# MEGASAT



Satmeter Digital 1 HD
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**User manual**

# Content

## General Features

- Satellite Meter for DVB-S/-S2 signals
- Pre-programmed satellite and transponder list
- 3.5 inch TFT LCD display with 320 x 240 pixels
- Unicable ready (EN 50494 / EN 50607)
- Konstellation- and spectrum analysis
- Live TV picture for direct checking
- Automatic Satellite detection (NIT)
- Separate 4-digit display for signal level
- Automatic calculation of turn and tilt angle of the antenna
- Display of signal strength / quality, dBµV, C/N, BER, FEC
- Integrated power battery with up to 3 hrs. operating time
- Firmware updates and channel list management via USB 2.0 port
- Charging with the included power adapter or car charger
- Clear and self-explanatory menu

# 1. Introduction

## 1.1 Safety instructions

Please read the manual thoroughly before operating the equipment. In case of incorrect or improper handling, the warranty becomes void.

| | |
|---|---|
| **Power supply:** | Before charging the device, please check the correct operating voltage of the power point. The operating voltage of the device is AC 100~240V, 50/60Hz / DC 12V, 2A. |
| **Overload:** | Do not overload a wall outlet, extension cord or adapter, neither use damaged power cord or touch it with wet hand as this may result in electric shock. |
| **Liquid:** | Avoid dripping, splashing or other liquids on the device |
| **Warmth:** | Do not put the device in direct sunlight or other heat sources, such as a heating. |
| **Risk of suffocation:** | Do not let children play with films or other packaging components, there is a risk of suffocation. |
| **Cleaning:** | Clean the unit with a soft cloth. |
| **Uncover:** | Do not remove the cover. Contact qualified and licensed service personnel to repair the receiver, or contact your dealer. |

## 1.2 Delivery

- Satmeter Digital 1 HD
- 230/12 V power supply
- 12 V car charger adapter
- 12 V adapter cable
- AV adapter cable
- Protective cover incl. carrying strap
- User manual
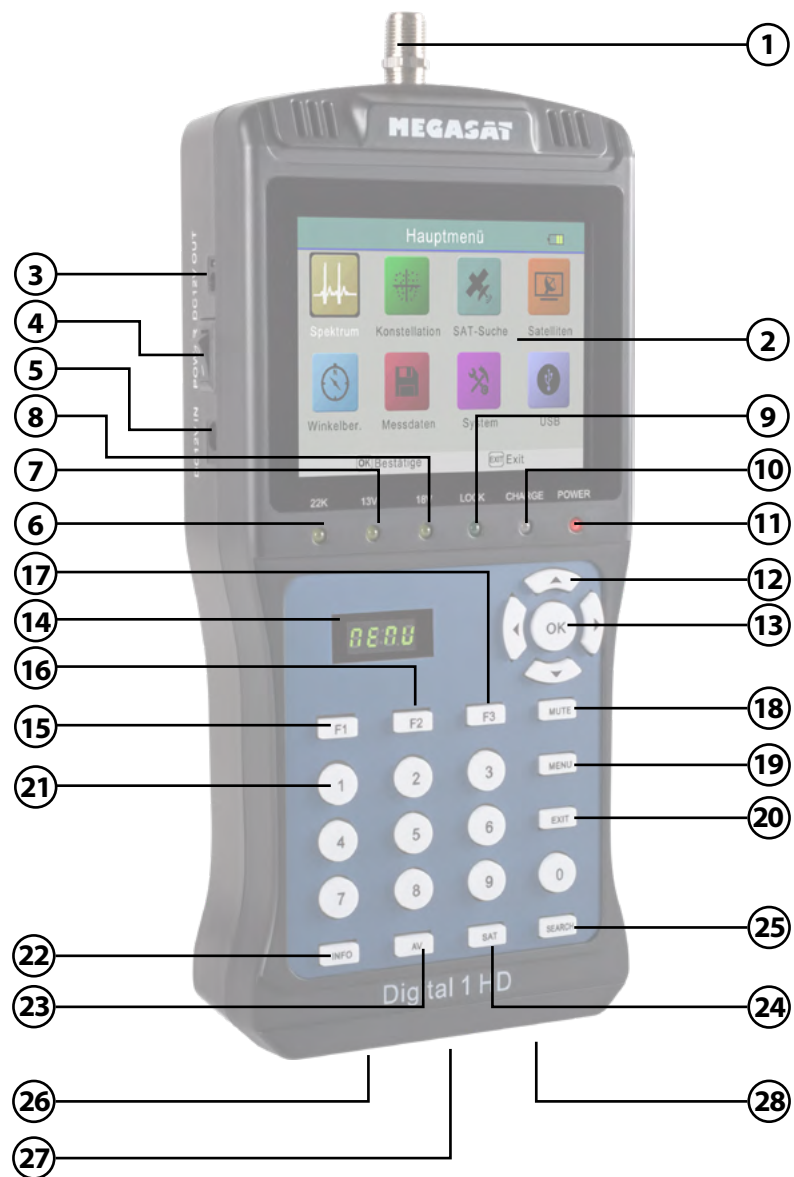
| | | |
|---|---|---|
| 1. | **RF IN** | Satellite signal input (a direct connection to the antenna via coaxial cable) |
| 2. | **LCD Display** | Displays the setting menu / TV picture |
| 3. | **DC 12V OUT** | Output for DC power supply for other devices |
| 4. | **POWER** | Switch for power on or off |
| 5. | **DC 12V IN** | Input for DC power supply for charging the device |
| 6. | **22 k** | 22 k display |
| 7. | **13 V** | 13V indicator lights in vertical transponders |
| 8. | **18 V** | 18V indicator lights in horizontal transponders |
| 9. | **LOCK** | Lights when satellite is found |
| 10. | **CHARGE** | Lights up when the device is charging |
| 11. | **POWER** | Lights when the unit is ready |
| 12. | **Navigation** | ▲▼ Navigation through the menu / change of values ◄ ► Navigation through the menu / change of values |
| 13. | **OK** | In the menus press OK to confirm your selection / Opens the channel list in TV mode |
| 14. | **DISPLAY** | 4-digit display shows the signal level of the satellite |
| 15. | **F1** | Turn LCD screen on/off (Only in video playing menu) / Other functions are displayed in the respective menu |
| 16. | **F2** | Enter audio language setting menu (Only in video playing menu) / Other functions are displayed in the respective menu |
| 17. | **F3** | Switch between TV and Radio channel list (Only in video playing menu) / Other functions are displayed in the respective menu |
| 18. | **MUTE** | Turns the volume to mute |
| 19. | **MENU** | Enter the menu or leave it |
| 20. | **EXIT** | Exit the menus |
| 21. | **Number pad** | To input digits or program selection |
| 22. | **INFO** | Display current information of the channel during the TV playback |
| 23. | **AV** | Switches to external playback via AV output |
| 24. | **SAT** | Displays the current satellite list |
| 25. | **SEARCH** | Changes in the search mode during TV playback |
| 26. | **USB** | USB port for firmware updates / channel list management |
| 27. | **AV IN** | Audio / video input for external playback devices |
| 28. | **DV OUT** | HDMI connector for external TV |

## 3.1 Instructions for quick measurement

1. Connect the antenna to the LNB input of the Satmeter.

2. Turn on the Satmeter, then the main menu appears.
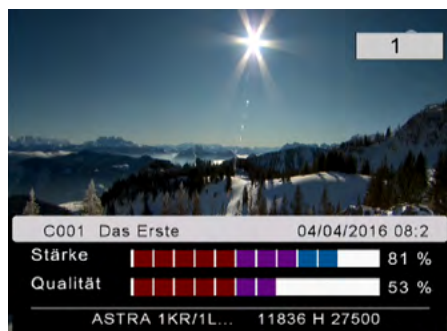
3. Press EXIT to enter The Live-TV mode and select the desired program (e. g. Das Erste on Astra 19.2° East). Press the SAT button to select another satellite.

4. Press the SEARCH button to enter the search mode (satellite detection).

5. Now turn the satellite dish horizontally and vertically until the selected satellite is locked and you have reached the maximum value.

## 3.2 Display the satellite detection

**Satellit**
Displays the current satellite. Use the ▲▼ keys to change the satellite. Press OK to enter the Satellite list. Use the ◄ ► buttons to select from, and click OK.

**LNB Typ**
Displays the current LNB type. Use the ◄ ► keys to change the LNB type. Press OK to enter the LNB list. Use the ▲▼ buttons to select the type and click OK.

**LO. LOW / LO. HIGH**
Enter the frequency of the LNB manually. The LNB Type must be set here individually (customised).

**Frequency**
Displays the current transponder. Use the numeric keys to enter a transponder, or press OK to select a transponder from the preloaded list.

**Symbol rate**
If you enter a transponder manually, you have to adjust the symbol rate accordingly here.

**Polarity**
Displays the polarity of the selected transponder to Horizontal (Hor) or vertical (Ver).

**Search**
With the previous settings, you can now search for the desired transponder. The channels are automatically stored in the satellite list.

**Strength**
Displays the current strength of the selected satellite.

**Quality**
Displays the current quality of the selected satellite.

**LOCK**
Displayed when the preset satellite is found.

**PWR**
Displays the current dBµV value.

**C/N**
Displays the current C/N value.

**BER**
Displays the current BER value.

**FEC**
Displays the current FEC value.

> **Note:**
> Press in satellite detection the F1 key to display the signal strength and signal quality as a large screen.

# 4. Main Menu

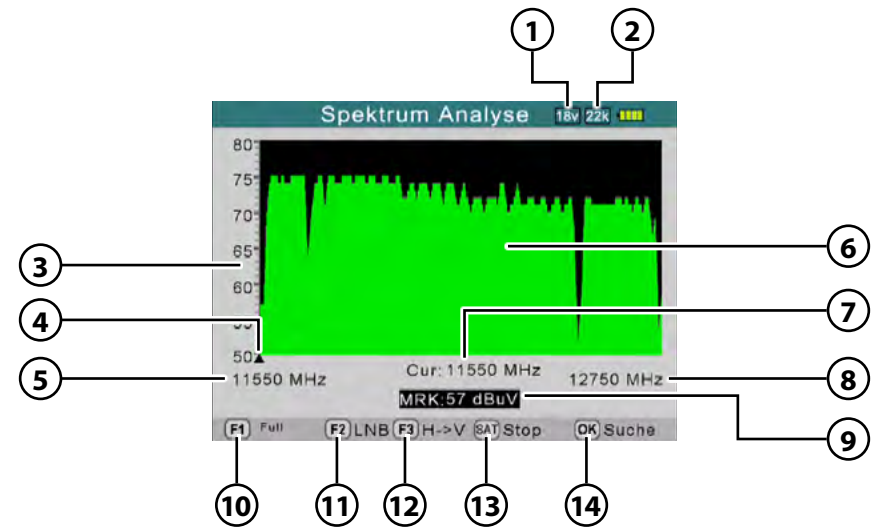## 4.1 Main Menu

The menu consists of 8 submenus:

- Spectrum analysis
- Constellation analysis
- SAT Search
- Satellite settings
- Angle calculation
- Measured data
- System settings
- USB



Use the ▲▼ or ◄ ► buttons to navigate the menu. Press OK to enter the submenu. With MENU return to the main menu.

## 4.2 Spectrum analysis



1. Displays the current voltage of the LNB. The values are: 13 V, 18 V or OFF.

2. Displays the current status of 22 K (- - K = off / K 22 = on).

3. Displays the range of power levels (0 ~ 100).

4. Displays the current frequency. Change with the ◄ ► keys.

5. Shows the initial frequency of the spectrum.

6. Displays the graphical part of the spectrum.

7. Displays the current frequency. Change with the ◄ ► keys.

8. Displays the final frequency of the spectrum.

9. Shows the power level value of the LNB voltage in dBμV.

10. (F1) Change the MHz range (200 MHz / 400 MHz / Complete range)

11. (F2) Opens the menu LNB settings to make the LNB type.

12. (F3) Switches from horizontal to vertical and vice versa.

13. (SAT) Stops the current spectrum analysis.

14. (OK) Switches to Find mode

# 4. Main Menu

## 4.3 Constellation analysis

In the Constellation menu you have two options for performing the analysis:

- Analyze by frequency
- Analyze by program
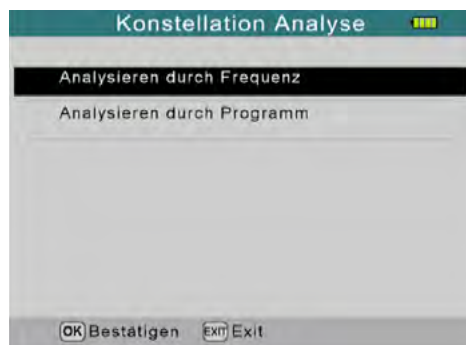


**Analyze by frequency**



| | | |
|---|---|---|
| **Satellit** | Displays the current satellite. Change the satellite with the ◀ ▶ keys. | |
| **Frequency** | Displays the current frequency. Change the frequency with the ◀ ▶ keys. | |
| **Symbol rate** | Displays the corresponding symbol rate. | |
| **Polarisation** | Displays the corresponding polarization (Hor/Ver). | |
| **Search** | Press OK to start the Search with the selected frequency. | |

# 4. Main Menu
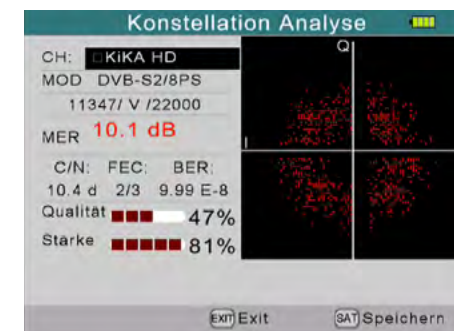
**Analyze by frequency**
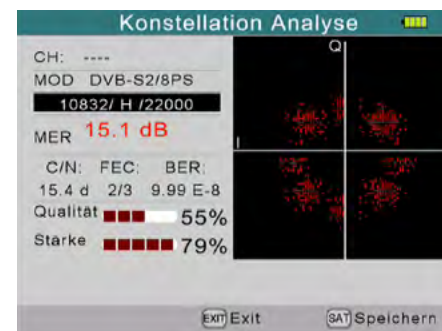


In „Analyze by frequency" the preset transponder are selected.

**Analyze by program**



In „Analyze by program" the preset channels are selected.

**Note:**
In the constellation view use the navigation keys to switch a frequency or the channel position.
With the SAT button the current view can be stored in the USB memory if a suitable USB stick has been inserted.

# 4. Main Menu

## 4.4 SAT Search

In der Satellitenerkennung können Sie nach voreingestellten Satelliten oder Transponder suchen. Des Weiteren können die voreingestellten Werte geändert sowie weitere hinzugefügt werden.
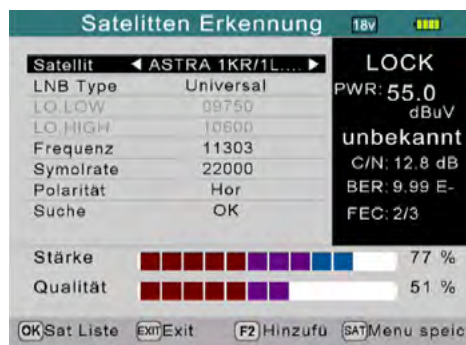
| | | |
|---|---|---|
| **Satellit** | Select the desired satellite. Use the navigation buttons to change. | |
| **LNB Typ** | Set the LNB type. Use the navigation buttons to change. (Universal = Standard) | |
| **LO.LOW** | Displays the LOW frequency of the LNB. | |
| **LO.HIGH** | Displays the HIGH frequency of the LNB. | |
| **Frequency** | Displays the corresponding frequency. Enter a frequency using the numeric buttons or press OK to enter the transponder list. | |
| **Symbol rate** | Displays the corresponding symbol rate. Change the symbol rate with the numeric keys. | |
| **Polarity** | Displays the corresponding polarization (Hor / Ver). Change the polarization with the ◀ ▶ keys. | |
| **Search** | Starts the search process. | |

1. Press the F2 key to add a new transponder for the selected satellite

2. Press the SAT button to save the settings.

## 4.5 Satellite Settings

The Satellite Settings menu is divided into three submenus:

- Edit satellite
- Antenna Setup
- Auto Scan
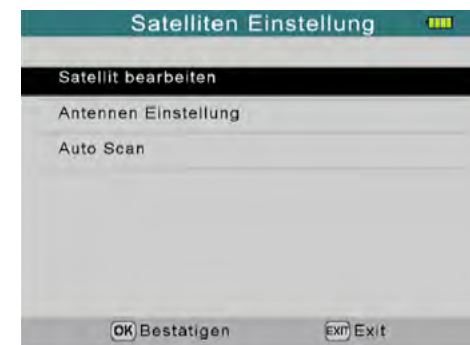
### Edit satellite:

> **Note:**
> Use the ◀ ▶ keys to switch between the satellites and transponders.

Use the navigation buttons to select a satellite and press OK. In the following menu you can change the name, and the longitude and direction. Press at „Name" OK and assign then to the letter block a new name. The longitude, you can re-enter with the number keys. The direction West or East, you can u change with the ◀ ▶ keys.
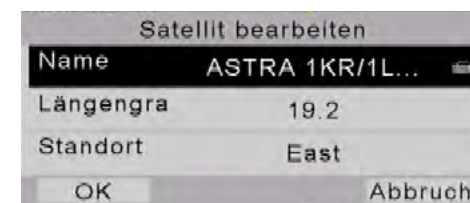
Then exit the menu by pressing OK. If you have made any changes you will be asked if you want to save the settings. Confirm with OK or cancel the operation.

# 4. Main Menu

## Add Satellite:

1. Press the F2 button to add a new satellite. Also enter the corresponding data as described in „Satellite Edit".

2. Now enter the corresponding data for the LNB.

3. Then confirm your entries with „Finish". The new satellite will be saved in the list.

## Delete Satellite:

To remove a satellite from the list, press the F3 key. You will be asked if you want to delete the satellite. Confirm with OK or cancel the operation.

## Save Settings:

If you have made changes to the satellite list or transponder list, you can save the settings by pressing the F4 key.

**Note:**
The changes in the transponder list is in the same way as that of the satellite list.

# 4. Main Menu

## Antenna Settings:

Enter the datas according to your existing system.

| | |
|---|---|
| **Satellite** | Select the desired satellite. Use the navigation buttons to change. |
| **LNB Typ** | Set the LNB type. Use the navigation buttons to change. (Universal = Standard) |
| **LO.LOW** | Displays the LOW frequency of the LNB. |
| **LO.HIGH** | Displays the HIGH frequency of the LNB. |
| **22 K** | Use the navigation buttons to change. Choose between AUTO (default), ON, OFF. |
| **LNB Power** | Setting the LNB power supply. Use the navigation buttons to change. Choose between 13 V / 18 V / OFF / AUTO (default). |
| **Change Typ** | Choose between NO (default), DiSEqC 1.0 / 1.1 or Unicable |
| **Change input** | Select the respective DiSEqC input (None, 1-4) |
| **Motor** | Choose between a fixed antenna, DiSEqC 1.2 or USALS. |

For **Unicable systems (EN50494)**, choose **SCR_Port_A** and assign the appropriate one under „IF Channel" Center frequency from your Unicable system.

Example:  IF Channel 1 -> Frequency: 1210 MHz
IF Channel 2 -> Frequency: 1420 MHz
IF Channel 3 -> Frequency: ........ MHz

With Unicable (EN50494) up to 4 frequencies are possible.

Press the SAT button to save the changes.

## 4. Main Menu

For **Unicable 2 systems (EN50607)**, select **SCD2_Port_A** and assign the appropriate one under „IF Channel" Center frequency from your Unicable system.

Example:     IF Channel 1 -> Frequency: 1210 MHz
             IF Channel 2 -> Frequency: 1420 MHz
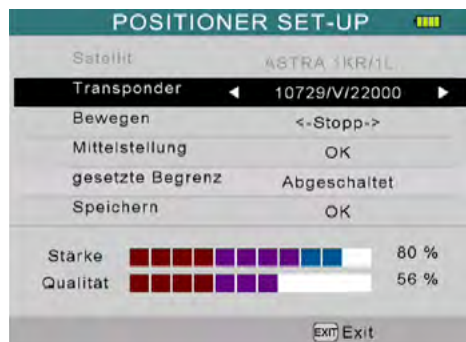             IF Channel 3 -> Frequency:   ........ MHz

With Unicable (EN50607) up to 24 frequencies are possible.

Press the SAT button to save the changes.

Note: When using special antenna sockets, it may be necessary to connect another receiver for voltage stabilization.

### *Motor settings:*

Press OK when you operate the system with an engine control (DiSEqC 1.2) and these have also adjusted.



| Satellite | Displays the current satellite. |
| **Transponder** | Displays the current transponder. Use the navigation buttons to change. |
| **Move** | Press the ◀ button to turn the engine gradually to the east. Press the ▶ button to turn the engine gradually to the west. If you hold down the keys, the motor is constantly rotated in the corresponding direction. |
| **Center position** | Press OK to turn the antenna to the center position. |
| **Limit** | You can set the max. rotary limit of the antenna. Choose between West, East, or disabled. |
| **Save** | Press OK to save your current location. |

## 4. Main Menu

If you want to control the system with USALS, you must make the following settings here.

| **Degree of longitude** | Geben Sie den Längengrad mit den Nummerntasten ein. |
| **Position (W/E)** | Nutzen Sie die Navigationstasten und wählen West oder Ost. |
| **Degree of latitude** | Geben Sie den Breitengrad mit den Nummerntasten ein. |
| **Position (N/S)** | Nutzen Sie die Navigationstasten und wählen Nord oder Süd. |
| **Go to Position** | Drücken Sie auf OK um zur ausgewählten Position zu wechseln. |

### Auto Scan:

Enter the datas according to your existing system.



| **Satellite** | Use the ◀ ▶ buttons to select the satellite. |
| **Motor** | This feature is disabled by default in the auto mode. |
| **Transponder** | Use the ◀ ▶ buttons to select the transponder. |
| **Search mode** | Select the desired search mode (Free / all channels) |
| **Search** | Choose whether you want to scan the entire satellite or only a specific transponder. Alternatively you can use Blind Scan to search for transponders that are not stored in the list. |

# 4. Main Menu

## 4.6 Calculate angle

In this menu, you can calculate the exact angle of the dish.
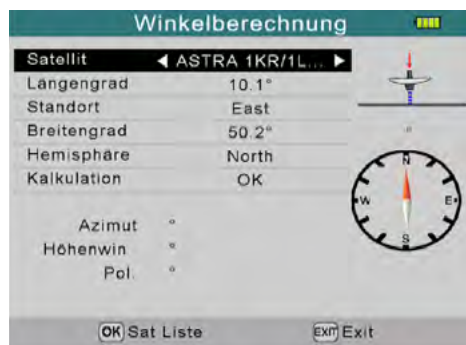


| | |
|---|---|
| **Satellite** | Use the ◀ ▶ buttons to select the satellite. |
| **Degree of longitude** | Press OK to change the longitude. Use the navigation buttons to change the value. |
| **Location** | Use the ◀ ▶ buttons to select East or West. |
| **Degree of latitude** | Press OK to change the latitude. Use the navigation buttons to change the value. |
| **Hemisphere** | Use the ◀ ▶ buttons to select North or South. |
| **Calculation** | Calculate the angle of the satellite. |

## 4.7 Messdaten

In this menu you can display stored values of the respective categories.
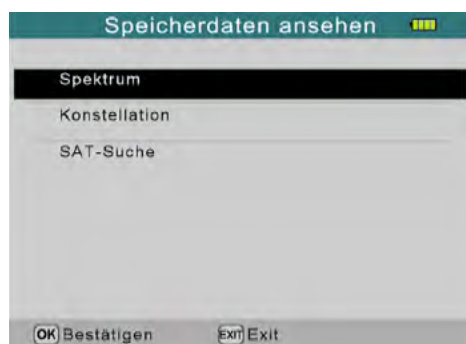


## 4.8 Systemeinstellungen

In this menu you can set up basic settings
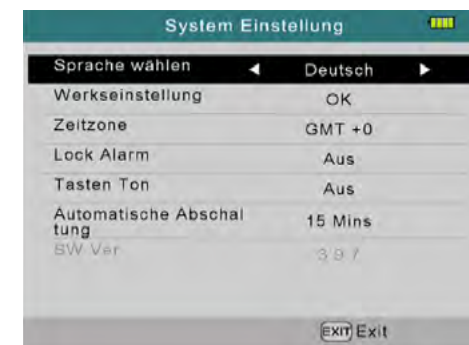


| | |
|---|---|
| **Language** | Select the desired menu language by using the ◀ ▶ keys. |
| **Factory setting** | Press OK to set the device to factory settings. **CAUTION:** All data you have entered will be deleted here! |
| **Time zone** | Set the appropriate time zone. |
| **Lock Alarm** | An audible alarm sounds when the satellite was found. |
| **Key Tone** | Enable or disable the key tones. |
| **Auto shutdown** | Set the minutes after the unit automatically switches to standby mode. |
| **SW version** | Shows the current firmware version of the device. |

# 4. Main Menu

In this menu, you can perform a firm-
ware update, import or export satellite
and channel lists.

**USB Service**

Software Upgrade
Satelliten importieren über USB
Satelliten auf USB exportieren
Programme von USB importieren
Programme auf USB exportieren
Daten auf USB exportieren

(OK) Bestätigen     (EXIT) Exit

**Software Upgrade:**

The latest firmware of the device you
will always find on our homepage:
**www.megasat.tv**

Copy the unzipped file to a suitable USB
drive and plug it into the USB slot.

1. Select „Software Upgrade" and press OK.

2. Select the corresponding file and click OK.

3. The upgrade process will be performed. Afterwards the device restarts.

**Import satellite list:**

Select „Import satellite list" from USB to overwrite the satellite list on the device.
**Note:** All satellite settings will be overwritten!

**Export satellite list:**

Select „Export Satellite List" to USB, to back up the satellite list from the device to a USB
drive.

**Import channel list:**

Select „Import channel list" from USB to overwrite the channel list on the device.
**Note:** All channel settings are overwritten!

**Export channel list:**

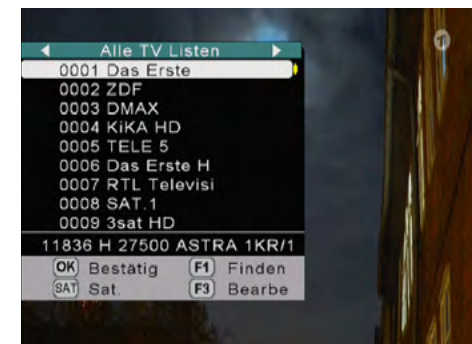Select „Export channel list" to USB to save the channel list from the device to a USB drive.

# 5. Edit Channel List

In normal playback mode, press the OK button to switch to the channel list. Should you
be in the main menu, you can leave this with EXIT.

**Select channel:**

1. Select a channel with the navigation
   buttons. Press OK to switch to the
   selected channel.

2. Press F1 to search for a channel.
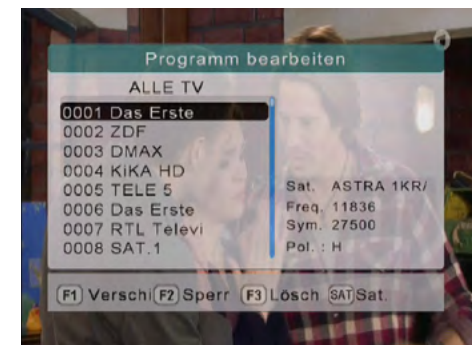
3. Press SAT to select another satellite.

**Alle TV Listen**

0001 Das Erste
0002 ZDF
0003 DMAX
0004 KiKA HD
0005 TELE 5
0006 Das Erste H
0007 RTL Televisi
0008 SAT.1
0009 3sat HD
11836 H 27500 ASTRA 1KR/1

(OK) Bestätig     (F1) Finden
(SAT) Sat.        (F3) Bearbe

**Edit channel:**

Press F3 to edit a channel.

Move channel:
Select a channel with the navigation
buttons and press F1 to highlight this.
Select the desired position and press OK
to move the channel to this point.

**Programm bearbeiten**

**ALLE TV**

0001 Das Erste
0002 ZDF
0003 DMAX          Sat.   ASTRA 1KR/
0004 KiKA HD       Freq.  11836
0005 TELE 5        Sym.   27500
0006 Das Erste     Pol. : H
0007 RTL Televi
0008 SAT.1

(F1) Verschi (F2) Sperr (F3) Lösch (SAT) Sat.

Lock channel:
Select a channel with the navigation buttons and press F2 to lock this. The channel now
requires a password, so that it can be unlocked (default: 000000).

Delete channel:
Select a channel with the navigation buttons and press F3 to delete this. Confirm the
deletion with OK or cancel the operation.

Press EXIT to save and leave the channel list.

> **Note:**
> Switch to Radio mode (F3 key) to edit this in the same way.

# 6. Specifications

| Reception Mode | DVB-S | DVB-S2 |
|---|---|---|
| Demodulation | QPSK | QPSK, 8QPSK,16APSK, 32APSK |
| Code rate | 1/2, 2/3, 3/4, 5/6, 7/8 | 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 5/6, 8/9, 9/10 |
| Symbol rate | 1 ~ 45 Mbps | |
| Frequency range | 950 - 2150 MHz | |
| LNB voltage | 18V, 13V, Auto, Off | |
| Input / output levels | 35 - 90 dBµV | |
| Input impedance | 75 Ω | |
| DiSEqC | 1.0 / 1.1 / 1.2 / USALS | |
| Unicable ready | yes (EN 50494 / EN 50607) | |
| Satellite detecting (NIT) | yes | |
| Ddisplay | 3,5 Zoll (8,9 cm) TFT LCD Color Display | |
| Resolution | 320 x 240 Pixel | |
| Live TV picture | yes | |
| LED display | 4-digit display for signal level | |
| Speaker | integrated | |
| Search mode | Automatic, Manual, Blind Scan | |
| Analyzer | Constellation and Spectrum | |
| Azimuth / Elevation / Skew | Automatic calculation of angle | |
| Show | Signal strength / -quality, dBµV, C/N, BER, FEC | |
| Battery pack | Li-Ion (7.4 V / 3000 mAh) up to 3 hrs. operation / 3hrs. charging time | |
| USB port | Manage channel lists / Firmware Updates | |
| HDMI output | yes | |
| AV input | yes | |
| 12 Volt output | yes | |
| Integrated receiver | yes | |
| Power switch | yes | |
| Power supply | AC 100 ~ 240 V / DC 12V, 2 A | |
| Dimensions (W/H/D) | 95 x 205 x 41 mm | |
| Weight | 425 g | |

**Note:**
Weight and dimensions are not absolutely exact values.
Technical details can be changed at any time without prior notice.

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# Conformity information

Hereby declare the company Megasat Werke GmbH that the following devices is in compliance with the essential requirements and other relevant provisions of Directive 2014/30/EU and 2014/35/EU and Radio Equipment Directive 2014/53/EU:

**Megasat Satmessgerät Digital 1 HD**   (Art.-No. 2600011)

The Declaration of Conformity for this product is located at the company:
Megasat Werke GmbH, Industriestraße 4a, D-97618 Niederlauer

The declaration of conformity can be downloaded from our homepage:
www.megasat.tv/downloads

## PRODUCT REGISTRATION

Registering your Megasat product gives you access to our automatic e-mail notifications. If your product requires new firmware, you will be notified by e-mail.

For registration please visit our homepage **www.megasat.tv**

You can find the form in **Support ⇨ Product registration**

WEEE Reg.-Nr. DE70592344