BTPRO-8000S

User Manual

HD Tablet/Touch Signal Analyzer

Professional SAT/TV/CATV/Optical

Stock #	Model Name	Description
4232 S	BTPRO-8000S	HD Tablet/Touch Signal Analyzer

ISO 9001:2015 Certified

P/N: UM8000Sr1 | Rev: 041221

NOTES

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GET TO KNOW YOUR BTPRO-8000 S

FRONT PANEL

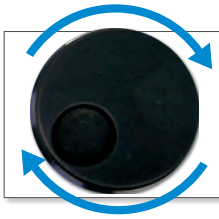
POWER

To turn on press the 'HOME' key.

To turn off press and hold the 'HOME' key

WHEEL

Use the wheel to navigate across the screen and adjust the values



Rotate to select a menu item or to change a value

Press to select a menu item or a numeric field,

Select a menu item, press and hold 2 seconds to display the pop-up menu.

RESET HARDWARE

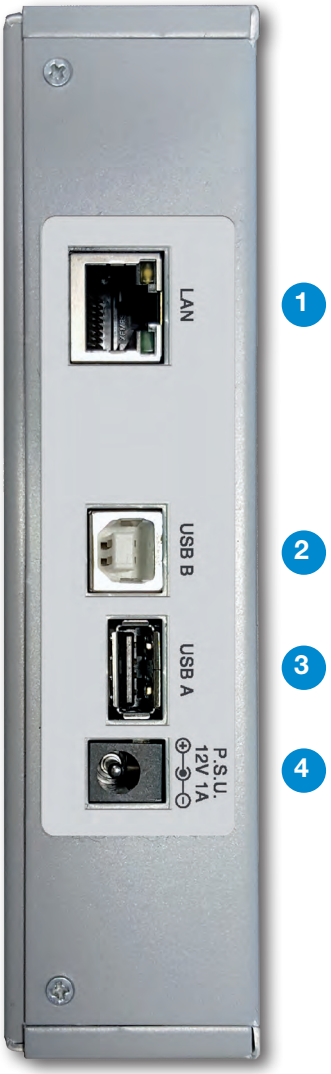
With instrument ON, Keep the "HOME" key pressed for 10" and turn on again.

RESET SOFTWARE

From instrument OFF, Switch on the meter, immediately after keep the "VOLUME" key pressed until a beep is heard.

SIDE PANELS

LEFT SIDE



RIGHT SIDE

TOP SIDE

1. = LAN Ethernet RJ45
2. = USB B SW upgrades
3. = USB A memory stick
4. = Power Supply input (12 V DC - 1A)
5. = Fan
6. = Analog video IN (CVBS)
7. = Remote Power Supply switch DC at RF IN ON/OFF
8. = IF/RF IN “F” 75 Ω
9. = OPTIC IN: SC connector

HOME AND NAVIGATION

“HOME” SCREEN

Press the ‘HOME’ key to go to the home screen, then rotate the wheel to navigate on ‘SAT’, ‘TV’ or ‘CATV’ icons and press the wheel to select the measurement mode required.

Press the ‘HOME’ key at any time to return to the home screen

NAVIGATION

Use the touch screen and the wheel to navigate across the screen and to change values

DISPLAY ZONES

1. tuning parameters
2. live picture
3. measurements
4. channel info
5. transport stream info
6. context sensitive menu

NAVIGATION USING MECHANICAL COMMANDS

How to select from the menus and adjust the value:

- Rotate the wheel and select from the menu required (fig. 1)
- Press the wheel (fig. 2)
- Rotate the wheel to adjust the value (fig. 3)
- Press the wheel and confirm the selection (fig. 4)

Example of TV/CATV channel selection:

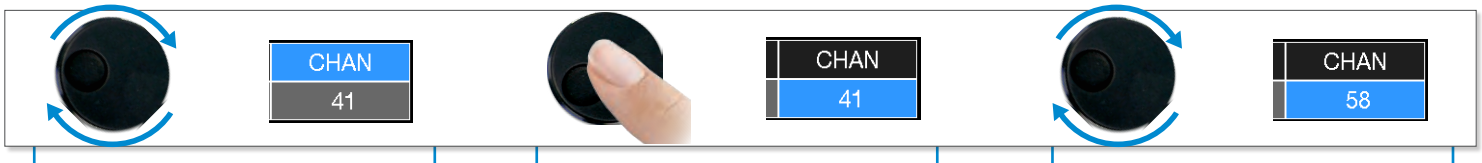


fig. 1 fig. 2 fig. 3

Example of SATELLITE transponder selection (TP/TS):

fig. 1 fig. 2 fig. 3

Example of remote TV-CATV power supply selection (DC&RF):

fig. 1 fig. 2 fig. 3 fig. 4

How to select from the menus and change a value using the drop down menus:

- Rotate the wheel and select the menu required (fig. 1)
- Keep the wheel pressed for 2 seconds to display the drop down menu (fig. 2)
- Rotate the wheel to adjust the value (fig. 3)
- Press the wheel and confirm the selection (fig. 4)

Example of TV/CATV channel selection:

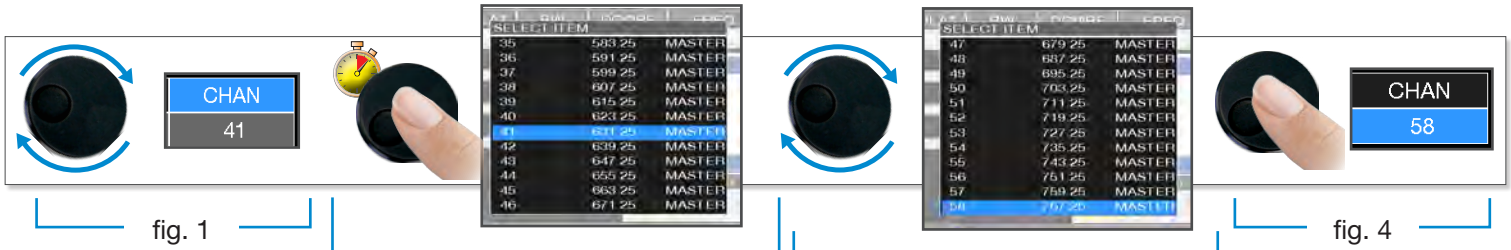


fig. 1 fig. 2 fig. 3 fig. 4

Example of SATELLITE transponder selection (TP/TS):

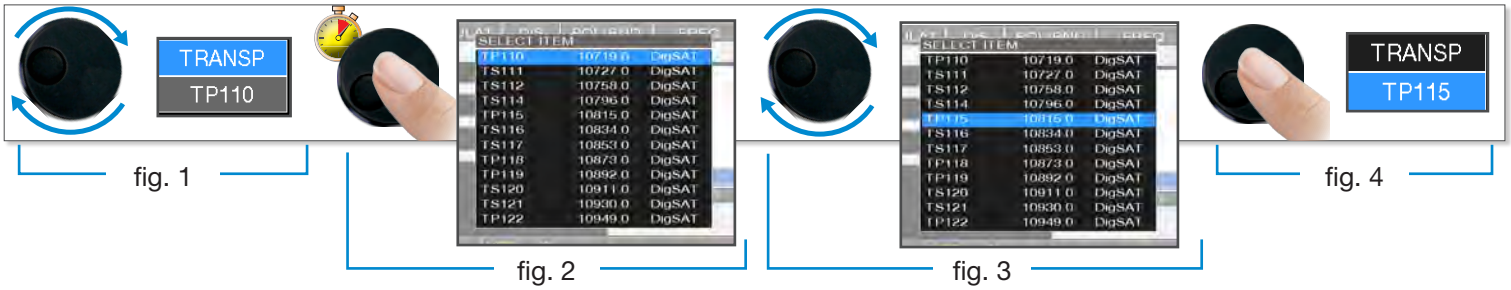


fig. 1 fig. 2 fig. 3 fig. 4

How to select the frequency and set the value using the numerical keyboard:

- Rotate the wheel and select frequency (FREQ) (fig. 1)
- Keep the wheel pressed for 2 seconds to display the keyboard (fig. 2)
- Touch the numbers on-screen to enter the required frequency value. To navigate within the window, rotate the wheel. (fig. 3)
- Finally rotate the wheel and select enter (fig. 4)
- Press the wheel and confirm the selection (fig. 5)

Example of manual frequency (FREQ) selection:

fig. 1

fig. 2

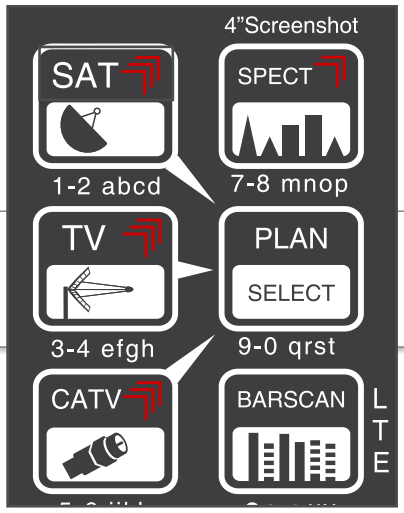


fig. 3

fig. 4

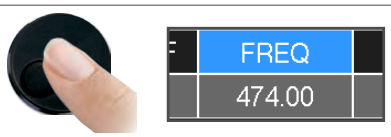


fig. 5

NAVIGATION USING MIXED COMMANDS: MECHANICAL & TOUCH

- Touch a value in the menu (fig. 1)
- Rotate the wheel to adjust the value (fig. 3) or touch the value required (fig.2)
- Press the wheel and confirm the selection (fig.3)
  or touch the monitor outside the drop down menu (fig.3)

Select from the menus and adjust the value using the drop down menu:

- Touch a value in the menu to visualize the drop down menu (fig. 1)
- Rotate the wheel to adjust the value (fig. 2) or touch the value required (fig. 2)
- Press the wheel and confirm the selection (fig. 3),
  or touch the monitor outside the drop down menu (fig. 3)

Example of TV channel selection:

fig. 1

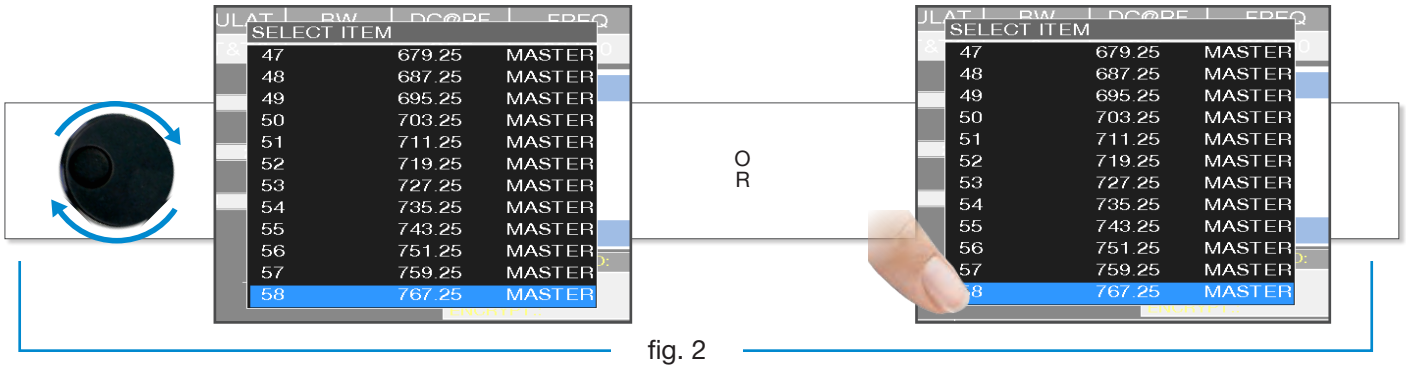


fig. 2

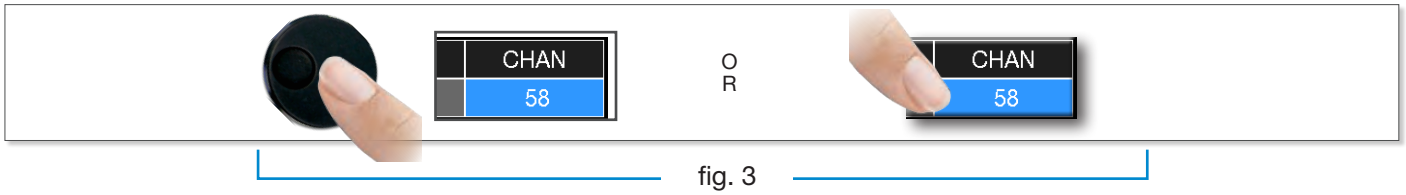


fig. 3

Example of SATELLITE transponder selection (TP/TS):

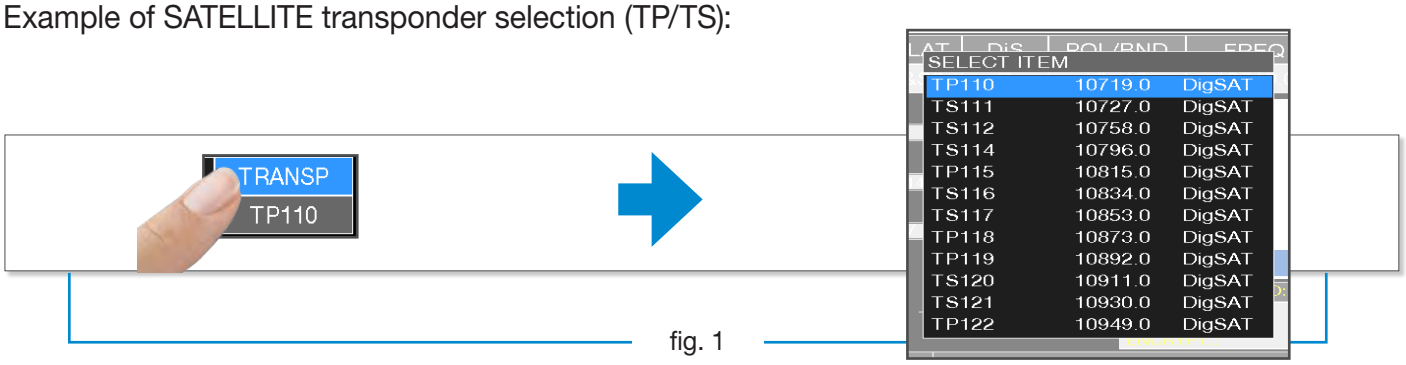


fig. 1

fig. 2

fig. 3

Select the frequency and set the value using the numerical keyboard:

- Touch FREQ to show the menu “INSERT FREQ” (fig. 1)
- Touch the numbers on-screen to enter the required frequency value (fig. 2)
- Finally touch enter and confirm the selection (fig. 3)

Example of manual frequency selection (FREQ):

fig. 1

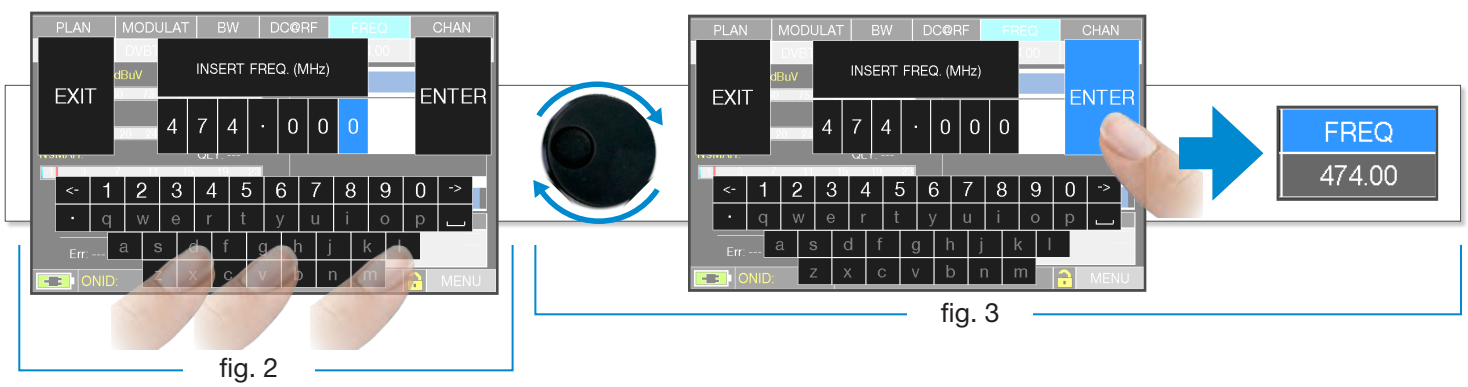


fig. 2 fig. 3

CONFIGURATION

Upon pressing the VOL key, the volume selection is immediately active.

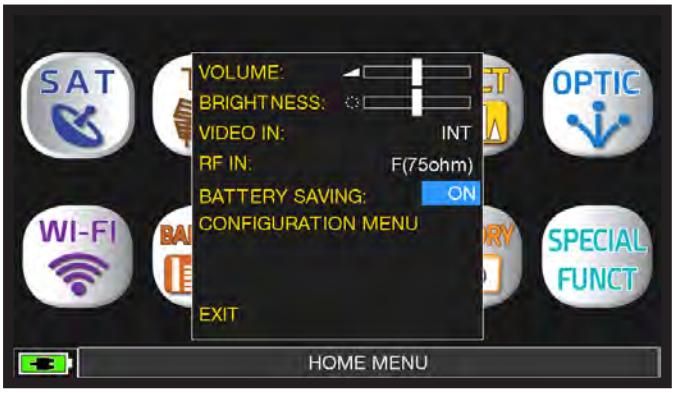
Press “ENTER” to configure the screen display and access other important settings.

VIDEO IN

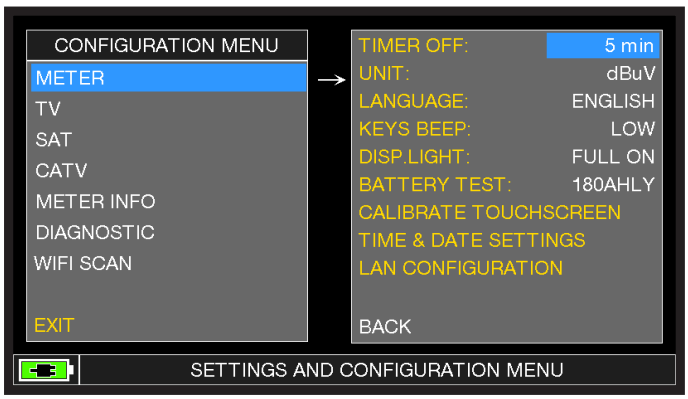
“VIDEO IN” (connector 7): Select “EXT” to visualize an external video source.

BATTERY SAVING AND TIMER OFF

Settings for battery save mode.



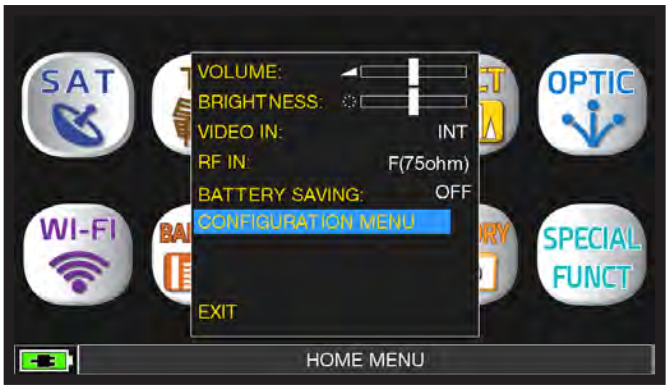
Choose “BATTERY SAVING” from the volume screen. In ON mode, if no key is pressed, after 30 seconds, the display brightness is reduced and after 5 minutes the meter automatically turns off. Press any key to temporarily reset the battery save mode.



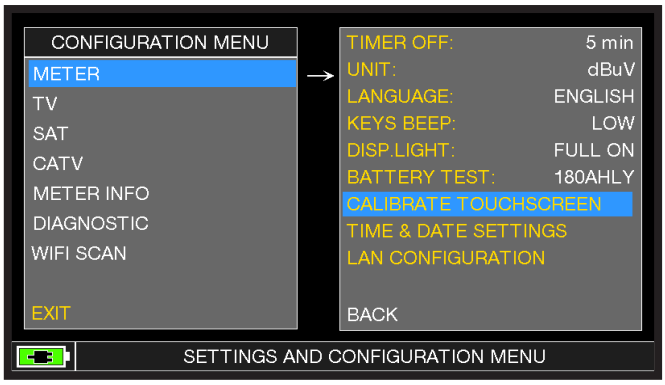
Touch “CONFIGURATION MENU” then “METER” in the volume screen and set the “TIMER OFF” value. The meter will turn off after 5, 10, 15, or 30 minutes of inactivity. Press any key to interrupt the automatic turn-off.

TOUCHSCREEN CALIBRATION

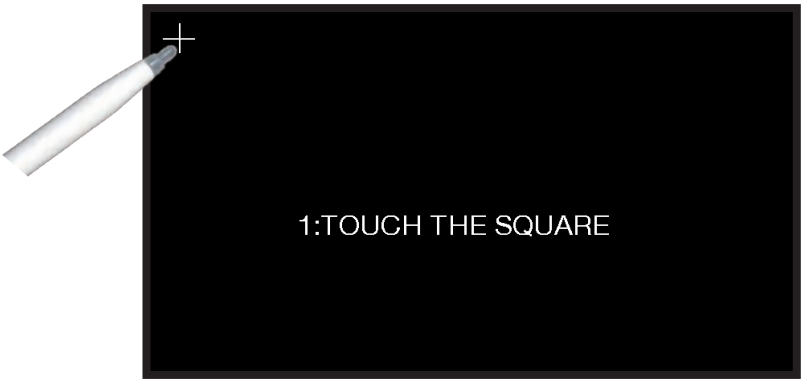
If the touchscreen does not respond to the commands, it may be necessary to calibrate:



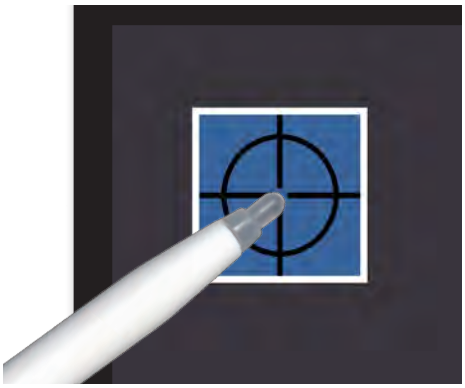
Touch “CONFIGURATION MENU” from the volume window;



Touch “METER” then “CALIBRATE TOUCHSCREEN”;



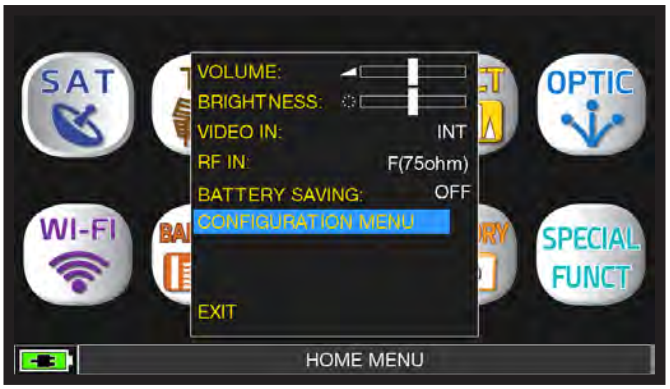
Touch the center of the squares that appear in the corners of the screen, repeat four times for each square.



NOTE: Use the pen and touch the the screen exactly in the center of the circle. If you do not carry out this procedure correctly the touch commands may be inaccurate.

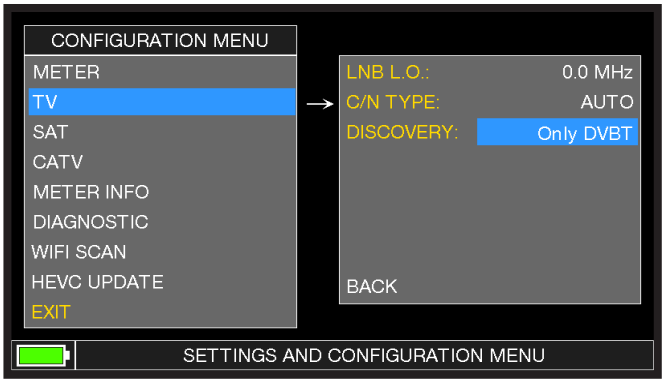
DISCOVERY

Identifies the modulation of a tuned TV channel in the TV master PLAN



To access, touch the “CONFIGURATION MENU” in the VOLUME window.

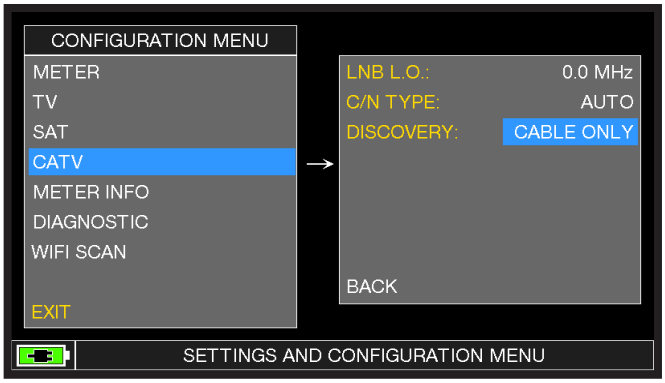
TV MODE



Touch “TV” and then “DISCOVERY” and set the identification mode desired:

- ONLY DVBT (only DVB-T/T2 digital signals);
- DVBT&C +AnTV (DVB-T/T2/C digital signals & analog TV signals);
- DVBT + AnTV (DVB-T/T2 digital signals & analog TV signals).

CATV (CABLE) MODE



Touch “CATV” and then “DISCOVERY” and set the identification mode:

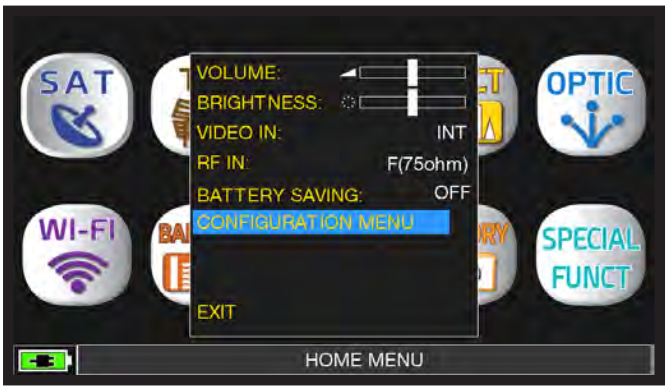
- CABLE ONLY
- TERR & CABLE

NOTES:

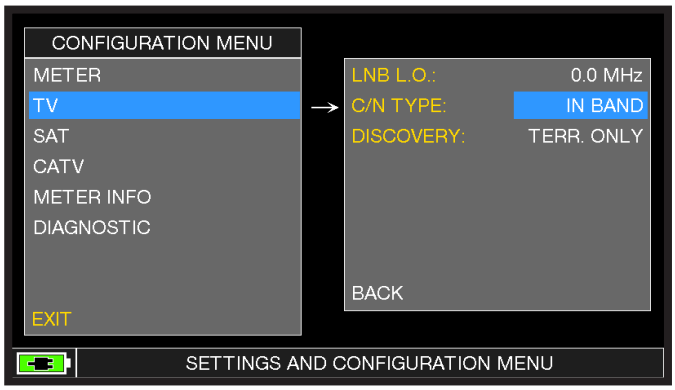
- DISCOVERY mode is active only if the antenna cable is connected to the instrument
- DISCOVERY mode is not active if you use a manual (ManuMemory Mix) or automatic memory plan (Automemory TV)

C/N TYPE

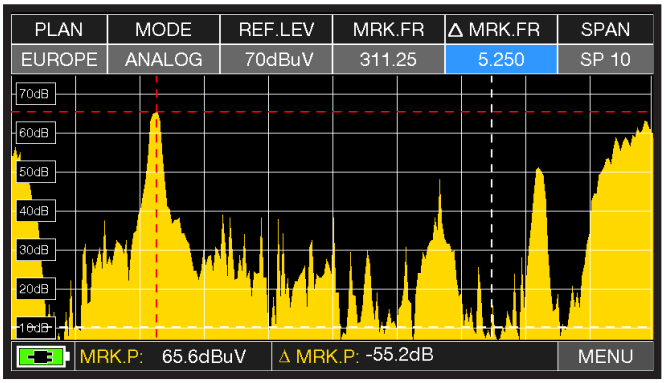
Set the measurement mode of the carrier noise ratio “C/N” (in band-out band).



Touch ‘CONFIGURATION MENU’ from the volume screen.

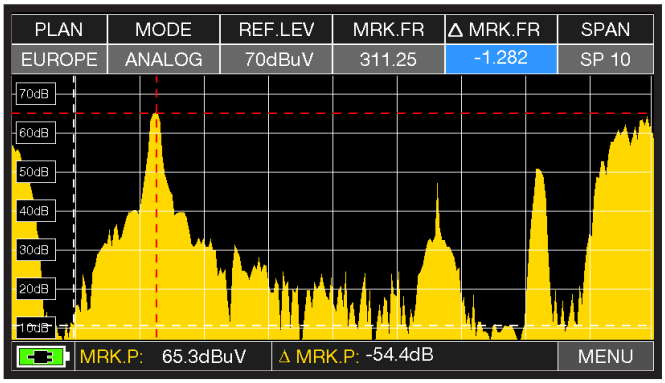


Touch “TV” then “C/N TYPE”.



C/N measurement mode “IN BAND”:

The signal/noise ratio is measured between the signal level of the video carrier (signal/carrier, red marker) and the noise level, estimated in the band between the coloured subcarrier and the audio carrier (white marker).



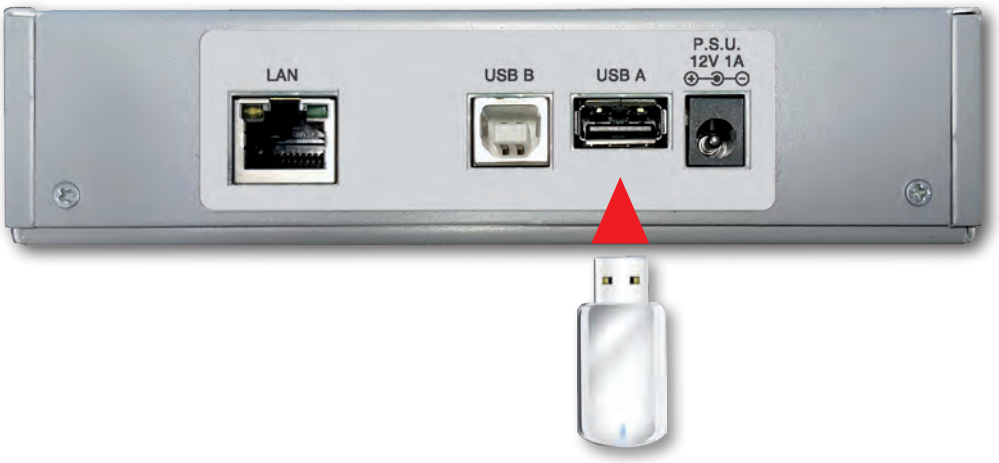
C/N measurement mode “OUTSIDE THE BAND”:

The signal/noise ratio is measured between the signal level of the video carrier (signal/carrier, red marker) and the noise level estimated in the guard band (-1.282 MHz from the video carrier, white marker).

NOTE: The “C/N TYPE” setup is available in TV and CATV mode.

SCREEN SHOT

The “SCREEN SHOT” function allows you to directly save the TFT monitor screens in an external memory.



- Connect an external memory source (not provided) to the USB A socket.
- Set the instrument on the screen to be saved: Spectrum, Measurements, Constellation, Echoes etc.
- Press the SPECT (4” Screenshot) key for 4 seconds keys and wait for file to be saved: the instrument will make a series of beeps.
- Enter in the file name and press ENTER.

N.B.:

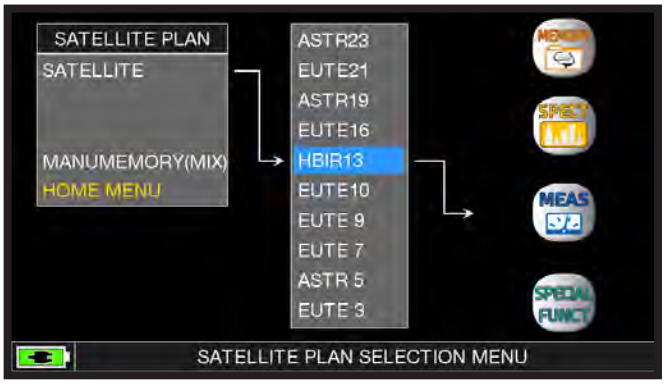
- If the memory is not inserted correctly, or is not recognised, the following message will be shown: “PLEASE INSERT USB MASS STORAGE DEVICE”.
- Full screen picture zooms can not be saved.
- the ENTER command is not active If the file name is already present in the external memory source.
- The files are saved in .bmp (bitmap) format.

SAT MEASUREMENTS

Press the “HOME” key.

o
r

Touch “SAT”, and then “PLAN” or use the wheel to obtain the Satellite list.



Touch to select the desired satellite, or use the wheel. Once selected, touch “MEAS” to display the measurement or “SPECT” to display the spectrum.

NOTE: The chosen Satellite and Transponder will remain in memory if you change mode (TV/CATV) or if you switch off the meter.

DVB-S, DVB-S2 SAT MEASUREMENTS

Press the “HOME” key.

Touch “SAT” and then “MEAS & PICT” or use the wheel.

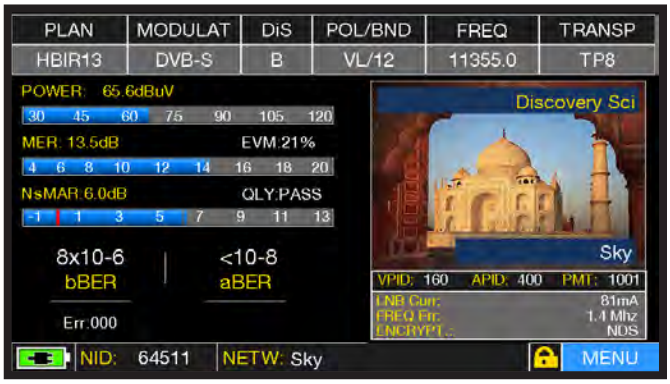
Main measurments and image.

RELATED FUNCTIONS

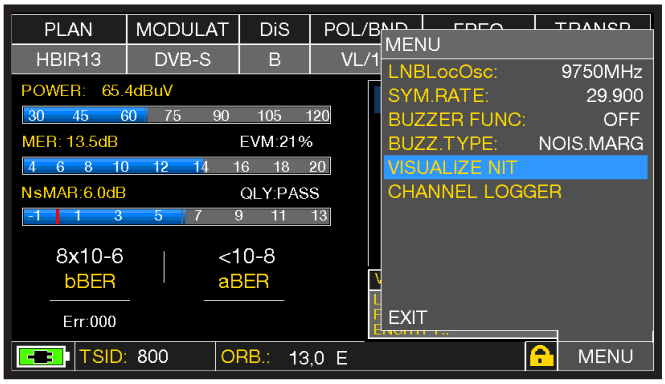
Press repeatedly to navigate into SAT measurements screens: Measure, Constellation.

Press to enter in the spectrum.

VISUALIZE NIT



Touch “MENU” from the “MAIN MEASUREMENTS & PICTURES”.



Touch “VISUALIZE NIT”.

Example 1:

NIT INFO VISUALIZATION

FREQ	POL	SYM.RATE	MODE	TYPE	FEC
11842.0	vert	29900.00	DVB-S2	8PSK	3/4
12731.0	hor	29900.00	DVB-S	QPSK	5/6
11976.0	hor	29900.00	DVB-S	QPSK	5/6
12713.0	vert	29900.00	DVB-S	QPSK	5/6
12616.0	hor	29900.00	DVB-S	QPSK	5/6
12635.0	vert	29900.00	DVB-S	QPSK	5/6
12054.0	hor	29900.00	DVB-S	QPSK	5/6
12034.0	vert	29900.00	DVB-S	QPSK	5/6
11958.0	vert	27500.00	DVB-S	QPSK	3/4
11861.0	hor	29900.00	DVB-S	QPSK	5/6
12465.9	vert	29900.00	DVB-S	QPSK	5/6

BACK

“NIT INFO VISUALIZATION” referring to the HOTBIRD 13° East transponder

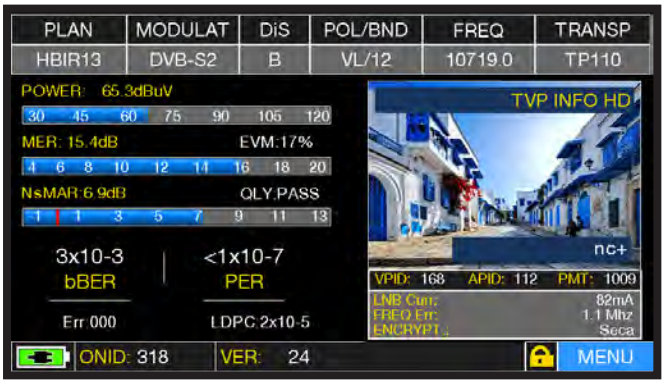
NOTE: The function VISUALIZE NIT is also available in TV & CATV mode.

CHANNEL MONITOR

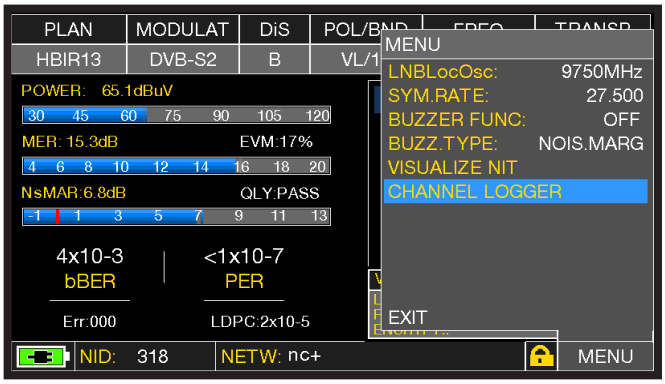
The weekly application of SW CHANNEL MONITOR allows you to control and register the trend of the main parameters of a digital signal over time (from 30 minutes to one week) for the following: TV, CATV, & SAT.

This application is used to resolve reception problems which occasionally occur. It also allows you to measure, memorize and visualize (local or in remote) the following digital signal's parameters tested: DVB-S/T/C = Power, MER, ERROR, bBer, aBer; DVB-S2 / T2 / C2 = Power, MER, ERROR, aBer, Lber, PER, LDCP.

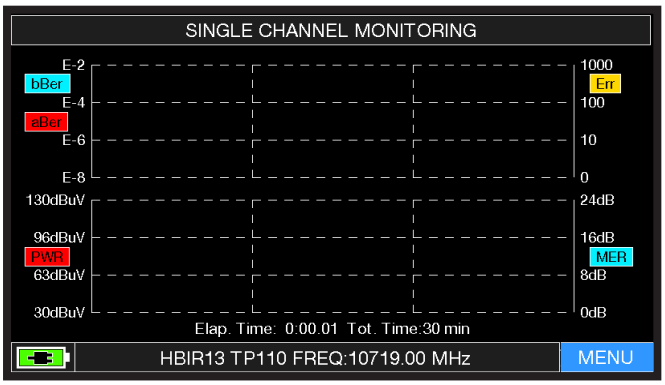
Each registered parameter is graphically represented on the display using different colours for easy identification.



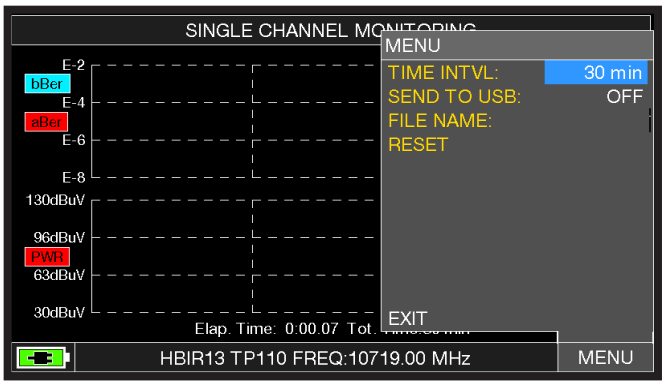
Touch "MENU" from MAIN MEASUREMENTS & IMAGES screen.



Touch "CHANNEL LOGGER".

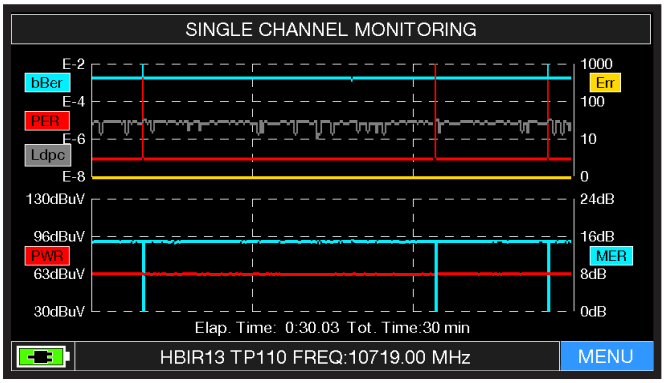


Touch "MENU".



Select the time interval (TIME INTVL) and where you want to store the file, either in the meter's memory, or in the USB memory stick (send to USB-ON), with the relative file name (File name).

Example 1:



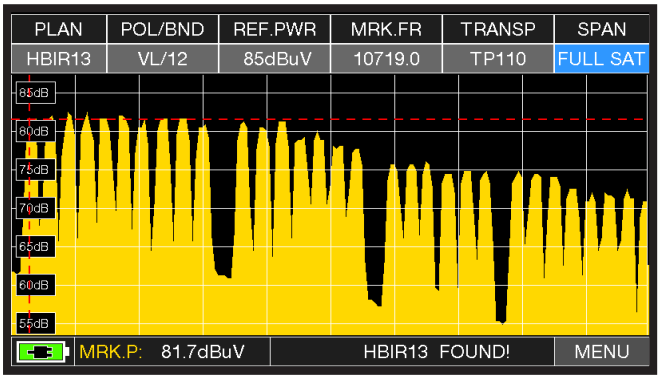
SINGLE CHANNEL MONITORING: 30 minutes.

NOTE: The Channel Monitor function is also available in TV and CATV mode.

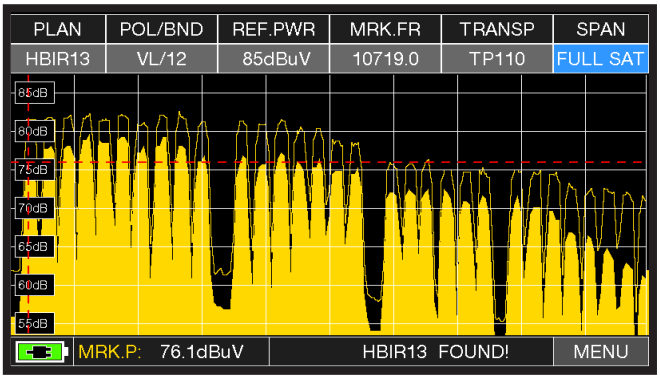
SPECTRUM ANALYZER

Press the “HOME” key.

Touch “SAT” and then “SPECT” or use the wheel.



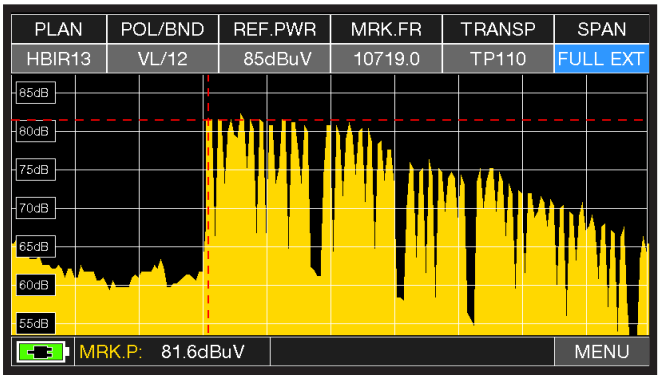
SAT SPAN FULL SAT Spectrum
(from 930 to 2250 MHz).



Press the the SPECT key again to activate
the “MAX HOLD” function.

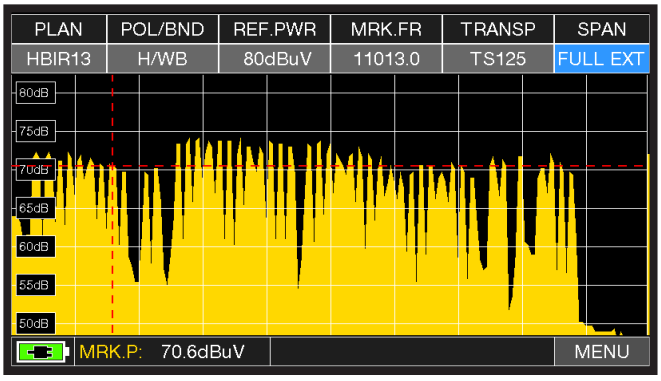
Touch “SPAN” and rotate the wheel to select the SPAN value desired:
10-20-50-100-200-500-FULL SAT-FULL EXT

Example 1:



“SAT” spectrum SPAN FULL EXT
(from 230 to 2610 MHz) with universal LNB.

Example 2:

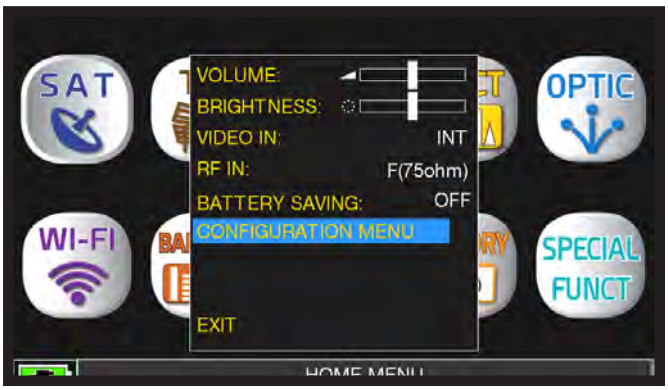


“SAT” spectrum SPAN FULL EXT
(from 230 to 2610 MHz) with LNB WIDE BAND.

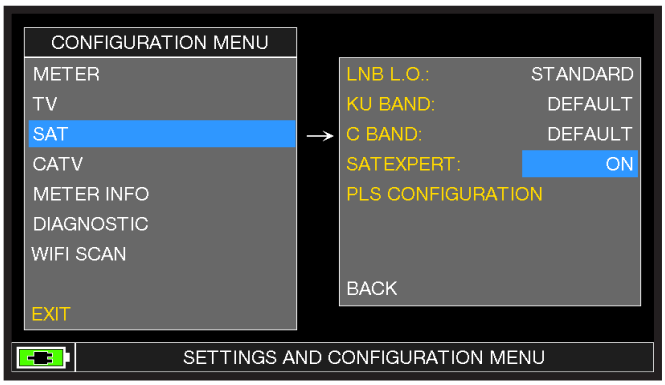
SAT EXPERT

The SATEXPERT SW function (guided satellite tracking function), is a valuable aid for a fast satellite antenna pointing to a wanted satellite.

Through text messages, which appear from time to time on the screen, the measuring instrument will indicate in which direction to move the satellite dish, to the east or to the west, until you reach the wanted satellite.



Touch “CONFIGURATION MENU” from the VOLUME screen

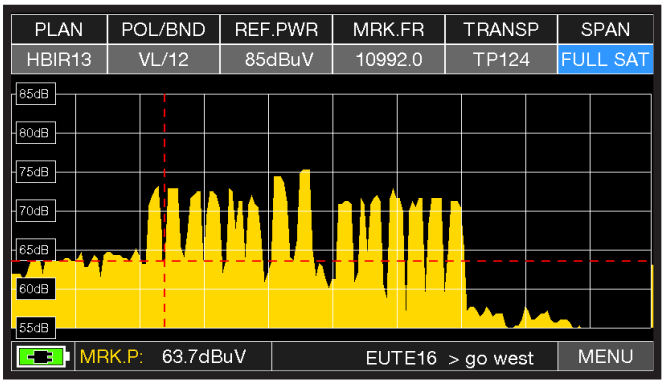


Touch “SAT”, then in “SAT EXPERT” and select “ON”

In SAT mode, press the PLAN key and select the satellite to be pointed, for example HBIR 13. Press the SPECT key, touch “SPAN” and select “Satxprt”.

Here you can find some examples:

Example 1:



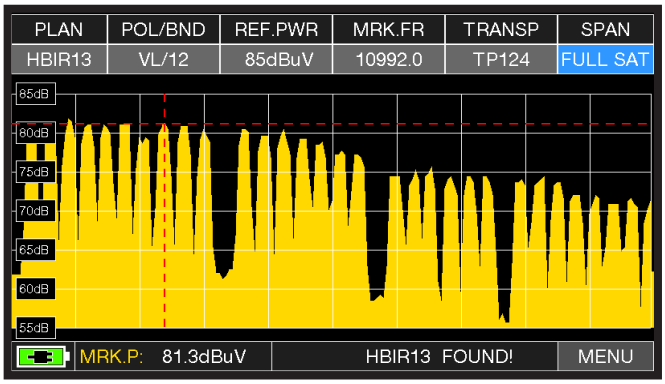
The satellite you have pointed to is not correct.

The lower part of the display shows the following information:

EUTE 16 > GO WEST

(move the satellite dish west).

Example 2:



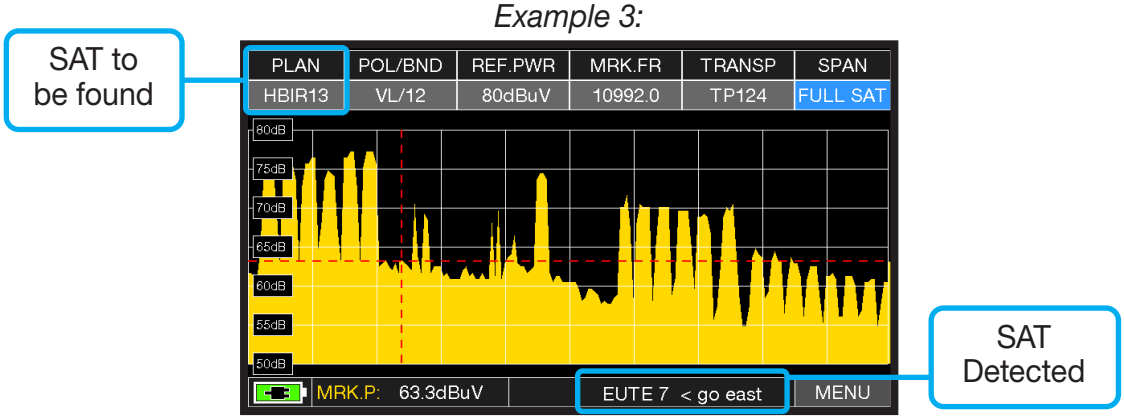
Satellite found.

The lower part of the display shows the following information:

HBIR13 FOUND!

(the satellite that has been pointed is correct)

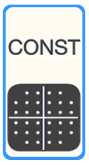
Example 3:



The pointed Salellite is not the correct one.
The lower part of the display shows the following information:
EUTE7 < GO EAST (move the satellite dish EAST).

IMPORTANT: The text messages that from time to time will appear on the screen of the instrument when moving the satellite dish to east or west, are bound to the diameter of the used antenna: 60-80-90 cm etc.

Therefore, using antennas with a small diameter, the messages related to some satellites may not be reported.

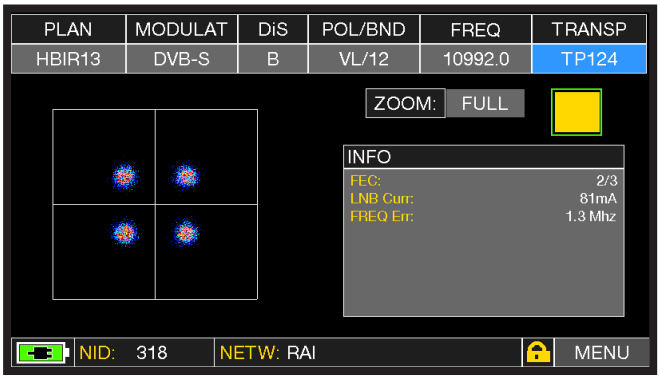


CONSTELLATION ANALYSIS

Press the “HOME” key.

Touch “SAT” and then “CONST” or use the wheel.

Example 1:



QPSK constellation.

Example 2:

8PSK constellation.

Touch “FULL and select the zone of constellation to enlarge.

RELATED FUNCTIONS

Press repeatedly to navigate into SAT measurement screens: Measure, Constellation.

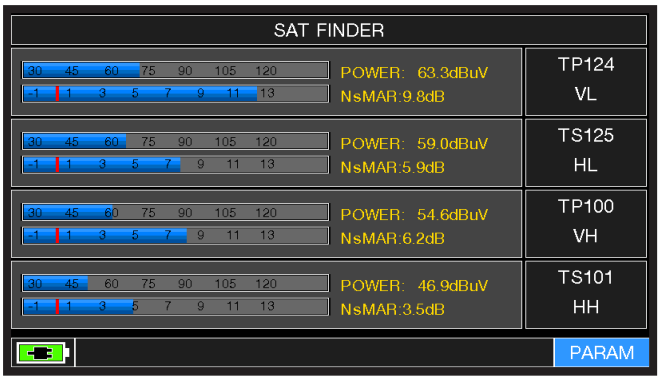
Press to enter in the spectrum.

SAT FINDER

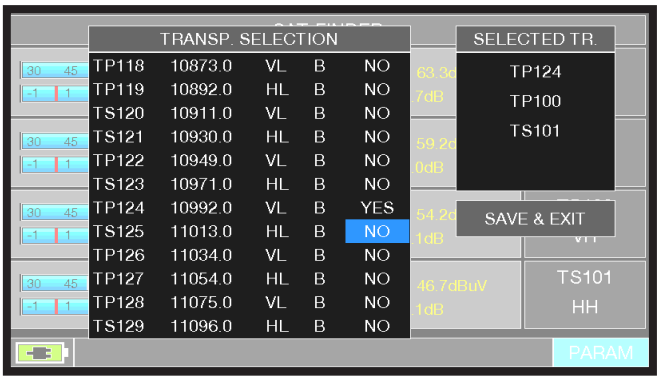
The SAT FINDER function allows you to check the quality of 4 transponders simultaneously and to check the operation of the 4 LNB polarities.

Press the “HOME” key.

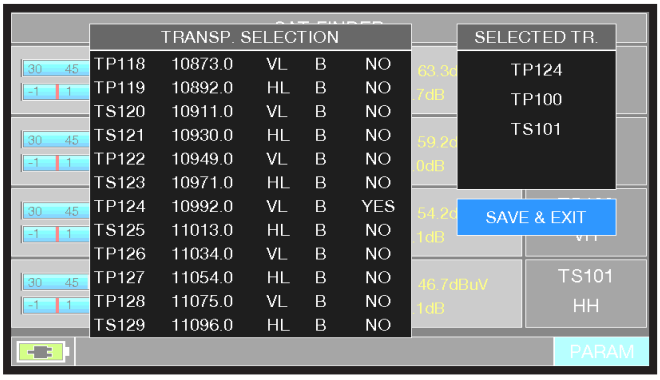
Touch “SAT” and then “SAT FINDER” or use the wheel.



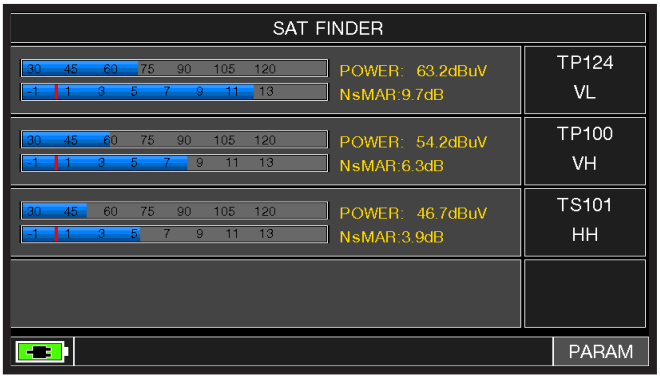
Satellite locked.



Touch “PARAM” to modify the transponders list.



Touch the selected transponder, touch YES/ NO to add or delete from the list. Once finished, touch “SAVE & EXIT”.



Satellite locked.

When the chosen satellite is found the buzzer will start. If this does not happen, continue looking for the right satellite. Optimize the dish alignment and skew to obtain the maximum NsMAR value (noise margin).

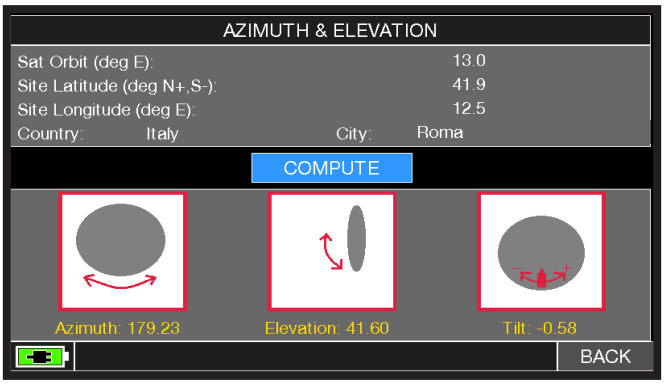
NOTE: For a proper use of the “SAT FINDER” function, verify the tuning parameters for all three transponders (frequency, polarity, band, and symbol rate) and the type of lnb you are using (universal or quatro)

Go to the www.lyngsat.com site for more information

AZ/EL POINTING DATA

Press the “HOME” key.

Touch “SAT” and then “AZ/EL”.



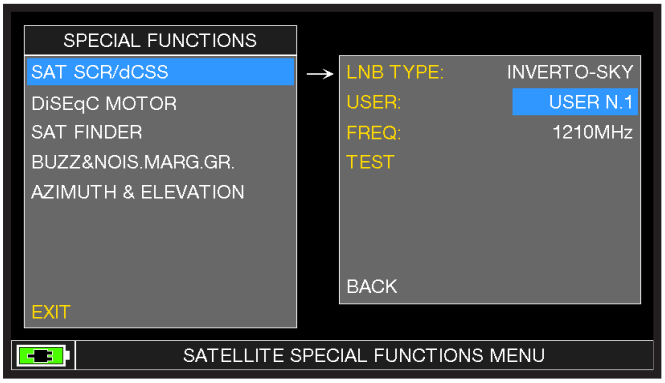
Calculation of the pointing data:

1. Touch “SAT ORBIT” and set up the orbit position of the desired satellite, for example 13,0 EAST.
2. Touch “COUNTRY” and select your Nation, for example Italy.
3. Touch “CITY” and select your city, for example Roma.
4. Touch “COMPUTE” to obtain the automatic calculation of pointing parameters: Azimuth, Elevation & Tilt.

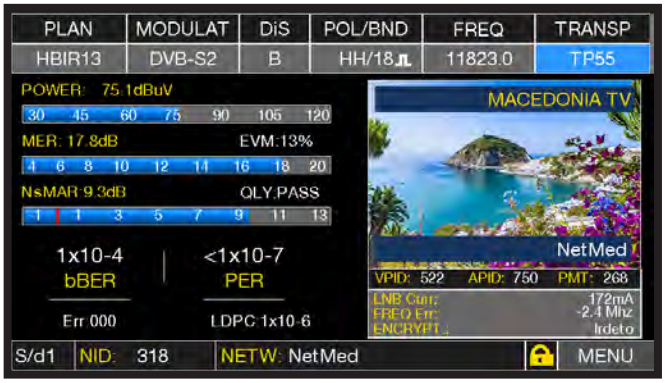
MEASUREMENTS WITH SCR LNB/MULTISWITCH

Touch the “HOME” key.

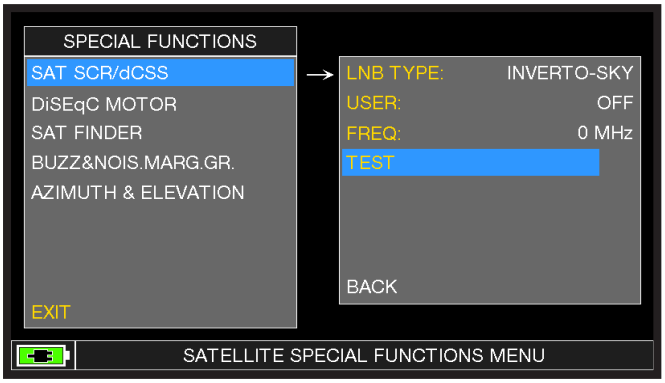
Touch “SAT” and then “SCR dCSS” or use the wheel.



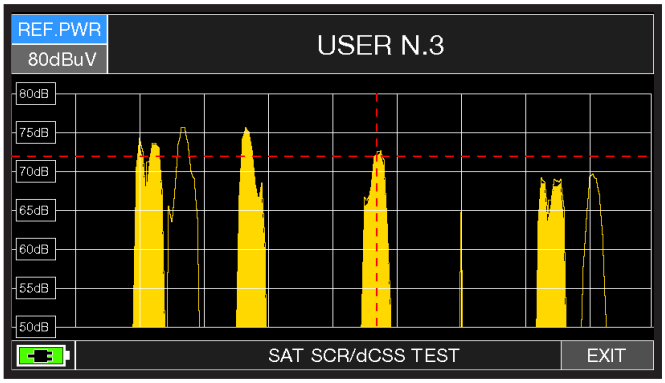
- Touch “LNB TYPE” and select the installed LNB/multiswitch model (see NOTE).
- Touch “USER” and select the user’s number to test (user 1-4).
- Press “SPECT” to visualize the spectrum or “SAT” to take the measurements.



SCR measurements.



Or select “TEST”, in Spectrum mode, to perform a verify of the 4 exit frequencies (user 1-4) from LNB/multiswitch.

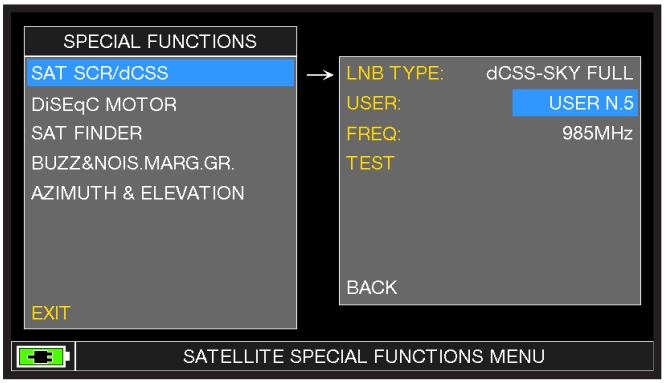


SCR test.

LNB/MULTISWITCH dCSS MEASUREMENTS

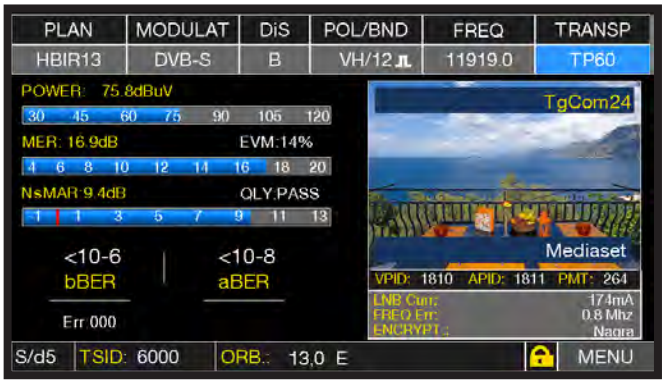
Press the “HOME” key.

Touch “SAT” and then “SCR dCSS” or use the wheel.

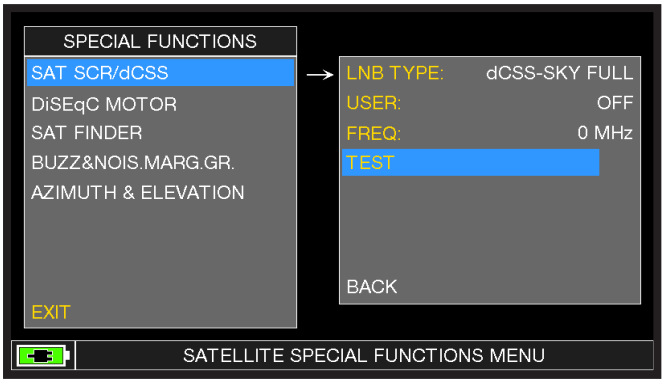


- Touch “LNB TYPE” and select the installed LNB/multiswitch model (see NOTE).
- Touch “USER” and select the user’s number to test (user 5-16).

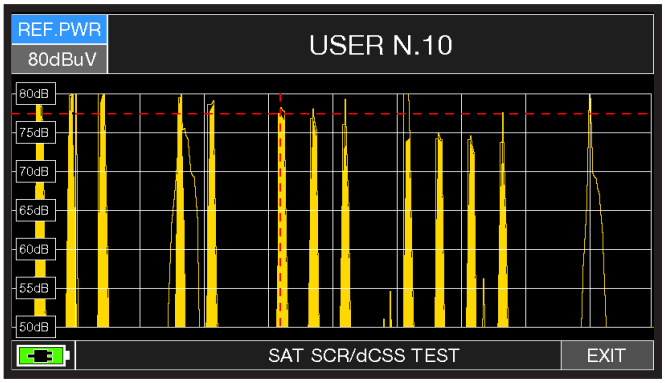
- Press “SPECT” to visualize the spectrum or “SAT” to take the measurements.



dCSS measurements.



Or touch “TEST”, in Spectrum mode, to perform a verify of the 12 exit frequencies (user 5-16) from LNB/multiswitch.

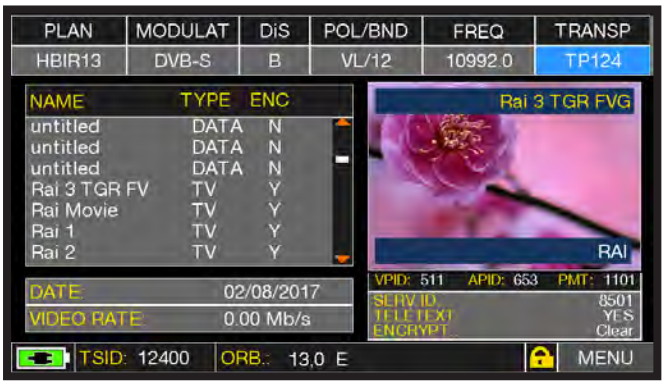


dCSS test.

IMAGES VISUALIZATION & SERVICE CHOICE

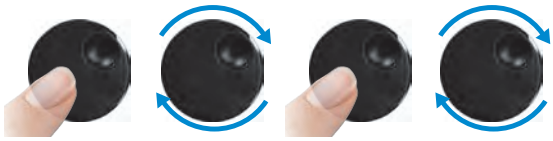
Press “HOME” key.

Touch “SAT” and then“MPEG”
or use the wheel.

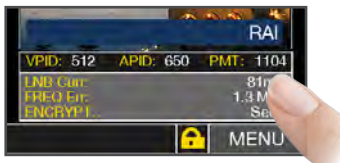


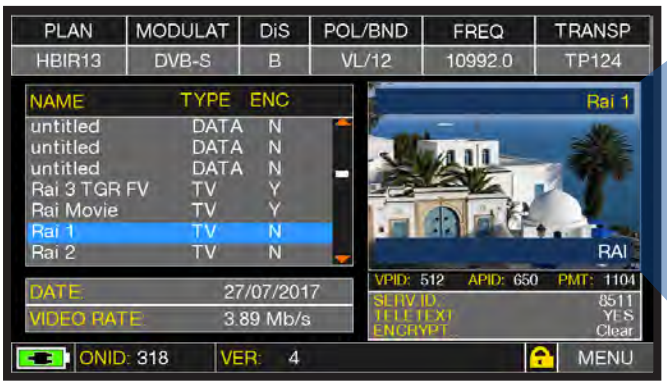
Images and MPEG service list.

Touch to select the RADIO/TV service or use the wheel.



or touch “Vpid-Apid” in Measure screen.





RADIO & TV service selection.

Touch the image to enlarge.
Touch again to come back at the service list.

RELATED FUNCTIONS

Press repeatedly to navigate into SAT measurements screens: Measurements, Constellation.

Press to enter in the spectrum.

TV MEASUREMENTS

Press the “HOME” key.

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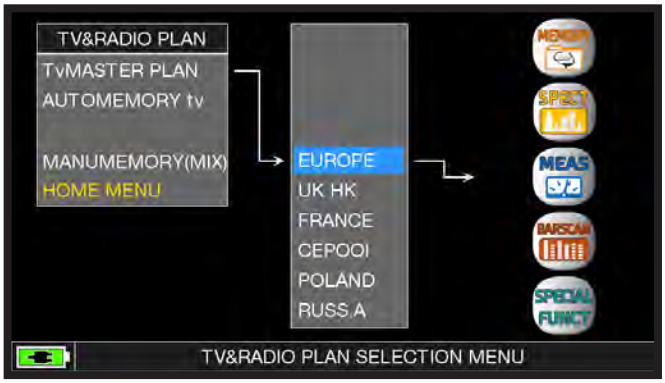
Touch “TV” and then “PLAN” or use the wheel to access at the TV channel list.



Touch the desired channel plan or use the wheel. At the end touch “MEAS” to make the measure or “SPECT” to visualize the spectrum.

NOTE: The chosen channel plan and channel will remain in memory also if you change mode (CATV/SAT) or if you switch off the meter.

DIGITAL TV MEASUREMENT DISPLAYS DVB-T & DVB-T2 M-PLP

Press the “HOME” key.

Touch “TV” and then “MEAS & PICT” or use the wheel.

Main menu and image.

RELATED FUNCTIONS

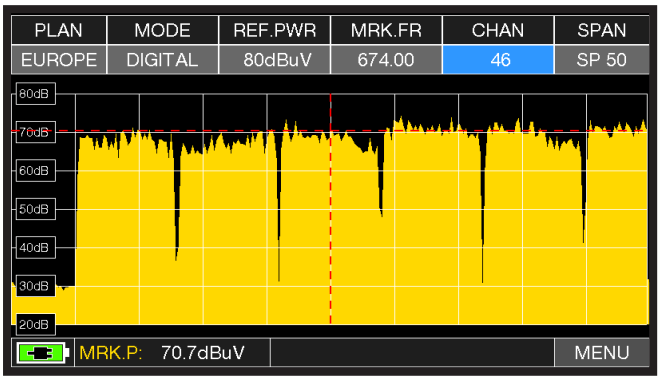
Press repeatedly to navigate into TV measurements screens: Measurements, Constellation, Echoes and MER vs CARRIER.

Press to enter in the spectrum.

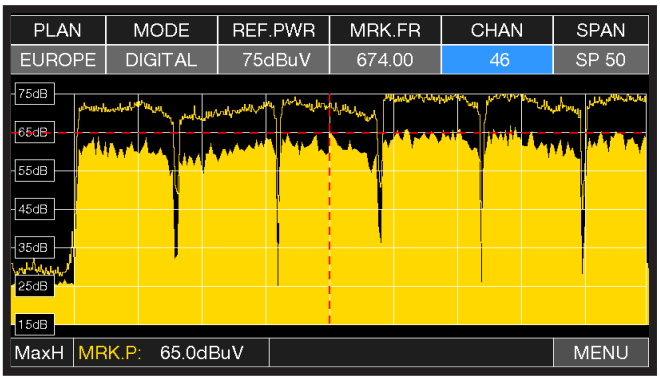
SPECTRUM ANALYZER

Press the “HOME” key.

Touch “TV” and then “SPECT”
or use the wheel.



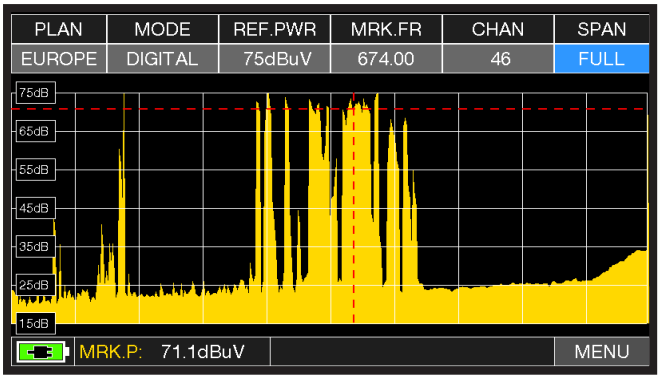
TV spectrum SPAN 50 MHz



Press again te spectrum key to activate the
“MAX HOLD” function.

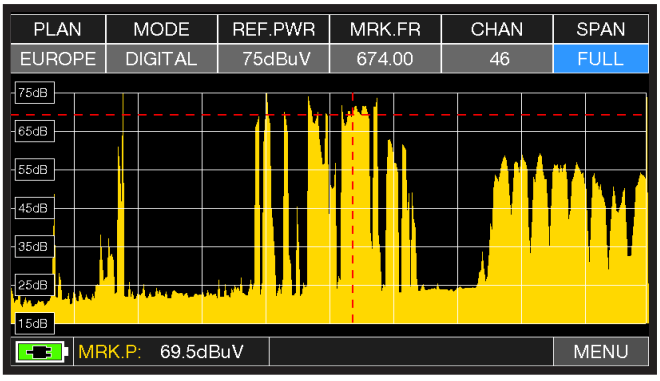
Touch “SPAN” and rotate the wheel to select the desired SPAN value:
1-2-5-7-10-20-50-100-200-500-FULL-UHF VHF

Example 1:



“TV” SPAN FULL spectrum
(from 5 to 1.250 MHz).

Example 2:



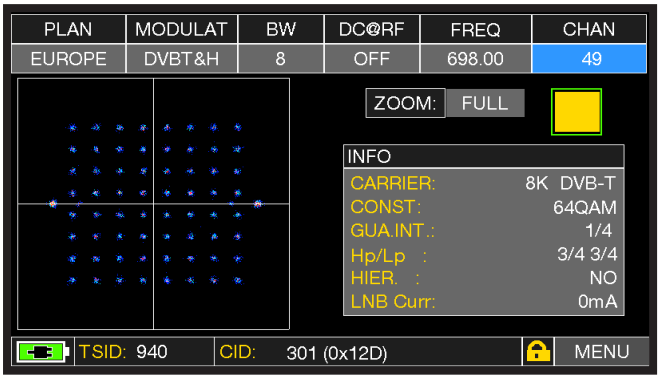
TV SPAN FULL spectrum with mixed channels
SAT signals (from 5 to 1.250 MHz).

CONSTELLATION ANALYSIS

Press the “HOME” key.

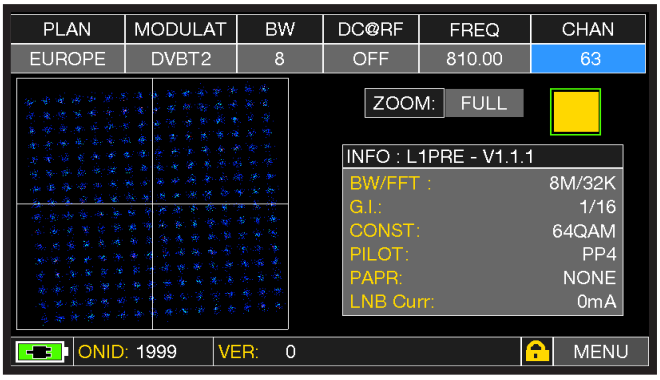
Touch “TV” and the “CONST” or use the wheel.

Example 1:



Constellation DVB-T.

Example 2:



Constellation DVB-T2.

FULL Touch “FULL” and select the box of constellation to enlarge.

RELATED FUNCTIONS

Press repeatedly to navigate into TV measurements screens: Measurements, Constellation, Echoes and MER vs CARRIER.

Press to enter in the spectrum.

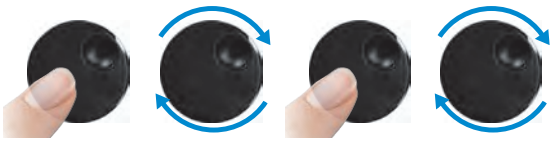
IMAGES VISUALIZATION & SERVICE CHOICE

Press “HOME” key.

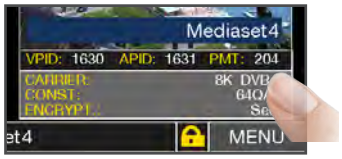
Touch “TV” and then“MPEG”
or use the wheel.

Images and MPEG service list.

Touch to select the RADIO/TV service or use the wheel.



or touch “Vpid-Apid” in Measure screen.



RADIO & TV service selection.

Touch the image to enlarge.
Touch again to come back at the service list.

RELATED FUNCTIONS

Press repeatedly to navigate into TV measurements screens: Measure, Constellation, Echoes and MER vs CARRIER.

Press to enter in the spectrum.

CHANNEL MONITOR

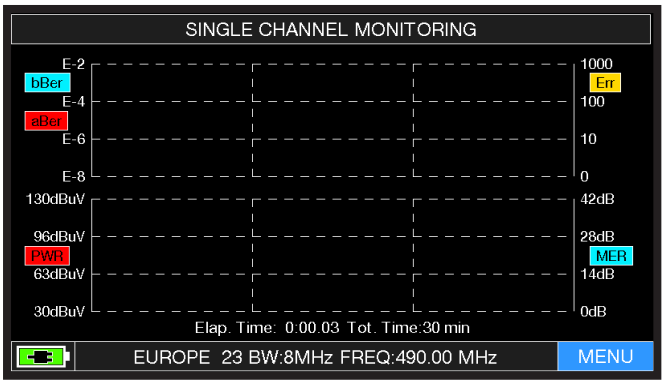
The weekly application of SW CHANNEL MONITOR allow you to control and register the trend of the main parameters of a digital signal over time (from 30 minutes to one week): TV, CATV & SAT.

This application is indicated to resolv the reception problems which occur occasionally, it also allows you to measure, memorize and visualize (local or in remote) the digital signals parameters tested: DVB-S/T/C = Power, MER, ERROR, bBer, aBer; DVB-S2 / T2 / C2 = Power, MER, ERROR, aBer, Lber, PER, LDCP.

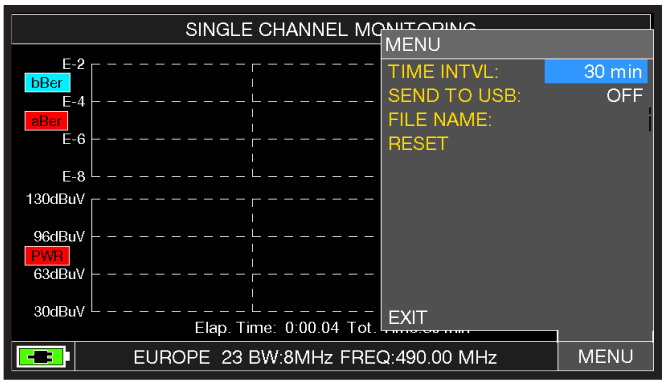
Every registered parameters is graphically represented on the display using differents colours for a easy identification.

Press the “HOME” key.

Touch “TV” and then “CH MONITOR” or use the wheel.

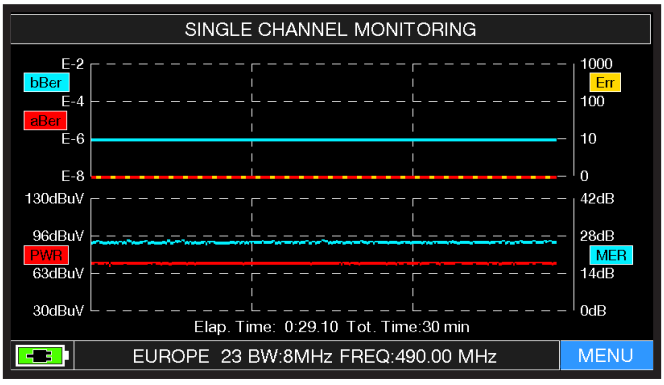


Touch “MENU”



Select the time interval (TIME INTVL) and where you want to store the file, either in the meter’s memory, or in the USB memory stick (send to USB-ON), with the relative file name (File name).

Example 1:



SINGLE CHANNEL MONITORING: 30 minutes.

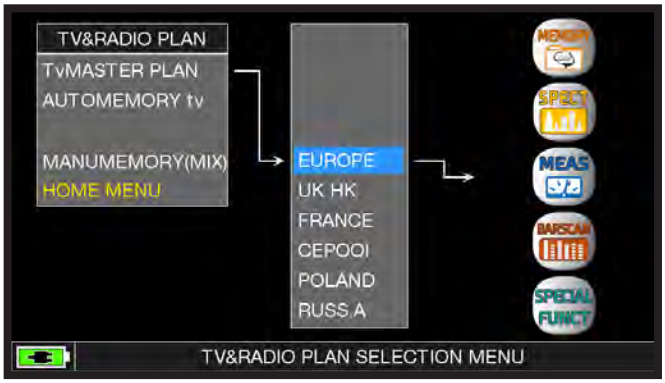
NOTE: The Channel Monitor function is available also in CATV and SAT mode.

FM MEASUREMENTS

Press the “HOME” key.

or

Touch “TV” and then “PLAN” or use the wheel to access the TV channel plan list.



Touch to select the desired channel plan or use the wheel. At the end touch “MEAS” to make the measure or “SPECT” to visualize the spectrum.

NOTE: The chosen channel plan and channel will remain in memory also if you change mode (CATV/SAT) or if you switch off the meter.

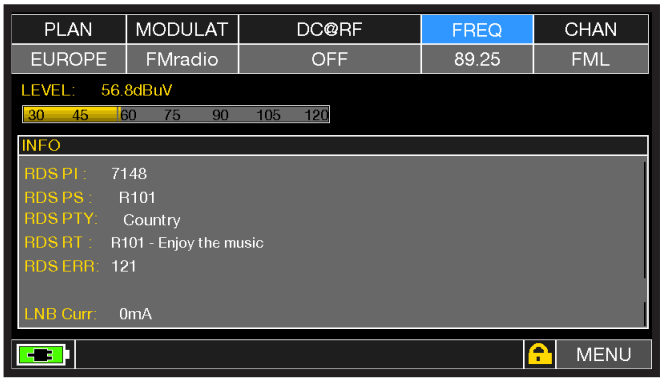
FM MEASUREMENT

Press the “HOME” key.

Touch “TV” and then “MEAS & PICT” or use the wheel.

Touch “CHAN” and select the “FML” channel or “FMH”.

Touch “FREQ” and type the desired frequency value, then touch “ENTER”.



Main menu.

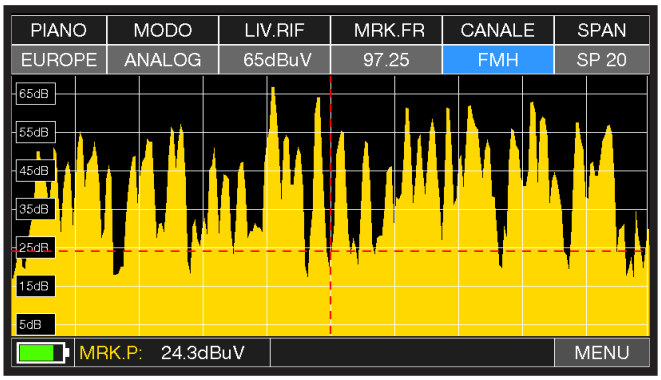
RELATED FUNCTIONS

Press to enter in the spectrum.

SPECTRUM ANALYZER

Press the “HOME” key.

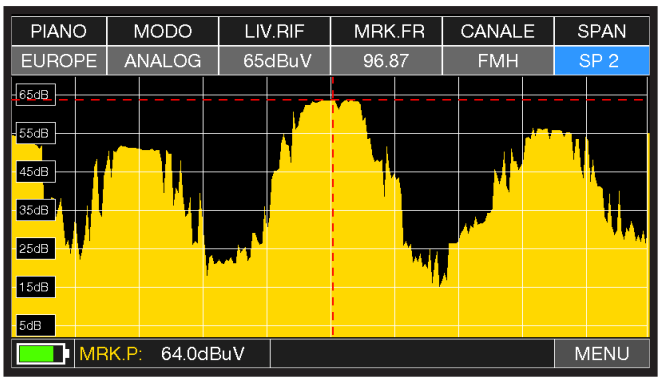
Touch “TV” and then “SPECT”
or use the wheel.



FM spectrum SPAN 20 MHz

Touch “SPAN” and rotate the wheel to select the desired SPAN value:
1-2-5-7-10-20-50-100-200-500-FULL-UHF VHF

Example:



FM spectrum SPAN 2 MHz

CATV MEASUREMENTS

Press the “HOME” key.

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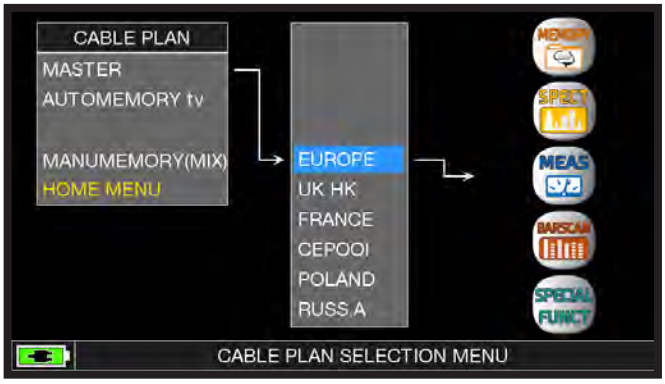
Touch “CATV” and then “PLAN” or use the wheel to access the CATV channel plan list.



Touch to select the desired channel plan or use the wheel. At the end touch “MEAS” to make the measure or “SPECT” to visualize the spectrum.

NOTE: The chosen channel plan and channel will remain in memory also if you change mode (CATV/SAT) or if you switch off the meter.

DIGITAL DVB-C & DVB-C2 MEASUREMENTS (opt.)

Press the “HOME” key.

Touch “CATV” and then “MEAS & PICT” or use the wheel.

Main measurements and image.

RELATED FUNCTIONS

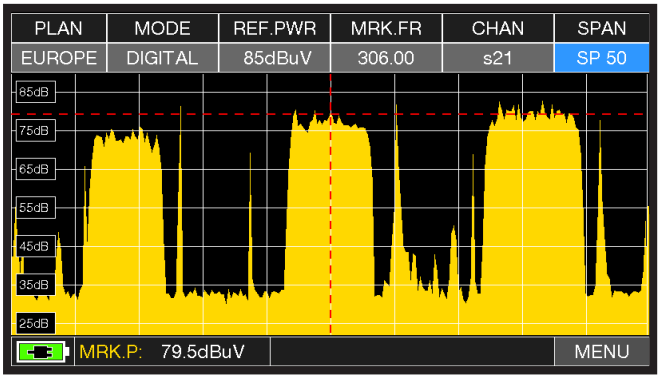
Press repeatedly to navigate into CATV measurements screens: Measure and Constellation.

Press to enter in the spectrum.

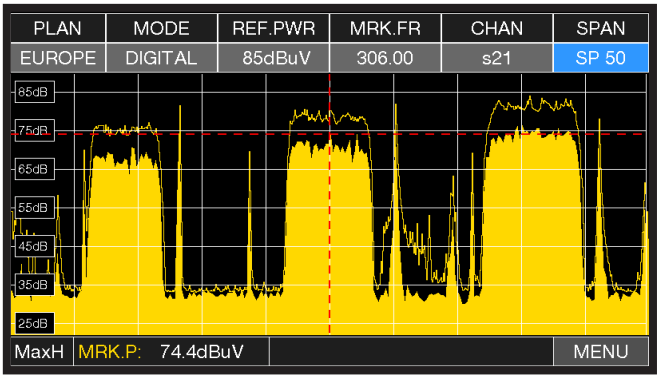
SPECTRUM ANALYZER

Press the “HOME” key.

Touch “CATV” and then “SPECT”
or use the wheel.



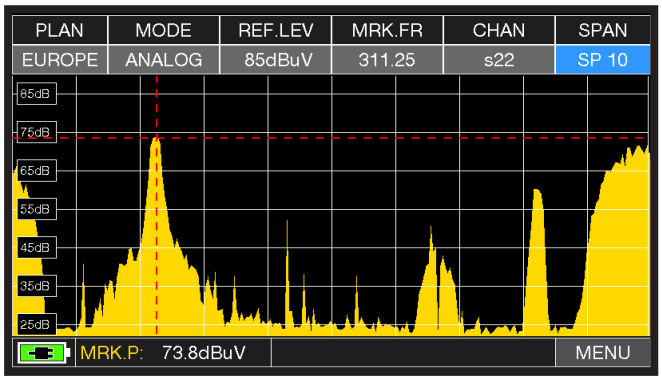
CATV spectrum SPAN 50 MHz.



Press the spectrum key again to activate the
“MAX HOLD” function.

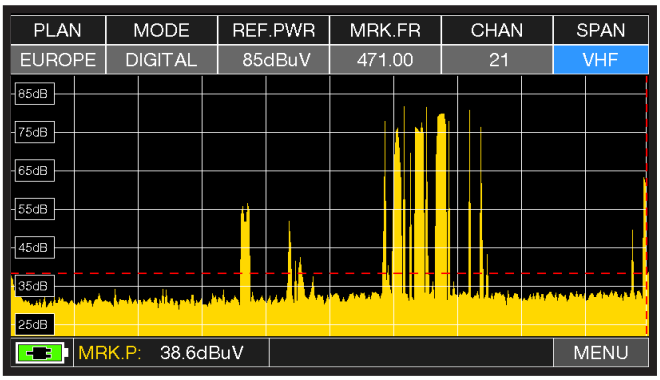
Touch “SPAN” and rotate the wheel to select the desired SPAN value:
1-2-5-7-10-20-50-100-200-500-FULL-UHF VHF

Example 1:

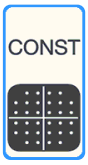


CATV spectrum SPAN “10 MHz”.

Example 2:



CATV spectrum SPAN VHF.

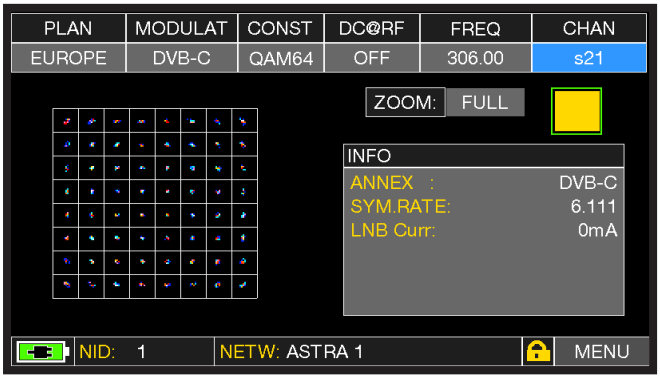


CONSTELLATION ANALYSIS

Press the “HOME” key.

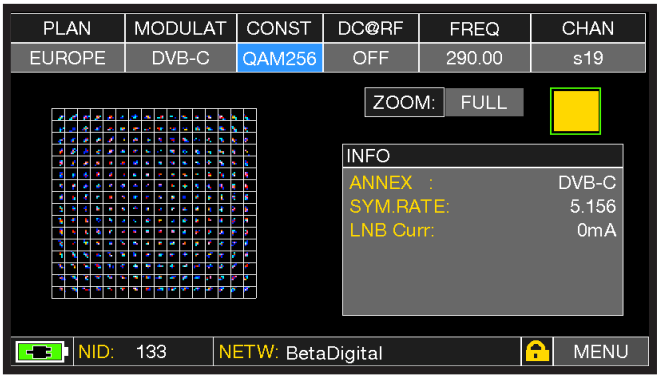
Touch “CATV” and then “CONST” or use the wheel.

Example 1:



64 QAM constellation.

Example 2:



256 QAM constellation.

Touch “FULL” and select the box of constellation to enlarge.

RELATED FUNCTIONS

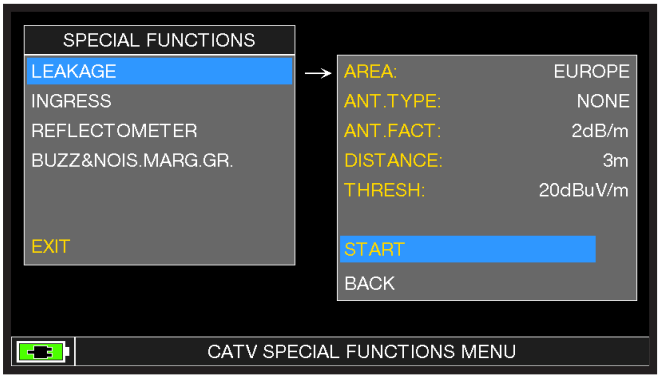
Press repeatedly to navigate into CATV measurements screens: Measure and Constellation.

Press to enter in the spectrum.

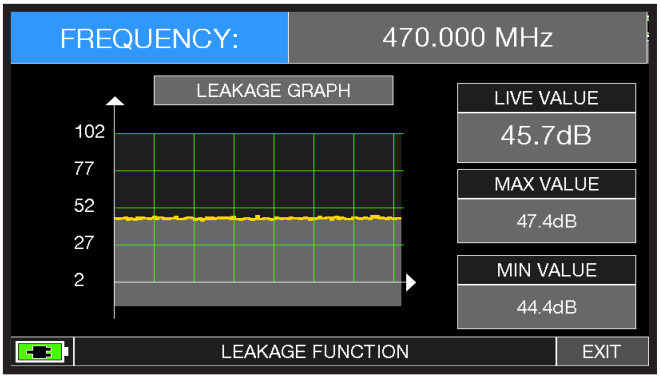
LEAKAGE

Press the “HOME” key.

Touch “CATV” and then “LEAKAGE” or use the wheel.



Set the desired parameters, at the end touch “START” to start the leakage measurements.

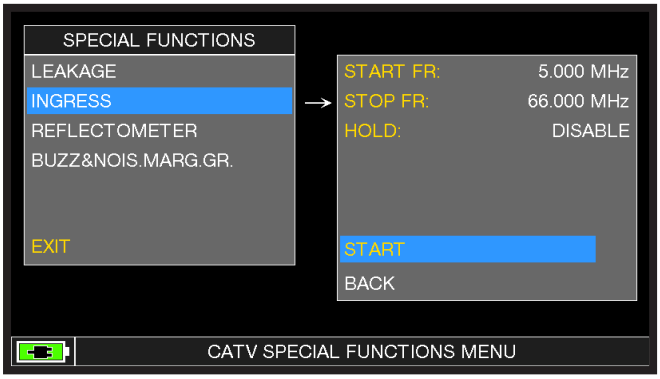


Leakage measurements.

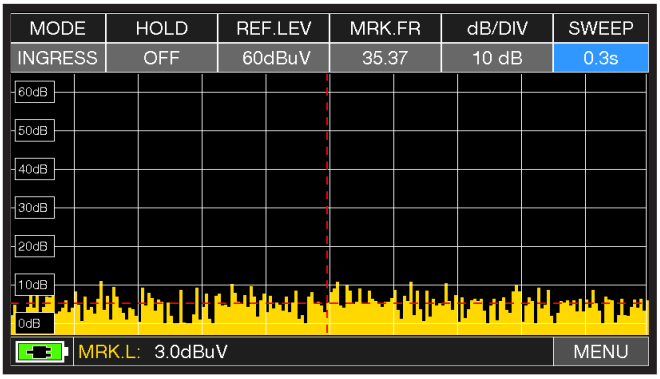
INGRESS

Press the “HOME” key.

Touch “CATV” and then “LEAKAGE” or use the wheel.



Set the desired parameters, at the end touch “START” to start the Ingress measurements.



Ingress measurements.

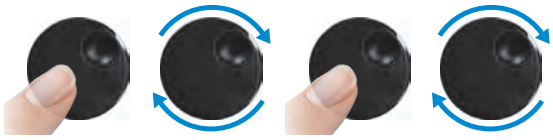
IMAGES VISUALIZATION & SERVICE CHOICE

Press the “HOME” key.

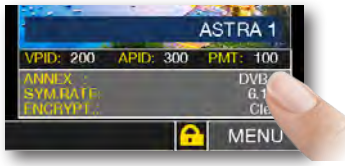
Touch “CATV” and then “MPEG”
or use the wheel.

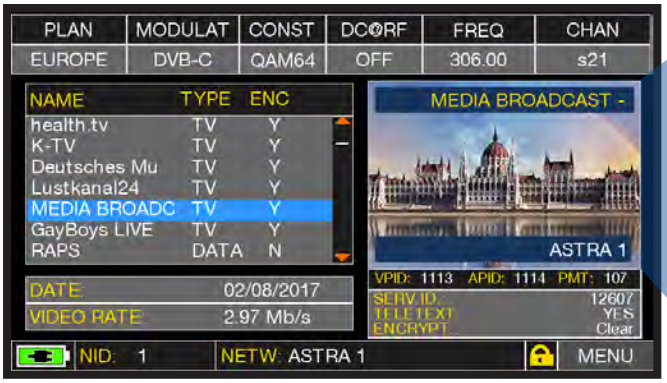
Images and MPEG service list.

Touch to select the RADIO/TV service or use the wheel



or touch “Vpid-Apid” in Measure screen.





RADIO & TV service selection.

Touch the image to enlarge.
Touch again to come back at the service list.

RELATED FUNCTIONS

Press repeatedly to navigate into CATV measurements screens: Measure and Constellation.

Press to enter in the spectrum.

CHANNEL MONITOR

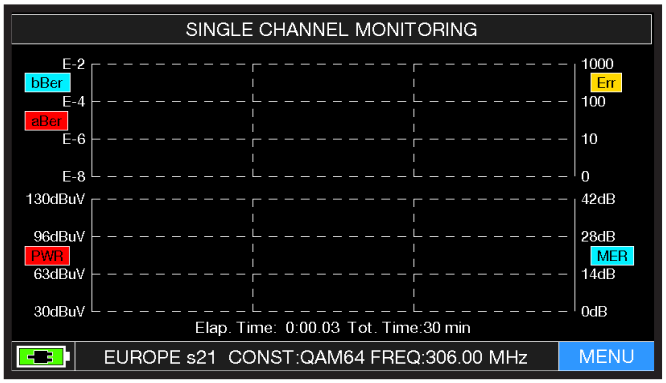
The weekly application of SW CHANNEL MONITOR allows you to control and register the trend of the main parameters of a digital signal over time (from 30 minutes to one week) for the following: TV, CATV, & SAT.

This application is used to resolve reception problems which occasionally occur. It also allows you to measure, memorize and visualize (local or in remote) the following digital signal's parameters tested: DVB-S/T/C = Power, MER, ERROR, bBer, aBer; DVB-S2 / T2 / C2 = Power, MER, ERROR, aBer, Lber, PER, LDCP.

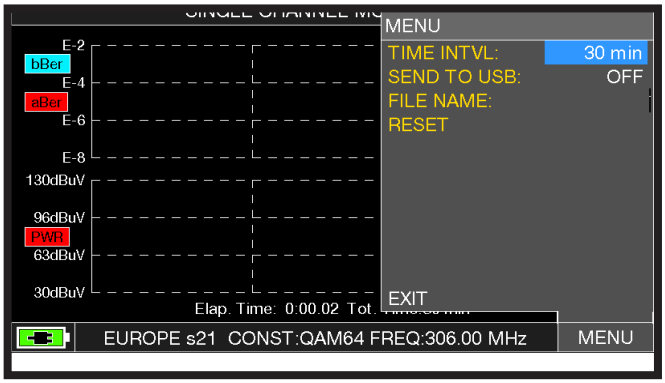
Each registered parameter is graphically represented on the display using different colours for easy identification.

Press the "HOME" key.

Touch "CATV" and then "CH MONITOR" or use the wheel.

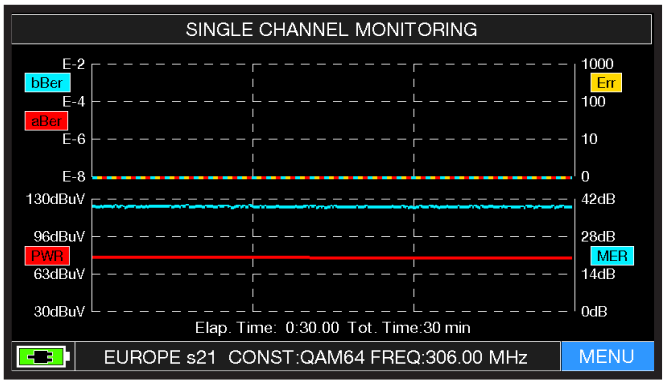


Touch "MENU"



Select the time interval (**TIME INTVL**) and where you want to store the file, either in the meter's memory, or in the USB memory stick (**Send to USB - ON**), with the relative **File Name**.

Example 1:



SINGLE CHANNEL MONITORING: 30 minutes.

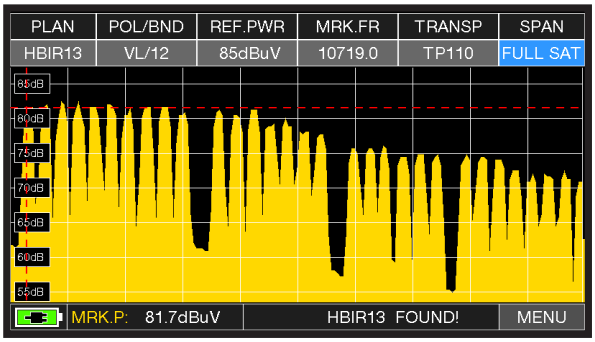
NOTE: The Channel Monitor function is available also in TV and SAT mode.

SPECTRUM ANALYSIS

After selecting the desired Operation Mode, TV, CATV or SAT, you can directly access the Spectrum Analyzer by touching the “SPECT” icon from the “HOME” menu or by pressing the “SPECT” button directly.

SAT SPECTRUM

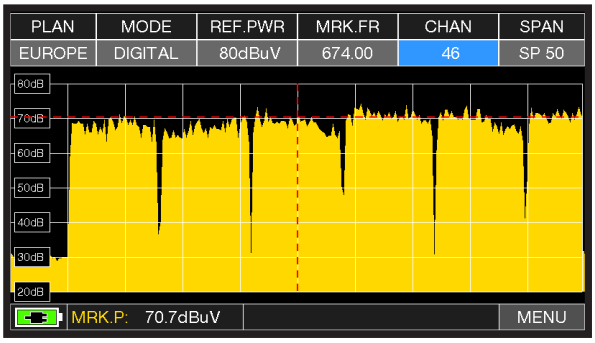
Press the “HOME” key.



SAT spectrum.

TV SPECTRUM

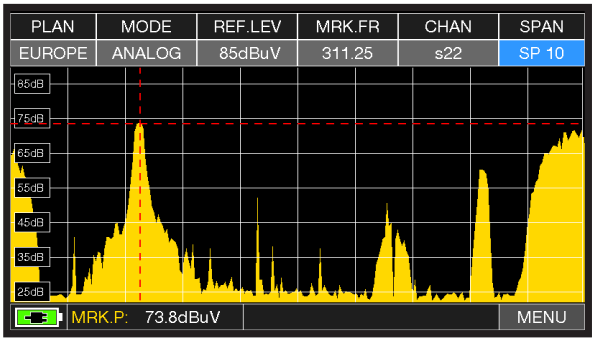
Press the “HOME” key.



TV spectrum.

CATV SPECTRUM

Press the “HOME” key.



CATV Spectrum

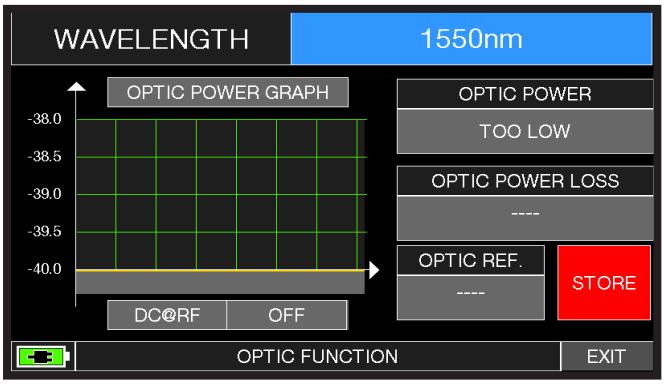
OPTICAL MEASUREMENTS (opt.)

The instrument, equipped with an internal optical converter, allows you to perform POWER and OPTICAL ATTENUATION measurements as well as perform RF measurements from optical inputs, decode services, and display Spectrum.

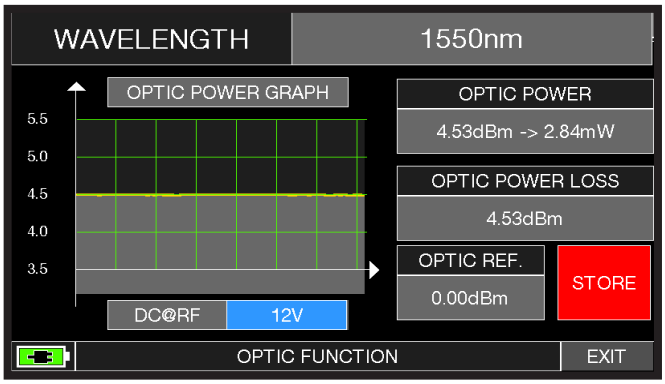
OPTICAL POWER & ATTENUATION MEASUREMENTS

Press the “HOME” key.

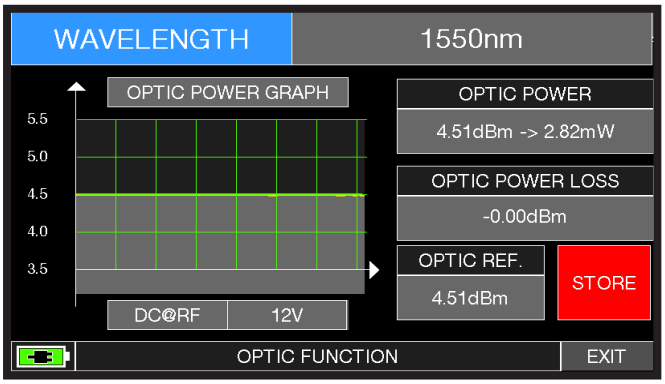
Touch “OPTIC” and then “PWR METER” or use the wheel.



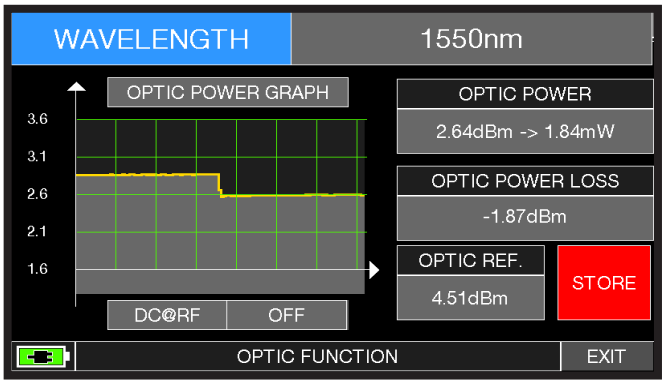
Touch “WAVELENGTH” and select the Wave length desired. (Example: 1550 nm)



Touch “DC@RF” and, if required, select the power supply voltage. (Example: 12V)



Touch “STORE” and memorizes the measured optical power value (Optic Ref.). (Example: 4.51 dBm)



In the “OPTIC POWER LOSS” field, the optical attenuation value is displayed with respect to the stored value (Optic REF): (Example: 1.87 dBm)

OPTICAL INPUT RF MEASUREMENTS

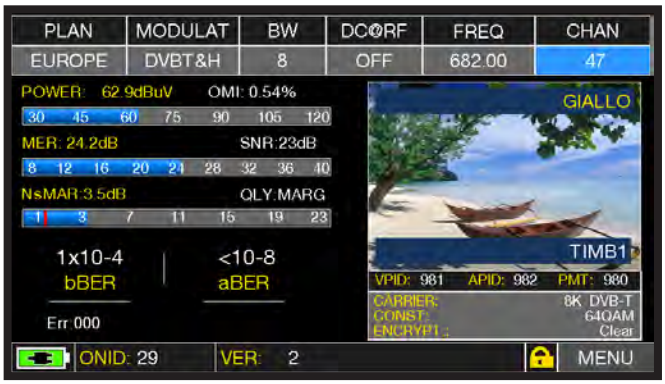
After selecting the desired Operation Mode, TV, CATV or SAT, press the “HOME” key.

Touch “OPTIC” and then “MEAS & PICT” or use the wheel.

Example 1:

Main measurements and image of a SAT signal.

Example 2:

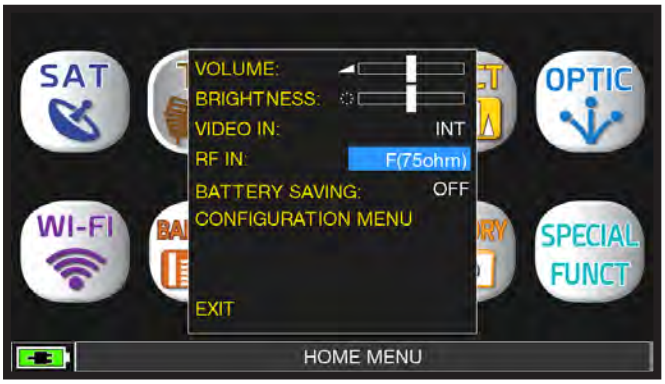


Main measurements and image of a TV signal.

NOTE:

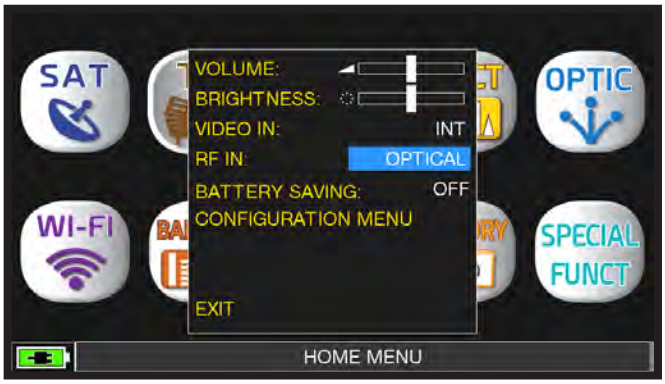
- In optical mode, you can measure the spectrum and measure just on Low Band Vertical.
- It is possible to manually switch the input of the RF IN: F (75 ohm) or OPTICAL signal. Press the VOLUME button, select “RF IN” and choose the desired mode.

Example 1:



F 75 ohm ingress selected.

Example 2:

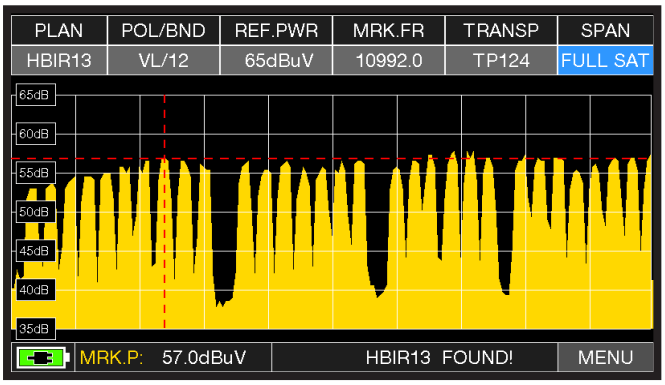


OPTIC ingress selected.

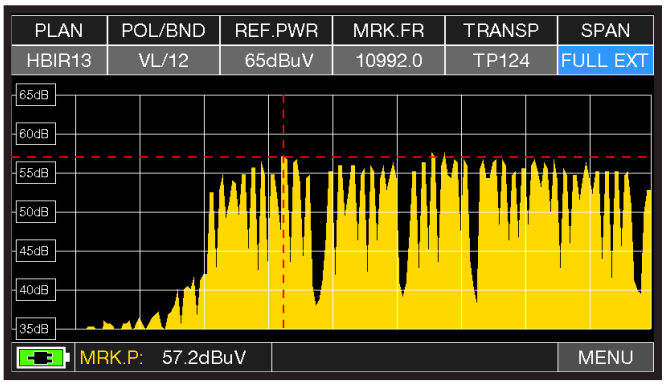
RF SPECTRUM FORM OPTIC INGRESS

After selecting the desired Operation Mode, TV, CATV or SAT, press the “HOME” key.

Touch “OPTIC” and then “SPECT” or use the wheel.



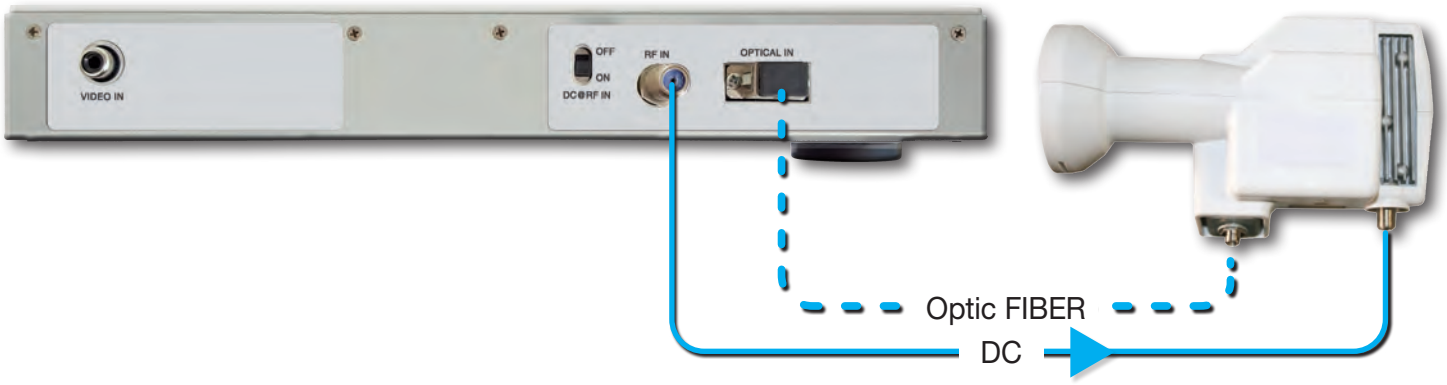
SAT spectrum SPAN “Full SAT” (from 930 to 2250 MHz).



SAT spectrum SPAN “Full EXT” (from 230 to 2610 MHz).

NOTE: In OPTIC mode it is possible to analyze the spectrum and measure only vertical/low band (VL) SAT transponders.

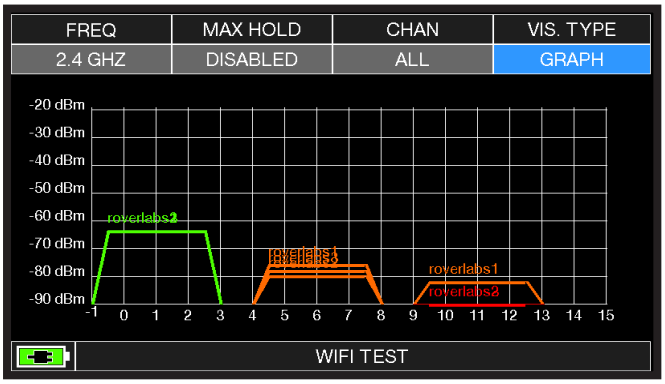
FIBER OPTIC AND REMOTE POWER SUPPLY CABLE CONNECTION



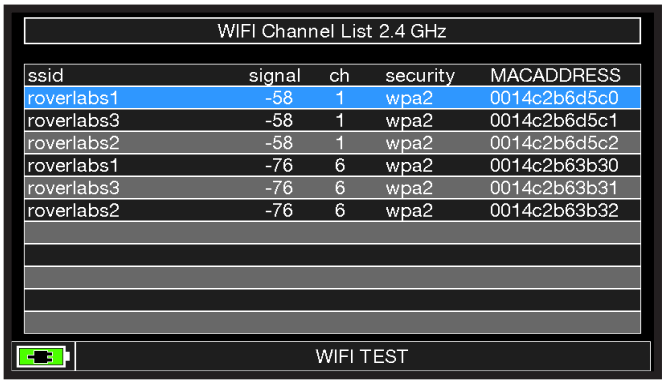
WI-FI ANALYZER (opt.)

The instrument, equipped with an WI-FI analyzer, allows you to analyze the WI-FI networks present in the building in the 2.4 and 5 GHz frequency range, check the power of the received Signal and display the List of Networks.

Press the “HOME” key.



Touch “WI-FI” to visualize the received WI-FI networks.



Touch “VIS. TYPE” to access to the received WI-FI network list.

- Touch “FREQ” to switch WI-FI band from 2,4 to 5 GHz.
- Touch “MAX HOLD” to enable/disable the maximum level of the received signal memorized.
- Touch “CHAN” to select channels reception modalities, all or from 1 to 13 (for 2,4 GHz networks) and from 36 to 165 (for 5 GHz networks).

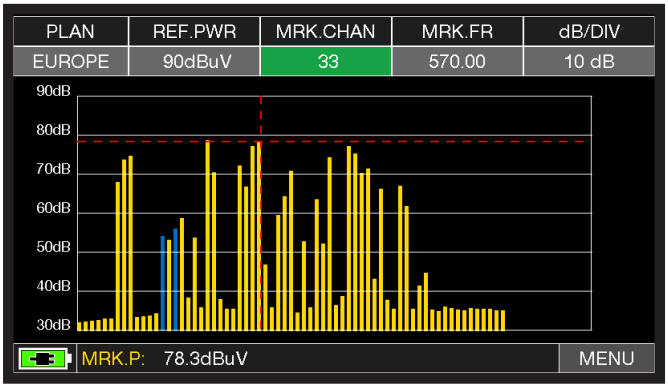
NOTE: For more information about the “APPs”, contact your distributor or Blonder Tongue.

BARSCAN CHECK ALL CHANNELS LEVEL/POWER

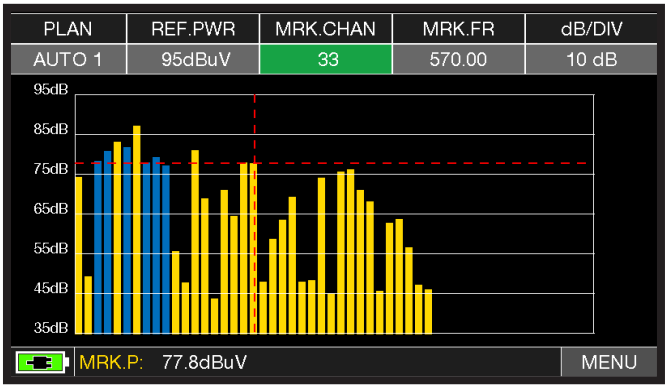
OR

Press the “HOME” key, then touch “BARSCAN”.

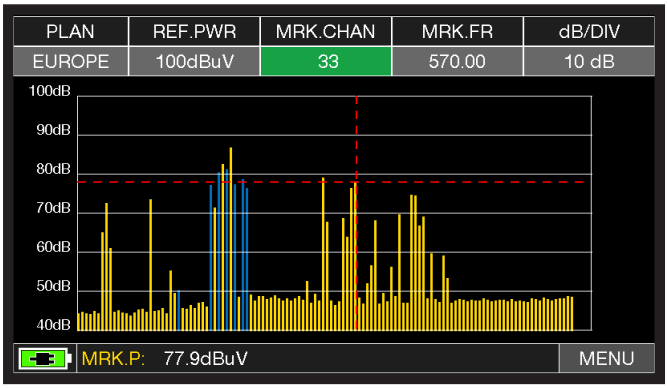
In TV/CATV mode and in the standard manual channelization (MANUMEMORY) or automatic (AUTOMEMORY) the meter displays the received signals and distinguishes the analog signals from the digital ones using two different colors.



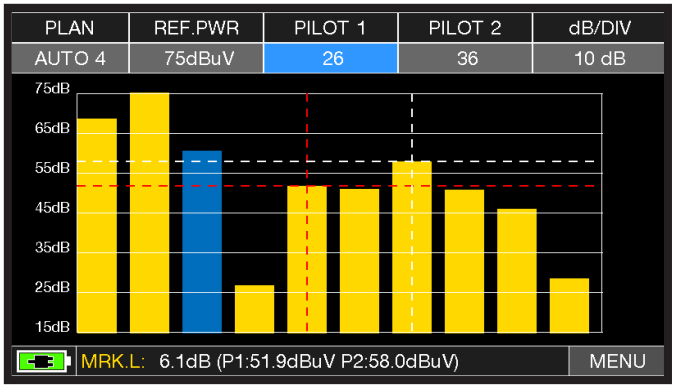
Standard BARSCAN TV channelization.



BARSCAN AUTO/MANUALMEMORY.



Standard BARSCAN CATV channelization.



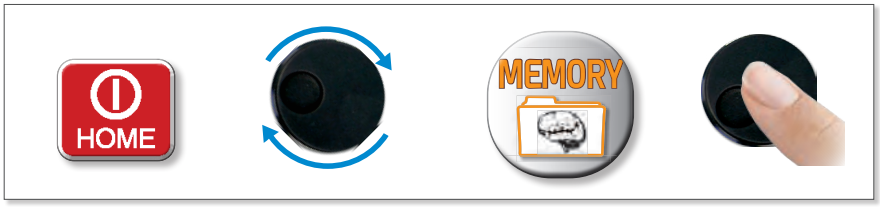
BARSCAN (TILT GRAPHIC). Touch “PILOT 1” and “PILOT 2 seconds to select the two channels to be used for the tilt measurement (level difference).

Touch “MENU” to choose the bargraph mode: “LEVEL” or “TILT”.

ANALOG CHANNELS

DIGITAL CHANNELS

NOTE: Function available only in TV or CATV mode.



AUTOMEMORY (TV)

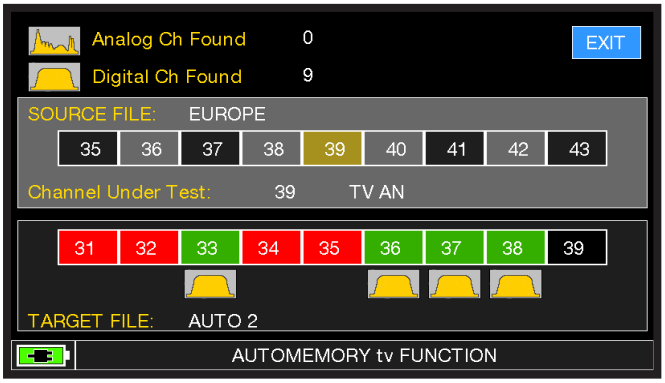
Press the “HOME” key.

Touch “MEMORY” then “AUTOMEMORY tv” or use the wheel.

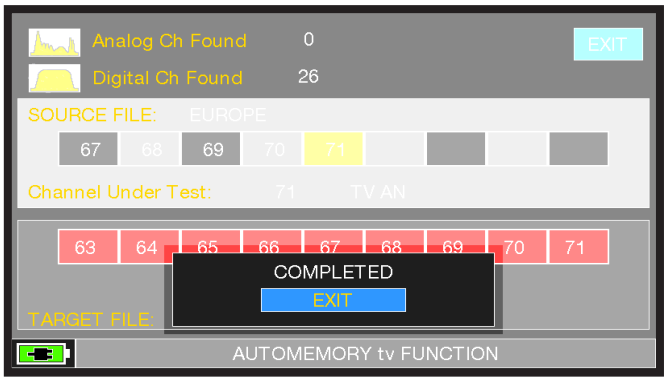
Set the desired parameters:

1. Touch “to FILE N” and select the destination file “AUTO” where the search must be saved.
2. Touch “LEVEL” and set the minimum level threshold of the analog and digital channels to be searched.
   - ONLY DVBT (only digital DVB-T/T2 signals);
   - DVBT&C +AnTV (digital DVB-T/T2/C & TV analogic signals);
   - DVBT + AnTV (Digital DVB-T/T2 & TV analogic signals).
3. Touch “DISCOVERY” and set the channel search mode:
4. Touch “DC&RF” and set the required power supply voltage.
5. Touch “START SAVE” to create a new channel plan and to activate the search.

NOTE: If the words “START OVERWRITE” appear, the selected file will be overwritten. Wait a few mins, and the meter will indicate the recorded ANALOG & DIGITAL CHannels.



Search channels in progress.



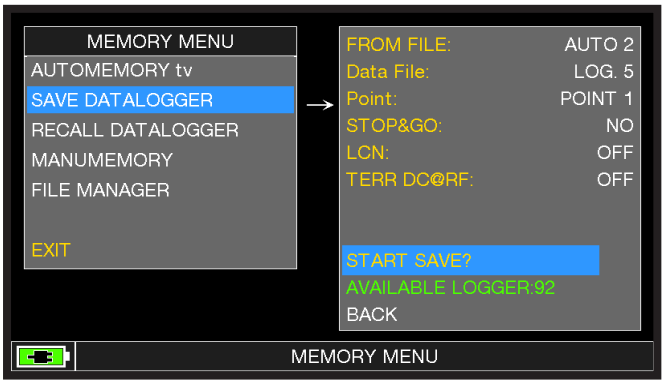
Search channels complete.

Once the Automemory is completed, the “AUTO” plan is automatically selected.

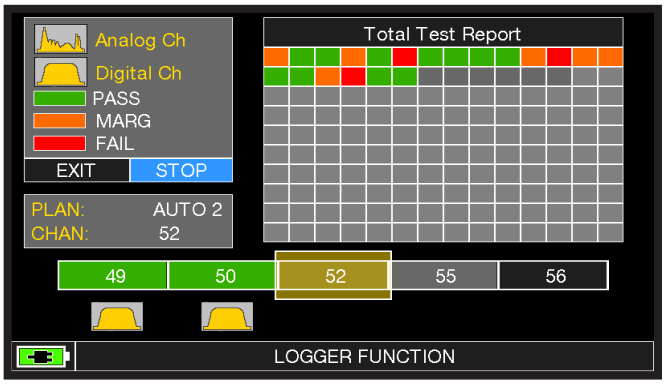
LOGGER SAVE (TV/CATV)

Press the “HOME” key.

Touch “MEMORY”
and then “SAVE DATALOGGER”.

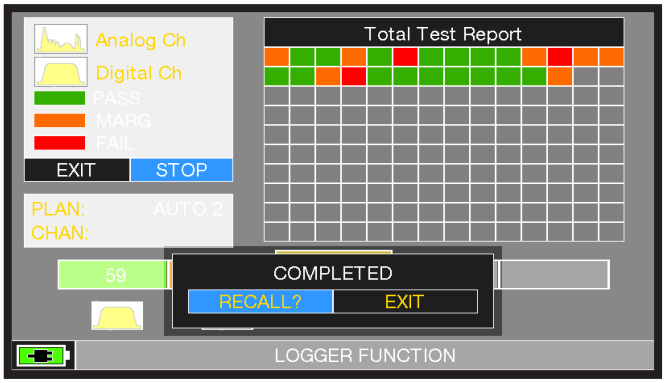


Set the parameters required. Touch “START SAVE” to create a new log file.

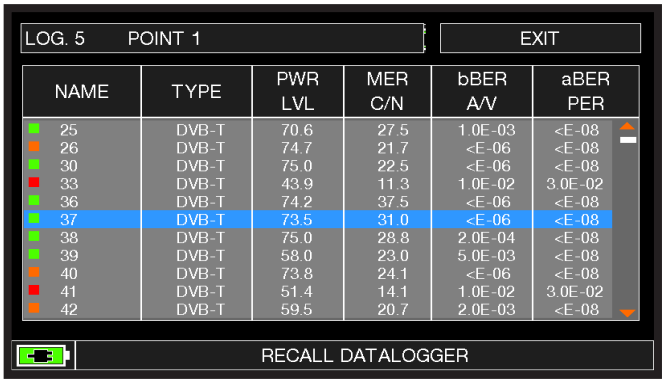


DATA LOGGER run.

NOTE: If the MENU plan has mixed TV and SAT programs, the “STOP&GO” function will assist when running a LOGGER asking to move the cable lead from a TV to a SAT signal source.



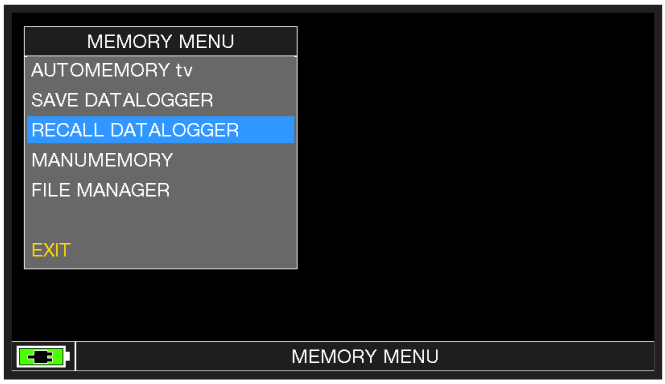
Touch “RECALL” to recall the Logger or “EXIT” to exit.



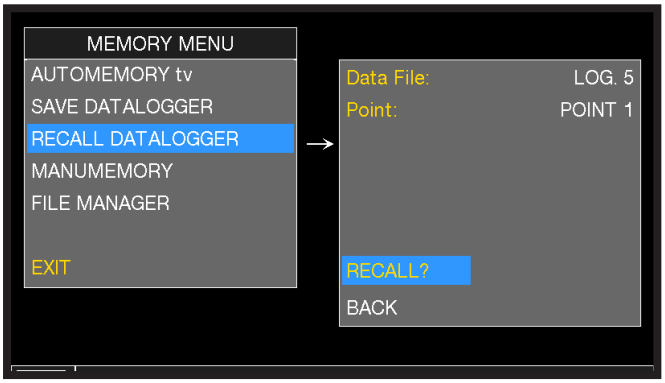
Example of saved measured in the Log file. Touch the screen to browse through measurements saved in the log file.

LOGGER RECALL (TV/CATV)

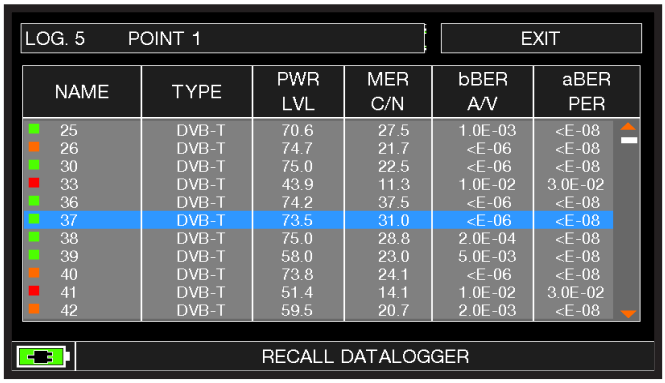
Press the “HOME” key.



Touch “MEMORY” and then “RECALL DATALOGGER”.



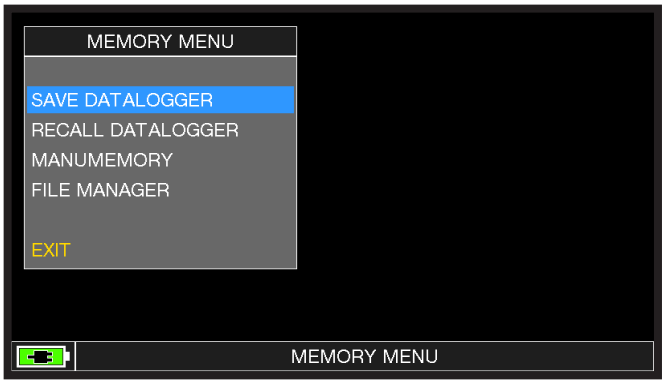
Set the LOG file parameters.
Touch “RECALL?” to see them.



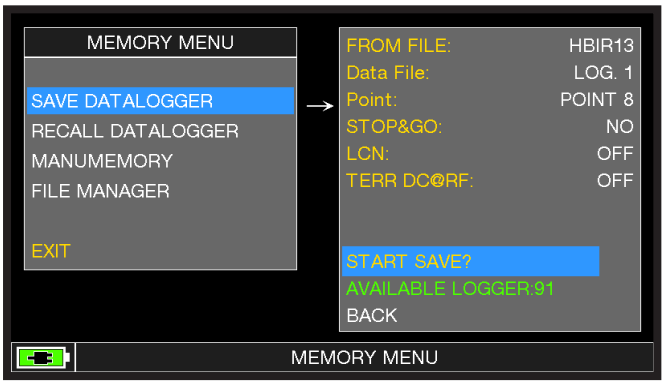
Example of saved measurments in the Log file.
Touch screen to browse through measurements.

LOGGER SAVE (SAT)

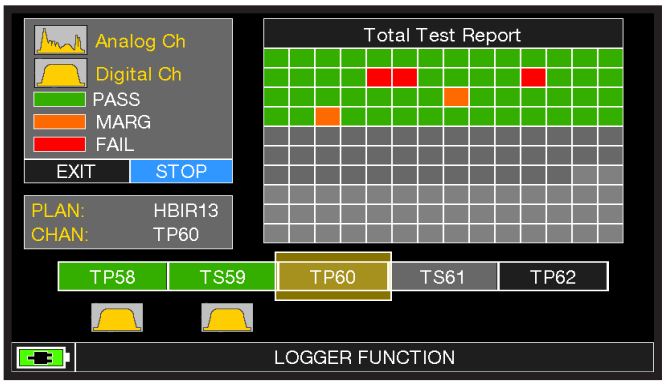
Press the “HOME” key.



Touch “MEMORY” and then “SAVE DATALOGGER”

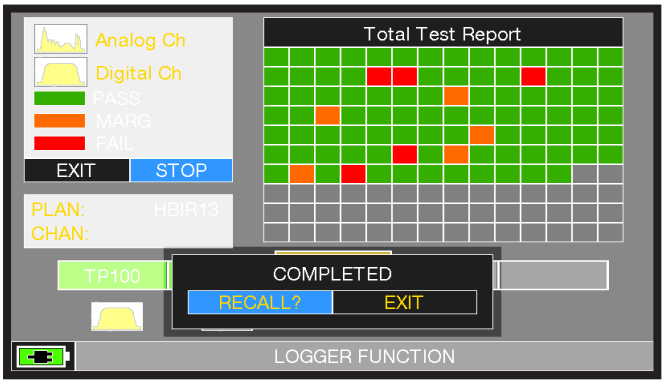


Set the parameters required. Touch “START SAVE” to create a new log file.

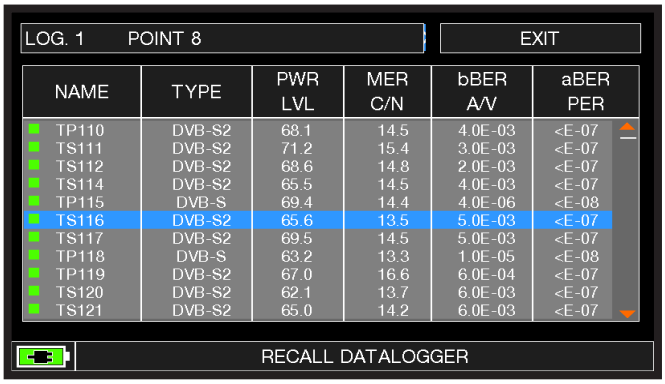


DATA LOGGER run.

NOTE: If the MENU plan has mixed TV and SAT programs, the “STOP&GO” function will assist when running a LOGGER asking to move the cable lead from a TV to a SAT signal source.



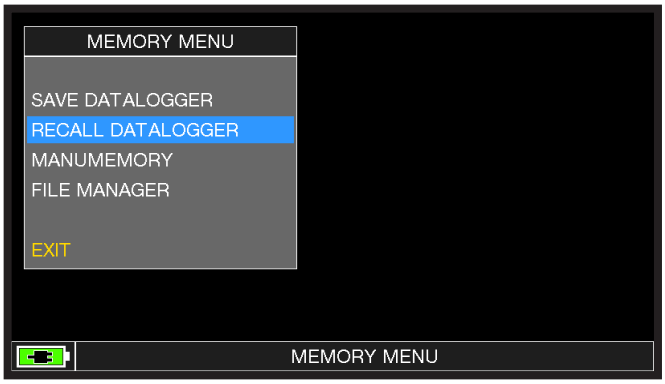
Touch “RECALL” to recall the Logger or “EXIT” to exit.



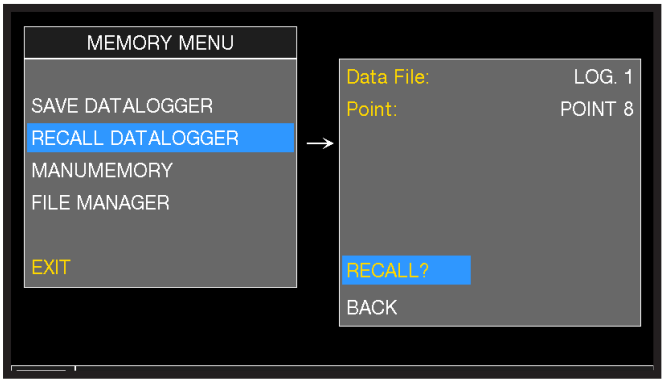
Example of saved measured in the Log file. Touch the screen to browse through measurements.

LOGGER RECALL (SAT)

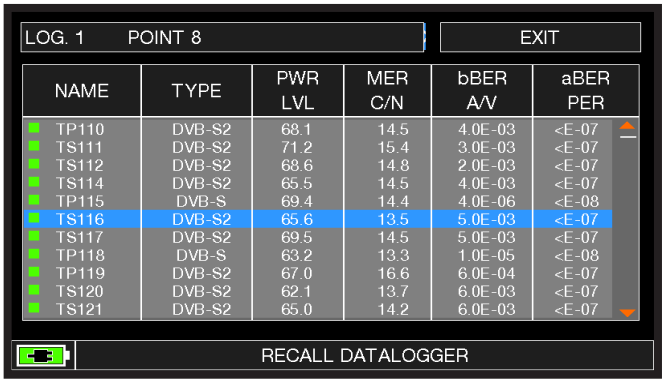
Press the “HOME” key.



Touch “MEMORY” and then “RECALL DATALOGGER”.



Set the LOG file parameters.
Touch “RECALL?” to see them.



Example of saved measured in the Log file.
Touch the screen to browse through measurements.

TV/CATV SPECIAL FUNCTIONS

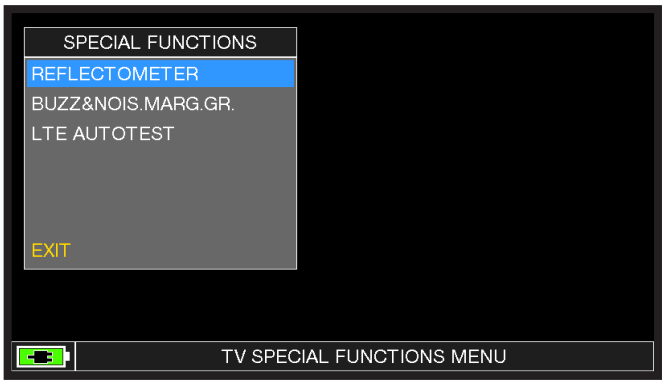
NOTE: The special functions depend on the active operating mode: TV SAT or CATV

REFLECTOMETER (OPT.)

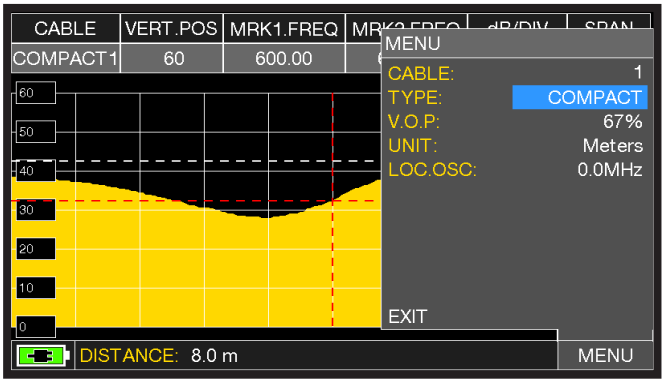
The instrument, equipped with “SW REFLECTOMETER App”, allows you to check the correct impedance matching of a 75 Ω distribution installation.

Through the use of calibrated noise generator, if in a distribution installation there was an impedance mismatch, such as a cable short-circuit, a cable cut or a not properly terminated cable to a 75 ohm dummy load, it will create a standing wave pattern that can be seen on the spectrum of the instrument as shown in the figures below.

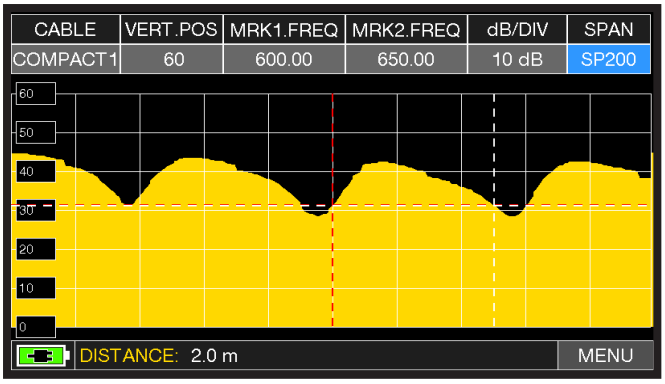
In TV mode press the “HOME” key.



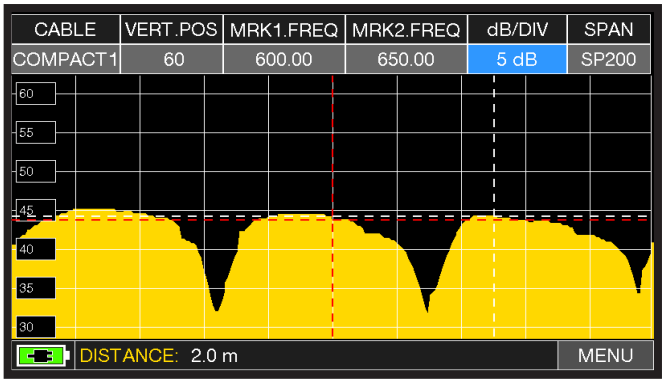
Touch “SPECIAL FUNCT” and then “REFLECTOMETER”.



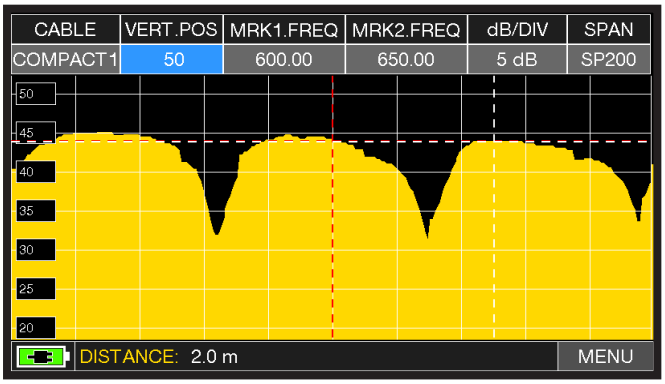
Touch “MENU” and set the features of the coaxial cable you need to analyze (see next page), at the end touch “EXIT”.



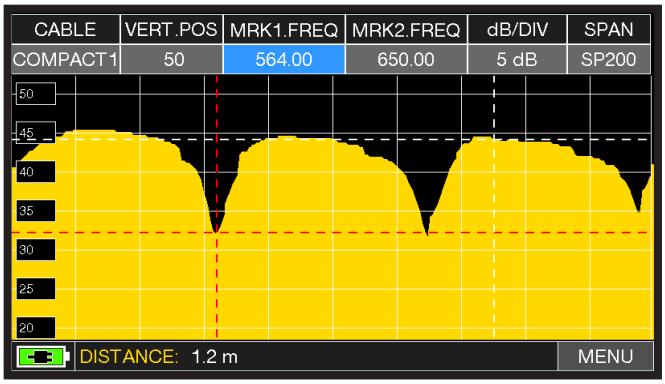
Touch “SPAN” and select the correct visualization value.



Touch “dB DIV” and select the correct visualization value.

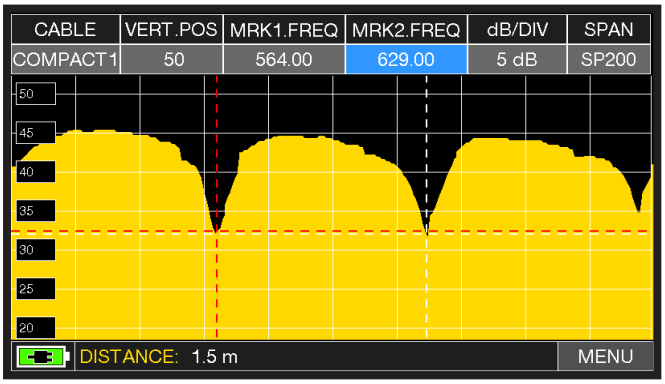


Touch “VERT.POS” and select the correct visualization value.



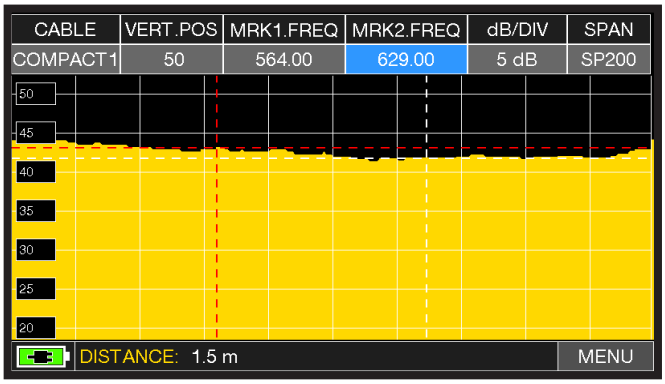
Touch “MRK1.freq” then “MRK2.freq” and set the marker frequencies in correspondence with the first and second minimum points.

Example 1:



In the DISTANCE window, read the cable’s mismatching value: example 1.5 m.

Example 2:



In the DISTANCE window, read the cable’s mismatching value: example 1.5 m.

CONFIGURATION OF COAXIAL CABLES

CABLE: from 1 to 5.

- Default coaxial cable configurations (adjustable).

TYPE: Type of cable to be tested.

- **AIRSPACE**: coaxial cable with dielectric in the air.
- **COMPACT**: coaxial cable with compact dielectric.
- **FOAM**: coaxial cable with foam dialectric.

V.O.P.: Propagation speed.

- Set the value provided by the cable manufacturer.

UNIT: Measurement unit.

- Set the value in meters or feet.

PICTURE: Spectrum graphics.

- Set the spectrum graphics mode to FULL or CONTOURS.

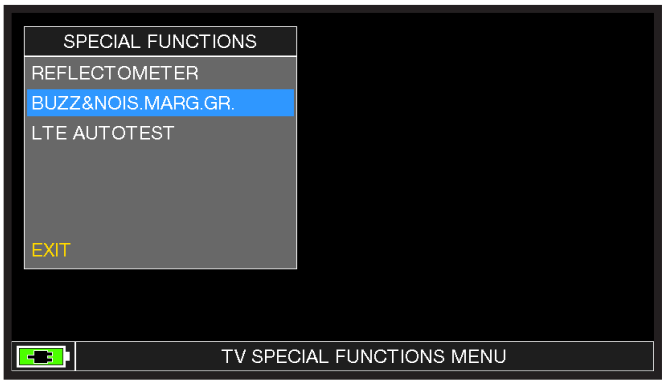
LOC.OSC.: LOCAL TV OSCILLATOR.

- Leave the value set by the manufacturer: 0 MHz.

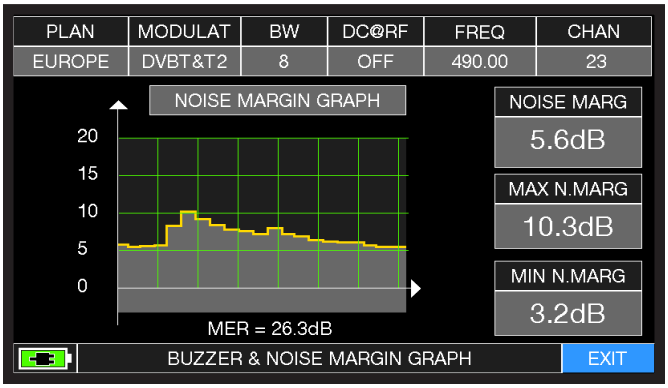
CONNECTION DIAGRAMS

BUZZER & NOISE MARGIN GRAPH

After selecting the TV/CATV channel plan and the desired channel press the “HOME” key.



Touch “SPECIAL FUNCT”, and then touch “BUZZ & NOIS MARGIN”.



Buzzer & Graphic of the progress of the noise. NOISE MARGIN of the TV/CATV tuned channel according to time.

High Tones = BEST Noise Margin Level
Deep Tones = WORST Noise Margin Level
Noise Marg = Real Time Noise Margin
Max N.Marg = Maximum Stored Noise Margin
MER = MER in Real Time

NOTE: The function is also available in CATV and SAT mode.

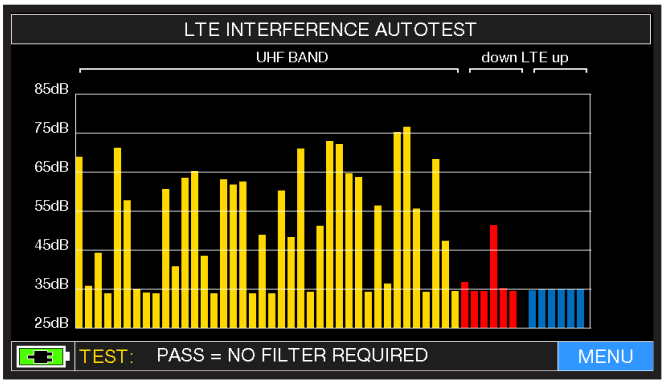
LTE INTERFERENCE TEST

In TV or CATV mode press the “HOME” key.

Or press “BARSCAN” key 2 times.

Touch “SPECIAL FUNCT”,
and then “LTE AUTOTEST”.

Example 1:

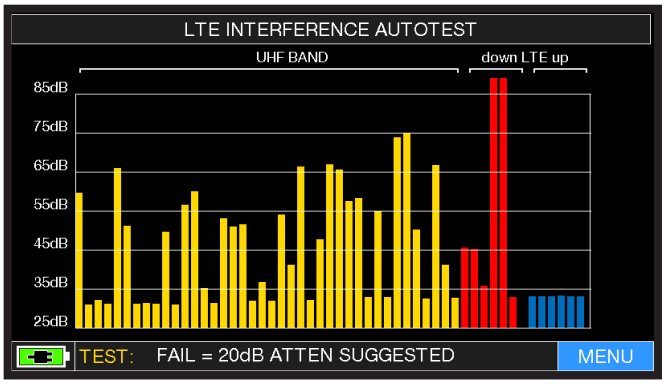


Low LTE interference.

The lower part of the display shows the following information:

PASS = NO FILTER REQUIRED
(No interference detected).

Example 2:

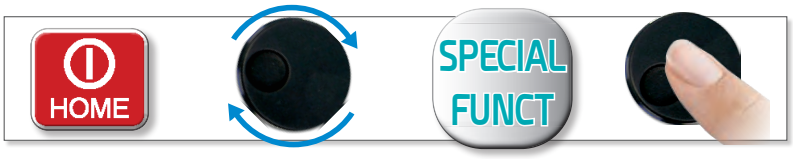


High LTE interference.

The lower part of the display shows the following information:

FAIL = 20dB ATTEN SUGGESTED
(the instrument suggests attenuating the interfering LTE signals by 20 dB)

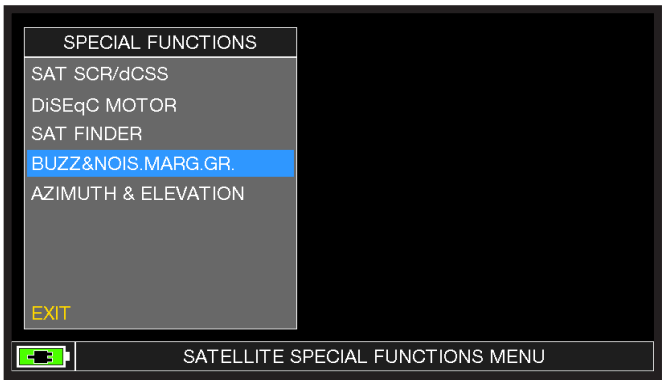
SAT SPECIAL FUNCTIONS



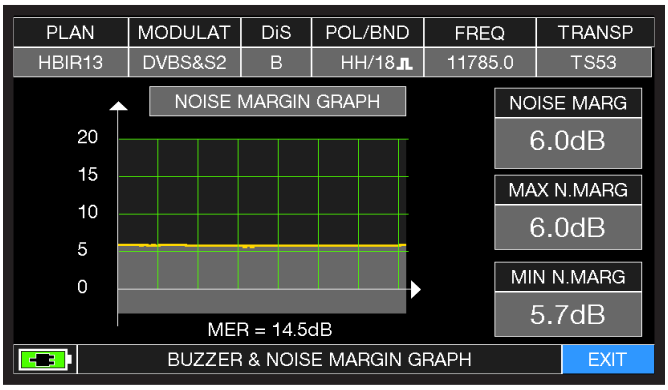
NOTE: The special functions depend on the active operating mode: TV SAT or CATV.

BUZZER & NOISE MARGIN GRAPH

After selecting the desired Satellite and Transponder, press the “HOME” key.



Touch “SPECIAL FUNCT”, and then touch “BUZZ & NOIS MARGIN”.



Buzzer & Graphic of the progress of the NOISE MARGIN of the tuned Sat Transponder according to time.

High Tones = BEST Noise Margin Level
Deep Tones = WORST Noise Margin Level
Noise Marg = Real Time Noise Margin
Max N.Marg = Maximum Stored Noise Margin
MER = MER in Real Time

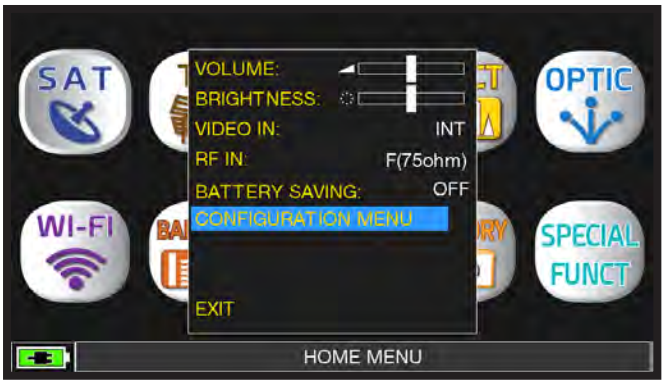
NOTE: The function is also available in CATV and TV mode.

OPTIONAL "APPs"

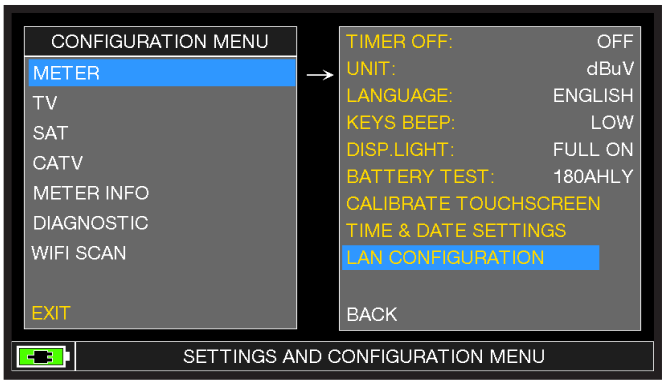
REMOTE CONTROL

The SW REMOTE CONTROL application allow to configure and memorized the instruments and all measurements remotely via web browser (PC, TABLET and SMARTPHONE)

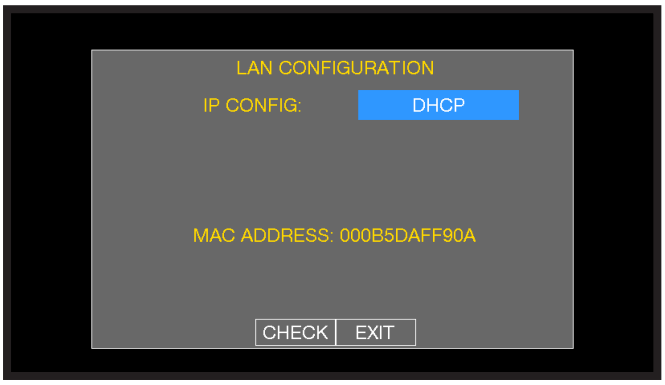
"DHCP" CONFIGURATION EXAMPLES.



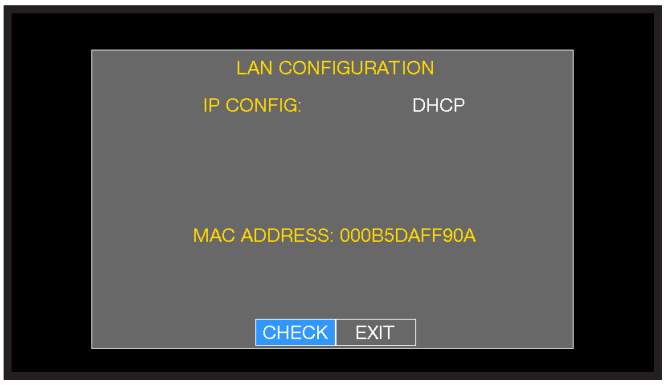
Touch "CONFIGURATION MENU" from "VOLUME" screen.



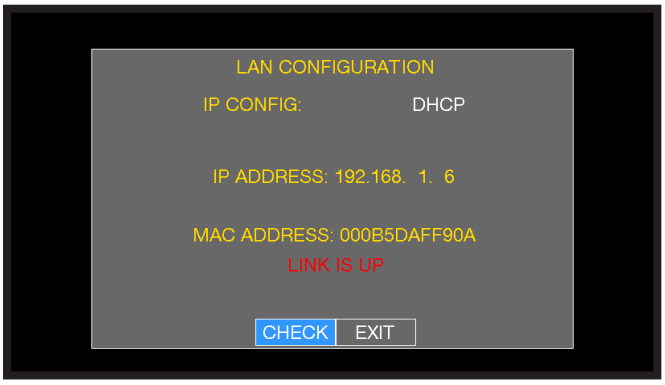
Touch "METER" and then "LAN CONFIGURATION".



Touch "IP CONFIG" and select "DHCP".



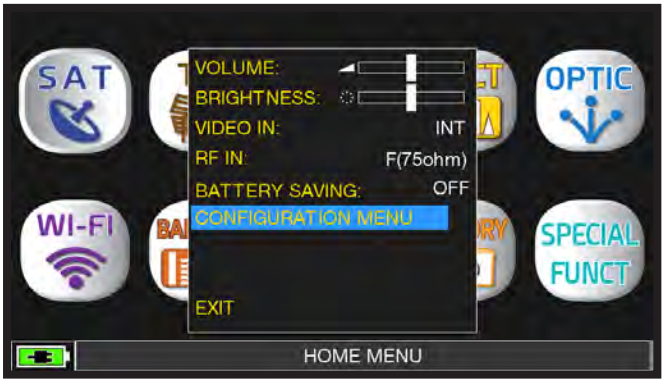
Touch "CHECK".



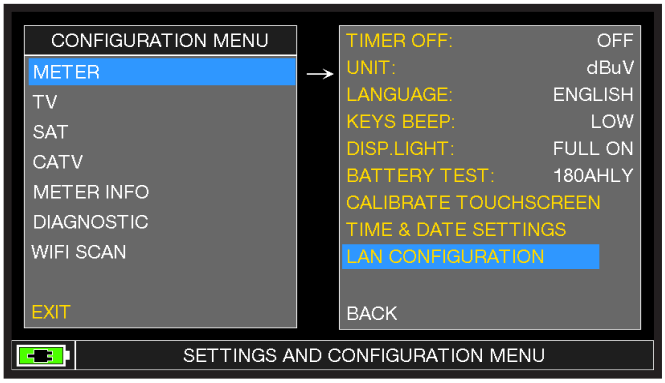
IP address assignment to be inserted into the web browser done.

At the end touch "EXIT" to exit.

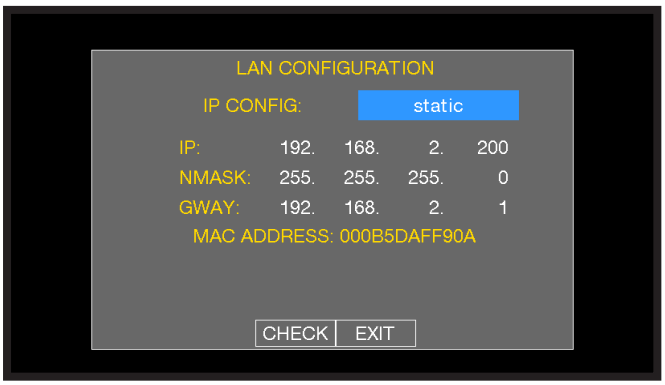
EXAMPLE OF “STATIC” CONFIGURATION.



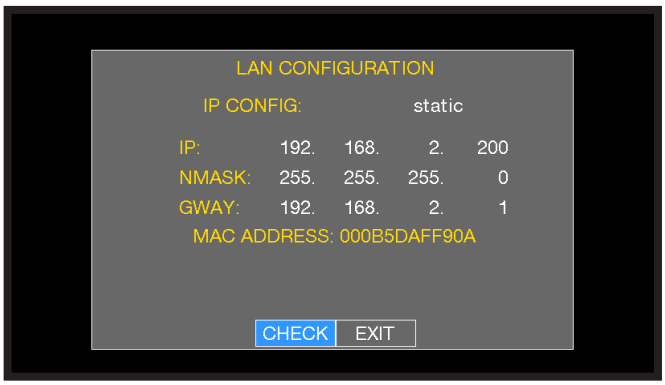
Touch “CONFIGURATION MENU” from “VOLUME” screen.



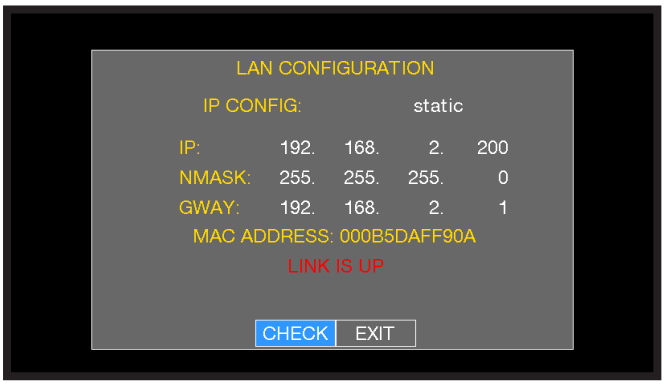
Touch “METER” and then “LAN CONFIGURATION”



Touch “IP CONFIG” and select “STATIC”, insert the “IP”, “NMASK” and “GWAY” parameters.



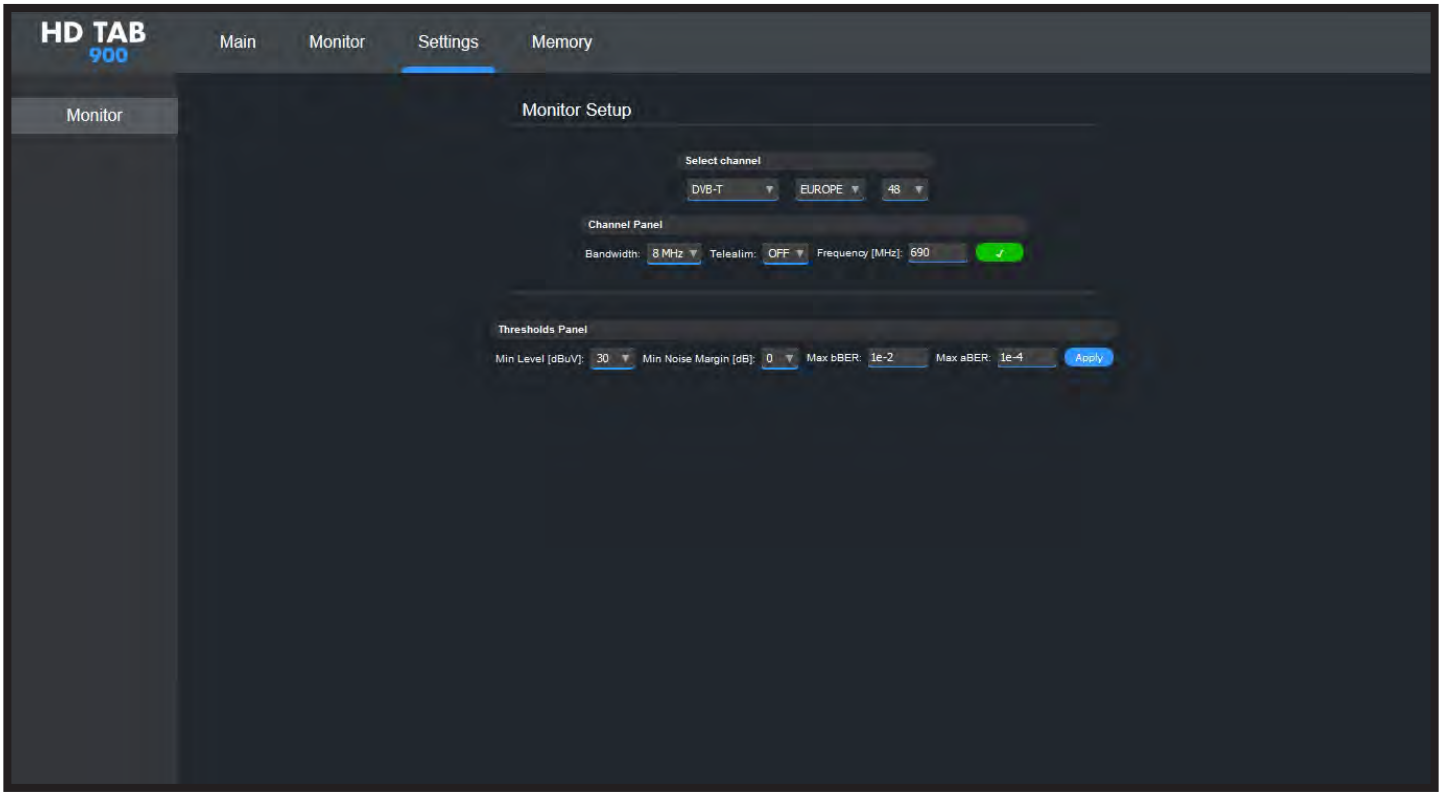
Touch “CHECK”.



At the end touch “EXIT” to exit.

REMOTE CONTROL INTERFACE

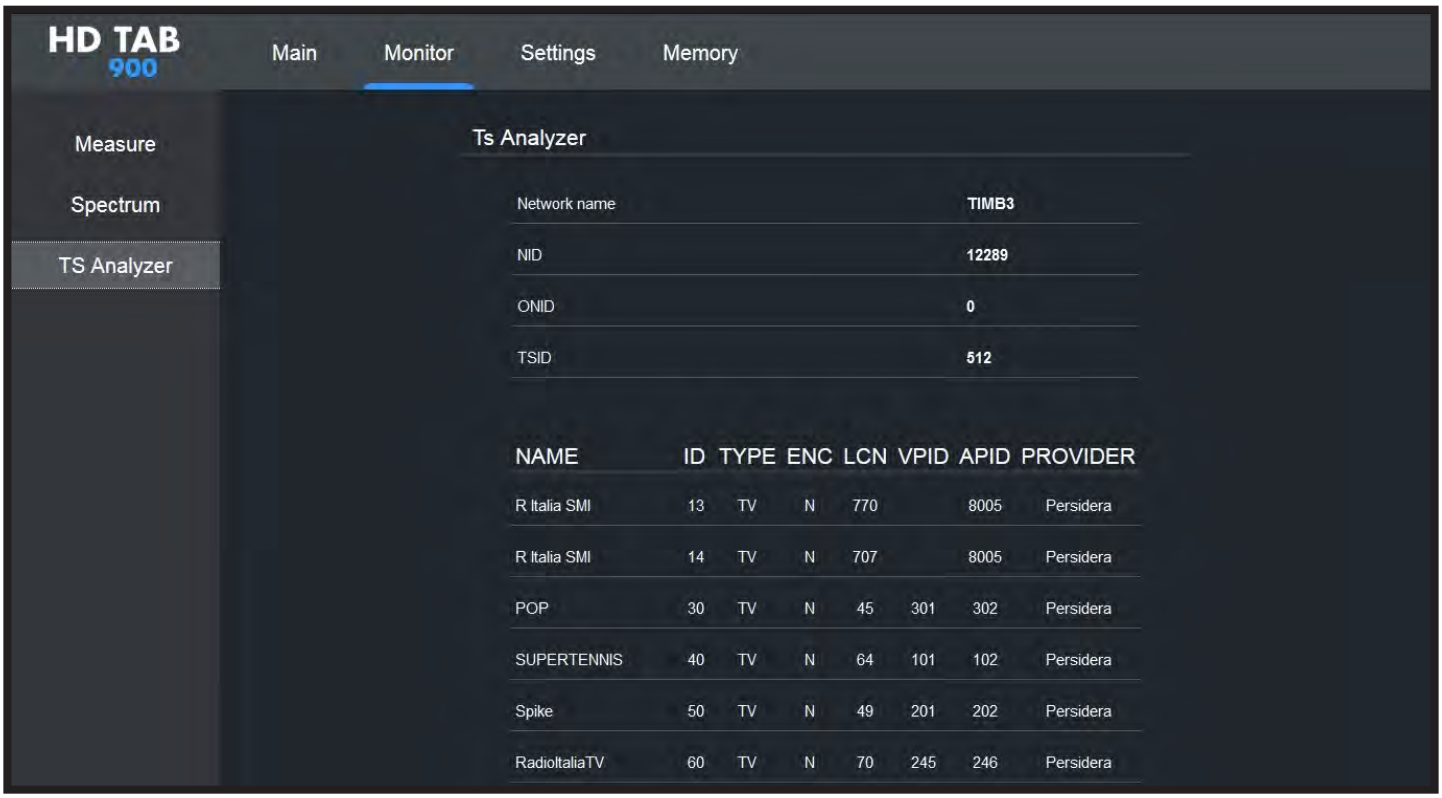
1. Open a web browser
2. Write the assigned IP address, example 192.168.15.134/index.html



Example of SETTING a TV RECEPTION CHANNEL (DVB-T Standard)
and the related ALARM THRESHOLDS (THRESHOLDS)

Example of MEASUREMENTS of a TV CHANNEL (DVB-T Standard)
and related screen of IMPULSE RESPONSE (ECHOES)

Example of DISPLAY of a TV SPECTRUM, SPAN 50 MHz



Example of TRANSPORT STREAM ANALYSIS

LI-ION POLYMER BATTERIES

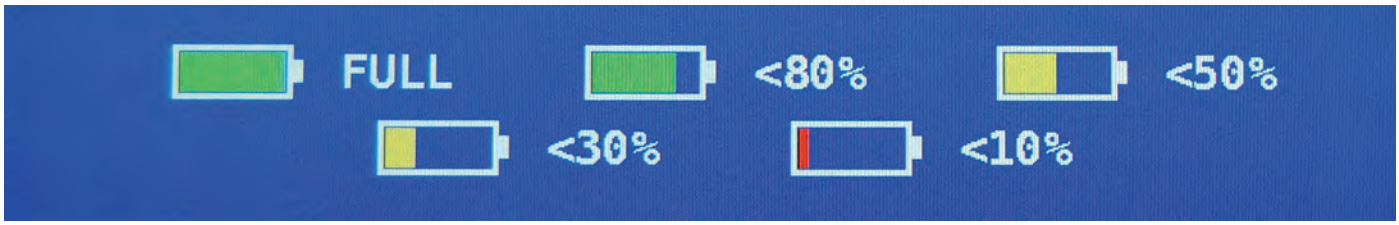
IMPORTANT:

- DO NOT LEAVE THE BATTERIES DISCHARGED FOR LONG PERIODS;
- ALWAYS CHARGE THE BATTERIES AT NIGHT, EVEN IF THEY ARE NOT COMPLETELY DISCHARGED.

USEFUL INFORMATION:

1. The batteries supplied are high quality and tested individually, the autonomy depending on the following conditions:
   - the LNB power consumption: Single, Dual or Quadruple;
   - the external temperature: with temperatures of less than 10°C, 20% of the capacity is lost;
   - the age of the batteries: a 10% loss in efficiency each year;
   - Remember that the TIMER OFF function, that automatically turns off the Meter after 5 o 10 minutes of inactivity saves up to 30%.
2. The battery indicator has a tolerance (like all battery powered electronic devices) according to the following factors:
   - the battery's charging percentage;
   - external temperatures;
   - battery wear and tear;
   - +/- 2 %

ICONS SHOWING THE BATTERY CHARGE STATUS:



BATTERY AUTONOMY:

The battery autonomy is 2 to 4 hours maximum.

WARNINGS

RECHARGEABLE BATTERY

This device contains a built-in Li-PO (Lithium polimer) battery that can be recharged many times.

The battery contains chemicals that might wear with time even if not used. Please dispose of batteries properly.

Do not take the battery pack apart or expose it to extreme temperatures (over 50°C). If the device has been exposed to very low or high temperatures let it rest at room temperature before use.

RECHARGING THE BATTERY

The Battery must be recharged at room temperature (about 20°C) with the device turned off.

To avoid premature failure of the battery never leave the device with an empty battery for prolonged periods.

BATTERY TEST & REGENERATION

THIS PROCEDURE EXPLAINS HOW TO REGENERATE/CHECK YOUR BATTERIES AND CALIBRATE THE BATTERY CHARGE INDICATOR.

USEFUL ADVICE:

- Charge the batteries every night after use, even if they are not completely discharged;
- Always use the “battery save” & “timer off” functions to increase your meter’s autonomy;
- The maximum capacity of the batteries and battery charge indicator’s accuracy improves by up to 20% if you carry out many battery test cycles;
- Do not replace the batteries: first carry out 3 to 5 battery test cycles until you recover the maximum capacity of the batteries.

“BATTERY TEST” INSTRUCTIONS & PROCEDURE:

1. Before carrying out the test connect the meter to the original battery charger:
   - Turn on the meter;
   - Press the volume key and select “configuration menu” (fig. 1);
   - Select the word “meter” and press “ENTER” (fig. 2) & press “ENTER” to confirm;
   - Select “battery test” and select “on” (fig. 2);
   - Press “enter” to confirm;
   - Carefully read the various screens, pressing “enter” in succession;
   - In the last instructions window, select “start” and press “enter” to start the test.

WARNING: The procedure will be cancelled if you select “exit” on any screen.

FIG. 1*

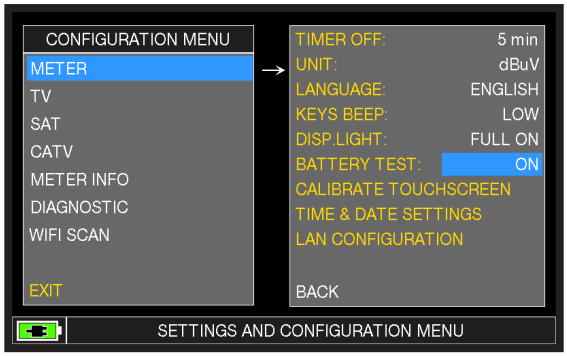


FIG. 2*

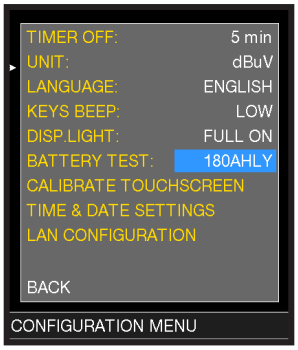


FIG. 3

IMPORTANT ADVICE:

- Do not connect any type of load to the “F” input connector (LNB, TV head-end, amplifiers, etc.).
- Extract the conditional access module (CAM), if it is present in your meter.

2. The battery test takes approx. 12/18 Hours according to the model (charging/discharging/recharging activities and measurement of the battery autonomy), during this time the meter must not be used.
   At the end of the test the meter will turn off automatically. In order to make sure that the test has been carried out correctly, all the meter’s commands are blocked except for the reset function, which remains active so that the meter can be turned off if necessary.
3. the batteries will be completely charged at the end of the test.
4. To check the battery test results, enter once again into “meter” in the “configuration menu” and read the results (Fig. 3):
   - for example 265BFEY (fig.3) = 265 minutes.
   The “Y” of YES confirms that the battery is still good enough, whereas an “N” for NO indicates that it could be faulty, too deteriorated or that the cycle was interrupted.

IMPORTANT NOTES:

If the test is interrupted using “reset”, the battery charge indicator may provide incorrect indications, therefore repeat the battery test procedure.

* The displays shown in this guide may change according to the model and are subject to change without notice. If you connect your meter, using the S.M.A.R.T. Pro program, from the usb port to the pc, you can download the screens shown above.

POWER SUPPLY (MAINS) AND BATTERY CHARGE (CHRG) LED STATUS

INSTRUMENT	CONNECTED TO THE MAINS POWER SUPPLY	LED MAINS	LED BATT CHRG	NOTES
ON	NO	ON	OFF	Instrument ON or in power up
OFF	YES	ON	Flashing 0.5 SECONDS OFF 0.5 SECONDS ON	Abnormal battery temperature. The recharge cycle has been suspended temporarily and will automatically reset.
OFF	YES	ON	ON	Batteries in charge
OFF	YES	ON	OFF	Battery charge completed
OFF	WITH A POWER SUPPLY NOT COMPLIANCE	Flashing 0.5 SECONDS OFF 0.5 SECONDS ON	OFF	The meter does not turn on. Check the mains power adapter, it must be 12 Vdc and not 18 Vdc

METER MAINTENANCE

CLEANING THE METER

Cleaning the meter from dust and dirt is easy and helps in maintaining optimal work conditions through the years. The cleaning procedure is simple and quick and requires only minor attention.

Never use aggressive chemical products (diluent) and/or abrasive or rough cloth which may damage plastics and displays.

Always use a soft cloth, dampened with a simple water and alcohol solution or a de-greasing nonabrasive liquid soap.

Keyboard and display should be gently cleaned. Rubbing the keyboard and/or the display(s) may seriously damage their functions.

MAINTENANCE AND CARE OF THE METER

This meter has been designed to withstand severe conditions of use. Even so, its life may be prolonged by respecting some simple and effective rules:

The meter has not been designed to withstand high temperatures (over 60°C or 140° F). Those temperatures can be easily reached when the meter is left in a car, especially behind the windshield, or in the trunk. The LCD display and/or other details may easily be damaged by the extreme temperature.

The internal battery may rapidly loose its efficiency if exposed to high or low temperatures. This will result in reduced autonomy of the meter when powered by internal battery.

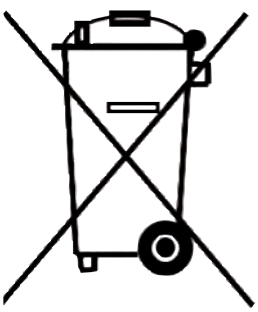
When recharging the internal battery, do allow a good air circulation around the meter and the adapter: do not cover it with clothes and do not recharge the battery when the meter is contained in its transport case

The meter is not waterproof, even if it is protected against incidental water drops. In case of contact with water, electronic circuits may be damaged, allow the meter to dry thoroughly before trying to turn it on. Do not use a hairdryer or other strong heating sources, but just leave the meter in quiet air. If possible, contact Blonder Tongue Technical Support.

DISPOSAL OF ELECTRONIC EQUIPMENT

Disposal of electric/electronic equipment (applicable in all CEE countries and wherever separate waste collection system is applied).

This symbol on the packaging indicates that the product should not be considered as domestic waste. The product, at the moment of disposal, should be brought to a waste collection point with the proper facilities to manage electrical/electronic appliances.



Electric/electronical appliances, if not disposed of correctly, may have negative consequences on your health and enivironment.
Furthermore, a proper recycling procedure helps maintain natural resources.
For more information about the correct disposal of this product, please refer to your local waste management offices or the shop where this product was bought.

SUGGESTED VALUES

This table shows the suggested measurements at a user's socket for the main digital modulations.

SUGGESTED VALUE TO: SUBSCRIBER SOCKET, KUNDEN ANTENNEN DOSE, PRESA UTENTE, PRISE DE L'ABONNE', TOMA FINAL DE USARIO, АБОНЕНТСКИЙ РАЗЪЕМ

DVB-S QPSK		
PARAM.	MIN	TYP.
AVG PWR	40 dBµV	50 dBµV
NOISE MARG.	3 dB	6 dB
aBER post Viterbi	2x10 −6	2x10 −8
MER QPSK 2/3 FEC	9 dB	12 dB
MER QPSK 3/4 FEC	10 dB	13 dB
MER QPSK 5/6 FEC	11 dB	14 dB

DVB-S2 8PSK		
PARAM.	MIN	TYP.
AVG PWR	40 dBµV	50 dBµV
NOISE MARG.	3 dB	6 dB
PER 8PSK	<1x10 −7	<1x10 −8
MER 8PSK 2/3 FEC	11 dB	14 dB
MER 8PSK 3/4 FEC	12 dB	15 dB
MER 8PSK 5/6 FEC	13 dB	16 dB

DVB-T-H & GB COFDM		
PARAM.	MIN	TYP.
AVG PWR	40 dBµV	50 dBµV
NOISE MARG.	6 dB	9 dB
aBER post Viterbi	2x10 −6	2x10 −8
MER 64 QAM 2/3 FEC	25 dB	28 dB
MER 16 QAM 2/3 FEC	20 dB	23 dB
MER QPSK 2/3 FEC	14 dB	17 dB

DVB-T2 & GB COFDM		
PARAM.	MIN	TYP.
AVG PWR	40 dBµV	50 dBµV
NOISE MARG.	6 dB	9 dB
PER	1x10 −7	1x10 −8
MER 256 QAM 2/3 FEC	25 dB	28 dB
MER 256 QAM 3/4 FEC	26,5 dB	29,5 dB
MER 256 QAM 5/6 FEC	28,5 dB	31,5 dB

ATSC (USA) 8VSB		
PARAM.	MIN	TYP.
AVG PWR	-15 dBmV	-5 dBmV
NOISE MARG.	2 dB	9 dB
bBER pre Trellis	1x10 −3	<1x10 −6
bBER post Trellis	3x10 −6	<1x10 −8
aBER pre R.S.	3x10 −6	<1x10 −8
MER	16 dB	23 dB

ACCESSORIES SUPPLIED

- Rugged Elite BAG
- Removable side pocket for tools and accessories
- Shoulder strap
- USB 2.0 cable for PC connection
- Battery charger power supply
- Pen for touch screen display
- F Female - F Female connector

NOTE: This list of accessories is subject to change without notice and depends on the meter's configuration.

LIMITED WARRANTY

Seller will at its sole option, either repair or replace (with a new or factory reconditioned product, as Seller may determine) any product manufactured or sold (or in the case of software, licensed) by Seller which is defective in materials or workmanship or fails to meet the applicable specifications that are in effect on the date of shipment or such other specifications as may have been expressly agreed upon in writing: (i) for a period of three (3) years from the date of original purchase for all stock hardware products (other than those specifically referenced herein below having a shorter warranty period); (ii) for a period of one (1) year from the date of original purchase, with respect to all MegaPort™, IPTV products, test equipment and fiber optics receivers, transmitters, couplers and integrated receiver/distribution amplifiers; (iii) for a period of one (1) year from the date of original purchase (or such shorter period of time as may be set forth in the license agreement specific to the particular software being licensed from Seller) with respect to all software products licensed from Seller (other than Core Product Software) that is (a) developed for a specific function or application, (b) complimentary to and does not function without the Core Product Software, and (c) listed with a specific model number and stock number in Seller's Price List ("Non-Core Software"); (iv) for a period of ninety (90) days from the date of original purchase, with respect to non-serialized products and accessories, such as parts, sub-assemblies, splitters and all other products sold by Seller (other than Core Product Software and Refurbished/Closeout Products) not otherwise referred to in clauses (i) through (iii) above. The warranty period for computer programs in machine-readable form included in a hardware product, which are essential for the functionality thereof as specifically stated in the published product specifications ("Core Product Software") will be coincident with the warranty period of the applicable hardware product within which such Core Product Software is installed.

Software patches, bug fixes, updates or workarounds do not extend the original warranty period of any Core Product Software or Non-Core Software. Notwithstanding anything herein to the contrary,

(i) Seller's sole obligation for software that when properly installed and used does not substantially conform to the published specifications in effect when the software is first shipped by Seller, is to use commercially reasonable efforts to correct any reproducible material non-conformity (as determined by Seller in its sole discretion) by providing the customer with: (a) telephone or e-mail access to report non-conformance so that Seller can verify reproducibility, (b) a software patch or bug fix, if available or a workaround to bypass the issue if available, and (c) where applicable, replacement or damaged or defective external media, such as CD-ROM disk, on which the software was originally delivered;

(ii) Seller does not warrant that the use of any software will be uninterrupted, error-free, free of security vulnerabilities or that the software will meet the customer's particular requirements; and the customer's sole and exclusive remedy for breach of this warranty is, at Seller's option, to receive (a) suitably modified software, or part thereof, or (b) comparable replacement software or part thereof;

(iii) Seller retains all right, title and interest in and to and ownership of all software (including all Core Product Software and Non-Core Software) including any and all enhancements, modifications and updates to the same; and

(iv) in some cases, the warranty on certain proprietary sub-assembly modules manufactured by third-party vendors and contained in Seller's products, third party software installed in certain of Seller's products, and on certain private–label products manufactured by third-parties for resale by Seller, will be of shorter duration or otherwise more limited than the standard Seller limited warranty.

In such cases, Seller's warranty with respect to such third-party proprietary sub-assembly modules, third-party software and private-label products will be limited to the duration and other terms of such third-party vendor's warranty, if any. In addition, certain products, that are not manufactured by Seller, but are resold by Seller, may carry the original OEM warranty for such products, if any.

The limited warranty set forth above does not apply to any product sold by Seller, which at the time of sale constituted a Refurbished/Closeout Product, the limited warranty for which is provided in the following paragraph.

Seller will at its sole option, either repair or replace (with a new or factory-reconditioned product, as Seller may determine) any product sold by Seller which at the time of sale constituted a refurbished or closeout item ("Refurbished/Closeout Product"), which is defective in materials or workmanship or fails to meet the applicable specifications that are in effect on the date of shipment of that product or fails to meet such other specifications as may have been expressly agreed upon in writing between the parties, for a period of ninety (90) days from the date of original purchase.

Notwithstanding the foregoing, in some cases the warranty on certain proprietary sub-assembly modules manufactured by third-party vendors and contained in Seller products, third party software installed in certain of Seller's products, and on certain private–label products manufactured by third-parties for resale by Seller will be of shorter duration or otherwise more limited than Seller limited warranty for Refurbished/Closeout Products.

In such cases, Seller's warranty for Refurbished/Closeout Products constituting such third party proprietary sub-assembly modules, third party software, and private-label products will be limited to the duration and other terms of such third-party vendor's warranty, if any. In addition, notwithstanding the foregoing, (i) certain Refurbished/Closeout Products that are not manufactured (but are resold) by Seller, may carry the original OEM warranty for such products, if any, which may be longer or shorter than Seller's limited warranty for Refurbished/Closeout Products. All sales of Refurbished/Closeout Products are final.

To obtain service under this warranty, the defective product, together with a copy of the sales receipt, serial number if applicable, or other satisfactory proof of purchase and a brief description of the defect, must be shipped freight prepaid to Seller at the following address: One Jake Brown Road, Old Bridge, New Jersey 08857.

This warranty does not cover failure of performance or damage resulting from (i) use or installation other than in strict accordance with manufacturer's written instructions, (ii) disassembly or repair by someone other than the manufacturer or a manufacturer-authorized repair center, (iii) misuse, misapplication or abuse, (iv) alteration, (v) exposure to unusual physical or electrical stress, abuse or accident or forces or exposure beyond normal use within specified operational or environmental parameters set forth in applicable product specifications, (vi) lack of reasonable care or (vii) wind, ice, snow, rain, lightning, or any other weather conditions or acts of God.

OTHER THAN THE WARRANTIES SET FORTH ABOVE, SELLER MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND, EXPRESS OR IMPLIED, AS TO THE CONDITION, DESCRIPTION, FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR AS TO ANY OTHER MATTER, AND SUCH WARRANTIES SET FORTH ABOVE SUPERSEDE ANY ORAL OR WRITTEN WARRANTIES OR REPRESENTATIONS MADE OR IMPLIED BY SELLER OR BY ANY OF SELLER'S EMPLOYEES OR REPRESENTATIVES, OR IN ANY OF SELLER'S BROCHURES MANUALS, CATALOGS, LITERATURE OR OTHER MATERIALS. IN ALL CASES, BUYER'S SOLE AND EXCLUSIVE REMEDY AND SELLER'S SOLE OBLIGATION FOR ANY BREACH OF THE WARRANTIES CONTAINED HEREIN SHALL BE LIMITED TO THE REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT F.O.B. SHIPPING POINT, AS SELLER IN ITS SOLE DISCRETION SHALL DETERMINE.

SELLER SHALL IN NO EVENT AND UNDER NO CIRCUMSTANCES BE LIABLE OR RESPONSIBLE FOR ANY CONSEQUENTIAL, INDIRECT, INCIDENTAL, PUNITIVE, DIRECT OR SPECIAL DAMAGES BASED UPON BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT TORT LIABILITY OR OTHERWISE OR ANY OTHER LEGAL THEORY, ARISING DIRECTLY OR INDIRECTLY FROM THE SALE, USE, INSTALLATION OR FAILURE OF ANY PRODUCT ACQUIRED BY BUYER FROM SELLER.

All claims for shortages, defects, and non-conforming goods must be made by the customer in writing within five (5) days of receipt of merchandise, which writing shall state with particularity all material facts concerning the claim then known to the customer.

Upon any such claim, the customer shall hold the goods complained of intact and duly protected, for a period of up to sixty (60) days. Upon the request of Seller, the customer shall ship such allegedly non-conforming or defective goods, freight prepaid to Seller for examination by Seller's inspection department and verification of the defect. Seller, at its option, will either repair, replace or issue a credit for products determined to be defective.

Seller's liability and responsibility for defective products is specifically limited to the defective item or to credit towards the original billing.

All such replacements by Seller shall be made free of charge f.o.b. the delivery point called for in the original order.

Products for which replacement has been made under the provisions of this clause shall become the property of Seller.

Under no circumstances are products to be returned to Seller without Seller's prior written authorization. Seller reserves the right to scrap any unauthorized returns on a no-credit basis.

Any actions for breach of a contract of sale between Seller and a customer must be commenced by the customer within thirteen (13) months after the cause of action has accrued.

A copy of Seller's standard terms and conditions of sale, including the limited warranty, is available from Seller upon request.

Copies of the limited warranties covering third-party proprietary sub-assembly modules and private-label products manufactured by third-parties may also be available from Seller on request. (Rev 0713) .

ABBREVIATIONS & TECHNICAL TERMS

- **APID (Audio Packet Identifier):** Audio reception parameters in the MPEG data stream.
- **aBER (Bit Error Rate after Viterbi):** Ratio of the transmitted bits to the erroneous bits after Reed Solomon (Viterbi).
- **BCH (Bose Chaudhuri Hocquenghem):** External error protection decoder.
- **BER (Bit Error Rate):** The bit error rate shows the quality of the DVB signals. It displays the number of erroneous bits in relation to all the transmitted bits.
- **bBER (Bit Error Rate before Viterbi):** Ratio of the received bits relative to bits that have errors before Reed Solomon (Viterbi).
- **CBR (Constant Bit Rate):** Is used for MPTS measurements, cf. VBR.
- **C/N (Carrier to Noise):** Difference between the carrier signal and noise level in dB; see also S/N.
- **EVM (Error Vector Magnitude):** Measurements deviation of the transmitted symbols to the ideal constellation, measured in dB.
- **FEC (Forward Error Correction):** Forward Error Correction, e.g. in case of the code rate ¾, ¾ of the information is user data, ¼ of the data come from the Viterbi correction.
- **Guard Interval:** Guard interval by extending the symbol through a gap. Due to this, good reception is possible even in case of strong reflections.
- **LCN (Logical Channel Numbering):** Logical channel sorting performed by the provider.
- **LDPC (Low Density Parity Check):** A new error protection method applied in DBV-S2 (Gallager codes). Inner error protection; code rates from 1/2 to 9/10.
- **MER (Modulation Error Rate):** MER is the ratio of the average signal power to the average error power in dB. It is a kind of a C/N measurement which gives information whether the receiver is able to demodulate the received signal.
- **MPTS (Multiple Program Transport Stream)**
- **NID (Network Identification):** Network ID or channel identification number between 0 and 8191.
- **NIT (Network Information Table):** Contains, for example, information about all available transponders, PIDs, downlink frequency, polarisation, next transponder for the scan; transmitted in the multiplexer transport stream.
- **NsMargin (Noise Margin):** Signal to Noise Ratio margin.
- **OMI (Optical Modulation Index)**
- **PER (Packet Error Ratio):** The Packet Error Ratio displays the number of incorrectly received data packets relative to the total number of transmitted packets (after Viterbi).
- **QEF (Quasi Error Free):** Bit error rate equals 2.00e-4.
- **Noise Level:** Sum of noise factor and thermal noise floors. Noise is created by physically caused molecular motion in electrical conductors.
- **RMS (Root Mean Square):** Method of a square mean value determination.
- **S/N (Signal to Noise):** Difference between the wanted signal and the noise level in dB; S/N ≈ C/N + 1,5; see also C/N.
- **SPTS (Single Program Transport Stream)**
- **TSID (Transport Stream ID):** Transponder/multiplex ID.
- **VBR (Variable Bit Rate):** Is used for MPTS measurements, cf. CBR.
- **VPID (Video Packet Identifier):** Video reception parameters in the MPEG data stream.

NOTES

www.blondertongue.com

UG-BTPRO8000S-EN-V1

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