

Installation Instructions

Oyster IV Digital

OYSTER DIGITAL INSTALLATION INSTRUCTIONS

Don't worry, installing the Oyster is no great problem. However, some points are to be observed. Please follow these installation instructions closely, so that your Oyster then works to your full satisfaction.

Read each point through at least once, before you begin to carry it out.

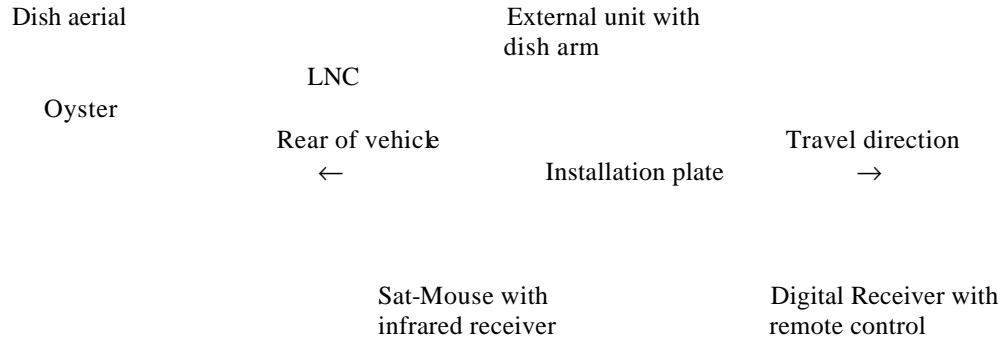
Work through one point after another.

Attention:

Sensitive equipment. Never pull on the dish arm. Never manually lift or rotate the dish arm, the dish arm must only be moved by the motor. Only lift with the plastic shield or the aluminium plate. The screws on the plastic housing may only be removed by the equipment manufacturer.

Delivery package

There should now be laid before you:



Installation bag with:

- 5m cable between the external unit/receiver
- 3 pole power supply
- 3.5 m TV coax. cable
- Brief instructions
- Operating instructions
- Installation instructions
- Screws bag with:
 - 6 Phillips - sheet metal screw for the mounting plate
 - 4 Phillips M6 screws with serrated lock washers for the dish
 - 2 Phillips - sheet metal screws for the angle screw joint.

Installation

1. Preparation

It is important that the roof of your vehicle is sufficiently robust. With inadequate or doubtful roof stability a ca. 2 mm thick steel sheet with ca. 100 x 100 cm is to be fixed on the roof outer skin. Consult your vehicle manufacturer on this.

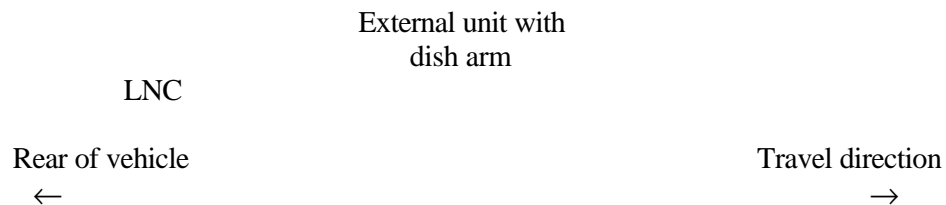
In order to fit the unit you will need a flat spanner size 13, a Phillips screwdriver, a 15 mm drill, a drilling machine, a sharp knife (carpet knife), a slot screwdriver 3 mm, pincers, industrial cleaner to clean the mounting plate and a strong adhesive body sealant (e.g. Sicaflex).

2. Select the mounting position

Now that all the doubts relating to the roof stability have been removed or the necessary measures have been taken for a correct installation, place the Oyster with the mounting plate provisionally on the intended mounting position.

Now the Oyster dish arm must be set correctly as well as the LNC pointing towards the rear of the vehicle, other positions are not permitted - see the drawing below.

Ensure the necessary space requirements for the final selection of the mounting position and take into consideration the easing of the later cable laying with regard to the selection of the locations of the individual units.



2a. Location selection of the equipment

Rear of vehicle

└

Travel direction

®

External unit – Receiver
5.0 metre

TV
3.5 metre

Sat-Mouse with
infrared receiver
2.0 metre

Digital Receiver

Vehicle voltage
red = + 12/24 Volt
brown = - 12/24 Volt
black = Terminal 15

Please note in order to simplify the installation (cable laying):

1. Angle screw joint

The angle screw joint on the roof must point in the direction of the rear of the vehicle, so that the cable entry is at the rear and is protected against sprayed water.

For an uncomplicated cable laying within the vehicle it is advantageous to maintain the distance between the angle screw joint and the receiver as short as possible.

2. Receiver

The receiver is equipped with an external infrared eye with channel indication (Sat-Mouse) and can therefore be built-in e.g. in a cupboard or a stowage point (5 cm spacing for the three sides with cooling slots). The receiver must later, for the power supply of the whole unit, be connected with the living space battery and for safety (travelling with open equipment) with the vehicle ignition (terminal 15).

3. Sat-Mouse

The infrared eye of the receiver is integrated in the Sat-Mouse. The Sat-Mouse should be fitted visibly in the proximity of the television, as the remote control will be held in its direction later.

2b. Space requirement of the oyster

Ensure sufficient space is available for the closed Oyster as well as for the action radius (rotation radius).

Generally the following space is necessary for the closed Oyster: Hold the unfitted dish as a test over the dish arm and plan on 9 cm from the roof to the lower corner of the dish.

The Oyster must later be so installed, that the LNC points to the rear of the vehicle (see drawing).

Oyster 85: Length 111.5 cm

Oyster 65: Oyster 85:
Width 72 cm Width 92 cm

Travel direction

→

Oyster 65: Length 91.5 cm

For the **action radius** during the rotation of the oyster, space must first be made available at a height of 133 mm from the roof upper edge. That means that roof attachments as e.g. air-conditioning units, roof windows in the open condition, roof boxes, etc. must be found at this height outside the action radius given below. Objects, which are lower than 135 mm from the roof upper edge, as e.g. most types of roof rail, cannot be found within the action radius and must not limit it.

Centre Radius Oyster 65:
 54 to 55 cm high

 Radius Oyster 85:
 65 to 55 cm high

3. Fitting the mounting plate

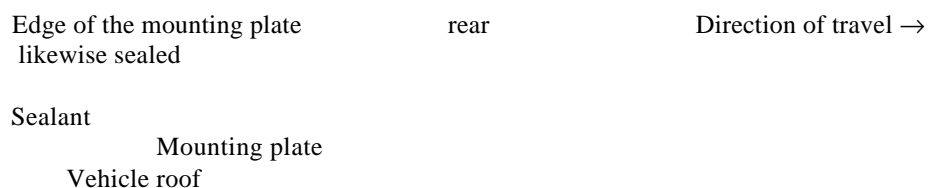
Now that the final mounting position of the Oyster has been established and you have again checked that it is the correct position in relation to the direction of travel, mark the corner point of the installation plate.

Attention!

Be certain to mark an addition line on the mounting plate and the vehicle roof, to exclude a reversed direction installation. The Oyster can only be fitted on one position on the mounting plate. The LNC must therefore point in the direction of the rear of the vehicle. Any other position of the Oyster is not permitted and leads to the withdrawal of the guarantee.

Now remove the Oyster by means of the fixing nuts from the mounting plate. The mounting plate is stuck to the vehicle roof with commercial body sealant and then screwed on. For the cleaning of the mounting plate and the roof use a special cleaner, which the manufacturer of the strong adhesive sealant (e.g. Sicalflex, Teroson 1K-Pur) will recommend.

After removing the cleaner apply the sealant to the underside of the mounting plate and screw it follow its positioning onto the roof with the enclosed 6 sheet screws (see drawing).



4. Position the oyster

First connect the large cable set with the Oyster. Tip the Oyster on its side. The plug connection is to be found in the depression in the housing body base. Now place the Oyster on the mounting plate and lead the cable in the small cut-out of the Oyster base plate towards the rear. If the mounting plate was previously mounted correctly, the LNC now points in the direction of the vehicle rear.

Do not yet screw the Oyster to the mounting plate.

5. Fixing of the angle screw joint (through the roof)

The angle screw joint must be so mounted on the vehicle roof, that they point in the direction of the rear of the vehicle and the cable entry is at the rear protected from sprayed water.

Angle screw joint

O-Ring

Ø 15 mm through roof

- a) Drill a hole of ca. Ø 15 mm for the cable to pass through underneath the angle screw joint.
 - b) Clean the mounting position and the underside of the angle screw joint with the appropriate cleaner (see attaching of the mounting plate).
 - c) After removing the cleaner guide the Oyster cable set (works have already led it through the angle screw joint) through the hole into the vehicle interior.
 - d) Now apply the strongly adhesive sealant to the underside of the angle screw joint and position this on the mounting position. Ensure the correct seating of the O-ring!
 - e) Then screw the angle screw joint with the two enclosed sheet screws to the roof. Do not yet tighten the nut on the angle screw joint!
 - f) Seal around the lower edge of the angle screw joint as well as the sheet screws again using the sealant.
 - g) So that your Oyster is removable at any time e.g. for shaded places or low bridges, you will find on the underside of the unit the Oyster cable plug connection. The cable left on the vehicle roof must therefore be long enough, to be able to lift the Oyster from the mounting plate and be able to remove the plug without a problem. Check this out and provide for a problem free removal facility!
 - h) Now rotate the nut on the angle screw joint with a 27 mm flat spanner in a clockwise direction.
- Then check the sealing at the cable entry, at the sheet screws and at the foot of the angle screw joint.**

6. Cable lying

- a) Guide the Oyster cable coming from the angle screw joint down to the receiver.
- b) You can use commercial cable channelling for the cable run between the Oyster and the angle screw joint on the vehicle roof. Ensure however that the cable channel does not go directly up to the Oyster. Otherwise the fast removal facility will be limited and the cable channel must first be opened.
- c) Should the Oyster cable be too long within the vehicle, you can wind it or appropriately shorten it.

Take note however on shortening of the following drawing.

Use the following procedure for shortening the cable:

When shortening the lead to the external unit it is imperative to have the standard 4 pole connector to hand. Only then is a connection to the receiver possible. Note before the separating the cable sets, that the Sat-cable must be ca. 40 cm longer than the rest of the cable. Connect each end of the four separated power supply leads, after you have removed the excessive length, with suitable connectors. Ensure the colours match (red to red, etc.). You need for the Sat-cable a new F-plug to screw on to the shortened Sat-lead (not included in the delivery package).

Fitting of the F-plug:

Please ensure that the inner and outer conductors cannot create a short circuit.

7. Power supply

Ensure a sufficient power supply for the Oyster

- a) The Oyster requires a connection to the 12 V or 24 V of the vehicle supply.
- b) Connections to the vehicle supply may not have cable cross-sections less than 2.5 mm². For cable lengths from 6 metres used 4 mm².
- c) Connecting to the vehicle supply through existing cabling is in general not ideal. Often the cable cross section is too small and/or there are already other consumers as e.g. the television being supplied through these cables. The power standing available is then mostly insufficient.
- d) It is recommended and at the same time the optimum solution to lay a separate connection for the Oyster to the battery. The fusing of these connections must be between 10 and 20 A.

8. Safety switching

To prevent damage through an inadvertent movement with an open Oyster, the black connection of the power supply must be connected to terminal 15 (Terminal 15 is a connection, which leads to the switched on ignition voltage and with the ignition switched off there is no voltage). The unit then automatically retracts, immediately the ignition is switched on. This also functions, if the unit is switched via the low consumption "SLEEP" button (this function is further explained in the Operating Instruction).

In addition with a switched on ignition the unit will not extend.

Note:

Only use a switched plus connection, not the D-Plus connection of the generator. The D-plus connection on many vehicles does not provide a clean DC; in addition on this connection there is often not an immediate ca.12 volts, but a slow build up of voltage. This can lead to functioning problems with the processor in the receiver.

9. Connection of the equipment

Connect all the cables as shown in the drawing.

TV – Scart
(Option)

TV cable

Power supply

brown = - 12 / 24 Volt
red = +12 / 24 Volt
black = terminal 15

10. Mounting the dish

Now that all the equipment is connected, the dish is mounted.

Attention: First ensure that in the area of the external unit no tools or similar powered devices can affect the equipment.

a) Put the main switch at the rear of the receiver to “ON” (1).

b) Then press the red button on the remote controller.

The Oyster (external unit) then travels to the last position and starts the “Fully automatic search”.

c) When the Oyster is in an approximately vertical position, interrupt its movement by pressing the “EXIT” button.

Hold the remote control in the direction of the Sat-Mouse.

You must wait, until the equipment no longer moves before beginning with the mounting of the dish.

Now the antenna dish is crewed to the dish arm with the four Phillips screws and lockwashers.

11. Matching the TV unit and receiver

There are two possibilities of connecting the receiver and the TV. Only follow the instructions for **one** of the two methods!

Either: Connect with the supplied TV coax. cable, sound reproduction only in mono.

First the TV must be set at the receiving channel of the Sat-receiver. (Set the channel selection and the storage in accordance with the operating instructions of your TV unit). The equipment must be so switched, that it receives a menu or a picture on the TV. Now the TV unit can search for the receiver channel (see the TV operating instructions). If a picture (menu text or TV programme) appears on the TV, the correct channel has been found. Now store this channel on a programme position of your choice.

Or : Connect through the TV Scart socket using a Scart cable (available in dealers, not included in the supply package). Stereo sound reproduction is possible with this connection.

In this case you do not need to use the supplied TV coax. cable. You need not do more than insert the Scart cable in the TV-Scart socket of the equipment. At the TV you only then need to switch to the "AV" programme.

Switch the equipment by pressing again the red power button on the remote control.

The external unit now runs back to its store position and then switches the power supply of the external unit and the receiver.

The unit is now ready to operate

The more important functions for the operation are to be found in the shortened operating instructions on the next page.

Before switch on ensure it faces due south, otherwise no satellite reception is possible.

3. OPERATING THE OYSTER

1. Switch the TV on and select one of the stored Sat programme positions (mostly programme position “1” or with a Scart connection “AV” or “0”).
2. To switch on the Oyster press the red button on the remote control.
Everything from now on up to picture transmission functions fully automatically.

Your Oyster generally travels first into the last receiving position. While the equipment runs on the vehicle roof, the green line on the Sat-Mouse runs in a circle. If your vehicle has not moved since the last picture transmission, you will then receive your TV picture.

If you have changed your location, the Oyster cannot evaluate a picture in the last position and begins the “Fully automatic Astra” search. This satellite is to found in most parts of Europe.

In several regions (e.g. in parts of Greece, Turkey) the Astra satellite does not emit a sufficient signal and therefore cannot be received. Select there the local search (see the detailed operating instructions).

Should one of these procedures be interrupted with the “EXIT” button on the remote control, the “Oyster Menu” then appears on the screen.

If in the meantime the satellite is found and you receive a TV picture, you can switch over the programme e.g. with “P+” or “P-“on the remote control.

The Oyster can be switched off with the red button, the remote control or by pressing both buttons at the same time on the Sat-Mouse for around three seconds.

**You can call our Service- Hotline for questions on the installation of the Oyster
Satellite Receiving Equipment:**

Telephone: 0113 2401155/ 0773 005 9695

With best regards

Transleisure Ltd

Operating Instructions

Oyster IV Digital

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CAUTION

In order to avoid the danger of fire and the danger of an electric strike or damage to the equipment, the equipment is to be protected from rain and humidity.

The housing should not be opened to avoid an electric strike. Leave the maintenance work to a specialist.

Do not introduce any object through the ventilation slots.

Do not position the equipment where there is insufficient air movement. If the equipment is mounted on a shelf or in a fitted cupboard, sufficient cooling it is to be available. Do not cover the ventilation slots on the housing in any way.

Of special note

Should an object or a liquid enter the housing, separate the equipment from the power supply and leave the checking out to a specialist, before you use again.

Position the equipment in a place where **sufficient air circulation** is guaranteed and where **no heat source is in its proximity**. This avoids an internal build-up of heat and ensures a long life.

Do not stand anything on the equipment - if the ventilation holes are blocked, this can lead to malfunctioning.

Switch the receiver off, before connecting the other equipment.

If you notice an unusual smell or smoke the equipment should be separated from the power supply and the checking out left to a specialist.

The equipment must be connected directly to the battery with 2.0 mm² to 4.00 mm² cross-section cables. Check to insure, that the equipment is not connected to an electronic charging controller.

Ensure that all cabling and equipment parts are located away from possible sources of interference such as mobile telephones, electronic heating controls or radio equipment.

Only used for the connection of the external unit (receiving antenna) the supplied cable set or the extension cable set which can be supplied as an accessory.

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Introduction

Your Oyster Digital Satellite Receiver unit is an intelligent receiving system, which functions fully automatically and releases you from the whole laborious adjustment work of a manual system.

Unlike a normal television antenna a satellite unit must always be exactly aligned on the satellite beam in a southerly direction. There is a requirement that there is no interruption in the signal through trees or other obstacles otherwise satellite reception is not possible.

Always ensure that there is a “free view to the South”. It is often the case, that only a few metres from your location trouble free reception is possible, while in your parked position no picture can be received as the satellite signal is interrupted by a tree.

In order to get around a situation of not receiving comfortable satellite transmissions, your Oyster Digital is removable. You can take it from the roof at any time and set it up in a secure receiving position in the proximity of your vehicle. This only requires a special floor support and extension cable (available as a “Floor installation kit” accessory).

If a satellite unit is installed within a house, this generally requires only a one-off setting. As when you are mobile and your location is always changing (even a movement of a few centimetres can require change), the satellite unit must be readjusted. However for you as an Oyster Digital owner this only means the pressing of a button.

Oyster means exceptional operating comfort and programme versatility. Pressing a button aligns the equipment and searches for all receivable satellites. The microprocessor controlled fine adjustment as well as the digital receiver technique provides for the best picture quality. Then you have all the TV and radio

programmes the new digital transmitting satellites simply through the remote controller. In fact you can control the sound volume of the television through the Oyster remote control. This spares you the complication of two remote controllers.

In order to meet various customer requirements, in addition to the normal switch-off procedure your Oyster Digital also incorporates the facility of switching off with open standing equipment. Therefore with several daily stops the daily on and off switching procedures for the equipment can be avoided.

On the first pages of these instructions you will find information on the operation of the general functions of the receiver, then descriptions of the special functions of the Oyster Digital as well as detailed explanations on the search functions.

Putting into operation

Following the unpacking

Check the delivery package of the OYSTER DIGITAL.

The following parts should be completely to hand:

Receiver

External unit

Dish

Mounting plates

Screw package

Cable sets, as applicable with adapter sets

Sat-Mouse

Remote controller

2 batteries (LR03, size AAA)

Operating Instructions

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Disposal information for packaging

The packaging and packing materials are recyclable and should generally be directed for such.

Packaging material as e.g. plastic bags should not fall into the hands of children.

Connection of the equipment

The following connections of the receiver must be made for putting into operation:

TV-Scart	Connect the "TV-Scart" socket of the receiver using a SCART cable with your TV.
TV	Alternatively you can connect your TV also through this antenna socket to the receiver.
Sat-Antenna	Connect the supplied white coaxial cable from the external unit with this socket
Power supply	Connect the power supply cable from the battery with this socket
4-pole plug	Connect the supplied control cable from here to the external unit
Sat-Mouse	Plug the supplied external indicator unit in here

Optional equipment

AUDIO	Should you want to connect a car radio, you can plug a Chinch (L&R) in here
VCR- Scart	A video recorder can be connected here to "VCR-Scart"
IF- OUTPUT	Should you want to use a second satellite receiver, you can pass on the satellite signal to this through the IF-OUTPUT
RF IN	Here you can connect an existing normal television antenna, which will then be passed on to the TV
RS232	The RS232 can connect a PC, to load the current transmitter list or software.

Operation of the receiver

Before you can operate the receiver the main switch on the rear side must be switched to “T”. If this switch is on “0” the Oyster Digital is completely separated from the power supply.

In a normal television operation you can select the following functions through the remote controller:

O	
MUTE	If this button is held down continually for ca. 3 seconds, then the Oyster Digital switches to Standby WITHOUT the antenna closing (Sleep Function) Short pressure: Sound mute switch on/off
P+ /P-	Changes to the previous or next transmitter in the transmitter list
TV RADIO	Changes between TV and radio modes
+/-	Increase / decrease sound
MENU	Stop the current programme and call up the Oyster Digital menu
OK	Insert the status panels or the abridged Help
SWAP	Change to the last selected channel
AV	Switch through the signals from a connected video recorder to the television

Operating without remote control

An emergency operation of the receiver is possible through the two buttons on the separate indicator unit (Sat-Mouse), if no remote controller is available. In which case the buttons have the following functions:

→	Change to the next transmitter in the transmitter list
←	Change to the previous transmitter in the transmitter list
←/→	<p>If the two buttons are pressed for a short time at the same time you can switch between RADIO and TV and vice-versa.</p> <p>If you press the two buttons longer the antenna will retract and the unit will switch off. This corresponds to the pressing of the red standby button on the remote controller.</p> <p>Should the unit be in standby a short pressing of both buttons will switch it on.</p>

The remote control

Operation of the menus

The operation of your receiver is carried out through the supplied remote controller. The navigation within the integrated screen menus is achieved through the following buttons:

MENU	Opens the fast view menu for simple access to the stopping of the current programme and for access to the Oyster Digital Functions. Press MENU a second time in order to call up the main menu.
P+ / P-	Moves the current selection in the menu upwards and downwards
+/-	In Lists: moves in the list page by page In data fields: changes the value to be adjusted
OK	Opens, confirms or prepares the directly lightly marked entries
EXIT	Leaves the directly active menus. Press EXIT several times in order to delete all menus.
SWAP	In menus with several windows SWAP changes back and forth between windows.
EPG	Call up of the EPG. With the first pressing the info. on the current programme is displayed. A further press opens the list with the programme summary for the whole day.
LIST	Indication of the transmitter list.

In order to reach the OYSTER DIGITAL Functions, press 1 x MENU, then move with P+/P- the light lines on "Oyster Digital" and then press OK.

The description of all OYSTER DIGITAL functions is to be found on page 30.

Basic settings

Following the first switch-on some adjustments must be made in the operating software. Please carry out the following steps:

1. Call up the main menu.	2 x MENU
2. Select the "Configuration" menu and then the subpoint "General"	P+/P- OK
3. Input your current time zone. For Central Europe if wintertime applies: +1:00 and summer time +2:00. This setting must be updated each time following the summer time change. You can change the setting either with the arrow buttons or through the direct inputting of the numbers. You can change the conditions with LIST.	0 -9 +/- LIST
4. Leave the general adjustments with EXIT.	
5. Go to the entry "Store adjustments". Press there OK and wait until the menu disappears.	P+/P- OK

All further configuration facilities will be explained detailed on page 20 in the section "Configuration of the receiver".

Channel selection

The receiver internally selects a transmitter list. In this list is found all the transmitters of the activated satellites. If the determined satellite has not been activated, the associated transmitter will be removed from the transmitter list.

In the selection of a transmitter, there are several possibilities:

P+/P-	Changes to the previous or the next transmitter in the transmitter list
TV RADIO	Changes to TV or radio modes
SWAP	Changes between the current transmitter and the directly previously activated transmitter and vice-versa. For this the operation software notes as the previous transmitter always the one which was last activated for at least one second. That means that you can also navigate in the list in between by fast pressing of the P+/P- buttons. Therefore the short time selected transmitter will be ignored by SWAP-Automatic.
0 - 9	The transmitter numbers can also be directly inputted with the number buttons. You can shorten the inputting with OK (if you e.g. want to input a single digit number) or break off with EXIT. In order to input a number with less than three digits, you can also end the inputting, by holding the last digit number down longer. Note: With direct number inputting it is also possible, to select targeted deactivated transmitters, by inputting their number.

Transmitter list

The transmitter list can also be directly displayed:

LIST	Display of the whole transmitter list. Navigate there with the P+/P- buttons to the required transmitter. Then press OK, in order to activate it. In the transfer list you can likewise using the TV/RADIO buttons change between the TV and the RADIO and the list.
EXIT	If the status panel has disappeared, you can also call up the transmitter list with the EXIT button. The EXIT is easily reachable with the cursor cross.
TV RADIO	Changes to TV or Radio list.
0 - 9	The channel number can also be directly inputted with the number buttons. You can shorten the inputting with OK (if you e.g. want to input a single digit number) or break off with EXIT.

EPG - electronic programme guide

DVB conforming transmitters offer for your programme information such as the title and a description of the current and following transmissions. In addition the transmitter can optionally provide a programme summary for up to 64 days in front. At the moment not all the transmitters offer this service, the receiver recognises the EPG information however fully automatically and presents it.

Please ensure, that under Main menu → Configuration → Time Zone the correct value has been set. (+2:00 for German Summer Time / +1:00 for German Winter Time).

The status panel

When you select a transmitter, the title and a short description text of the current transmission will appear in the status panel. For further information please call up the EPG.

The EPG

is your electronic programme magazine. The following summary explains the individual functions of the EPG:

Detailed view	In the current programme acquire the EPG with the EPG button. There will be displayed the latest listed information on the current transmission.
Detailed view of the following transmission	For the Infos on the following transmission change with the +/- buttons.

Daily summary	<p>If you wish with a further press on the EPG button from the detailed summary you can get a detailed view of the list. There you can see all the transmissions of the current day (from 6:00 hours to 6:00 hours on the following day).</p> <p>The title line gives the date to which the programme summary refers. To the right of which one can see, how many days the total information covers and which day you have directly activated.</p> <p>If you want to change to the next day, go to the end of the list and press P+ or P-. In order to change to earlier days you go to the beginning of the list and there press + or -.</p> <p>Note: If you have selected a transmitter even for the first time, it can be, that the data in the list will be supplemented, while you navigate.</p>
Daily summary detailed view	<p>To acquire additional Info. on a transmitter in the list press OK, to call up the detailed summary. In the detailed summary you can proceed to the previous or next transmitters with the +/- buttons.</p>

Problem with the EPG

Digital television is a relatively young medium. Equipping the transmitter stations with the new technique is very expensive and not carried out uniformly overall. Please therefore understand, that with some transmitters the EPG data is not yet very extensive and can be subject to faults.

On the basis of these faults experience has shown, that incorrectly presented EPG information in general can be traced back to the non-observance of the applicable technical standards part of the transmitter stations.

Should faults affect you, please turn to the appropriate transmitter. It is in their interest to show you the digital programme on offer, impress upon the transmitter, that they should continually improve their EPG offer.

Pleas note, that you must install the correct time zone so that the EPG information will be correctly shown (Section “Basic settings” on page 12)

Selection of the audio/radio channels

In order to select an alternative audio channel in TV operation with multilanguage programmes, open the Context menu in the current programme through the MENU button.

Providing the selected transmitter provides a recognition for the transmitted audio channel, there appears in the menu the subpoint "Audio channel". Select this with OK and select in the list the required the channel.

If the audio channel possesses a speech recognition, this will be indicated here.

Radio transmitter

Some freely receivable radio transmissions on Astra 1 will be transmitted as separate audio channels. These can also be selected with the describes procedures. Therefore the name of the transmitter will also be displayed in the list of the audio channels.

Game

A small game is incorporated in the menu point “Extras” in the main menu. The objective of the game is to sort out the fallen blocks so that the field is filled in without gaps if possible. Whenever a line is completely filled, it disappears and the above lines return below. You acquire points for each stone you sort out and each eliminated line. The game is ended, when you have no more space, in which to sort out the blocks.

In order to position the blocks, use the following buttons on your remote controller:

OK / P+	Rotate the blocks (anti-clockwise)
+	Push the blocks to the left
-	Push up the blocks to the right
P-	Allow the blocks to fall faster

Configuration of the receiver

Basic settings

The basic settings of the receiver will be taken from the submenu “Configuration” in the main menu. Arrive there by pressing the MENU button twice.

Use the +/- buttons in order to change the individual options in the subpoints of the “Configuration” menu.

Providing the particular option provides for selection from a value list, this list can be displayed with the OK button. With numerical values, directed inputting is possible with the number buttons.

Please also note for the individual points the help insertion on the screen.

Settings which have changed since the last storage will be given in green.

Once you have made the changes, you must store them. Go to the “Configuration” menu on the point “Store settings” and then press OK. Wait until the menu disappears - only then is the storage procedure completed. This can according to circumstances last for several seconds.

Configuration → General

Time zone: Here set your time zone in relation to the world time (Greenwich time, UTC). This is necessary, because the time transmitted by the transmitter operations always relates to UTC.

Operating language: Here you can set your preferred language. All OSD inserts then follow in this language. A change is only activated through the menus. The EPG text will naturally be generally displayed in the language, in which the transmitter has transmitted it.

Search for coded transmitter: Here you can input whether the automatic search procedure should be carried out for a coded transmitter and this should be displayed in the list. A reproduction of picture and sound from a coded transmitter is not possible with this equipment.

Configuration → OSD / EPG

Status insert duration: Establishes how long the status display with information on the current programme stays on the screen following a programme change.

Channel number – Timeout: Establishes for how many seconds a programme changeover will be accepted through a number input, if this is incomplete.

OSD Transparency: Set the transparency of the OSD inserts, as well as the strength of the picture so that it should appear through the OSD.

Help text: Here the inserting of the Help text can be completely switched out.

Shortened Help with OK: If this point AN is inserted with the pressing of the OK button there is a shortened help, otherwise the status panel will display the programme information.

Configuration → Satellite system

Here you will acquire a list of all the satellites known at the time. If you mark here individual satellites, then only those satellites are receivable. In the pre-setting all satellites are receivable, even without a special marking.

Should you be e.g. exclusively interested in receiving Astra 1 and Hotbird, you mark these two satellites.

Please note, that as long as you do not make changes all satellites can be received. If you make changes you prevent the reception of all non-marked satellites.

When new satellites are installed in space, we will add these to our list as necessary. This list can at any time be taken from the Internet with the help of a computer and loaded into the receiver.

The address for new transmitter lists is: www.ten-haaft.de/Digital

Configuration → Reproduction

Television: Should your television be a “wide screen unit” with the picture format 16:9, you can set this here. Up to now in the operating area 4:3 equipment has been used exclusively.

Videofomat TV / VCR / VCR-In: Here you can select most of the normal, pre-installed formats as well as the formats Y/C and RGB, should they be required by your television/videorecorder. The FBAS format always functions, the other formats can possibly provide a better picture quality, but only function with some televisions/videorecorders.

Volume – Bypass: This adjustment point deactivates the sound control for the given equipment. The basic setting “None” permits the adjustment of the sound with your Oyster Digital remote controller.

Configuration → Store settings

This point must always be selected, when you have made changes under the other points and these must be permanently stored.

If you do not select “Store settings”, on the next switch-on of the receiver the values will return to the original settings.

Preparation of the transmitter list

You can change the transmitter list of the receiver in accordance with your own ideas. We recommend, that the transmitters are grouped according to satellite, as they are in the pre-installed transmitter list.

Call up the transmitter list editor through the menupoint “Transmitter list /Sort transmitters in the main menu.

Once you have completed the required changes, leave at the transmitter list with EXIT. Confirm the subsequent question, in order to store the transmitter list.

In order to change an entry, you must select an entry in the list, then press OK. Then appears a menu with the available functions.

If you want to work on a complete block of one after another transmitters, select the option “Block marking” in the menu. In this case the menu disappears and you will be required to mark the end of the block in the list. Go to the last entry which belongs to the block and press OK. Then the menu with the available options will be inserted.

The following are functions are available in the menu:

Copy	Copy the transmitter in another position of the transmitter list. The target entry will be deleted.
Move	Move the entry to another position. Note: if you move an entry upwards, it will appear in front of the target entry, if you move it downwards, it will appear behind the target entry.
Delete	Deletes a transmitter from the transmitter list. The entry will be marked in the list as unused. This leaves the numbering of the other transmitters unchanged.

Cut out	Deletes a transmitter from the transmitter list. The following transmitter returns to the vacated position. Note: In order to maintain the blocking of the transmitters all the transmitters only return to the next entry marked “unused”. If the list of entries from 85 to 99 are not occupied, you can for example delete entry 57 and only return transmitters 57 to 84. The transmitters from 100 remain unchanged.
Free insertion	Only inserts an empty entry. The following transmitters return correspondingly to the rear. Note: As with “Cut out” this operation sends all the transmitters marked “unused” to the end of the block.
Packing	This option is only available, if you have marked a block. Within this block all the gaps with entries marked “unused” will be moved as transmitters are inserted above. The empty entries are then to be found gathered together at the end of the block.

With the functions concerned with a target entry, following the selection of any menupoint, you will be required to select the target entry. You do this, by going to the entry in the list and confirming with OK.

Providing you have not completed a function, you can return to the previous step with the EXIT button.

Search procedure

The automatic search procedure of the receiver searches for any satellite in accordance with a new programme. Programmes which are already entered in the transmitter list will automatically update the changes. Coded transmitters will operate according to guidelines.

To carry out a search procedure

1. Call up the search procedure through the main menu in subpoint “Transmitter list/ Transmitter search”.
2. Select from the satellite list that you wish to search for and confirm with OK.
3. Wait until the end of the search procedure. The displayed information is the technical detail of the searched for transmitter. The “Total” field gives information on the found free programme.
4. When the search procedure has ended, the channel selection window will be inserted.

Channel selection window

This window contains on the left the transmitter list and on the right the new channels. In order to change between the found TV and radio transmitters, please press the TV or Radio button. To change between the lists use the SWAP button. The various functions are available for you. In order to call these up, move the selection first to the channel which you want to change, then press OK and select in the presented menu the required option.

With operations in which there is an insertion of the transmitter entry, change the selection in the left window and you will be required, to select the target entry from the list with OK.

For the found transmitters (right list) the following options are available:

Activate	View channel
Copy before	Copies the selected new transmitter into the transmitter list before an existing entry. This entry and the following one will be pushed downwards, to make space for the new one.
Copy on	Copies the selected new transmitter in the transmitter list on an existing entry. The old entry is therefore written over.

Look at the existing transmitter list in the left column. You can switch the preparation of this list with the SWAP button. Available here for you are the following menu options:

Activate	View channel
Return	With the transmitters, which have been found again by the search procedure, you can use of this option to prevent their updating. Re-found transmitters will be shown in the transmitter list in green.
Cut out	Deletes a transmitter from the transmitter list. The following transmitter returns to the vacated position.
Delete	Deletes a transmitter from the transmitter list. The entry will be marked in the list as unused. This leaves the numbering of the other transmitters unchanged.

Storing the transmitter list

Once the new transmitter has been inserted in the transmitter list in accordance with your wishes, press EXIT. Then appears a dialogue, in which you can select, whether you wish to store the change (OK button), or if you wish to reject it (SWAP button) or whether you again wish to return to the channel selection window (EXIT button).

If you reject your changes (SWAP button), the original transmitter list remains unchanged and all your changes will be lost.

Signal strength indication

You can call up the signal strength indication in the submenu “Extras” of the main menu. You can assess the signal strengths from the presented vertical columns. The C/N value gives the same values in dB.

The three coloured fields associated with the columns give information on the status of the various stages of the receiving components. Only if these three fields are green, will applicable data from the signal be acquired and only then can a picture be presented.

Note: The signal strength depends not only on the setting of your receiver unit, but also on the directly activated channel. Take note of this, if you as a result of the signal strength indication check the alignment of the your antenna.

Note: The same indication will also be inserted in the menu “Oyster Digital → Manual search.

Operation with additional satellite receiver

If you wish to operate an additional satellite receiver on the same antenna as the Digital receiver, connect the signal from the IF-OUTPUT of the Digital receiver to the antenna input of the second receiver.

So that this procedure functions correctly, only one of the two receivers may control the LNB voltage of the antenna. In order to ensure this, the unused equipment should be switched off. It is sufficient to put the Digital receiver into the standby mode.

So that the automatic satellite finding of the Oyster Digital can function without problem, during the search no interruption of the signal is to take place. Therefore the second receiver during the fully automatic search or the local search must be switched off.

Please note, that you cannot receive with both receivers at the same time - should you require this, the option "Twin-LNB" is recommended. In this case a special LNB (receiver head) with two outputs is mounted in the Oyster external unit and two antenna cables will be used.

The Oyster Digital Functions

You reach the “Oyster Digital” menu by pressing the MENU button and then selecting the point “Oyster Digital” with P+/P-. The Oyster Digital menu is opened by pressing OK.

You can select the individual points as normal with P+/P- and OK. All the search functions and the necessary associated settings will be carried out through the Oyster Digital menu. Many functions will also be carried out fully automatically, if this increases the ease of operation for you.

Therefore directly after the switch-on of the equipment the antenna is automatically opened and moved to the last receiving position. If there no picture can be received, then there is an automatic start of the fully automatic search.

On the switching off of the equipment with the red standby button or the buttons on the indication unit the antenna automatically closes, as well as the antenna retracting if you switch on the ignition of your vehicle in order to start the motor. Naturally the retraction of the antenna last a few seconds. Never travel until the antenna is fully retracted.

Generally check before moving off with a look at the vehicle roof for the correct storage position of the antenna. The indication unit should only display a green standby point or be fully dark.

A further fully automatic comfort function of your Oyster Digital is the automatic realignment of the antenna to another at the time selected satellite, if you switch to a programme which is transmitted from another satellite. Therefore all the receivable satellites are available for you at any time. The only thing you have to do is change the programme.

Fully automatic search

The fully automatic search is directly started through the selection of this menupoint, unless it has otherwise already started following the switch-on, if in the last receiving position no picture can be evaluated (e.g. following vehicle movements or a change of location). The satellite search is carried out in accordance with the LEM principle (Last Elevation Memory) and begins in the angle position of the last receiving position. In general the receivable satellite will be found relatively quickly, as often between the old and new location no great distance exists.

If since the last location of the vehicle a long run has been completed, it is generally advantageous in time (search time shortening), to select the "Local search".

The satellite, for which the fully automatic search has been used, can be pre-set under **Oyster Digital → Configuration → Satellite search**.

Local search

With the selection of this menupoint you open a submenu for the selection of various countries or areas. Using it the P+/P- buttons (lines) or +/- (pages) an entry can be selected and then activated with OK.

This will arrange for the regionally differing angles of the receivable satellites. The resultant satellite finding is then reduced in time. This search function is of special interest; particularly, if there is a long distance between your old and new locations.

If you have pre-set a satellite under **Oyster Digital → Configuration → Satellite search** which cannot not now be found at the selected location, the equipment automatically selects a satellite as the search satellite, which was principally received at your location of the time (mostly Eutelsat Hotbird).

You will be shown on the screen which satellite has actually been used for the search,

following the successful finding of the satellite there will be an automatic switching to a programme which is actually being transmitted by that satellite.

Please note that not all satellites can be received in all places. If you are not sure whether your pre-set search satellite can really be received at your current location, use the local search. In this case the Oyster Digital will automatically select a receivable satellite.

Manual search

With the selection of this menupoint you open a menu with your oyster which can be manually controlled or adjusted. For this first go to a receivable programme at your location, as otherwise you cannot receive a picture. (see Transmitter List Appendix and Search Satellite Appendix on page 41).

With the manual search, for example, one can manually optimise the antenna position or can control the new satellite. The menu shows the rotation and the angle in degrees relative to your vehicle as well as the signal strength. The strongest signal presents at the same time the best picture quality. The signal strength varies however according to the programme and the location. To receive a picture you need in the signal strength window 3 green indicators (DVB, FEC and QPSK) as well as a C/N value of at least 6 or higher.

In order to move the antenna put the light column with P+/P- on Azimuth (rotation, direction) or Elevation (angle). Using the +/- buttons the antenna can be moved in steps in the selected direction. You will see in the direction indication window the corresponding change, which you have called up in the antenna direction. Please note, that the indicated direction value relates to your vehicle and to no actual degree information (space direction) - which once you have moved your vehicle will no longer have any validity!

If you wish to manually control the antenna over a greater range this can be increased

in steps. For this simply press a number from 1 – 9 on the remote controller, while the light selection column stands on Azimuth or Elevation. The selected step size will be presented in the direction indication window behind the degree number. For this applies: the greater the number, the greater the extent of the step. For the fine adjustment of a position to be possible you must select a step of 1 or 2.

In order to store the current set position select the point “Store position” and press OK. The current position will now be immediately stored. If you now retract / switch off, the unit will automatically return to this position. If you had a picture at the “Store position” and the vehicle does not move, then when switching on again within a few seconds you will receive a picture.

As a further facility you can from the “Manual search” point retract the antenna at any time - for this you move the light column and press OK. The antenna now retracts, you can achieve this in the direction indication window. At an elevation of ca. -73° the antenna is mechanically fully retracted - the equipment however does not now switch itself off. By selecting the point “Last position” and then pressing OK the antenna travels to the stored position. This can for example be used if you have previously retracted the antenna and must now re-open it.

In order to leave the “Manual search” menu you can press EXIT at anytime.

Retracting and switching off

This function switches the antenna and switches the receiver into standby.

The same function can be carried out by pressing the red standby button on the remote controller or with a longer pressure at the same time on the two buttons on the indication unit.

The standby condition will be indicated with a green point on the indication unit, unless under Oyster Digital → Configuration → Standby mode the setting “Comfort” is selected (see page 35).

Video – Operation

With the selection of this point the antenna is retracted and the signal from the videorecorder is passed through to the television. For this your videorecorder must be connected to the upper (VCR) Scart socket of the Oyster Digital receiver.

Video operation is also possible with an extended antenna - in this case you must merely press the AV button, in order to pass the signal from the videorecorder to the television.

With very strong wind it is recommended that you retract the antenna for the video operation. With switched off equipment (standby) no video operation is possible!

Configuration

Using this menu point the various settings for the operation of the Oyster Digital can be carried out. All the automatic search functions relating to settings are carried out here.

Stand-by mode: The “Comfort” setting permits you to switch the equipment on again with the remote controller (red button) if it has been switched into standby. This readiness position during standby will be indicated by a small green point in the display.

The “Power saving” setting switches in the standby situation also for the remote control receiver and the display of the green light point. In this case the switching on again can no longer be carried out with the remote controller, to switch on the two buttons on the indicator unit must be pressed for a short time only.

Search satellite: Here can be selected which satellite the equipment should proceed with following the switch-on for the fully automatic search or the local search. There are various satellites to choose from covering the various areas and language programme ranges. Please note, that not all satellites can be received everywhere! (see Search satellite appendix, page 41).

Automatic satellite change: The “Active” setting checks on a programme change whether the newly selected programme is transmitted by another than the currently received satellites. If such a satellite change is recognised the equipment will automatically travel to the new satellite.

The “Off” setting deactivates the automatic satellite change. This can be necessary, if the automatic satellite change does not function due to the weaker signal and you want to use the manual search. (See Automatic satellite change, page 36).

LED rotation display: The “Yes” setting ensures, that the channel number is indicated in the display standing on its head. This is of use, if the external indication unit is mounted with the buttons “hanging” downwards. This means that the channel number will again be normally readable.

The “No” setting is intended for a “normally” mounted display, with the buttons pointing upwards.

Automatic satellite changeover

Your Oyster Digital is in a position, to automatically switch at all your locations between the receivable satellites, without you having to be particularly involved.

For each programme position stored in the transmitter list is also stored the satellite, which transmits these programmes (see Transmitter list appendix, page 43). If the Oyster Digital following a programme change carried out by you recognises a satellite change, the antenna immediately searches for the satellite and aligns itself exactly on the signal. You will see during this time in the status indication the report **“Antenna rotating”**.

If the selected programme cannot be found on the new satellite (e.g. because at the time it is not transmitting or it is to be found outside the receiving area), the antenna returns to the satellite, from which the search started and switches on a programme of that satellite.

The time which your equipment needs to carry out this change is strongly dependent, on how far the two satellite positions are apart from each other. A change between Astra 1 and Hotbird can e.g. take place in less than two seconds, if the satellite positions are known. Should the exact positions not be known, the change lasts a little longer.

This function can be broken off during the travel to a new satellite or during the search for a new satellite at any time with the SWAP button.

So that this function can be unprepared carried out, there must be a switching to **“Active”** under **Oyster Digital → Configuration → Automatic satellite change**. In order to use the manual search there must be a prior switching to the function **“Automatic satellite change”** in the Configuration menu and **“Off”**, as the equipment otherwise will always automatically return to a known satellite in order to be able to receive a picture.

Reception in remote countries

Through the use of modern digital techniques there has been a considerable increase in the area in which a determined satellite can be received.

In any case all the satellites target, for programmes of interest to Central Europe, transmissions naturally towards Central Europe. If the receiver equipment is outside this area, then the antenna looks “from the side” at the satellite. This effect is called the “skew angle” or also “polarisation angle” and occurs in particular in areas such as Portugal, Southern Spain, Morocco, Greece, Turkey and quite at the extreme on the Canary Islands.

The receiving electronics compensate for this effect without much further having to be done, but in some cases it has to be “helped” by hand. This “help” consists of turning the LNB (the receiver head of the antenna by a few degrees).

Setting of the LNB in different areas (skew angle correction)

Southern Spain, Algeria	+10°
Portugal, Gibraltar	+20°
Morocco	+30°
Canary Islands	+40°
Greece	-10°
Turkey, West Russia	-20°
Or other areas	0° (LNB stands vertical)

Positive degree numbers are turned from the view the dish **IN THE CLOCKWISE DIRECTION**, negative degree numbers **IN THE ANTICLOCKWISE DIRECTION**.

Corrections under 20° are not strictly necessary, providing a good reception is guaranteed.

Interference indication

Interference can occur during the operation of the automatic antenna unit if e.g. the freedom of movement of the antenna is not guaranteed (branches, snow, etc.).

The type of interference will be automatically recognised and presented on the external indication as a fault code.

Display	Fault description	Interference elimination
E 01	In the search for a satellite cannot receive a signal.	Change your location. Do you have a free view to the South? Are you in the receiving area of a satellite?
E 02 E 03	Antenna blocked in the rotation direction/angle direction	Is an object projecting into the movement area of the antenna? Is the supply voltage too low (weak battery)? Switch the equipment off with the MUTE button (hold down for 3 seconds) and then switch on again.
E 04	Antenna cannot completely retract and switch off	Press EXIT to close the antenna again. Remove snow, leaves or other objects from the storage hollow in the antenna body.
E 05 E 06	Antenna does not react after the switch-on or does not react to commands	Is the yellow/red fuse in order? Are all the cables correctly inserted?
E 07	Short-circuit in the antenna cable or LNB	Check the white antenna cable and the plug.

Use of the RS232 interface

The serial R232 interface of the receiver offers the facility for the connection of a PC. On our website under www.ten-Haaft.de/Digital programs are available, in order to use this function. There are also available updates on the operating software and the current transmitter list ready to download, eliminate any faults and the offer of new functions or additional transmitters.

Do not use any prepared software updates other than those from us under www.ten-Haaft.de/Digital. The use of prepared software updates which are not from us can damage your Oyster Digital and lead to the loss of guarantee claims.

For the connection of the receiver to a PC you require a serial cable with 1:1 Pin arrangement. That is all pins will be directly connected. On the PC side the cable has a 9 or 25 pole D-SUB socket, intended for the serial connection of your PC. A 9 pole D-SUB plug is required on the receiver side. A “mouse extension cable” is fitted in this form and can be used.

The receiver socket is occupied as follows:

1, 4, 6 – 9	Not occupied
2	TXD
3	RXD
5	GND

Technical data on the receiver

ZF Part (Front End)

Input frequency range	950.... 2150 MHz
Input sound level range	-65 ... -25 dBm
Input impedance	75 Ohm unsymmetrical
Signal modulation	QPSK
Input socket	F-Std., female
Signal transmission socket	F-Std., female

Signal decoder

Fault corrector (FEC)	Viterbi
Viterbi rate support	1 /2, 2/3, 3 /4, 5/6, 7/8
Signal format	DVB MPEG2
Code process support	FTA (Free to Air)

Audio/video part

Signal preparation	in accordance with ISO/IEC 13818-2
Video signal output	FBAS or Y/C or RGB
Audio signal output	Stereo via SCART or Chinch
Audio level output	adjustable or fixed 0dB

Output sockets

Audio / Video	Euro SCART
Audio	RCA Chinch
HF-Modulator	DIN / IEC

Further data

Operating voltage	12V or 24V (10-33V) DC
Receiver power consumption	ca. 10 Watt
Weight	ca. 2 kg
Dimensions (WxHxD, in mm)	ca. 260 x 80 x 140

The right for technical changes reserved.

Search satellite Appendix

These satellites are preprogrammed for direct search in your Oyster Digital. The selection is carried out under **Oyster Digital → Configuration → Search satellite** (see page 35).

In addition many other satellites transmit in the DVB standard. In any case these satellites have either a very small or continually changing programme range and because of the signals strength are often not suitable for mobile problem free reception. The Oyster Digital on the basis of the function “Automatic satellite change” is in a position to also receive those satellites (see page 36).

ASTRA 1

DER satellite for the German speaking area. A total of over 50 freely receivable German language television programmes, including without exception all the major private transmitting stations, public and all others as well as numerous radio programmes.

Unfortunately in Greece, in Turkey in the Eastern Mediterranean and in Eastern Europe it cannot or only very poorly be received. However with an 85er antenna it can be received in the normal manner even in the Canary Isles. In comparison with the old analogue programmes the digital illumination zone extends clearly much farther.

ASTRA 2

This covers primarily the English speaking area in Europe. The recognised English language news transmitters are to be found here. The illumination zone is still greater than that of Astra 1. In any case the receiving area is divided into North and a South zone. Only in Central Europe are all programmes available.

HOTBIRD (also called “Eutelsat Hotbird”)

Like Astra, Hotbird is also a complete satellite system, not only in a single satellite. In total around 200 digital programmes are freely available in various languages. Hotbird really covers the whole of Europe - if however with some weaker signals than Astra. In Greece and in Turkey Hotbird is the easiest German transmitter to receive.

THOR

Covers at the North European area, both with programme range and also with the illumination zone. Many if not all of the programmes from Thor are in any case down to Southern Germany receivable, if a sufficiently large antenna is used.

TELECOM 2B

Illuminates primarily France and therefore offers a mainly French speaking range of programmes. Telecom 2B can naturally be well received in the areas bordering France, but it covers a not so wide area as the other satellites.

HISPASAT

Covers in particular the Iberian Peninsular, the Canary Islands and also France. The programme range is tailored for the Spanish area.

EUTELSAT W3

The satellite with in total the far largest receiving area. Practically all of Europe and also the Near East are illuminated. In any case the total signal is clearly weaker than the other satellites, so generally the use of an 85cm antenna is to be recommended. Eutelsat W3 is in spite of the weak signal at the time the best possibility of receiving German television programmes even in distant countries.

Transmitter list appendix (television transmitters)

The programmes in the original transmitter list (TV) are arranged for the individual satellites as follows:

ASTRA 1	CH 001 to CH 199
Hotbird	CH 200 to CH 399
Sirius	CH 400 to CH 449
Thor	CH 450 to CH 549
ASTRA 2	CH 550 to CH 599
Telecom 2B	CH 600 to CH 649
Telecom 2A	CH 650 to CH 699
Amos	CH 700 to CH 719
Hispasat	CH 720 to CH 749
Eutelsat W3	CH 750 to CH 799
Eutelsat W2	CH 800 to CH 849
Arabsat	CH 850 to CH 899
Turksat	CH 900 to CH 919

Please note, that not all programme numbers are currently assigned a transmitter. A number of them are kept free for future expansions. Further some of the transmitter stations very often switch off individual programmes. You can sort the transmitter list in any way at any time you wish or enter new transmitters with the help of the search procedure. The operation of the equipment will not be influenced.

New transmitter lists, which we offer to you to download under www.ten-Haaf.de/Digital possibly have another distribution than the list originally stored in the receiver. Such changes can be necessary in the future, in order to incorporate new satellites in the list.

The distribution of the radio transmitter list is comparable to the television transmitter list.

Television transmitter selection appendix

Among others the following German language transmitters are programmed into your Oyster Digital at the works:

ASTRA 1

Eutelsat Hotbird