

Operating instructions



Oyster[®]

HDTV

cosmo[®]

HDTV

CARO[®]

HDTV



HD receiver „Europe“

tenHaaft[®]

Innovative Mobile Technology

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1.1 Introduction



Your ten Haaft® HDTV digital satellite reception system is a smart and fully automatic system. It does not require any of the manual adjustments associated with conventional systems. Unlike normal television antennas for terrestrial reception, a satellite antenna always must be precisely aimed southward into the satellite's signal beam. This signal beam must not be interrupted by trees or other obstacles, as this will prevent reception.

Please ensure that the system always has a clear view to the satellite in the South. If the signal is blocked – for example by a tree – it is quite possible that a good satellite signal may be received without any problems in a position just a few meters away. In Scandinavia, even mountains in the far distance can interrupt the satellite signal.

Oyster® only

To allow reception even under such adverse conditions, the top-box (also called „antenna unit“) of the Oyster® system can be removed from the vehicle top and be set up near the vehicle in a position where a signal can be received. This requires a special pedestal and an extension cable which are available as an optional „ground kit“.

Satellite systems installed on buildings must usually only be adjusted once. By contrast, a mobile system will need to be readjusted even if it is moved only a few centimetres. Your ten Haaft® satellite system does this adjustment automatically at the push of a button.

Our HDTV satellite systems stand for exceptional operating convenience and a multitude of channels. At the touch of a button, the system folds out and starts scanning for receivable satellites. The micro-processor controlled fine-tuning and the digital receiver technology ensure the best possible picture quality. Using the remote control, you can then enjoy the full range of TV and radio programmes transmitted by satellites using the new digital standard. You can even adjust the volume of your television set with the satellite system's remote control. This eliminates the inconvenient handling of two remote controls.

To further enhance the operating convenience, a new function has been implemented in your satellite system that allows it to be switched off with the antenna dish remaining in its folded-out position. This eliminates the daily folding out and retracting of the antenna when staying in one location for several days without having to dispense with the extremely efficient power-saving stand-by mode.

The first few pages of these instructions explain the general functions of the receiver and are followed by an explanation of all the functions specific to the satellite system and the search functions.

Your HDTV satellite system can receive unencrypted „Free-To-Air“ (FTA) programmes as well as encrypted programmes. The integrated „Common Interface“ (CI) accepts decoder modules for the various different encryption methods. It can hence receive encrypted programmes, provided that you have procured the corresponding decoder module and a valid „conditional access“ (CA) smart card.

Please observe section „Common Interface (encrypted programmes)“.

1.2 Proper use and operation

Your satellite receiver has been designed for use on mobile homes, camper trailers or other vehicles for the reception of standard satellite signals of the Ku band frequency range.

It is designed to automatically aim an antenna mounted on a stationary vehicle at one of the geostationary and directly transmitting television satellites commonly used to cover Europe.

The power to the system is supplied by a vehicle electric system with a rated voltage of 12 or 24 Volt. For installations where a connection to the vehicle's electrical system is not possible, a suitable 230-Volt-to-12-Volt power transformer must be used.



This product has been designed for use in a fixed installation on mobile homes or camper trailers with a maximum speed of 130 km/h.

To ensure the reliable and proper operation of your system, it must not be used for any other than its intended purpose.

- Changing the overall device by removing or adding individual components is not permissible.
- All applicable and approved guidelines of the automotive industry must be observed and complied with when installing the device. The installation instructions supplied with the system must be strictly observed when installing the pole and the antenna.
- The product does not require any regular maintenance. Enclosures must not be opened.
- Do not clean your mobile home with the mounted satellite system in a single-bay or drive-through car wash and do not use a high-pressure cleaner.
- Retract the antenna during periods of strong winds or storm. 
- The equipment must only be installed on hard vehicle roofs which are sufficiently strong and inherently stable.
- In the event of any problems, or if you are unsure about anything, please contact the manufacturer directly or a specialist workshop which is approved by the manufacturer.

ten Haaft GmbH
Oberer Strietweg 8 · DE-75245 Neulingen
Phone +49 (0) 7237 4855-0 · Fax +49 (0) 7237 4855-50
info@ten-haافت.de · www.ten-haافت.com

1.3 Safety information

To avoid the risk of fire or damage to the device, the receiver must never be exposed to moisture or rain.

Should an item or liquid get into the housing, immediately disconnect the device from the power supply and have it checked by a qualified professional before further usage.



Place the receiver in a place with sufficient air circulation and away from any heat sources. This will prevent heat accumulation inside the receiver and ensures a longer lifecycle. Do not place any items on the receiver – malfunctions, damage and even self-ignition may occur if the ventilation openings are blocked.

Should you ever notice an unusual smell or smoke, immediately disconnect the device from the power supply and have it checked by a qualified professional.

Switch off the receiver before connecting other devices. The power supply line to the receiver must have a cross-section of 2.5 to 4,0 mm² and must be connected directly to the vehicle battery. Ensure that the device is not connected to an electronic charge controller.

Keep a sufficient distance to potential sources of interference such as mobile phones, electronic heater controllers, igniter components or radio devices when routing the lines and positioning the components.

It is recommended that you ground your television set in the vehicle to avoid interference on your television set or satellite receiver. Only connect the freely accessible ground of your television set to the vehicle chassis.

Only use the wiring harnesses supplied or the extension wiring harnesses available as accessories to connect the top box. The extension wiring harnesses are available for the Oyster® Digital system only.

Ensure that the opening motion of the antenna is not obstructed e.g. by a tree or sign before folding out the antenna.



The driver of the vehicle must inspect the top-box before driving off to ensure that the antenna is fully retracted.

The antenna may need up to 30 seconds to retract after the ignition is switched on or the engine is started. Do not move the vehicle during this period! The antenna will only retract if the master switch at the receiver is set to ON (or ,I') and if the receiver is connected to a power source. Automatic retraction may be prevented by technical defects of the vehicle or the antenna system. **Ensure that the antenna is fully retracted before driving off!**

Ensure that the system is installed in your vehicle in accordance with the installation instructions provided or have the correct installation confirmed by the installer.

Please note that different legal requirements may apply to the operation of electrical and electronic equipment in different countries. As the user of this equipment, you are responsible for ensuring compliance with the relevant laws and regulations.

In case you are not familiar with the applicable legal regulations, we recommend that you fully disconnect the satellite system from the power supply by turning off the master switch of the receiver in order to avoid violating any applicable laws.

Keep in mind that all parts of this system may be dangerous to children. The swallowing of small parts such as batteries can be fatal! Never leave children unattended in the vicinity of the system or its components. Ensure that there are no persons within the operating radius of the antenna when it is operated.

2.1 Remote controls

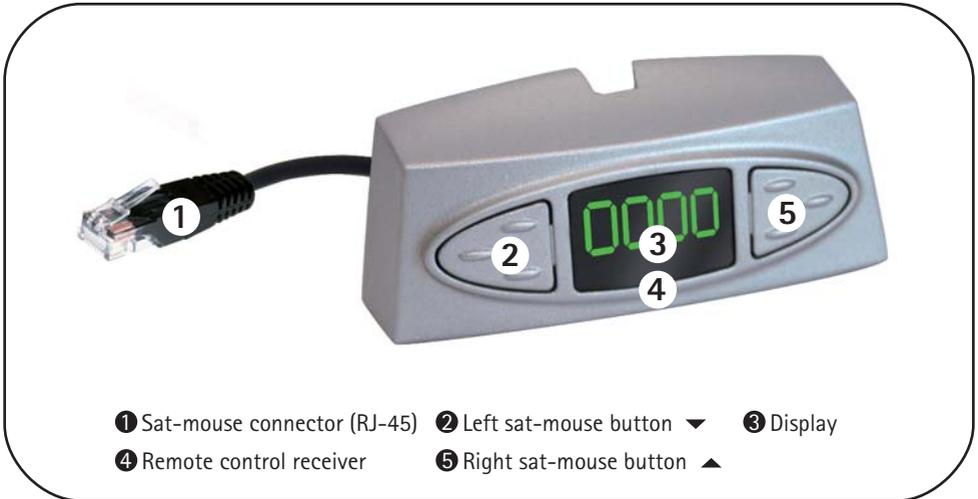


	Switches the receiver on and off (Power)
	Mutes the sound Activates sleep mode if pressed for more than 3 seconds
	Number buttons for direct channel selection
	Changes between TV and radio mode
	Selects favourite channels list
	Volume control
	Channel up/down
	Opens display menus
	Returns to previously selected programme Switches teletext mix-mode on and off
	Shows current programme information (EPG)
	Menu navigation up Normal mode: Channel up/down
	Menu navigation down Normal mode: Channel up/down
	Menu navigation left Normal mode: Volume control
	Menu navigation right Normal mode: Volume control
	Selects or confirms functions
	Opens the programme list
	Closes on-screen menus / switches teletext off
	Blank button
	Displays the electronic programme guide (EPG)
	Starts the teletext function of the receiver



OPT	Selects sound options
◀◀	Reverse
▶▶	Forward
▶	Starts playback
⏸	Interrupts playback Starts the timeshift function
■	Stops playback
●	Starts the recording of a programme
↶	Moves 5 minutes backward within the recorded programme
↷	Moves 5 minutes forward within the recorded programme
FILES	Displays the recordings overview
TIMER	Displays the timer list
FORMAT	Selects the video resolution of the HDMI output
FUNC	CARO MA HDTV: Starts the satellite search menu Oyster HDTV + I: Starts the satellite search / Starts the Internet satellite search
AV	Activates the loop-through for analogue and digital video and audio signals
ANT	Opens the antenna system menu

2.2 Sat-mouse – operation without remote control



The two buttons on the sat-mouse allow you to control the following basic functions of the receiver when the remote control is not available:

▲	Changes to the next channel in the channel list.
▼	Changes to the previous channel in the channel list.
▲/▼	Press both buttons briefly at the same time to toggle between RADIO and TV mode. Holding both buttons down will cause the receiver to switch off. This corresponds to pressing the red stand-by button (ON/OFF) on the remote control.

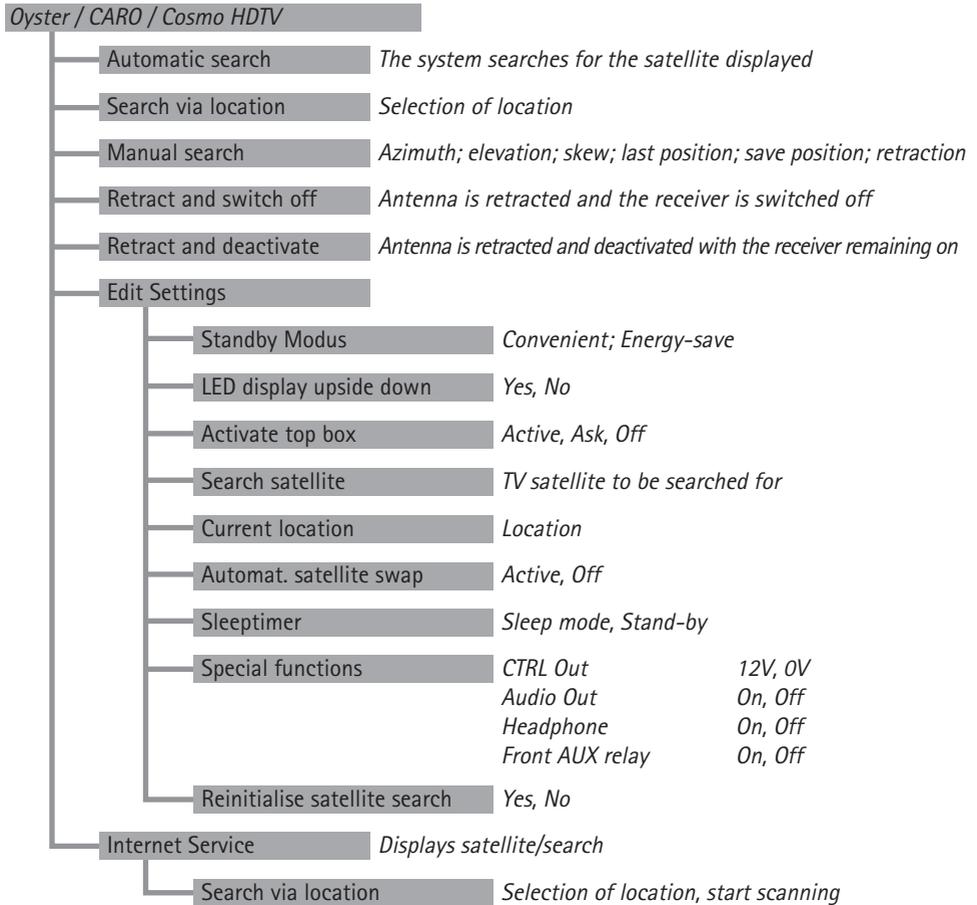
When in stand-by mode, a brief press on both buttons switches the receiver back on. **When in „power-saving“ stand-by mode, the receiver can only be switched on using the button combination.**

Another control element is the master switch on the front of the receiver. In position „0“ or „OFF“, the receiver is isolated from the vehicle's power supply. The switch must be in position „I“ or „ON“ for the receiver to operate.

Should the receiver no longer respond to commands, set the master switch to „0“ for approx. 10 seconds and then back to „I“.

3.1 Functions of the satellite system

The menu branch with the system controls can be opened directly by pressing the ANT button on the remote control.



The **Oyster / CARO / Cosmo HDTV** menu can also be opened by pressing the MENU button and the selecting item **Oyster / CARO / Cosmo HDTV ...** using the cursor buttons (menu navigation buttons up/down).

Press OK to open the menu.

3.1 Functions of the satellite system

To select the individual menu items, use the cursor buttons (menu navigation buttons) and confirm with OK as usual. All search functions and the required settings are controlled via the **Oyster / CARO / Cosmo HDTV ...** menu.

To enhance your operating convenience, many functions are performed automatically.

For example, the antenna is automatically opened and moved into the previous reception position any time you switch on the system. If no image is received in this position, the automatic search function is started. Ensure that the moving antenna cannot cause harm to any person before switching on the system.

When the system is switched off using the red stand-by button  or the buttons of the sat-mouse, the antenna retracts automatically. The antenna also retracts when switching on the vehicle ignition to start the engine. Of course, the antenna will need a few seconds to retract. Never drive off before the antenna is fully retracted and the receiver has been switched off.



Before driving off, always perform a visual check of the vehicle roof to ensure that the antenna is correctly retracted into its park position. The display must show the green stand-by dot or must be completely blank, depending on the settings.



Please note that the system is completely disconnected from the vehicle's electrical system and that the antenna will hence not be able to retract automatically when the master switch is switched off.

The receiver can be switched back from the power-saving stand-by mode only by pressing both buttons of the sat-mouse simultaneously.

If you suspect a malfunction of your system, then first press both buttons of the sat-mouse.

3.2 Automatic search



Selecting this menu item will directly start the automatic search. Otherwise, the automatic search will start when switching the system on if no signals are received in the last reception position, e. g. after the vehicle has been moved.

The satellite search is carried out in accordance with the 'Last Elevation Memory' (LEM) principle starting at the angle of the last receiving position. The receivable satellite is usually found quite quickly if the distance between old and new location is not too great.

However, if a larger distance has been covered, it is generally advisable to select option **Search via location**.

The automatic search function always assumes that your vehicle is perfectly level. If this is not the case, the search time may be extended.

The satellite used for the automatic search can be pre-set under Oyster / CARO / Cosmo HDTV... -> Edit Settings -> Search satellite.

Ihre Sat-Anlage ist in der Lage, automatisch zwischen allen an Ihrem Standort empfangbaren Satelliten hin und her zu schalten, ohne dass Sie dies besonders veranlassen müssen.

Your satellite system will switch between all satellites receivable at your location without any user interaction.

The satellites broadcasting the programme are stored together with the programme position in the channel list (see appendix 'Channel list'). If the satellite system recognizes a satellite change after you have changed the channel, the antenna will immediately search for this satellite and precisely adjust itself to its signal. During this period, the status message **Antenna is being moved** is displayed.

3.2 Automatic search

If the selected programme cannot be found on the new satellite (e.g. due to an interruption of transmission or your location being out of range), the antenna will return to the position of the satellite from which the search was started and will switch back to one of the programmes from this satellite.

The time required for such a change depends on how far the two satellite positions are apart. For example, the change from Astra 1 to Hotbird takes less than 5 seconds if the satellite positions are known. If the exact positions are not known, the first change will take a little longer.

3.3 Search via location



Menu item „**Search via location**“ opens a sub-menu with a selection of countries and regions. Use the cursor buttons (menu navigation buttons up/down) to select an entry and confirm with OK to activate it.

The system will then search for the satellite used for the automatic search which can be pre-set under Oyster / CARO / Cosmo HDTV... -> Edit Settings -> Search satellite.

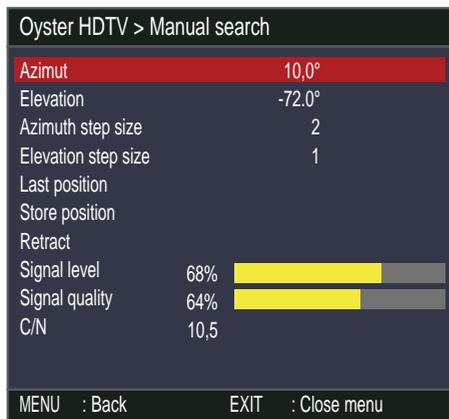
The regionally applicable elevations are now allocated to the receivable satellites.

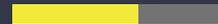
Finding a satellite may now be quicker. This search option is especially convenient if you have travelled a greater distance from your last location.

The satellite actually used for the search will be shown on screen. After the satellite has been found, the system automatically switches to a programme that is transmitted via this satellite.

Please note that not all satellites and all programmes can be received in all locations. Reception also depends on the size of the antenna.

3.4 Manual search



Oyster HDTV > Manual search	
Azimut	10,0°
Elevation	-72,0°
Azimuth step size	2
Elevation step size	1
Last position	
Store position	
Retract	
Signal level	68% 
Signal quality	64% 
C/N	10,5
MENU : Back EXIT : Close menu	

This menu item opens a sub-menu that allows the manual control and adjustment of your satellite system. Before selecting this menu item, switch to a programme that is receivable at your current location, as otherwise no picture can be received.

The manual search is recommended if you wish to optimise the antenna position or aim the antenna at new satellites. The menu displays the rotation and elevation in degrees relative

to your vehicle and the signal strength. The strongest signal will provide the best picture quality.

However, signal strength varies with the channel and location. To receive an image, a signal strength with a C/N value of at least 7 (C/N 8 for encrypted channels) is required.

To move the antenna, use cursor buttons (menu navigation buttons) to highlight option „Azimuth“ (rotation, direction) or „Elevation“ (inclination angle). **Then use the cursor buttons (menu navigation buttons) to move the antenna in increments into the required direction.**

The change of the antenna direction is indicated in the display. Please note that the indicated directional values relate to your vehicle and are not actual geographic degrees – i.e. previous values are invalid after you have moved the vehicle!

3.4 Manual search

If you wish to move the antenna over a greater range, the increments can be increased.

Select item **Store position** to store the current position and then press OK. The current position is stored immediately.

If you switch off the system now or retract the antenna, it will return to this position the next time the system is switched on. Accordingly, if you were receiving a picture when selecting option **Store position** and if you have not moved the vehicle since, you will again receive a picture only seconds after switching the system back on.

From the menu „Manual search“ you can also retract the antenna at any time. Move the red bar to „Retract“ and press OK. The antenna retracts, its movement is displayed in the direction indicator window. At an elevation of approx. -73° the antenna is fully retracted, but the system will not yet switch off. To return the antenna to its stored position, select „Last Position“ and press OK. This function is useful to manually open a previously retracted antenna.

When a DVB-T (optional) programme is selected, an optimization of the satellite antenna is not required. DVB-T is received by a separate antenna. A corresponding message is displayed accordingly if the manual search is started while a DVB-T channel is active.

If you wish to exit the „Manual search“ menu, press EXIT at any time. If the antenna is still moving when you press EXIT, the antenna stops.

3.5 Retract and switch off

Retract and switch off	
Azimuth:	0,0
Elevation:	0,0
The dish is retracting, afterwards the receiver will switch to standby. Press EXIT if you want to abort.	

the sat-mouse.

If option „Convenient“ is selected in **Oyster / CARO / Cosmo HDTV... -> Konfiguration -> Stand-by-Modus**, the stand-by mode is indicated by a green dot in the sat-mouse.

This function retracts the antenna and switches the receiver into stand-by.

This function can also be activated by pressing the red stand-by button  on the remote control or by simultaneously holding down both buttons of

3.6 Retract and deactivate

Retract and deactivate	
Azimuth:	0,0
Elevation:	0,0
The dish is retracting. Press EXIT if you want to abort. When retracted you can use the PVR playback or the DVB-T mode.	

This function retracts the antenna without switching the receiver off.

Reactivation:

Select menu item **Manual search -> Return to last position**.

3.7 Edit settings

This menu contains several settings for the operation of the satellite system. Here, all settings concerning the automatic search are made. Settings concerning general functions of the receiver are made in **Menu -> Edit settings**.

The following settings of your satellite system can be edited:

- **Stand-by mode**

When the system is set to „Convenient“, it can be re-activated from stand-by mode by pressing the red button on the remote control. The stand-by mode is indicated by a green dot or hyphen in the satellite-mouse display.

When the system is set to „Energy Save“, the remote-control receiver and the green dot are switched off when the system is in stand-by mode. In this case, the system cannot be switched back on with the remote control. To switch the system back on, press both buttons of the sat-mouse (LED display) simultaneously.

- **LED display upside down**

If set to „Yes“, the channel number will be displayed bottom-up. This is useful if the sat-mouse is mounted upside down. Channel numbers are then seen in their normal position.

Setting „No“ must be used when the sat-mouse is mounted in „normal“ direction.

3.7 Edit settings

- **Activate top box**

When the system is switched on, the top box (antenna unit) is usually activated immediately, aiming the antenna at the satellite. To prevent this, set this menu item to „Off“. This may be useful if you are in a location where no satellites can be received but you do wish to use the PVR or +T (optional) functions.

This function can also be used for operating an external satellite antenna. When option „Ask“ is enabled, the question whether the antenna shall be activated this time or not will be asked every time the system is switched on.

You can activate the top box at any time later on by opening the **Oyster / CARO / Cosmo HDTV** menu using the ANT button and by then selecting **Activate top box** in **Edit settings**.

- **Search satellite**

This option allows you to select the satellite that the system shall to search for when being switched on or when the automatic search or the search by location is initiated. Several satellites covering different regions and offering programmes in different languages are available. Please note that not all satellites can be received in all locations (see appendix „Search satellites“).

- **Automat. satellite swap**

When set to „Active“, the system will check at every programme change whether the new programme selected can also be received from a satellite other than the current one. If such a satellite change is recognized, the system will automatically adjust the antenna to the new satellite.

To deactivate the automatic satellite swap, set the setting to „Off“. This may be necessary if the automatic satellite change does not function because of weak signals or if you prefer to perform a manual search (see „Automatic satellite swap“).

3.7 Edit settings

- **Sleeptimer**

When in stand-by mode, the antenna will be retracted and switched off when the sleep-timer is activated. When set to sleep mode, the system is switched into the sleep mode by the sleep timer without retracting the antenna.

The regular timer programmes are only executed in sleep mode and are inactive in stand-by mode.

- **Reinitialise search parameters**

Select this menu item and confirm it with OK if you assume that your satellite system does no longer reliably find the selected satellite via the automatic search or the search via location. The satellite search function is reset to the default settings. Please note that the first search after a parameter reset may take quite a long time. This function should hence only be used after due consideration.

Service menu

Select menu item **Oyster / CARO / Cosmo HDTV...** -> **Edit settings** and press the ANT button to open the Service menu.

Sat-mouse characters

The default setting for the number of characters shown by the sat-mouse is 4.

Search transponder / beam (to be used by specialist dealers only)

Some satellites have more than one footprint. As a consequence, not all channels of a satellite can be received within the satellite's overall coverage area. Also, it may be possible that the automatic search will not yield a satellite when a different footprint is selected for reference. With this menu item, a footprint suitable for your location can be allocated to each satellite in accordance with the specifications of the satellite operator.

3.7 Edit settings

Internet-service satellite

This option allows you to enable the Internet data service in an Oyster Digital system fitted with the „Internet“ option. In the default settings, this function is already pre-set for the satellite modem included in the supply.

Test limits and Test power supply

Menu items Test limits and Test power supply are intended for the technician installing the system and are not relevant for normal operation.

3.8 Internet service (optional)

If you own an Oyster 85 Digital CI system fitted with the „Internet“ option, then you can access the Internet directly via satellite. (The Internet option is not available for other models.)

Using the Internet requires a service agreement with an Internet provider and a specific satellite modem as well as an iLNB capable of transmitting data. If you have purchased the Oyster 85 with the Internet option, the modem and iLNB are included in the supply. To enable the modem supplied you need to have a service agreement with an Internet provider. Information and further details have been provided together with the system.

Internet communication can then be performed using any computer or laptop fitted with a network port. The port is required to connect your PC to the satellite modem using the cable provided.

Your system is already set up for the satellite modem supplied and the Internet service provider recommended in the information provided with the system.

You can enable the Internet function either via **MENU -> Oyster HDTV -> Internet Service** or, alternatively, during TV mode by pressing the FUNC button on your remote control.

In both cases the system starts searching for the pre-set Internet satellite and assumes an adjustment for optimal Internet signal reception.

After successful adjustment, the sat-mouse display will show „IP“ (Internet Protocol). The modem now starts communicating with the network via satellite and logs itself in. The procedure usually requires 60 seconds, but may take significantly longer in exceptional cases.

Successful communication of the modem with the network is indicated by the green „RX“ LED lighting up in the modem. If the green LED in the modem does not light up within 60 seconds after switching into „IP“ mode, then a fault is present in the modem.

3.8 Internet service (optional)

The yellow „Warning“ LED in the modem goes off when the modem has successfully logged into the network. Your PC is now connected to the Internet.

Please note: Your PC is assigned an IP address by the modem or by the satellite network via DHCP. Please be sure to enable the function „Obtain IP address automatically“!

To switch back from Internet mode to normal TV mode, press the „AV“ button on your remote control. You can then start a new search for the pre-set TV satellite using the remote control (**MENU -> Oyster HDTV -> Automatic search**).

Alternatively, use the „TV“ button to abort the Internet mode and directly return to the pre-set TV satellite.

It is of course also possible to directly switch off your satellite system and retract the antenna while in Internet mode by pressing the red stand-by button on the remote control.

Please note that the satellite system can only be used either in TV/radio mode or in Internet mode. It is not possible to use both features simultaneously.

3.9 Fault messages

Malfunctions of the top box may occur if e. g. the antenna's motion is obstructed by branches or snow.

Such malfunctions are automatically detected and will be displayed by the sat-mouse as fault codes.

Mes- sage	Fault description	Remedial action
E 01	The search did not yield the reception of a satellite.	Change your location. Do you have a clear view to the South? Are you within the footprint (range) of a satellite?
E 02 E 03	Antenna rotation (E02) or elevation (E03) motion is blocked.	Is the motion obstructed by obstacles? Is the supply voltage too low (weak battery)?
E 04	Antenna does not fully retract and switch off.	Press EXIT to re-open the antenna. Remove snow, leaves or other items from the antenna. DO NOT switch off the system by setting the master switch to OFF before having eliminated the cause of the malfunction.
E 05 E 06	Antenna does not react after activation or does not respond to commands.	Is the red fuse (10 A) at the receiver in order? Are all cables correctly connected? Contacts of the control cable may be slightly oxidized. Disconnect and reconnect the cable.
E 07 E 09	Short-circuit/open circuit in the antenna cable or at the antenna.	Check the white antenna cable and the connectors at the receiver and at the LNB.
E 08	No or insufficient voltage for top box.	Check fuses on the rear of the receiver.
E 10 E 11 E 12	Caution: The supply voltage drops considerably while the antenna is moving.	Recharge the battery as soon as possible. Check the wiring and the connection of the system to the voltage supply. Observe the information in the Installation Instructions!

3.9 Fault messages

Message	Fault description	Remedial action
E14 E 15	Incorrect feedback from top box.	An incompatible top box is connected. The power-supply relay of the top-box oscillates between open and closed position or the contact is soiled or burned (relay is defective). Severe oscillation of the power supply (caused by charge controller or TV set generating interferences).
E 16	Incorrect model configuration	Error occurred during model configuration. An update may have been performed incorrectly. The device must be serviced by the manufacturer.
E 17	Re-Init activated.	Undefined memory detected. The faults were corrected. Switch the system off and back on. You may have to restore some settings (e. g. search satellite).
E 18	Limit switch/mechanical fault	A fault in the top box has been detected. Icing may be the cause. Please contact the service department.
E 19	Hardware failure (possibly in conjunction with OSD message)	The automatic self-test revealed a hardware fault. Do not operate the device any more, further damage may occur. The device must be returned to the service department.

3.10 Reception in remote areas

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 antenna bolts and turning the antenna to a different angle. Such optimisation is only required in the fringe areas of a satellite's footprint. It should be performed by expert users only.

State-of-the art digital technology can considerably enlarge the area in which a satellite can be received.

Most 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 „polarization 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 requires some manual fine-tuning by pivoting the LNB (reception head) or the entire flat-panel antenna by some degrees.

The following definitions apply to the tables and angles below: To determine the sense of rotation, the viewer looks towards the satellite from the perspective of the antenna. Accordingly, the viewer must be located behind the antenna or at its side. Depending on the antenna model, either the LNB in front of the antenna dish (Oyster®), the LNB inside the antenna (Cosmo®) or the entire antenna (CARO®) must be turned.

- Rotations in CLOCKWISE direction are negative (-).
- Rotations in COUNTERCLOCKWISE direction are positive (+).
Accordingly, a rotation in „+“ direction means that the BOTTOM of the LNB or antenna is turned to the RIGHT.
- A rotation in „-“ direction means that the BOTTOM of the LNB or antenna is turned to the LEFT.

3.10 Reception in remote areas

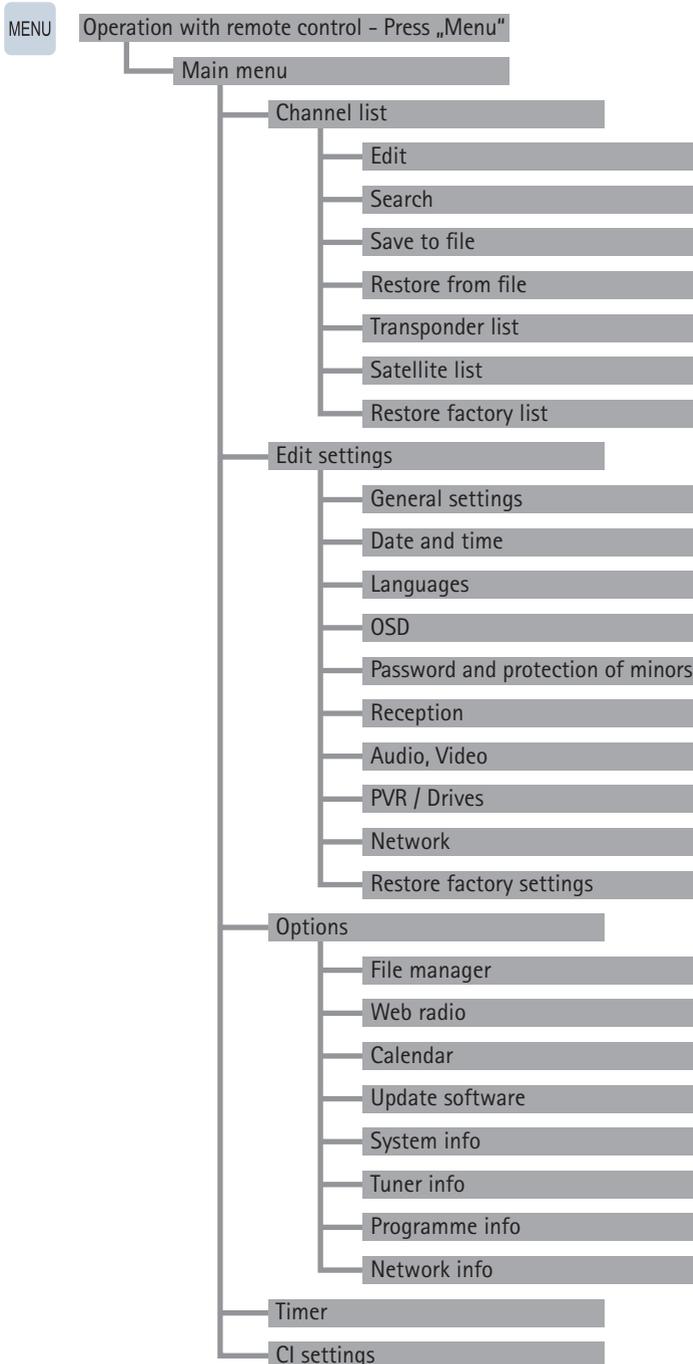
Einstellung des LNBs in unterschiedlichen Gegenden:

Country	Astra I 19.2° E	Astra II 28.2° E	Astra III 23.5° E	Hotbird 13° E	Atlantic Bird 3 5° W
Germany and neighbouring countries	0°	+8°	+4°	-6°	-23°
France	+7°	+14°	+1°	+2°	-15°
Benelux	+3°	+9°	+6°	-2°	-16°
England	+7°	+12°	+10°	+3°	-9°
Ireland	+11°	+16°	+13°	+7°	-6°
Portugal	+22°	+28°	+25°	+16°	-4°
South of Spain, Gibraltar	+20°	+28°	+24°	+14°	-8°
Scandinavia	-6°	-2°	-4°	-9°	-19°
Greece	-12°	0°	-7°	-20°	-38°
Turkey, Ukraine, Belarus	-20°	-11°	-15°	-26°	-39°
Canary Islands	+39°	+44°	+42°	+34°	+12°
Morocco	+23°	+31°	+27°	+17°	-8°
Italy, Sicily	-2°	+8°	+3°	-8°	-27°
Tunisia, Libya	+4°	+15°	+9°	-4°	-27°
Near East	-31°	-19°	-25°	-38°	---

Note: The skew angle values provided are for reference only!

Adjustments of less than 8° are usually not required 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.

4.1 Receiver menu tree



4.1 Receiver menu tree

Operation with remote control:



Function	Setting option
----------	----------------

Main menu / Channel list

Edit	Sorting channels, editing favourite-channel lists
Search	Scan for channels
Save to file	Export of channel list
Restore from file	Import of channel list
Transponder list	Add transponders, Delete transponders
Satellite list	Edit basic settings of satellites
Restore factory list	Channel lists are reset to default settings

Main menu / Edit settings

General settings	CEC control, Remote control, Sleep-timer, Automatic power-down
Date and time	Date, time, time zone, daylight-saving time
Languages	Menu language, audio language, subtitle language
OSD	OSD Display time, Transparency, Radio stillpicture, Channel number timeout
Password and protection of minors	Setup menu lock, Password, Viewing age, Parental info
Reception	Twin LNB, device control, satellite selection, satellite activation, LNB upper and lower LOF
Audio, Video	Format, Scaling method, HDMI signal (resolution), YPbPr, Brightness, Contrast, Saturation, Digital audio output, HDMI audio output, Lip sync mode
PVR / Drives	PVR/drives settings (Internal HDD power down (optional), PVR jump time, Timer pretime, Timer posttime, Rename selected drive, Format selected drive)
Programme info	Programme information for selected channel
PVR / Drives	PVR/drives settings (Internal HDD power down, PVR jump time, Timer pretime, Timer posttime, Rename selected drive, Format selected drive)
Network	DHCP On/Off, DNS mode auto/manual
Restore factory settings	Restore factory settings

4.1 Receiver menu tree

Funktion	Einstellmöglichkeit
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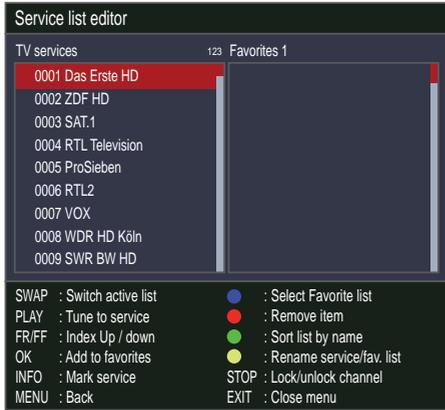
Main menu / Options

File manager	Display of drives and files
Web radio	Webradio on/off
Calendar	Display of calendar of current year
Update software	Software update
System info	System information
Tuner info	Tuner information (current tuner, current satellite, current transponder, signal level, signal quality)
Programme info	Programme information for selected channel
Network info	Information about network connected

Main menu

Timer	Timer list, Edit timer/Remove item
CI settings	Information about CI module and smartcard

4.2 Edit channel list



Your digital CI receiver provides 10 freely programmable favourite channels lists.

A favourite channels list is a selection of channels from the list of all channels.

When a favourite channels list is activated, only the channels maintained in this list are available, all other channels will be suppressed. The possibility of creating up to 10 different favourite channels lists allows different receiver users to create personal lists without having to change the complete list of channels.

Creating favourite channels lists

The favourite channels lists are maintained under MENU -> **Channel lists**. In this sub-menu, any channel from the complete channel list can be allocated to any of the 10 favourite channels list. For operation, observe the help text displayed at the bottom of the screen. To exit the editing dialogue of the favourite channels list, press EXIT once or MENU twice. Changes must be confirmed with OK.

Using favourite channels lists

Start the selection menu of the favourite channels list by pressing the „0” button. Use P+/P- to select a list and confirm your selection with OK. Now, the channel list only provides the channels maintained in the selected favourite channels list. To regain access to the full range of channels, press „0” again and select <None>. Please note that you can directly select any channel even if a favourite channels list is active.

Sorting programs

Use this sub-menu to sort program lists, to insert programs into the list, to rename programs, to delete programs and to add programs to favourites.

4.2 Edit channel list

Creating a favourite list

Press the blue button to select a favourite list (list 1 is preselected). Highlight a program in list „TV programs“ and press [OK] to add it to the current favourites list. If you wish to also add the subsequent program, press [OK] again. Repeat this process to add all your favourite programs to the list.

Editing program or favourites list

Use the [SWAP] button to select list „TV programs“ or a „Favourites list“ for editing.

Highlight the program to be edited. Now use the buttons [◀◀] and [▶▶] to move the program within the list, use the [yellow] button to edit the program name or the [red] button to delete the program from the list.

Within the text box:

Highlight the text position you wish to edit and change the letters using the number buttons (e.g. 1 x button [2] = «a», 4 x button [9] = «z»). Use the [blue] button to change the available character type, the [yellow] button to insert a character, the [green] button to delete a character, and the [red] button to delete the character left of the cursor.

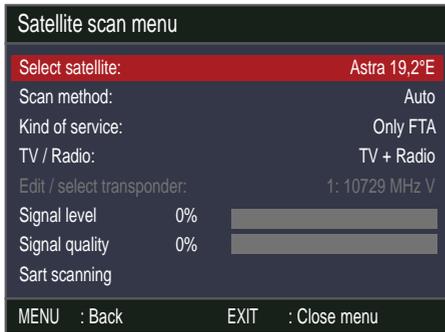
This option requires appropriate technical knowledge



In the program menu (press MENU button once), option „Edit channel list“ provides a sub-menu option „Transponder list“. This sub-menu allows you to view and edit the settings required for the reception of the individual channels.

Wrong entries at the individual positions may prevent the reception of one or more channels.

4.3 Channel list / Scan



First select the satellite to be scanned (e.g. „ASTRA“), then the type of scan: **Auto** for a complete scan of the satellite, or **Channel** to scan only one of the satellite's transponders.

Then select whether programs of type **Only FTA**, **Only encrypted services** or **All services** are scanned.

Then you can select whether **TV + Radio**, **TV only** or **Radio only** programs are scanned. If you wish to scan a specific transponder of a satellite, then you must set the transponder using the [◀] and [▶].

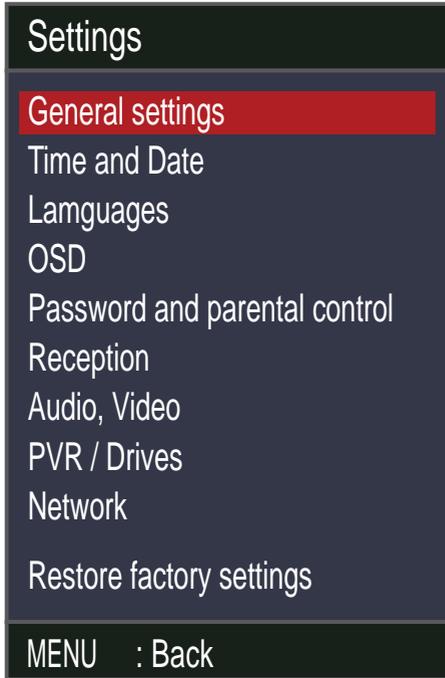
Further information on the scan function:

Make yourself familiar with the scan function and use it regularly. Digital TV is characterized by frequent additions of new channels.

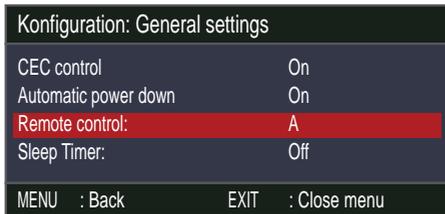
Also, the data of existing channels is subject to change.

The search function automatically updates the internal channel list if you confirm the security prompt with „OK“ when leaving the search function, even if you have not made any manual changes.

4.4 Main menu / Edit settings



Editing the receiver settings

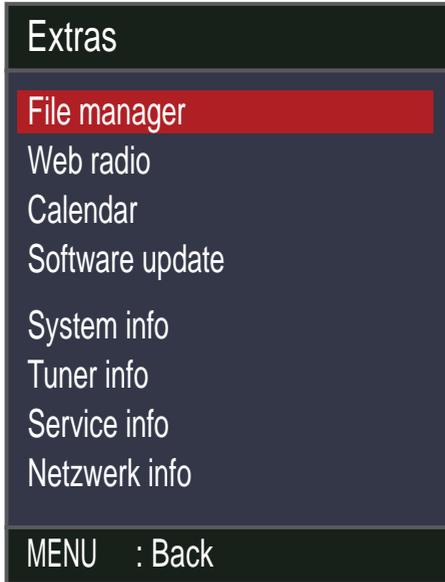


Editing the receiver settings /
Menu item **General settings**



Editing the receiver settings /
Menu item **General settings**
-> Remote control selection
(If competing remote controls are used.)

4.5 Options



1. Signal strength

Once the antenna is adjusted, you can view the signal level at any time via sub-menu „Options / Tuner info“. The signal level is then indicated as a vertical bar.

The C/N value will indicate the same value in dB. The higher the number, the better the reception quality will be. In satellite mode, and depending on the channel, a satisfactory TV picture should be received with any value above approx. 8. In DVB-T mode (optional), a C/N value above approx. 15 will provide interference-free reception.

Note:

Further to the setting of your reception system and your position within the satellite's footprint, signal level also depends on the currently selected channel.

Please take this into account when checking the aim of your antenna using the signal level display. It is normal that some channels are received with a strong signal while others are rather weak.

4.5 Options

System info	
Bootloader:	2012-04-21 23:47
Firmware:	V1.0.0.0 2013-03-05 08:00
MAC address:	02:00:00:06:B3
Brand	Oyster HDTV
ten Haaft Serial:	*4294967295*
ten Haaft Build:	EU/3.00 Mar 5 2013 08:59:55
PSU-Firmware:	1.000
Motor-Revision:	00404

MENU : Back EXIT : Close menu

2. System info:

Open sub-menu „Options / System info“ to view the software version and serial number of your receiver.

This information is required for service purposes or software updates.

Example:

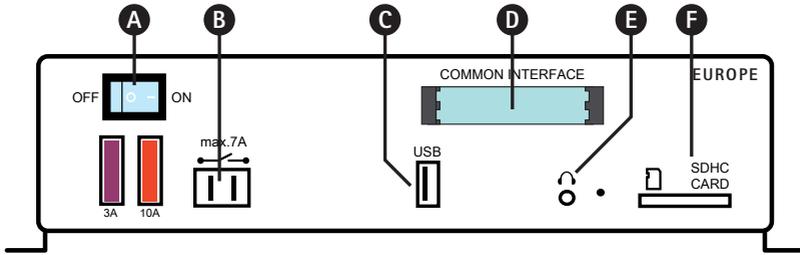
- ten Haaft Serial: 2800805030
- ten Haaft Build: EU/3.00
- PSU-Firmware: 1.00
- Motor Revision: 00404
(automatic systems only)

4.6 TIMER

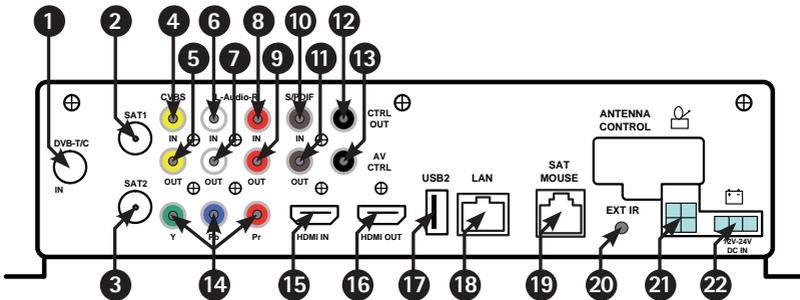
The timer is used to conveniently record programs on the hard disk at pre-set times.

The timer function is also available on devices without optional hard disk. This function is particularly helpful if you want to be sure not to miss a program on a certain channel. The receiver will then switch over to the channel programmed in the timer.

5.1 Connections



- A** Master switch OFF/ON
- B** Switch contact (max. 7A / 30V DC)
- C** USB 2.0 port for PVR functions
- D** Slot for CI modules
- E** headphone output (3.5 mm stereo jack)
- F** Slot for SD cards



- 1** Optional: DVB-T/T2/C input
- 2** SAT1, antenna input for connection of first LNB of satellite antenna system
- 3** SAT2, antenna input for connection of second LNB (recording function)
- 4** Video signal input for AV Loop Through function (FBAS)
- 5** Analogue video signal output (FBAS for older devices, non-HD-compatible)
- 6** Audio input left
- 7** Audio output right, for external active speakers, HiFi system, etc.
- 8** Audio input right
- 9** Audio output left, for external active speakers, HiFi system, etc.
- 10** Digital audio output (S/PDIF, coaxial)
- 11** Digital audio output (S/PDIF, coaxial)
- 12** CTRL Out (Cinch), switched voltage 12V / 300mA
- 13** AV CTRL (Cinch), switched voltage 6V / 12V
- 14** YPbPr component output (Cinch) for projectors, LCD or plasma devices (HD-compatible)
- 15** Digital HDMI input (for loop-through of HDMI signals to the HDMI output)
- 16** Digital HDMI output for connection of a TV set
- 17** USB 2.0 port for external USB drive
- 18** LAN, IP network connection
- 19** Sat-mouse connection for channel display, direct selection and infrared reception
- 20** Connection for optional infrared receiver
- 21** Antenna control for Oyster antenna
- 22** Power supply (brown (negative) = ground, red (positive) = 12 - 24 V; black = terminal 15)

5.2 Common Interface module



At the front of the device there is one slot for modules decoding encrypted programs.

To prevent damage, only modules with the „PC Card“ logo must be inserted. Any other module may damage the receiver beyond repair.

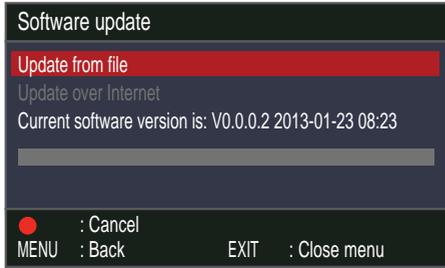
Do not use excessive force to insert the module. Rather pull the module back out of the slot and try inserting it again. Ensure that you insert the module with the correct side up.

Smartcards are sometimes printed in a confusing way as they are often designed to be used with other decoders. Most Common-Interface modules are designed to accept cards with the golden contacts facing upward. Before inserting a smartcard into the Common-Interface module, make sure that the usually gold-coloured contacts on the smartcard are clean and free of dust.

If a decoder module has been correctly identified, its name is displayed in the main menu under „Encryption“. When you select the entry for this module in the list and press OK, a menu will be displayed that is provided by the decoder module. Please contact the module manufacturer in case of any questions concerning the module.

Note: Some modules only log in completely and provide a menu system if a valid smartcard is inserted. The OK and EXIT buttons are used to navigate within the manufacturer-specific menus. If a menu does not respond to the OK or EXIT command, the dialog can be cancelled by pressing MENU. The receiver then interrupts the connection to the module's menu system.

5.3 Software update



Software and channel lists can be updated using the USB port via menu item **Options / Software update**.

Please refer to: www.ten-haaft.com

5.4 Specifications of receiver

SAT tuner	Input frequency range	950...2150 MHz
	Input impedance	75 Ω
	Input level range	-60 ... -25 dBm
	2 input sockets	F-standard, female
	LNB control signal	22kHz - 13V/18V
DVB-T2/C tuner	Frequency range	VHF (174MHz ... 230MHz) UHF (470MHz ... 790MHz)
Video	Video decoder	H.264 / AVC, MPEG-2
	Video resolution	480i/480p/576i/576p/720p/1080i
	Modulation types	DVBS, DVBS2 QPSK and 8PSK
	Video bit rate	up to 18Mbit/s
	Symbol rate	1 to 45 Msymb/s in DVB-S (QPSK) 1 to 62 Msymb/s in DVB-S2 (QPSK and 8PSK)
	FEC (error correction)	DVB-S: Viterbi and Reed-Salomon DVB-S2: LDPC + BCH dual decoder
	Signal outputs Video	HDMI, YPbPr, FBAS (Cinch)
Audio	Audio decoder	MPEG layer 1,2,3, AC-3, Dolby Digital
	Signal outputs Audio	HDMI, SPDIF (coaxial), analogue stereo (Cinch)
connections - Inputs	HDMI, SPDIF, FBAS, analogue audio	loop-through functionality
	2 x USB	2.0
	Ethernet	10/100 Base-T MAC
	Common Interface	CI 1.0 according to EN 50221
	SDHC Card	1
	External IR	1
connections - Outputs	Switched voltage output	12V / 300mA
	Switched output AV	6V/12V 3mA
	Switching relay	max. 7A / 30V DC
Operating voltage	12 V or 24 V (11 V to 30 V) DC Battery-buffered or electronically stabilized	

Technical changes reserved

5.5 Declaration of conformity



*Konformitätserklärung
Declaration of Conformity
Déclaration de Conformité*

Wir, der Hersteller, **ten Haaft GmbH**, Oberer Strietweg 8, D-75245 Neulingen, GERMANY / ALLEMAGNE erklären hiermit, dass folgende Produkte den wesentlichen Anforderungen der folgenden Vorschriften entsprechen und somit ein CE-Zeichen in Übereinstimmung mit der EMV-Richtlinie 89/336/EWG und der KFZ-Richtlinie 72/245/EWG (i.d.F. 2006/38/EG) tragen.

- Oyster® Digital 85 HDCI + T SKEW
- Oyster® Digital 65 HDCI + T SKEW
- CARO® Digital HDCI+T
- CARO® Digital MA HDCI+T
- Cosmo® Digital HDCI+T
- SamY® Digital HDCI+T
- D5000 HDCI+T

Eine Bescheinigung gemäß Anhang IIIC der EG-RL 72/245/EWG (2006/28/EG) liegt dem Hersteller vor.

- EN 55013 (2001) + A1
- EN 55020 (2001) + A1, A2

Neulingen, den 01.11.2009

Roman Bittigkoffer
Geschäftsführer

6.1 Channel and TV program list

Appendix Channel list:

In the original (TV) channel list, the programs are allocated to the individual satellites as follows:

Satellite	Position	Channel CH
Astra 1	19,2°E	001 - 499
Hotbird	13°E	500 - 999
Astra 2	28,2°E	1000 - 1269
Eutelsat W2	16°E	1270 - 1439
Atlantic Bird 3	5°W	1440 - 1499
Astra 3	23,5°E	1500 - 1599
Thor / Intelsat 10-02	1°W	1600 - 1839
Sirius	5°E	1840 - 1969
Hispasat	30°E	1970 - 2249
Astra 1 (Iber. Peninsula)	19,2°E	2250 - 2379
Eutelsat W3A	7°E	2380 - 2399
Hellas Sat 2	39°E	2400 - 2489
Eurobird 9	9°E	2500 - 2599
Amos	4°W	2600 - 2659
Eutelsat W1	10°E	2660 - 2699
Telstar 12	15°W	2700 - 2749
Türksat 2A	42°E	2750 - 2899
BADR 3 / 4	26°E	2900 - 2949
Atlantic Bird 2	8°W	2950 - 2999
Hotbird (Greek. Prog.)	13°E	3000 - 3079
Hotbird (Arabic Prog.)	13°E	3080 - 3299
Eutelsat W4	36°E	3300 - 3329
Astra 1	19°E	3450 - 3500

Channel list is subject to change without notice.

Please note that not all program numbers are assigned to a channel. Many numbers are kept blank for further system extensions.

TV services frequently stop the transmission of individual programs.

6.1 Channel and TV program list

You can re-sort the channel list of your receiver to your personal requirements at any time. New channel lists that are available for download at www.ten-haaft.com may be sorted and formatted in a different manner than the list originally stored in the receiver. Such changes may be required in the future to allow the update of the list with new satellites.

Appendix Encrypted programs:

The following encrypted programs are pre-set in the factory:

ORF (Austria) encrypted	CH 100 bis CH 111 (Astra 1)
SKY Deutschland encrypted	CH 120 bis CH 168 (Astra 1)
Arena encrypted	CH 163 bis CH 199 (Astra 1)
Canal + (Netherlands)	CH 200 bis CH 226 (Astra 1)
TV Vlaanderen (Belgium)	CH 228 bis CH 243 (Astra 1)
Canal Sat France (France)	CH 300 bis CH 473 (Astra 1)
SRG (Switzerland)	CH 540 bis CH 546 (Hotbird)
BIS TV (France)	CH 550 bis CH 594 (Hotbird)

Encrypted and unencrypted channels from various European countries with different dedicated themes (fashion, music, sports, ...) are located between CH 200 and CH 499. Further program packages and channels can be searched at any time using the scan function and can be stored at program positions of your choice.

Please note that the reception of encrypted programs requires the corresponding CI module and a valid access card supplied by the program provider. Please contact the relevant program provider for more information. The program providers will also provide details about the type and source of the CI modules required. Always contact the program provider directly if you require any information about encrypted program packages or if you have technical queries.

For licensing reasons, many program packages may only be received in their country of origin. Accurate information can therefore only be obtained from the program providers. Caution: To avoid damage to your digital CI receiver and your CI module, only use original access cards provided by the corresponding program providers!

6.1 Channel and TV program list

Appendix TV channels:

At the factory, your digital CI receiver has been programmed with the country typical channels.

6.2 Appendix Search satellites

ASTRA 1:

Astra 1 features more than 50 free-to-air programs in German language, including all major privately owned channels, channels under public law, their „third channels“ and numerous radio programs. Reception in Turkey, the Eastern Mediterranean and Eastern Europe is however poor or unavailable.

ASTRA 2:

Astra 2 primarily covers the English-speaking regions of Europe. It transmits the popular English-language news channels. Its footprint is split into different zones. The full range of channels is only available on the British Isles and Ireland.

ASTRA 3:

Astra 3 transmits program packages from the Netherlands, the Czech Republic and Slovakia. Southern Europe is not covered reliably by the footprint of the Astra 3 signals.

HOTBIRD (also referred to as „Eutelsat Hotbird“):

Like Astra, Hotbird is not a single satellite, but a system comprising several satellites. It transmits more than 200 digital free-to-air programs in several languages. Hotbird fully covers all of Europe, but at sometimes significantly lower signal levels than Astra. Hotbird is the easiest way to receive German channels in Greece and Turkey.

THOR und SIRIUS:

Channels and footprint of the satellites cover northern Europe. Many, sometimes all, channels of Thor and Sirius may be received even in southern Germany if an adequately sized antenna is used. Almost all channels are encrypted, though.

ATLANTIC BIRD 3:

Atlantic Bird 3 mainly covers France and Benelux, but can also be received all over Europe if a suitable parabolic antenna is used. It transmits several digital free-to-air French channels.

6.2 Appendix Search satellites

HISPASAT:

Hispasat covers mainly the Iberian Peninsula and the Canary Islands, but can also be received in Italy, France, Benelux etc. in good quality. The range of programs is focused on the Spanish region.

EUTELSAT W3A:

This satellite has the largest footprint of all. It covers the whole of Europe and the Middle East region. However, the signals are significantly weaker than those of the other satellites.

EUTELSAT W2:

This satellite transmits various channel packages from smaller European states, but its signal is relatively weak.

HELLAS SAT 2:

Hellas Sat 2 broadcasts some Greek programs and a large range of programs from Eastern European states such as Bulgaria or Ukraine.

EUROBIRD 9:

EUROBIRD 9 transmits some Italian, Swedish and other programs across Europe.

Türksat:

Türksat primarily transmits Turkish channels, with its two footprints covering almost all of Europe and the Arabic countries.

Telstar:

The satellite transmits various channels in different European and Arabic language.

Amos:

Amos transmits channel packages for Romania, Hungary and Ukraine. Amos can be received in central and eastern Europe.

6.3 Notes on the protection of the environment



At the end of its lifecycle, this product must not be disposed of with your normal waste, but instead must be returned to a recycling facility for electric and electronic devices. This is indicated by the symbol on the product, the operating manual or the packaging.

■ The materials can be reused in accordance with their identification. By reusing or recycling old equipment or making use of it in other ways you are making an important contribution to protecting our environment. Please contact your local council to find out where your nearest disposal facility is.

EC End-of-Life Vehicle Directive

The system is certified and intended for use as an accessory of a motor vehicle. The system may be disposed of together with the vehicle in accordance with the End-of-Life Vehicle Directive ELV, 2000/53/EC. The receiver does not contain any materials rated as hazardous to the environment according to the directive.

We hope you get a lot of enjoyment out of your new ten Haaft product!

ten Haaft GmbH

Oberer Strietweg 8
75245 Neulingen-Göbrichen
GERMANY

Phone + 49 (0) 72 37/48 55-0

Fax + 49 (0) 72 37/48 55-50

E-mail: info@ten-haaft.com

Office hours:

Monday – Friday 8:00 am – 12:00 am
1.00 pm – 4.30 pm