-Fi password for your FeatureBox. Each FeatureBox has its own name and password.

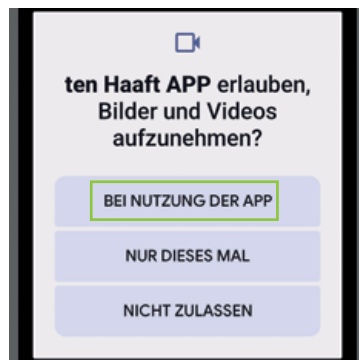
One label is already affixed to the FeatureBox at the factory, a second label is also already affixed to this description at the factory. You can affix the third label to a place of your choice.

The label on your FeatureBox always has priority for the operation of your system!

Now the app needs access to your device's camera, otherwise the QR code cannot be scanned.



iPhone



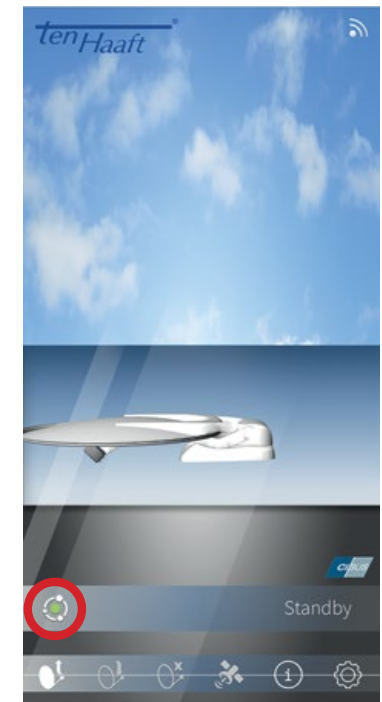
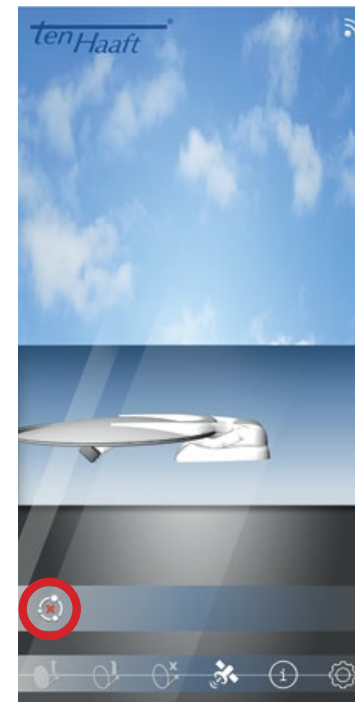
Android

Then aim the camera at the QR code on your device. Once the code has been recognised, the next step is initiated:

Please confirm that you wish to connect to the Wi-Fi as shown on the screen.

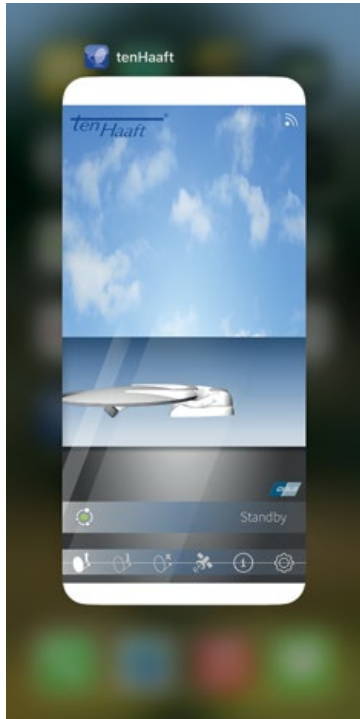


1. OPERATING THE SYSTEM



The red or green dot in the lower left-hand corner symbolises the connection status between the ten Haaft app and the FeatureBox: A red "X" indicates a missing connection, a green dot indicates an active connection. Normally, the status should change from the red "X" to the green dot after a few seconds. If not, you can initiate the connection again by clicking on the red "X".

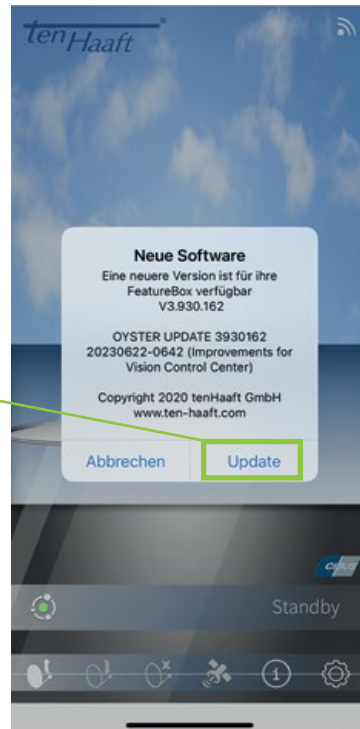
1. OPERATING THE SYSTEM



Important intermediate step: For some smartphone operating systems, it is recommended to close the app completely. This means that the app is not just moved to the background, but actually closed.

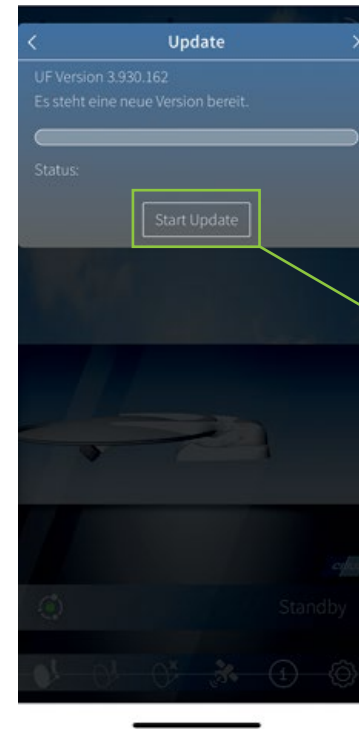
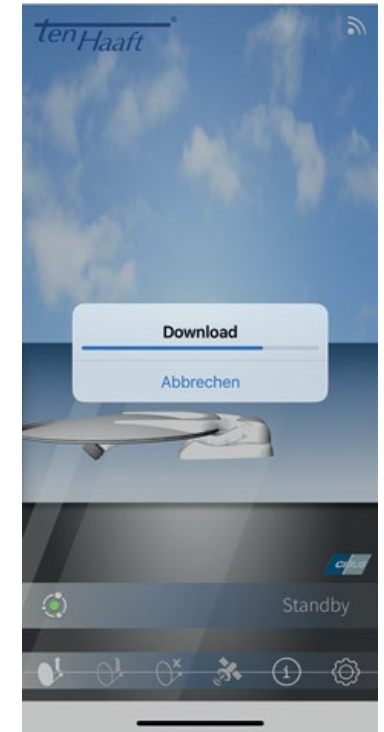
The next time you start the app, it will automatically check whether more recent software for your system is available on the ten Haaft server. Some smartphone operating systems also do this automatically.

Then please click on "Update".



1. OPERATING THE SYSTEM

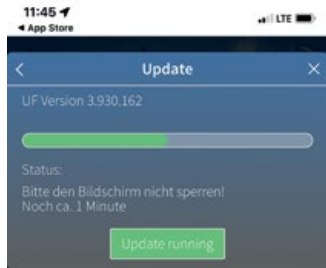
Software is downloaded from the smartphone via its LTE connection. The size of the download is only approx. 3-4 megabytes. Please make sure that your smartphone has a working internet connection.



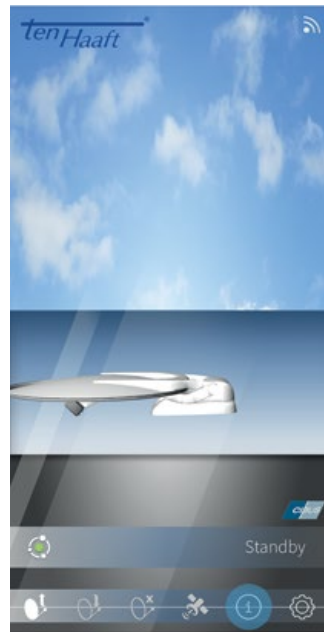
Once the download is complete, the app automatically checks whether the latest software is already installed on your system. If not, it will automatically suggest an update.

For this purpose, click on "Start Update".

1. OPERATING THE SYSTEM



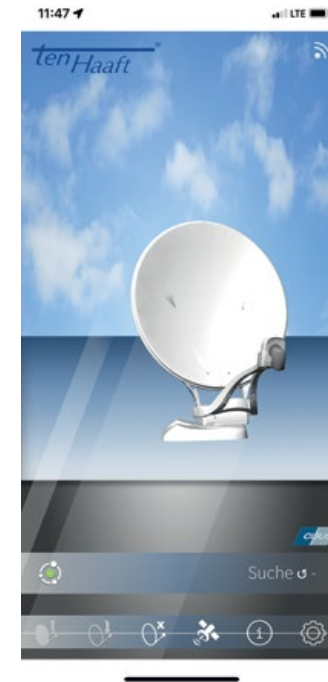
During the installation of the software update, you will see a green bar showing the progress. Normally, the image at the top right should show when the installation is complete. With some smartphone operating systems, however, the bar sometimes stops in the middle and then does not move any further. In this case, please wait another three minutes approximately and then close the app and restart it.



You can then easily check the successful installation of the software update yourself:

Tap on the "i" icon at the bottom right and then compare the two series of numbers that appear at "UF Version FB" and "UF Version APP". If both numbers are the same, then the software in the FeatureBox has already been successfully updated.

1. OPERATING THE SYSTEM



If you have any further questions, please do not hesitate to contact us. Please call us at +49 (0) 7231 / 58 588 0. You can also find more information and explanations about the ten Haaft app on our YouTube Channel at ten Haaft GmbH, or scan the QR code.



2. AUTOMATIC SATELLITE SWAP

2.1 Automatic satellite swap via DiSEqC™

In most cases you will aim your automatic satellite system at one specific satellite only. Of course, your system can also receive many other satellites, allowing you to watch e.g. Dutch, Swiss, French, Spanish or other channels. You can select a satellite manually at any time via the control menu.

However, your system can also readjust to a different satellite automatically when you change to the corresponding channel. This may be necessary in countries where the channels are broadcast via different satellites. Using the automatic satellite swap requires some settings to be made at your TV set or receiver, and possibly also at your satellite reception system. If these settings are not defined at all or are incorrect, the automatic satellite swap will not work or a wrong and hence useless satellite will be received. The automatic satellite swap can be performed using the DiSEqC™ feature (disabled at the factory).

The Automatic satellite swap of your CARO®+ VISION satellite system has been **disabled** at the factory to avoid problems and malfunctions! If you wish to use this function, you can enable it at any time via the menu system. However, it is then mandatory to adjust the settings of your TV set or receiver!

Changing the DiSEqC™ settings of your CARO®+ systems only makes sense in specific cases, for example when using a "FastScan Receiver" (Netherlands, Belgium, and some other countries).

If you wish to use the antenna system together with an external device (TV/receiver – not made by ten Haaft) supporting the "Fast-Scan" feature (Benelux, Scandinavia, possibly other countries), you need to change the DiSEqC settings in your control unit (Vision III control box/FeatureBox). The DiSEqC settings are determined by the Fast-Scan station list. You can read them out via the control panel and adjust them at the control unit.

The devices Oyster TV and HD Europe Receiver of ten Haaft support the "Fast-Scan" feature – no adjustment of the DiSEqC settings required.

2.2 Settings at the Vision control unit

To be able to use the automatic satellite swap by means of the DiSEqC™ capability of your TV set or receiver, you first need to enable the DiSEqC™ function in the menu of your antenna system.

2. AUTOMATIC SATELLITE SWAP

2.3 Enabling DiSEqC™ at the TV set

The settings required at the TV set or receiver are usually provided in a menu item called "DiSEqC™" or similar. For details please refer to the user manual of your TV set or receiver or contact the dealer.

The DiSEqC™ settings should provide options 1.0, 1.1 and 1.2. We recommend selecting DiSEqC™ 1.2. You then need to assign a unique ID to each satellite as is already preset at the FeatureBox. These IDs must be identical in the TV settings and in the FeatureBox (see table in the following slide).

If your TV set does not permit these settings, please contact your dealer.

Sat ID	Rotary switch	Satellite name		DiSEqC™ ID
1	1	Astra 1	19.2° East	1
2	2	Astra 2	28.2° East	5
3	3	Astra 3	23.5° East	3
4	4	Hotbird	13.0° East	2
5	5	Eutelsat W5	5.0° West	4
6	6	Thor / Intelsat 10	0.8° West	7
7	7	Astra 4	4.8° East	6
8	8	Eutelsat 16	16.0° East	15
9	9	Eutelsat 7	7.0° East	9
10	A	Hispasat	30.0° West	14, 21
11	B	Eutelsat 9	9.0° East	18
12	C	Hellas Sat 2	39.0° East	10
13	D	Türksat	42.0° East	11
14	E	Intelsat 907	27.5° West	19
15		Eutelsat 8W	8.0° West	8
16		Eutelsat 10	10.0° East	12
17		Amos 2/3	4.0° West	13
18		Telstar 12	15.0° West	16
19		Astra 5	31.5° East	20
20		Hylas 1	33.6° West	22

* DiSEqC™ is a registered trademark of Eutelsat, 70, rue Balard, F-75502 Paris Cedex 15. www.eutelsat.com

3. SERVICE

3.1 Reception in practice – aiming the satellite system

Satellite antennas are aimed at a satellite along three adjustment planes:

1. AZIMUTH ANGLE (COMPASS HEADING)

The azimuth angle defines the horizontal setting of the antenna, specifying the angle between North and antenna heading. It depends on the geographic position of the receiver and the satellite selected.

For example, Astra 1 (orbital position 19.2° East) has an azimuth of 173° in Berlin but 143° in southern Spain.

2. ELEVATION ANGLE (INCLINATION)

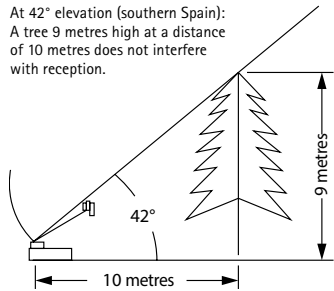
The elevation angle indicates the height of the satellite above the horizon. Like the azimuth angle, it depends on the position of the receiver and the satellite selected. In Central Europe, it is typically between 25° to 35°, decreasing as you move further North.

3. SKEW ANGLE (POLARISATION DEVIATION)

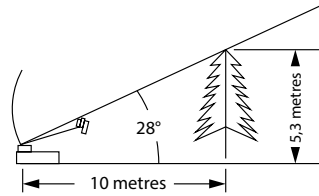
For optimal reception at the fringe of the satellites' footprints in southwestern and southeastern regions, the LNB may have to be rotated to compensate for the polarisation deviation caused by the earth's curvature.

OBSTACLES IN FRONT OF THE ANTENNA

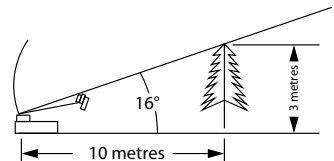
At 42° elevation (southern Spain):
A tree 9 metres high at a distance of 10 metres does not interfere with reception.



At 28° elevation (northern Germany):
A tree over 5 metres high at a distance of 10 metres does not usually interfere with reception.



At 16° elevation (Northern Europe):
A tree with a height of only 3 metres at a distance of 10 metres can already interfere with reception.



3. SERVICE

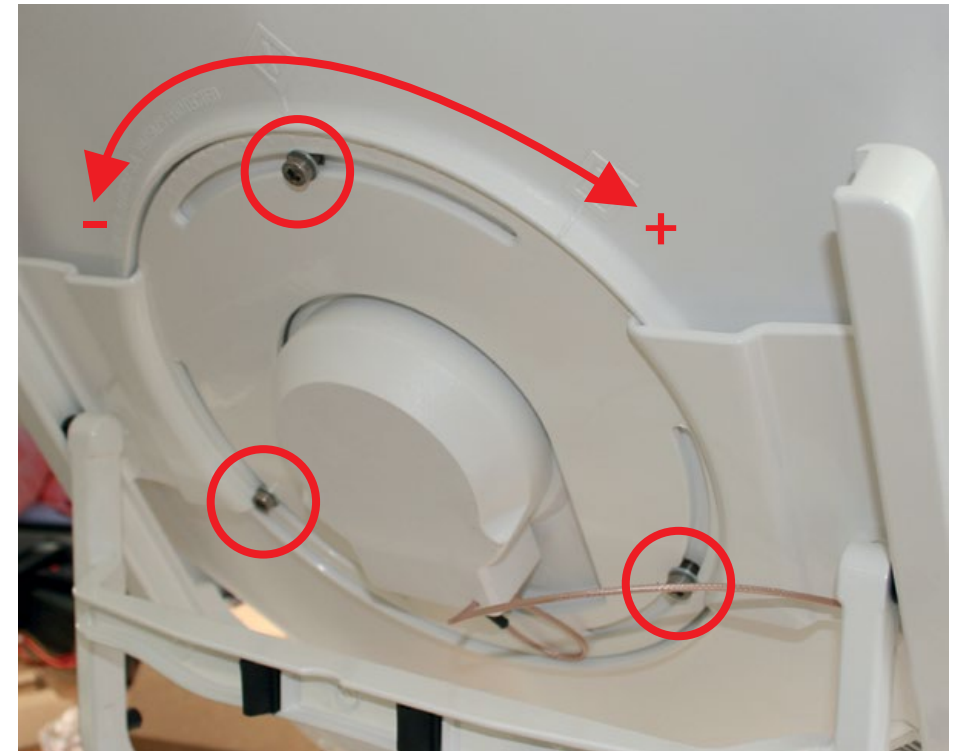
3.2 Reception in remote areas

LNB SETTINGS IN DIFFERENT REGIONS:

This section describes how to fine-tune the LNB to optimise reception in the fringe of a TV satellite's footprint. This requires loosening the LNB bolts and turning the LNB by a specific angle. This is only required in the fringe areas of a satellite's footprint. It should be performed by expert users only.

All satellites broadcasting channels of interest to Central European viewers are aimed at Central Europe. In locations outside this area, the antenna has a "sideways view" on the satellite. This effect is known as the "SKEW angle" or "polarisation angle" and occurs particularly in southern regions such as Portugal, Spain, Morocco, Greece, Turkey, and most extremely on the Canary Islands. The effect is mostly compensated by the receiver's electronics, but sometimes some manual fine-tuning is required by pivoting the LNB (reception head) by some degrees.

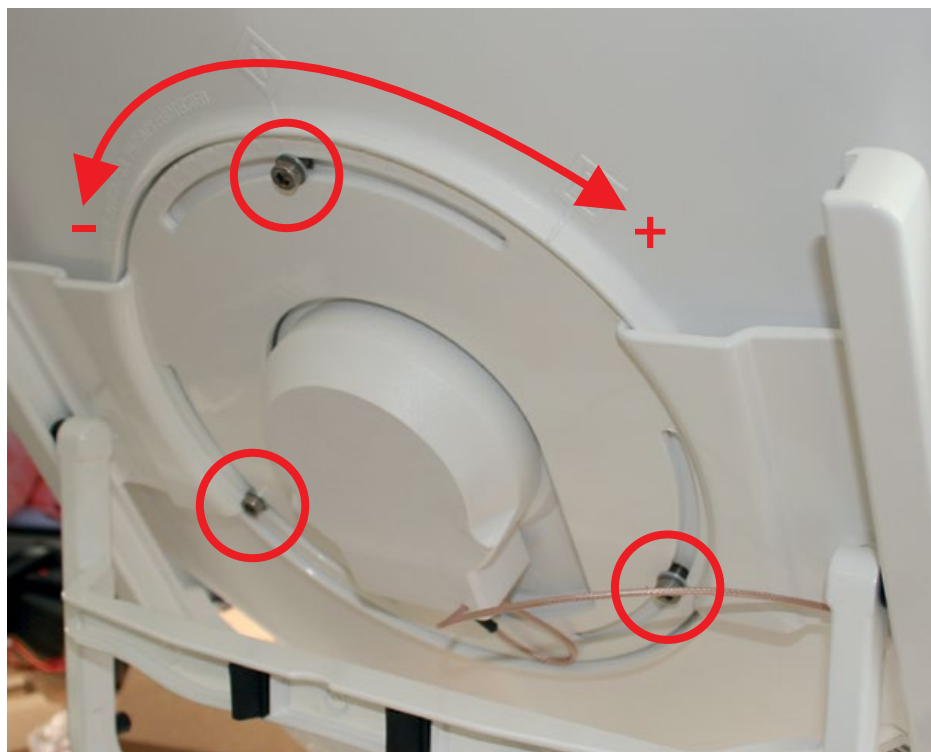
CARO®+



3. SERVICE

The following definitions apply to the tables and specified angles below: To determine the direction of rotation, the viewer must look into the direction of the satellite, as does the antenna, i.e. the viewer must be standing behind the antenna or on its side.

- Rotations in CLOCKWISE DIRECTION are negative (-).
- Rotations in COUNTERCLOCKWISE DIRECTION are positive (+).
- A rotation in “-” direction means that the BOTTOM of the antenna is turned to the LEFT.
- A rotation in “+” direction means that the BOTTOM of the antenna is turned to the RIGHT.



Country	Eutelsat W5 5° West	Thor 0.8° West	Astra 4 4.8° East	Hotbird 13° East	Astra 1 19.2° East	Astra 3 23.5° East	Astra 2 28.2° East
Germany, Austria, Switzerland	-23°	-16°	-12°	-6°	0°	4°	8°
France	-15°	-11°	-5°	2°	7°	11°	14°
Benelux region	-16°	-12°	-8°	-2°	3°	6°	9°
England	-9°	-6°	-3°	3°	7°	10°	12°
Ireland	-6°	-3°	1°	7°	11°	13°	16°
Portugal	-4°	1°	8°	16°	22°	25°	28°
Southern Spain, Gibraltar	-8°	-3°	5°	14°	20°	24°	28°
Scandinavia	-19°	-16°	-14°	-9°	-6°	-4°	-2°
Greece	-38°	-35°	-29°	-20°	-12°	-7°	0°
Turkey, Ukraine, Belarus	-39°	-36°	-31°	-26°	-20°	-15°	-11°
Canary Islands	12°	18°	26°	34°	39°	42°	44°
Morocco	-8°	-2°	6°	17°	23°	27°	31°
Italy, Sicily	-27°	-24°	-17°	-8°	-2°	3°	8°
Croatia	-27°	-24°	-19°	-11°	-5°	-1°	4
Tunisia, Libya	-27°	-22°	-15°	-4°	4°	9°	15°

Note: The SKEW angles provided are for reference only. Adjustments of less than 8° are usually not necessary as long as reception is undisturbed. The fine-tuning of the SKEW angle often allows the reception of satellites in areas actually outside of their footprint. The footprints of the individual satellites can be found at www.lyngsat.com or www.satcodx.com. Both websites provide interesting general information about the channels and footprints of the various satellites.

3.3 Notification tones / warning tones

Your FeatureBox is provided with a sound generator to inform you of situations requiring your attention.

3.3.1 Road safety tones

A short tone sounds if you switch on the ignition with the antenna unfolded. This alerts you that the antenna is still open and still needs some time to retract completely.

The antenna is only operational when the ignition is off. For reasons of road safety, the antenna will not open as long as the ignition is on. If you switch on the system nonetheless, the antenna will not unfold.

If a warning tone sounds when pressing the Start key, the antenna cannot unfold, e.g. because the ignition is still on.

A continuous warning tone sounds if the antenna cannot fully retract while the ignition is on.

3.3.2 On-board voltage tones

If a short triple tone sounds in reception mode, you should check the charge state of the on-board battery. The tone is repeated every minute if the on-board voltage is low. If the on-board voltage drops further, the tone will sound every 15 seconds.

If a triple tone sounds when switching on the system, the antenna cannot unfold because the on-board voltage is too low.

3. SERVICE

3.4 Troubleshooting

Stop function

It is essential that the antenna motion can be stopped at any time. A satellite search can be stopped or interrupted by pressing the SAT button on the control panel, the Stop button on the Oyster® TV set's remote control or the Power button on the FeatureBox. After either of these buttons has been pressed, the system will no longer accept any control commands.

Resetting the stop function

To cancel the stop function, press the Start button on the Oyster® TV set's remote control of a Premium system, the SAT button on the control panel of a Vision system or the Power button on the FeatureBox to send a new motion command.

Fault description	Remedial action
No satellite was found during search.	Do you have a clear view to the South? Are you inside the footprint of the satellite being searched? Does your position require the LNB's SKEW angle to be adjusted?
The antenna does not retract or unfold properly.	Is the motion obstructed by obstacles? Is the supply voltage too low (weak battery)?
The antenna does not react after activation or does not respond to commands.	Is the fuse OK? Are all cables properly connected?
Signal tone of the FeatureBox	If the system receives a command to retract the antenna via the line connected to terminal 15 / D+ (it is mandatory that this line is correctly connected), but does not send a feedback to the FeatureBox, a signal tone will sound. Check whether the antenna has been retracted.

3. SERVICE






3.5 FeatureBox update via USB stick

Further to automatic updates via the app, which is the preferred option, updates can also be performed manually using a USB stick.

You will need a USB stick formatted as FAT/FAT32 with the file `tenhaaft.uf` loaded into its root directory (top level).

The UF-file is available from our website.

The maximum file size is approx. 6 MB, so the USB stick's storage capacity is not relevant.

Procedure	Description
	Switch on the FeatureBox! The image shows a FeatureBox that is switched off and in stand-by mode (left LED illuminates red).
	The FeatureBox shown is active (left LED illuminates green).
 or 	Plug the USB stick into the port marked "USB" on the rear face of the FeatureBox. The USB stick will then flash to indicate reading access, and both LEDs on the front face illuminate (left LED in green, then changing to red, right LED in red or flashing red). In this mode, the data are transmitted from the USB stick into the internal update memory of the FeatureBox. Depending on USB stick and file size, this procedure may take some time (< 2 min.) and must not be interrupted!
	The right-hand red LED turns off when this step is completed. You can then remove the USB stick from the FeatureBox.
	An LED illuminating blue can be ignored!

3. SERVICE

BLUE LED

Once the data is available in the internal update memory, it can be distributed to the connected hardware components. If feasible, this happens automatically. However, it is often impossible to update everything immediately because the FeatureBox does not know the status of a component (for example, because the antenna is not even connected at the time of the update).








This condition is neither unusual nor critical!

The user is only alerted by a blue LED lighting up that he can now press the "i" button to try an update.

UPDATE SEQUENCE

The components connected to a FeatureBox are updated in a fixed order: At first the FeatureBox itself and then the antenna's motor control.

For safety reasons, a motor control is only updated after it has been reliably detected and the antenna is run in. Therefore, pressing the "i" key with the blue LED being on may trigger the antenna to run in.

Sequence	Description
	Device is switched off (<i>standby</i>) --> Switch on the device
	Device is switched on --> Plug in the USB stick
 or 	Data are being transmitted or updated --> Do not touch – wait!
After the right red LED has turned off permanently, you can remove the USB stick.	
	--> Press the "i" button



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