HD Satellite Meter
User's Manual

MAN_MTR_SATFIND-HD_REV002

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VIKING SATCOM

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Warranty

Seller warrants the items ordered hereunder at the time of shipment to be free from defects in material, workmanship, and to conform to the contract specification. Seller's liability under this Warranty shall terminate one (1) year after date of shipment of order. Some individual products include extended warranties as stated in brochure(s) and extended warranties may be purchased as requested and quoted. Written notice of any defects shall be given Seller upon discovery and Seller shall promptly correct such defects by repair or replacement, at its option, without charge, either FCA Seller's plant or service in the field. After the warranty period stated herein has expired, some manufacturer's and/or licensor's warranties may still be in effect, and the Purchaser shall look solely to such manufacturer and/or licensor for warranty repair.

IN NO EVENT SHALL SELLER'S LIABILITY UNDER THIS WARRANTY EXCEED THE COST OF REPAIR OR REPLACEMENT OF SUCH DEFECTIVE ITEM AND UNDER NO CIRCUMSTANCES SHALL SELLER BE LIABLE FOR SPECIAL OR CONSEQUENTIAL DAMAGES.

Specifically excluded from this Warranty are:

a. Defects or nonconformance caused by and resulting from improper operation, maintenance, or storage of the equipment.

b. Items of characteristically indeterminate life, such as bulbs, fuses, etc.

THIS WARRANTY CONSTITUTES SELLER'S SOLE AND EXCLUSIVE LIABILITY HERUNDER AND PURCHASER'S SOLE AND EXCLUSIVE REMEDY FOR DEFECTIVE OR NONCONFORMING ITEMS AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS IMPLIED OR STATUTORY (INCLUDING THE WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE).

1. USER INFORMATION

1.1 Use of This Manual

This manual is intended for the HD SATELLITE METER. Please read this user manual carefully before operating the device for the first time. Be aware of all warnings and notations included in this manual for safety as well as proper use of the product. Ensure that the manual is kept with the HD SATELLITE METER at all times for quick reference. This manual is subject to change without notice. Contact Viking Satcom for the latest documentation.

2. PRODUCT DESCRIPTION

The HD SATELLITE METER is a digital DVB-S2 measuring device for quick and easy alignment of satellite antennas. When a satellite is found, the HD METER shows it on the display and emits an audible signal. Signal strength and quality are displayed as numerical values and bar graphs. Measurements displayed include the forward error correction (FEC[1]), the carrier to noise ratio (C/N), the bit error rate after Viterbi (VBER), and the modulation error rate (MER[2]). In addition, the picture quality can be revised on the high resolution 3.5 in. TFTLCD screen.

Many satellites are pre-programmed to allow a quick antenna adjustment. There is also a carrying bag included for transport and protection.

2.1 Delivery

When you receive your HD METER, ensure that all parts are included in the delivery

- DVB-S2 HD METER
- 12 V Plug-in Power Supply
- Quick F Connector
- Carrying Bag
- User Manual

If your delivery is incomplete, contact Viking Satcom immediately.

[1]FEC = forward error correction: In each data packet there are control bits. FEC 5/6 means that there are 5 data bits and 1 control bit. The better the ratio between data and control bits, the fewer the errors at the receiver's side. With FEC 3/4 the ratio is better than with FEC 5/6. Possible values are FEC 1/2, 2/3, 3/4, 5/6, 7/8, and 8/9.

[2]MER = modulation error rate: All signal disturbances are summarized to one measurement value. The higher the MER value, the better the signal quality.

2.2 Meter

2.2.1 Front View

Reference Number	Description		
1	LC Display		Display of the TV Picture, Menu, and the Measured Values
2	POWER	LED	Green: The Meter is On Off: The Meter is Turned Off Charging: Red During Charging Green if the Battery is Fully Charged
	AV IN		Lights if the Meter is Switched to the Analog Video Input
	LOCK		Lights When a Signal is Received
	13 V		Lights if There is a 13 V Signal for the Polarization Control (Vertical)
	18 V		Lights if There is a 18 V Signal for the Polarization Control (Horizontal)
3	FUNCTION Keys		Various Functions Depending on the Menu. The Functions Are Displayed at the Bottom of the Screen
4	FIND		Call of the Channel Search Function
5	SCAN		Start of the Automatic Channel Scan
6	POWER		Switch Device On/Off
7	AV IN		Switch to the Analog Video Input
8	Numeric Keys		Direct Entry of Numbers
9	Cursor Cross OK		Press to Navigate Through Menus/Submenus Press ▲, ▼ to Switch Between Stations Press ◄, ► to Adjust the Volume Press to Confirm Your Selection/Display Station List
10	MENU		Display the Main Menu
11	EXIT		Leave the Current Menu, Cancel Operation
12	SYS		TV Mode: Call of the Menu OSD Setting Menu: Volume Cotnrol
13	+/-		Call of the Media Player
14	●		Pressing This Key Copies a Screenshot to a Connected USB Disk


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12
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POWER
AV IN
LOCK
13V
18V
F1
F2
F3
F4
SYS
MENU
SCAN
OK
FIND
EXIT
7
8
9
0
4
5
6
+/–
1
2
3
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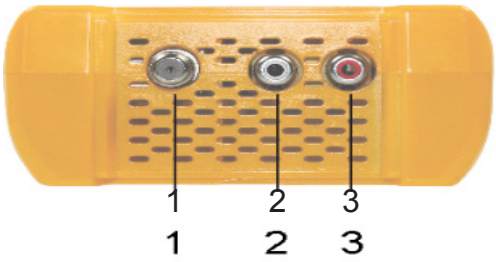
AV IN

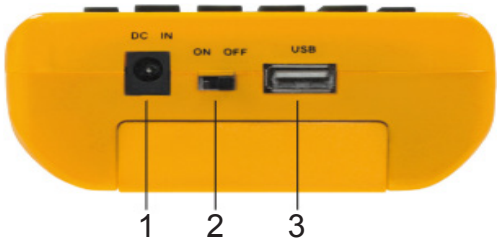
2.2.2 Top View

Reference Number	Description
1	Digital Satellite Signal Input
2	Analog Audio Input (Mono)
3	Analog Video Input (Composite Video)



2.2.3 Bottom View

Reference Number	Description
1	Low-voltage Socket (For Power Plug)
2	Switch for Battery (For Separating the HD METER Electronics from the Rechargeable Battery)
3	USB Port for External Data Storage Devices



2.2.4 Rear View

At the rear is the battery compartment. Do not open unless you suspect that the lithium ion battery must be replaced.

3. SAFETY NOTES

3.1 Safety of Persons

Ensure that no one is in danger from falling tools or parts during the installation and adjustment of the antenna. For your own safety, use a rope on sloping roofs.

3.2 Appropriate Usage

The HD SATELLITE METER was developed to measure signals of digital satellite antennas and satellite systems. Do not use this product for functions not expressed in this manual. Improper use of the HD SATELLITE METER could result in damage to the product or injury to the user. There will be no warranty or liability for damages caused by improper use.

3.3 Hazards from Improper Use

CAUTION

- Make sure the meter, and especially the power plug, are always kept dry.
- Do not expose the meter to temperatures below 0° C.
- Only connect the power plug to 100 - 240 V AC, 50/60 Hz.
- Charge the meter only with the supplied power plug.
- During electrical storms, disconnect the meter from the antenna and from the power supply.
- Do not put heavy objects on the meter.
- Avoid mechanical influences that could damage the LCD display or the housing of the meter.
- Do not bend or crimp the cables.
- Do not start to use the meter if you can see signs of damage or if you can hear loose parts within the device.

WARNING

- Danger of electrical shock from high voltage.
- Damage on the housing of the power plug or an improperly repaired power plug can expose the user to mains voltage.
- Do not open the supplied power plug.
- Have the power plug repaired by qualified personnel only

NOTE: Taking the device from cold into warm temperatures can lead to condensation forming inside the device. Do not connect the device immediately. Leave it switched off for a few hours.

3.4 Lithium Ion Battery

The HD SATELLITE METER is provided with a lithium ion battery. Observe the following safety notes for the battery.

WARNING

- Fire and explosion hazard.
- Any kind of heat (inside or outside) can trigger uncontrollable chain reactions inside the battery.
- Do not store or use the battery in temperatures above 40° C.
- Never connect the two poles (+ and -).
- Never expose the battery to high temperatures (close to stoves, cookers, or other hot objects).
- Charge the battery only with the supplied power plug.

CAUTION

- Damage and improper use can lead to fumes leaking from the battery. When inhaled, these fumes can irritate the repiratory tracts.
- Avoid damaging the battery.
- If fumes leak from the battery, open a window and seek medical advice if you experience health problems that may have been caused by inhaling the fumes.
- Defective batteries can leak and spill liquid onto nearby objects.
- Check the objects affected.
- Clean or replace the objects affected.

4. INITIAL SETUP

4.1 Charging the Battery

1. Charge the battery completely before you use the meter for the first time.

NOTE: The battery can be charged while the meter is switched On or Off. It can also be charged if the battery switch on the underside of the meter is switched On or Off. An integrated automatic charging system ensures optimum charging of the battery.

2. Switch off the meter to ensure that complete power of the power supply can be used to charge the battery. The meter can be charged while On, but this increases the amount of time it takes to fully charge the battery.

3. Plug the power plug into a 110 - 240 V socket. Connect the low-voltage plug of the power plug to the low-voltage socket on the bottom of the meter.

NOTE: The battery begins charging when you connect the HD METER to the power plug. When you charge the HD METER for the first time, make sure it has been charged for at least 5 hours. The maximum charging time is 12 hours.

4.1.1 Charge Control

Charging is indicated by a continuously moving battery symbol on the display, as shown. The POWER LED displays red while charging.

Completed charging is indicated by a steady battery symbol filled with four bars and the POWER LED displays green.

4.1.2 State of Charge

The current status of the battery is continuously displayed. If the battery is not adequately charged, the icon will display in red with one or two bars that correspond to the state of charge. It is necessary to charge the battery. If the battery is sufficiently charged, the icon will display green with three or four bars.

4.2 Switching the Meter On and Off

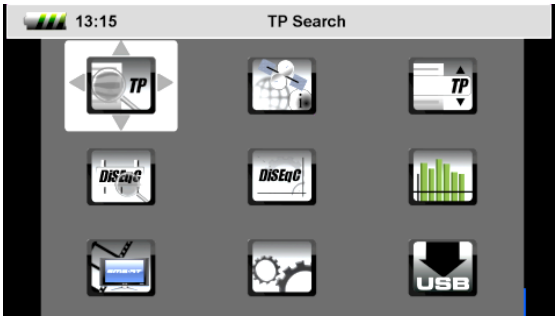
1. Ensure that the battery switch on the underside of the meter is set to the On position. Press the POWER key to switch on the meter. The POWER LED will display green.

Note: When not plugged in, the HD SATELLITE METER will be turned on, when you move the battery switch from the Off to On position. If the power supply is plugged in, the meter can be switched on regardless of the position of the battery switch.

2. Press the POWER key once again to switch off the meter after use. For long operational pauses, also separate the HD SATELLITE METER electronics from the battery by setting the battery switch on the underside of the device to the Off position.

4.3 Entering and Exiting the Menu

1. Press MENU to enter the main menu. The display shows the OSD (On Screen Display) main menu which appears when you switch the HD SATELLITE METER on and when you re-enter the menu.



2. Press the EXIT key to exit the menu or to return to the previous menu level. Depending on the submenu you are in, you may have to press the EXIT key several times to return to the main menu.

4.4 Navigating Through the Menu

1. Use the colored function keys and the cursor cross to navigate through the menu.

- Press ► or the yellow FUNCTION key to select the menu item to the right or to increase the selected value.
- Press ▼ or the red FUNCTION key to select the menu item below.
- Press ◄ or the blue FUNCTION key to select the menu item to the left or to decrease the selected value.
- Press ▲ or the green FUNCTION key to select the menu item above.
- Press OK to enter the selected menu item.

Activated menu items are highlighted by color.

Note: The FUNCTION keys can vary depending on the menu. Instead of changing a value by using the ◄ and ► keys, you can also press the OK key, select a new value from the list, and confirm the value by pressing the OK key again.

5. ALIGNING THE SATELLITE DISH

1. Press MENU

2. Use the cursor cross to select the menu item TP SEARCH and confirm your selection by pressing the OK key.

3. Select the desired satellite in the setting field with the ◄ and ► keys.

4. Go to LNB FREQ and select the value for the used LNB. You can also change the LNB frequencies with the blue FUNCTION key.

Possible Values for LNB Frequency (MHz)		
5150	10600	Universal (9750 - 10600)
5750	10700	UnicableA (9750 - 10600)
5950	10750	UnicableA (10200)
9750	11250	UnicableB (9750 - 10600)
10000	11300	UnicableB (10200)
10050	5150 - 5750	
10450	5750 - 5150	

5. If you use a multifeed antenna, go to DiSEqC1.0 and select the port for the selected satellite. You can also change the DiSEqC1.0 port with the yellow FUNCTION key.

6. If you can receive signals from more than four satellites, select DiSEqC1.1[4] and set the port for the selected satellite. Factory setting is Disable.

7. Go to TRANSPONDER and use the ◄ and ► keys to select the transponder, broadcasting the channel, which you will use to adjust your antenna. Signal strength and signal quality (of the selected transponder) are displayed at the bottom of the screen. Alternatively, go to TRANSPONDER, press the OK key, and select the corresponding transponder from the list. Confirm by pressing OK again.

8. Turn the dish until the LOCK LED illuminates, or the bar graph displays signal strength and signal quality. If the LOCK LED illuminates, there is also an audible signal.

Note: In the menu OSD SETTING → BEEPER you can turn the audible signal on or off.

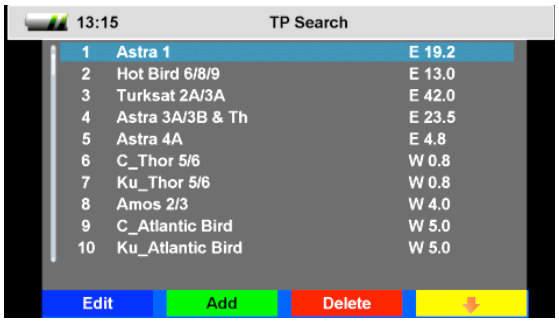
9. Move the reflector to the position with the best signal strength.

10. Vary the angle of inclination until the bar graph displays higher signal strength and quality.

11. Press the EXIT key several times to get to TV mode. In the info window at the bottom of the screen, signal strength (S), signal quality (Q), FEC, VBER (bit error rate after Viterbi), and MER (modulation error rate) are shown.

12. Move the reflector to the position with the best VBER quality. The VBER value with good reception is 10E-8 (almost 0). Higher VBER is indicative of poor signal.

6. MENU TP SEARCH



Select the menu TP SEARCH and press the OK key. A list of the stored satellites is displayed.Ten satellites are shown on each page. To view all stored satellites, use the ▲ and ▼ keys.

6.1 Renaming a Satellite

1. Select the satellite that you would like to rename in the list with the ▲ and ▼ keys.

2. Press the blue FUNCTION key (Edit) and a screen keyboard will display.

3. Give a new name to the satellite. Use the cursor cross to navigate through the characters and confirm your selection by pressing the OK key.

4. Repeat Step 3 until your desired name is complete.

- Press the blue FUNCTION key (Delete) to delete the currently selected character.
- Press the yellow FUNCTION key (CAPS) to switch between upper and lower case characters.
- Press the red FUNCTION key (Cancel) to discard the changes made thus far and to close the window RENAME.
- Press the green FUNCTION key (OK) to accept the changes made thus far and to close the window RENAME.

6.2 Adding a Satellite

1. Press the green FUNCTION key (Add) and a screen keyboard will display.

2. Give a name for the new satellite. Use the cursor cross to navigate through the characters

3. Repeat until you have the desired name.

- Press the blue FUNCTION key (Delete) to delete the selected character.
- Press the yellow FUNCTION key (CAPS) to switch between upper case and lower case.
- Press the red FUNCTION key (Cancel) to discard the changes made thus far and to close the window RENAME.
- Press the green FUNCTION key (OK) to accept the changes made thus far and to close the window RENAME.

6.3 Deleting a Satellite

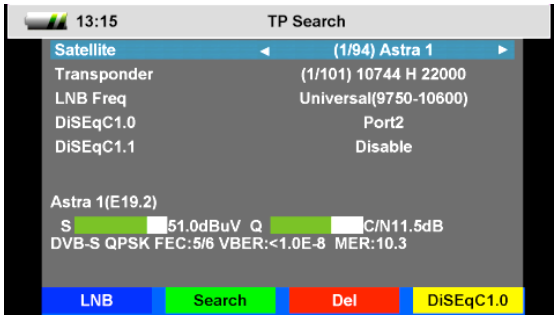
1. Select the satellite you would like to delete from the list with the ▲ and ▼ keys.

2. Press the red FUNCTION key (Delete).

3. Use the ◄ and ► keys to highlight Yes and confirm with the OK key to delete the satellite from the list. Highlight No and confirm with the OK key to return to the menu TP SEARCH without deleting the satellite.

6.4 Searching for a Transponder

*NOTE: The transponder list of a new satellite will be empty. See section **6.6 Adding a New Transponder** to add transponders to a satellite.*



1. Use the ▲ and ▼ keys to select the satellite you would like to search for a transponder.

2. Press the OK key.

3. Use the ◄ and ► keys to change the satellite.

4. Go to LNB FREQ and select the value for the LNB in use. The possible values are listed in section **5. ALIGNING THE SATELLITE DISH.** You can also change the LNB frequencies by using the blue FUNCTION key.

5. If you use a multifeed antenna, go to DiSEqC1.0 and select the port for the selected satellite. You can also change the DiSEqC1.0 port with the yellow FUNCTION key.

6. If you can receive signals from more than four satellites, select DiSEqC1.1 and set the port for the selected satellite. Factory setting is Disable.

6.5 Deleting a Transponder

1. In the sub menu TP SEARCH, select the satellite whose transponder you would like to delete using the ▲ and ▼ keys and press the OK key. Use the ◄ and ► keys to change the satellite.

2. Using the ▲ and ▼ keys, select the line TRANSPONDER and press the OK key.

3. Select the transponder you would like to delete with the ▲ and ▼ keys and then press the OK key.

4. Press the red FUNCTION key (Delete).

5. Use the ◄ and ► keys to highlight Yes and confirm with the OK key to delete the transponder from the list. Highlight No and confirm with the OK key to return to the menu TP SEARCH without deleting the transponder.

6.6 Adding a Transponder

1. In the sub menu TP SEARCH, select the satellite that you would like to add a transponder to using the ▲ and ▼ keys and press the OK key. Use the ◄ and ► keys to change the satellite.

2. Using the ▲ and ▼ keys, select TRANSPONDER and press the OK key.

3. Using the ▲ and ▼ keys, select NEW TP in the list and press the OK key to open the window ADD TP.

- Select FREQUENCY with the ▲ and ▼ keys and use the numeric keys to enter the frequency of the new transponder in MHz.
- Select SYMBOL RATE with the ▲ and ▼ keys and use the numeric keys to enter the symbol rate of the new tranponder in kS/s.
- Select POLARITY with the ▲ and ▼ keys and input the polarization of the new transponder using the ◄ and ► keys (H = Horizontal, V = Vertical).

4. Press the green FUNCTION key (Ok) to confirm th new transponder.

6.7 Searching Channels

1. In the TP SEARCH sub menu, select the satellite with the transponder that you would like to search for available channels and press the OK key.

2. Go to TRANSPONDER and use the ▲ and ▼ keys to select the transponder that you would like to search for available channels and press the OK key.

3. Go to LNB FREQ and select the correct value for the LNB being used. The possible values are listed in section **5. ALIGNING THE SATELLITE DISH.** You can also change the LNB frequencies with the blue FUNCTION key.

4. If you use a multifeed antenna, go to DiSEqC1.0 and select the port for the selected satellite. You can also change the DiSEqC1.0 port with the yellow FUNCTION key.

5. If you can receive signals from more than four satellites select DiSEqC1.1 and set the port for the selected satellite. Factory setting is Disable.

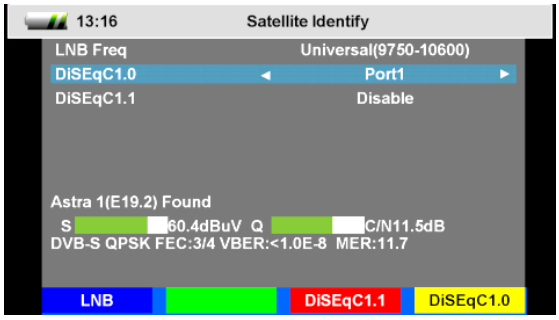
6. Press the green FUNCTION key to go to the search window.

- Select ONLY FTA[3] to determine if a scan should be made only for FTA channels (Yes) or (No).
- Select SCAN CHANNEL if you want to perform a scan only for TV channels, only for radio channels, or for TV and radio channels.
- Select NETWORK SEARCH if you want to search for an individual channel (No) or all channels of a channel network (Yes), such as PRO7, SAT1, KABEL1, or SIXX.
- Press the OK key to begin the channel search.
- Press the red FUNCTION key to stop the search at any time. Discovered programs are attached to the end of the channel list.

[3]FTA = Free to Air, unencrypted channels

7. MENU SATELLITE IDENTIFY

SATELLITE IDENTIFY uses the transponder lists stored in the HD SATELLITE METER



1. In TV mode, press the MENU key, or navigate to the main menu.

2. Select the sub menu SATELLITE IDENTIFY and confirm by pressing the OK key.

3. Go to LNB FREQ and select the correct value for the LNB in use. The possible values are listed in section **5. ALIGNING THE SATELLITE DISH.** You can also change the LNB frequencies with the blue FUNCTION key.

4. If you use a multifeed antenna, go to DiSEqC1.0 and select the port for the selected satellite. You can also change the DiSEqC1.0 port with the yellow FUNCTION key.

5. If you can receive signals from more than four satellites, select DiSEqC1.1 and set the port for the selected satellite. You can also change the DiSEqC1.1 port with the red FUNCTION key. Factory setting is Disable.

You can see which satellite is currently received on the display screen, as well as the signal strength and quality.

8. MENU PACKET CONTROL

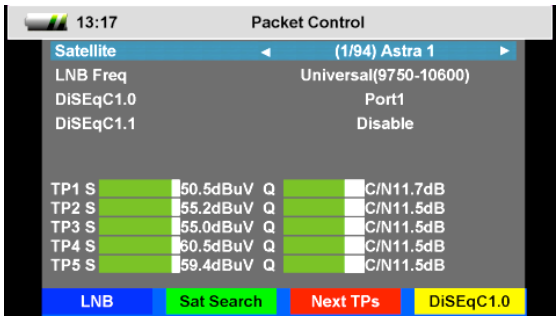
In this menu, you will have the ability to display signal strength and quality of five consecutive transponders and perform a channel search.

8.1 Showing Measurement Values of Five Transponders

1. In TV mode, press the MENU key, or navigate to the main menu.

2. Select with the cursor cross the sub menu PACKET CONTROL and confirm with the OK key.

3. Navigate through SATELLITE with the ◄ and ► keys to display the corresponding transponders.



4. Go to LNB FREQ and select the correct value for the LNB in use. The possible values are listed in section **5. ALIGNING THE SATELLITE DISH**. You can also change the LNB frequencies with the blue FUNCTION key.

5. If you use a multifeed antenna, go to DiSEqC1.0 and select the port for the selected satellite. You can also change the DiSEqC1.0 port with the yellow FUNCTION key.

6. If you can receive signals from more than four satellites, select DiSEqC1.1 and set the port for the selected satellite. Factory setting is Disable.

You can see the signal strength (S) and quality (Q) of five consecutive tansponders in the transponder list. Press the red FUNCTION key (Next TPs) to display the values of the next five transponders in the list.

8.2 Searching Channels

1. Press the green FUNCTION key to open the window SINGLE SATELLITE SEARCH where you can search for channels on one satellite. You can also reach this window by pressing the SCAN key.

- Select the satellite you want to perform the scan on by using the ◄ and ► keys.
- Select ONLY FTA[4] to determine if a scan should be made only for FTA channels (Yes) or for all channels (No).
- Select SCAN CHANNEL if you want to perform a scan only for TV channels, only for radio channels, or for TV and radio channels.
- Select NETWORK SEARCH if you want to search for an individual channel (NO) or all channels of a channel network (Yes), such as PRO7, SAT1, KABEL1, or SIXX. NETWORK SEARCH is only active if you selected SCAN MODE PRESET SCAN.
- Use SCAN MODE to select the type of scan you want to perform.
    - PRESET SCAN (Standard Scan) considers only the frequencies included in the TP list of the corresponding satellite.
    - AUTO SCAN (Blind Scan) considers all frequencies, regardless of whether they are included in the TP list.
- Press the green FUNCTION key to begin the channel scan. Press the red FUNCTION key to stop the search at any time.

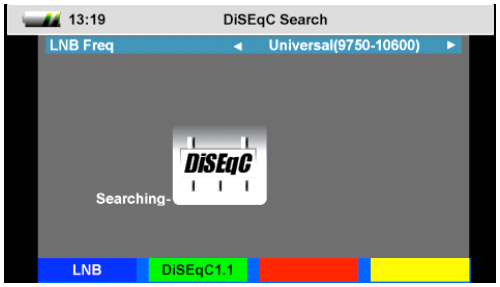
[4]FTA = Free to Air, unencrypted channels

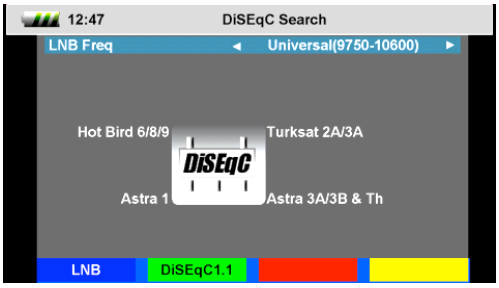
9. MENU DiSEqC SEARCH

In this menu you can scan the DiSEqC switch. This will enable you to see on which port each satellite is received.

1. In TV mode, press the MENU key, or navigate to the main menu.

2. Select the sub menu DiSEqC SEARCH and press the OK key.





The DiSEqC search begins automatically. In succession, all four DiSEqC1.0 ports are scanned. After completing the scan, the display may look like the image above right.

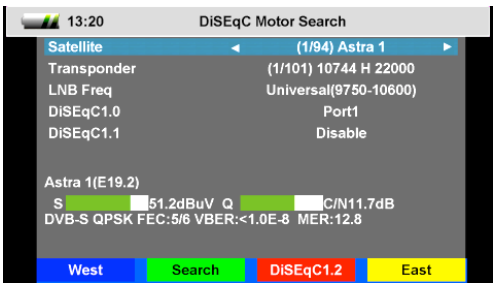
- Press the blue FUNCTION key (LNB) to select the correct value for the LNB in use.
- If you can receive signals from more than four satellites, press the green FUNCTION key to switch between DiSEqC1.0 and DiSEqC1.1.

10. MENU DiSEqC MOTOR SEARCH (Polar Mount Antennas Only)

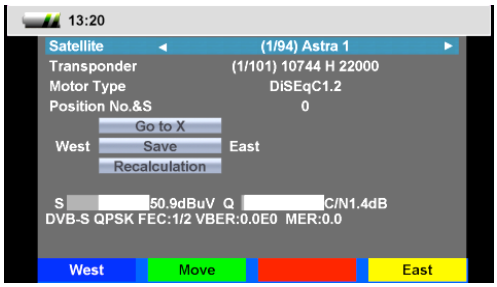
This menu is used to set up a motorized antenna and its control system. In all menu windows (moving dish) you see signal strength denoted as S and quality as Q.

1. In TV mode, press the MENU key, or navigate to the main menu.

2. Select the sub menu DiSEqC MOTOR SEARCH and press the OK key.



- Press the blue FUNCTION key to turn the satellite dish to the west.
- Press the yellow FUNCTION key to turn the satellite dish to the east.
- Press the green FUNCTION key to begin a channel search for the current transponder. See section **6.7 Searching Channels**. Because you are using DiSEqC1.2 or USALS for the antenna control, you can typically ignore the lines DiSEqC1.0 and DiSEqC1.1. There are special cases, such as cascading of DiSEqC switches, that require both DiSEqC1.2 and DiSEqC1.1.
- Press the red FUNCTION key to set the details for the motor control.
    - Navigate through SATELLITE to display the satellite's settings below using the ◄ and ► keys.



- Select TRANSPONDER to set the transponder which should be a reference for the antennna position, typically the transponder that broadcasts your favorite channel.
- Select MOTOR TYPE to set the control technique. Choose between DiSEqC1.2 and USALS, depending on the motor being used. Different settings are available based on this choice.

10.1 DiSEqC 1.2

1. Select POSITION NO & SAVE to set a position number that the current satellite, or current antenna position, will be saved as.

2. Select GO TO X to choose a position to start the settings. The value REFERENCE is the zero position.

3. Select SAVE and move the dish with the ◄ and ► keys to the west or east. Look for the maximum values of signal strength and quality that display at the bottom edge of the screen.

4. Press the OK key to save the discovered position. If necessary, repeat the above steps for additional satellites or transponders.

5. Select RECALCULATION and press the OK key to discard all settings and redefine the antenna positions. A query window will display. Confirm the deletion with the green FUNCTION key (Yes) or cancel with the red FUNCTION key (No).

10.2 USALS

1. Select LOCAL LONGITUDE to enter the longitude of your antenna's position with the numeric keys.

2. Select LOCAL LATITUDE to enter the latitude of your antenna's position with the numeric keys.

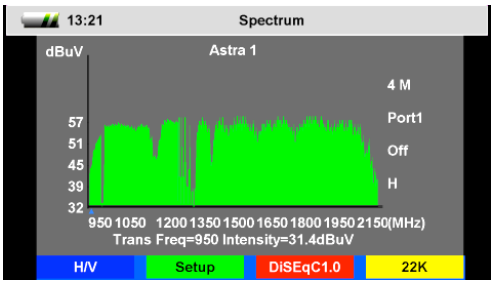
11. MENU SPECTRUM

In this sub menu, you can check the various transponders across the entire spectrum.

1. In TV mode, press the MENU key, or navigate to the main menu.

2. Select the sub menu SPECTRUM and confirm with the OK key.

- Press the blue FUNCTION key to switch the polarization between horizontal (H) and vertical (V).
- Press the green FUNCTION key to change the sample rate:
  - 4 M = Very exact scan
  - 8 M = Middle precision
  - 16 M = Less precise



NOTE: The more accurate the scan, the longer it takes to capture the entire frequency range.

3. Press the red FUNCTION key to select the DiSEqC port and the satellite.

4. Press the yellow FUNCTION key to set the 22 kHz control voltage for the switch between high band and low band. The permanent settings are required for certain antenna systems or to avoid interferences.

ON = Permanent on
OFF = Permanent off
AUTO = Automatic

12. MENU WATCH PROGRAM

To check the TV reception, you can put the HD METER in TV mode.

1. In the main menu, select the sub menu WATCH PROGRAM and confirm with the OK key or press EXIT in the main menu to switch to TV mode.

NOTE: After switching the HD SATELLITE METER on for the first time, or after resetting to factory settings, no programs will be stored and the channel list will be empty. An error message, "No Channel!" will display.

2. In addition to the live TV picture and info bar, the following information will also be displayed:

- Satellite, current date, and current time
- Position in the current channel list, channel name with video PID, audio PID, PCR PID
- Transponder data: frequency, symbol rate, polarization
- Error correction rate (FEC)
- Transmission standard, modulation
- Bit error rate VBER (bit error rate after error correction)
- Modulation error rate (MER): all signal disturbances are summarized to one measurement value. The higher the MER value, the better the signal quality. The MER can be worsened by these factors: noise (C/N), low frequency hum (50/100 Hz), inter modulation errors (overridden amplifiers), I/Q modulation errors (phase/amplitude), signal overlap (DECT phone), standing waves (damaged or unfavorably mounted cables).
- Signal strength (S) and quality (Q)

3. Press EXIT to open a toolbar in place of the info bar.

4. Press the blue FUNCTION key (Information) to open the info bar.

5. Press the green FUNCTION key (Full Screen) to close the toolbar and to show only live TV.

6. Press the red FUNCTION key (Mute) to switch off the TV sound.

7. Press the yellow FUNCTION key (Audio) to select the audio mode.

- Use the ◄ and ► keys to navigate through the Left, Right, Stereo, and Mono options.
- Use the ▲ and ▼ keys to select another language or Dolby AC3 (Dolby Digital).

NOTE: When selecting AC3, there is no TV sound. This option is solely for verifying programs and channels.

12.1 Selecting a Channel

You have several options when selecting a channel:

- Direct channel selection
- Channel selection via selection window
- Channel selection via search function

12.1.1 Direct Channel Selection

Select the desired channel by using the ▲ and ▼ keys. With each change of channel, a window will display with the current channel's information.

12.1.2 Channel Selection via Selection Window

1. Press the OK key to display a selection window with all available channels.

2. Select the desired channel from the list by using the ◄ and ► keys. You can choose between a channel list for all satellites, channel lists for each satellite, and your favorites lists.

NOTE: You can create favorites lists only with the channel list editor.

3. Select the channel to be displayed by using the ▲ and ▼ keys and confirm the selection by pressing the OK key. The channel will be switched accordingly.

12.1.3 Channel Selection via Search Function

1. Press the FIND key to open the on screen keyboard.

2. Select a character using the cursor cross and confirm each character by pressing the OK key.

3. When the first selected character is confirmed, a second window will display showing all channels beginning with this letter. Typically, the first character is a letter. Press EXIT to close the FIND window once you are finished. You can now select the desired channel in the remaining window by using the ▲ and ▼ keys. Confirm the selection by pressing the OK key.

4. Enter additional characters, Step 2, to further limit channel selection.

12.2 Sorting the Channel List

1. In TV mode, press the OK key.

2. Press the blue FUNCTION key (Sort) to open a window for determining sorting criteria.

- Select Name (A-Z) to sort the channel list in ascending alphabetical order.
- Select Name (Z-A) to sort the channel list in descending alphabetical order.
- Select Free/Scramble to list all free channels first, then all encrypted channels in the channel list.

3. Press OK to confirm.

4. Press the yellow FUNCTION key (Play) to return to TV mode.

12.3 Switching Between TV Channel List and Radio Channel List

1. In TV or Radio Mode, press the OK key.

2. Press the green FUNCTION key (TV/Radio) to switch between the TV channel list and radio channel list.

3. Press the yellow FUNCTION key (Play) to return to TV mode or Radio mode.

12.4 Deleting a Channel from the Channel List

1. In TV mode, press the OK key.

2. Select the channel from the channel list that you would like to delete using the ◄ and ► keys. If necessary, switch between the TV channel list and Radio channel list.

3. Select the channel that you would like to delete using the ▲ and ▼ keys.

4. Press the red FUNCTION key (Delete) to delete the channel and open a safety query.

- Press the green FUNCTION key (Yes) to complete the deletion.
- Press the red FUNCTION key (No) to cancel the deletion and return to the channel list.

5. Press the yellow FUNCTION key (Play) to return to TV mode.

13 MENU SETTINGS

1. In TV mode, press the MENU key or navigate to the main menu.

2. Select the sub menu SETTINGS and press the OK key to open the OSD SETTINGS window.

13.1 Hiding the OSD

Select OSD TIMEOUT to set the number of seconds the OSD will display using the ◄ and ► keys. You can select a value between 1 and 10 seconds. The factory setting is 3 seconds.

13.2 Switching Off the Screen

Select BACK LIGHT OFF to set the number of minutes until the screen will switch off using the ◄ and ► keys. You can select values between Off and 30 Minutes. Factory setting is 5 minutes.

13.3 Setting Display Brightness

Select BACK LIGHT LEVEL to set the display brightness using the ◄ and ► keys. You can select values between 1 (Dark) and 5 (Bright). Factory setting is 5.

13.4 Selecting Energy Unit

Select ENERGY UNIT to set which unit of measure you would like the voltage to display during a spectrum analysis using the ◄ and ► keys. You can choose between dBm and dBµV. Factory setting is dBµV.

13.5 Setting Volume Level

Select VALUE to set the level of TV and beeper sound using the ◄ and ► keys. You can select values between 10 and 100. Factory setting is 50.

13.6 Switching On/Off the Beeper

Select BEEPER to set the beeper On or Off when a signal is found using the ◄ and ► keys. Factory setting is On.

13.7 Activating the Automatic Standby Function

Select AUTO STANDBY to switch On or Off the automatic standby function using the ◄ and ► keys. If turned On, the meter will go into standby mode once your selection is confirmed. You can select values between Off and 3 hours. Factory setting is 3 hours.

13.8 Selecting the OSD Language

Select LANGUAGE to set the OSD language using the ◄ and ► keys. Factory setting is English.

13.9 Restoring Factory Settings

Select FACTORY SETTINGS and press the OK key to restore the factory settings. Press the green FUNCTION key (YES) to complete the restore or press the red FUNCTION key (NO) to cancel the restore and return to the menu window.

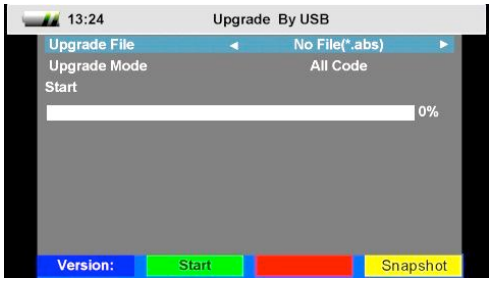
NOTE: A factory reset will erase all of the channels in your channel list

14. MENU PC UPDATE

The sub menu PC UPDATE is used to update the operating software via the USB port.

1. In TV mode, press the MENU key or navigate to the main menu.

2. Select the sub menu PC UPDATE and press the OK key to open the UPGRADE BY USB window.



14.1 Showing the Software Version

Press the blue FUNCTION key (Version) to display the software and hardware version of your HD SATELLITE METER.

14.2 Performing a Software Upgrade

CAUTION

- Make sure that the HD SATELLITE METER is supplied with power during the upgrade.
- During the update, supply the HD METER with electrical power with the power supply unit.

1. Look for the current software release packed as a zip archive in the support area.

2. Unpack it and save the file with the extension *.abs on your USB disk.

3. Connect the USB disk to the HD METER.

4. Select the line UPGRADE FILE.

5. Select the new software file *.abs. The file must be in the root directory of the connected USB disk.

6. Select the line UPGRADE MODE.

7. Make sure that the UPGRADE MODE is ALL CODE. If necessary, you must change the value by using the ◄ and ► keys. With ALL CODE, the software, current channel list, and the "factory" channel list (default setting is empty) are newly loaded into the HD METER.

8. Use the ▲ and ▼ keys to select START and press the OK key or the green FUNCTION key (Start) to start the upgrade process. You will see a security warning asking if you really want to burn the flash memory.

- Press the green FUNCTION key (Yes) to start the upgrade. After it is completed, the meter will restart.
- Press the red FUNCTION key (No) to cancel the upgrade and return to the window PC UPDATE.

CAUTION

- Never switch off the meter during the upgrade process.

14.3 Editing the Channel List

You can save the channel list of the HD METER on a USB disk, edit it with an apporpriate editor program, and then load it from a USB disk. You can also create a "fixed" channel list that is preserved even after a factory reset.

14.3.1 Saving the Channel List on a USB Disk

1. Select, with a connected USB disk, the line UPGRADE MODE in the UPGRADE BY USB window using the ▲ and ▼ keys. Use the ◄ and ► keys to select the value DUMP. The file name (ending in .abs) appears in the line UPGRADE FILE. The following items are stored in this file:

- Operation software
- Current channel list ("Your channel list")
- "Factory" channel list (Default setting is empty)

2. Select the START button with the ▲ and ▼ keys and press the OK key or the green FUNCTION key (Start) to start saving.

14.3.2 Editing the Channel List with the Editor Program

1. Save the channel list file on your PC.

2. Unzip the zip file into a directory of your choice.

3. Start the program with the channel list editor. The following options are now available:

- Load both your channel list (User Database) or the work list (Default Database) which you previously saved on your USB disk
- Move channels in the channel list
- Edit channel parameters
-Create up to 32 favorites lists
- Save the edited list as an "own" channel list (User Database) as well as a new "factory" list (Default Database) and then load it into your HD METER as User Database or Default Database.

CAUTION

- When delivered, the "factory list" is empty. There are no channels available.

14.3.3 Loading the Channel List from USB

14.3.3.1 Loading the "Own" Channel List from USB

1. Select, with a connected USB disk, the line UPGRADE FILE in the UPGRADE BY USB window using the ▲ and ▼ keys.

2. Select the "channel list file" (*.abs) containing the "own" channel list you want transferrerd to your HD METER using the ◄ and ► keys. This must be located in the root directory of the USB disk.

3. Select the line UPGRADE MODE and select the value USER DATABASE with the cursor cross.

4. Select the line START using the ▲ and ▼ keys and press the OK key or the green FUNCTION key (Start) to start loading.

14.3.3.2 Loading the "Factory" Channel List from USB

1. Select, with a connected USB disk, the line UPGRADE FILE in the UPGRADE BY USB window using the ▲ and ▼ keys.

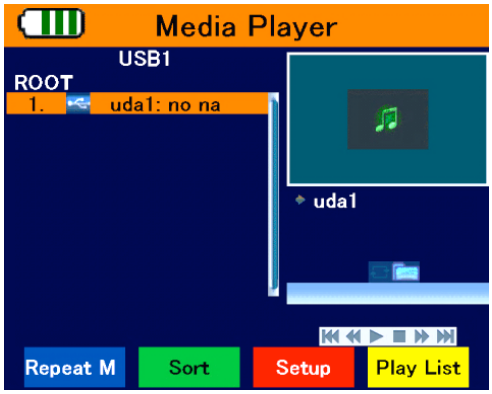
2. Select the "channel list file" (*.abs) containing the "factory" channel list you want transferred to your HD METER using the ◄ and ► keys. This must be located in the root directory of the USB disk.

3. Select the line UPGRADE MODE and select the value DEFAULT DATABASE with the cursor cross.

4. Select the line START and press the OK key or the green FUNCTION key (Start) to start loading.

14.4 Media Player

In the window UPGRADE BY USB, press the yellow FUNCTION key (Media Player) to open the MEDIA PLAYER window. The call of the Media Player is only available when a USB disk is connected.



14.4.1 Playback of a Music File

1. Press the OK key. The present directories and files will be displayed.

2. Select the track to be played using the ▲ and ▼ keys. Press the OK key to open a directory.

3. Press the OK key to start playback .

4. Use the FUNCTION keys to control playback.

- Blue (FB) to fast backward as long as the key is pressed
- Green (Play/Pause) to stop playback and continue at the same position
- Red (FF) to fast forward as long as the key is pressed
- Yellow (Stop) to stop playback

14.4.2 Playback Mode

Press the blue FUNCTION key (Repeat M) to change the playback mode. The corresponding symbol will display on the right half of the screen.

- All tracks in the current directory are played and repeated in the displayed order.

- Single track is played and repeated.

- All tracks in the current directory are played in random order and are then repeated.

14.4.3 Playback of an Image File

1. Press the OK key. The present directories and files will be displayed.

2. Select the image file to be displayed by using the ▲ and ▼ keys (press OK to open a directory). At the right half of the screen, a preview image will be displayed.

3. Press the OK key to switch to full screen mode.

NOTE: By default, the playback mode for images is slide show mode.

14.4.4 Configure a Slide Show

Press the red FUNCTION key (Setup) in the MEDIA PLAYER window to configure a slide show.

1. Select the line SLIDE SHOW TIME with the ▲ and ▼ keys and then select the display time between images (1 to 9 seconds) using the ◄ and ► keys.

2. Select the line SLIDE SHOW REPEAT using the ▲ and ▼ keys and then set whether the slideshow will repeat after displaying the final image using the ◄ and ► keys.

3. Select the line SAVE - CANCEL by using the ▲ and ▼ keys. Determine if the settings should be saved or discarded and select using the ◄ and ► keys. You will be directed back to the image list.

14.4.5 Sorting Files

Press the green FUNCTION key (Sort) in the MEDIA PLAYER window to sort the displayed files. Below are the possible options.

Value	Meaning
Default	The files in the current directory are displayed in the order that they are stored on disk
A - Z	The files in the current directory are displayed in ascending alphabetical order
Z - A	The files in the current directory are displayed in descending alphabetical order
Image	All image files of the current directory are displayed first, followed by all other files
Music	All music files of the current directory are displayed first, followed by all other files

14.4.6 Playlists

14.4.6.1 Creating a Playlist

1. Select a track by using the ▲ and ▼ keys and press the KEY 2 to add this to the regarding playlist (favorite list). A music file will automatically be added to the music playlist, an image file will be added of the image playlist.

2. Press the KEY 0 to add all music files of the current directory to the music playlist.

3. Press the KEY 1 to add all image files of the current directory to the image playlist.

14.4.6.2 Calling for a Playlist

Press the yellow FUNCTION key (Playlist) in the MEDIA PLAYER window to call for the playlists. A query will open with the following options:

- Press the green FUNCTION key (Music) to call for the music playlist.
- Press the red FUNCTION key (Image) to call for the image playlist.

14.4.6.3 Playback Files from the Playlist

1. Select a file to be played/displayed in the MUSIC/IMAGE PLAYLIST window using the ▲ and ▼ keys.

2. Press the green FUNCTION key (Play) to play/display the marked file.

14.4.6.4 Deleting a File from the Playlist

1. Select a file to be deleted in the MUSIC/IMAGE PLAYLIST playlist with the ▲ and ▼ keys.

2. Press the yellow FUNCTION key (Delete) to mark the selected file for deletion.

3. When leaving the window using EXIT, a safety query opens.

- Press the green FUNCTION key (Yes) to complete the deletion.
- Press the red FUNCTION key (No) to cancel the deletion and return to the playlist.

14.4.6.5 Deleting All Files from the Playlist

1. Press the yellow FUNCTION key (Delete) in the MUSIC/IMAGE PLAYLIST window to mark all files for deletion.

2. When leaving the window using EXIT, a safety query opens.

- Press the green FUNCTION key (Yes) to complete the deletion.
- Press the red FUNCTION key (No) to cancel the deletion and return to the playlist.

14.4.6.6 Saving a Changed Playlist

When leaving the MEDIA PLAYER with EXIT, you will be asked whether the changed playlist should be saved to the USB disk.

- Press the green FUNCTION key (Yes) to save the playlist.
- Press the red FUNCTION key (No) to cancel the saving and return to the UPGRADE BY USB window.

15. SAVING A SCREENSHOT

If a USB data storage device is connected to the meter, you can save a screenshot of the display to the data storage device to document measuring values.

Press the  (14) key. A screenshot of the display is saved to the USB data storage device as a bmp file.

16. OPERATION IN A UNICABLE SYSTEM

16.1 About Unicable

The HD SATELLITE METER allows for changing the receiving mode to the unicable standard. This makes it possible, depending on the antenna type, to connect up to eight independent receivers to only one main line.

For this, an own IF channel and a corresponding frequency should be set for each receiver via the settings menu. Allocation of channels and frequencies depends on the used LNBs and/or multiswitches. The data sheet and technical documentation of your LNB and/or multiswitch include an allocation table similar to the following table.

16.2 Allocation of IF Channels and Frequencies

NOTE: You can enter the frequencies of your receiving system into the last column of the table so that all relevant information is readily available. As a guide, highest frequency → shortest cable path.

Receiver	ZF-Kanal	Beispiel-Frequenz (MHz)	Frequenz (MHz)
Receiver 1	1	1284	
Receiver 2	2	1400	
Receiver 3	3	1516	
Receiver 4	4	1632	
Receiver 5	5	1748	
Receiver 6	6	1864	
Receiver 7	7	1980	
Receiver 8	8	2096	

16.3 Installation

1. Select the menu item TP SEARCH and press the OK key.

2. Select a satellite using the ▲ and ▼ keys and press the OK key.

3. Select the line LNB FREQ with the ▲ and ▼ keys.

4. Select the correct value for the Unicable LNB (according to the LNB specs) in use.

5. Select the line DiSEqC1.0 using the ▲ and ▼ keys and switch off the DiSEqC port use. Ensure that DiSEqC1.1 is also disabled using the ◄ and ► keys.

6. Select the line IF CHANNEL with the ▲ and ▼ keys and set the IF channel according to the specs of the unicable system with the ◄ and ► keys.

7. Select the line CENTRE FREQ using the ▲ and ▼ keys and set the frequency according to the specs of the unicable system with the ◄ and ► keys.

17. CLEANING THE METER

CAUTION

-Danger of electric shock during cleaning.
- Before you begin cleaning the meter, disconnect the meter from the power plug. Unplug the power plug from the socket.
- Never use a wet wipe to clean the meter or power plug.
- Ensure that the meter and power plug are always kept dry.

18. TRANSPORTING AND STORING THE METER

If you plan to tranport or stop using the meter, handle the device as follows:

- Disconnect the meter and all connected devices from the power supply.
- Remove the antenna cable from the device.
- Remove all other cables connected to the meter.
- Put the meter, the cables, and the user manual into the original packaging.
- Store the meter and the accessories in a dry and dust-free location.
- Ensure that the meter is protected from frost.

19. TROUBLESHOOTING

If the troubleshooting suggestions do not help to correct a malfunction, please contact Viking Satcom.

Fault	Potential Cause	Solution
Device does not react	The battery is drained	Charge the battery
Poor image quality, block defect	The antenna is not aligned to the satellite, the LNB is defect	Adjust the antenna, replace the LNB
Faint or no signal	Loose cables	Check all cable connections, adjust the antenna
No picture, no sound	Display/Sound is turned off	Turn on the display by pushing the F1 button, turn on the sound by pushing the F2 or ► button

20. DISPOSAL

CAUTION

- Do not dispose of the meter or battery in your normal household waste receptical.
- Ask your municipal authorities how to dispose of the device in an eco-friendly and proper manner.
- Take used batteries to an official collection point.

The WEEE symbol on the product or the product's packaging indicates that this is an electrical or electronic device. By disposing of this product responsibly, you will be contributing to the protection of the environment and the health of individuals around you, as material recycling helps reduce the consumption of raw materials.

The WEEE symbol stands for the Waste Electrical and Electronic Equipment Directive (2002/96/EC). This Directive was introduced to reduce the ever-growing quantity of electronic waste from spent electrical and electronic devices. The aim is to avoid and reduce growing quanitites of electronic waste and to promote eco-friendly disposal of such waste through extended manufacturer responsibilities.

HD Satellite Finder

MTR-SATFIND-HD

VIKING SATCOM

Your Trusted Source for Satellite Equipment

- **Quick Satellite ID**
- **Easy to Operate and Highly Sensitive**
- **Update with lyngsat.com**
- **RF Out, HDMI, and Digitial Audio Features Available**

Specifications	
Voltage	AC 100 V/240 V 50 - 60 Hz
Standby Power Consumption	<1 W
SMPS Type	DC 12 V Adapter
LNB In	F Type, Female
RCA	Audio In, Video In
USB	4 Pin Female USB 2.0
Video Resolution	720 x 576 (PAL) 720 x 480 (NTSC)
CPU Frequency	Dual 400 MHz CPU
Flash Memory	8 MB
SDRAM Memory	128 MB
Tuner Type	SHARP BS2S7HZ7306A
Frequency Range	950 - 2150 MHz
Input Impedance	75 Ω
LNB Power and Polarization	13/18 V, 400 mA Max.
Input Level Range	-65 dBm to -25 dBm
LNB Switch Control	22 kHz
DVBS Decoder DVBS	M3501C
DVBS Demod Standard	ETSI EN 302 307
DBVS Demodulation	QPSK/8PSK/16APSK
DBVS Symbol Rate	QPSK:45Ms/s 8PSK:30Ms/s
DVBS Code Rate	QPSK:1/4,1/3,2/5,1/2,3/5,2/3,3/4,4/5,5/6,8/9,9/10 8PSK:3/5,2/3,3/4,5/6,8/9,9/10 16APSK:2/3,3/4,4/5,5/6,8/9,9/10 H8PSK:1/4,1/3
Weight	0.5 kg
Dimensions	10.5 x 16.8 x 4.7 cm

Features

- **Supports DiSEqC 1.0, 1.1, and 1.2**
- **Supports DVB-S/DVB-S2**
- **Simple Media Player Supports MP3, OGG, BMP, JPG, AVI and MPEG Files**
- **Auto Off Screen and Auto Off Meter Extend Battery Life**
- **Can Save Information for Up to 128 Satellites**
- **Detailed Transponder Information for FEC, C/N, MER, workmode, and modulation**

MTR-SATFIND-HD_REV003

Specifications are subject to change without notice

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