PROMAX

SATHUNTER+

Satellite pointing made easy

Quick configuration guide

DVB S/S2

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If you have bought the **SATHUNTER+**, this presentation will help you to start using your unit.

If you have not got it yet, we hope it will help you to take a decision!

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With the **SATHUNTER+**, aligning a dish to the required satellite becomes fast and easy

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Some hightlights

- Small, light, easy to use and rought.
- It works for **DVB-S** and **DVB-S2**.
- Identifies the satellite and reads the service list of the selected transponder.
- Measures Power, MER, CBER and VBER / LBER for fine adjustment.
- Drives the LNB with voltage and 22 kHz signal.
- Li battery delivers 2 h of operation time, delivering power to the LNB.
  A one-hour charge restores the battery to 70% of its full capacity.
- High contrast, backlighted screen.
- **PROMAX: Our experience is backed by thousands of meters!**

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Before starting...

- Check if the satellites / transponders preprogrammed in the **SATHUNTER+** are good for your application.
- **SATHUNTER+** needs to be programmed before use with transponder information from the satellites you want to work with.
- Each set of transponder data (frequency, FEC...) will become a test point in the SATHUNTER which you can label, so you identify it easily.

Why use preprogrammed satellites?

This is a solution to make the installation and measurements with minimum operation complexity.

You can...

- Set up to 16 satellites (1 transponder per satellite).
- Set for testing the 4 polarities on up to 4 satellites (recommended).
  For example:
  - Atlantic Bird 5°W
  - Hot Bird 13°E
  - Astra 19°E
  - Other

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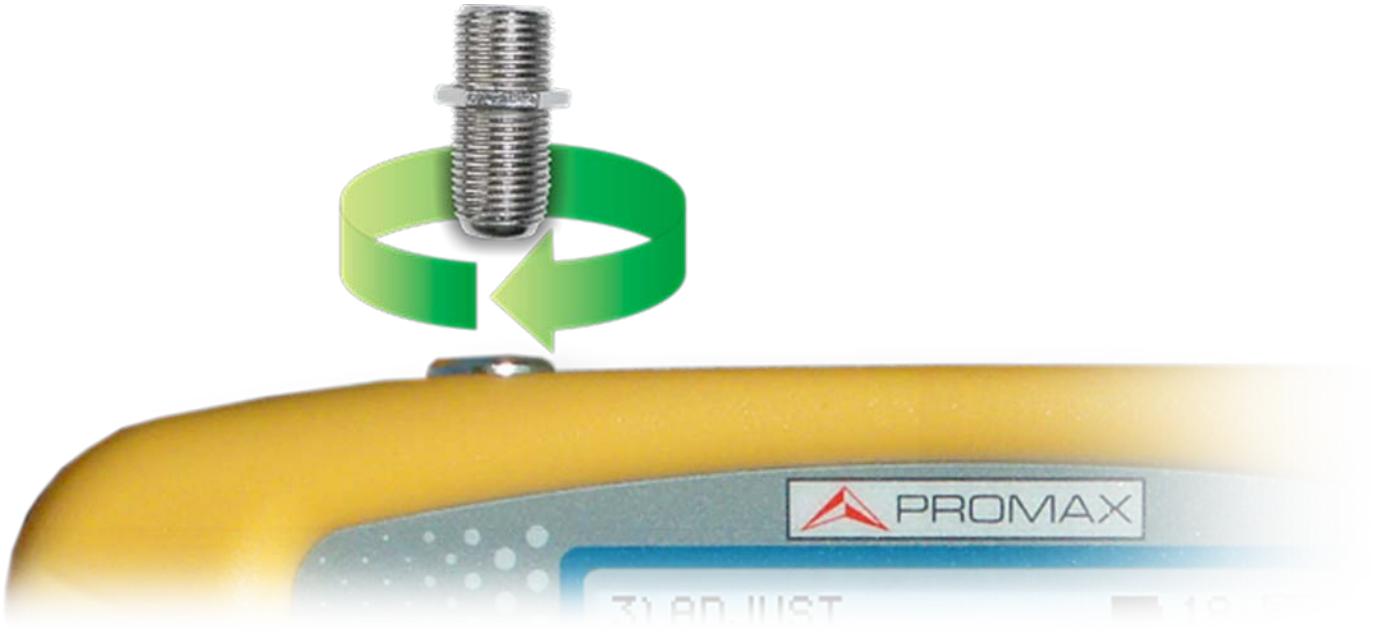
Conector de entrada reemplazable

The input connector is a frequent point of breakdown in field instruments.

Therefore the **SATHUNTER+** comes with a replaceable F/F adapter.



Li+ batteries

- Before starting operation make sure batteries are charged and eventually charge them for a few hours using the **AL-101B** power charger supplied.
- The batteries are Li+, so not only battery life is longer but also the charging time is quite short.
- The unit comes with a power adaptor and a charger for the car lighter.

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If the preprogrammed configuration is not good for your application, please go to the "**modifying configuration**" section

Click me to go there directly

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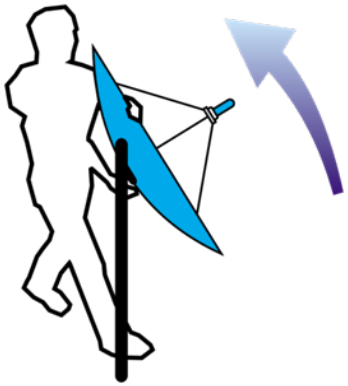
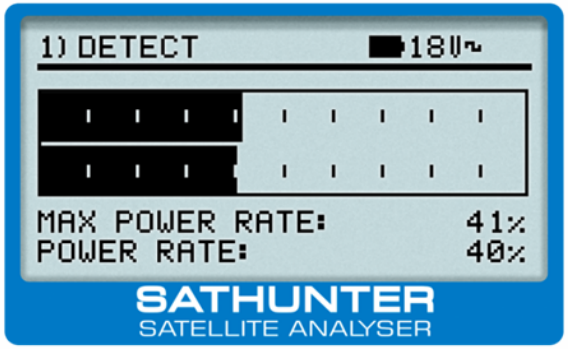
Step 1

Detecting a satellite

- Switch on by pressing key #1  for more than a second.
- Move the dish towards the position where you'd expect to find the satellite you wish to align.
- As soon as you receive signals from a satellite, the bargraph will show some activity and the acoustic indicator will beep.

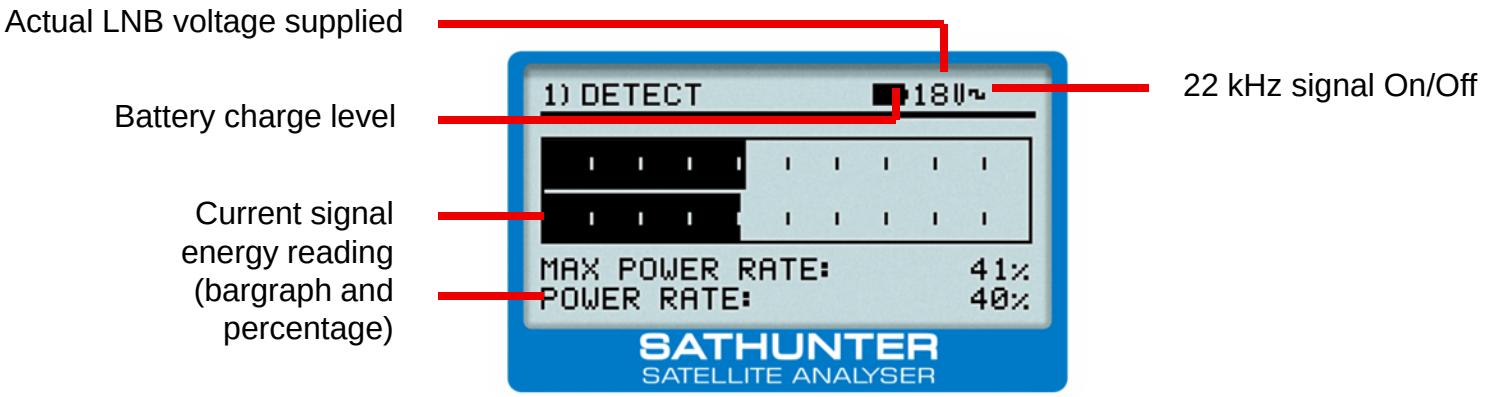




Step 1

Detecting a satellite

- Move the dish smoothly up, down, left and right to get the maximum bargraph deviation.
- Display will be also showing additional information:



Step 1

Detecting a satellite

There are some of the messages you can get on the display:

- "**LNB SHORT CIRCUIT**". Look for a short circuit in the cable to the LNB, connectors, LNB itself...
- "**LNB NOT DETECTED**". Check connectors and LNB. Check that the cable run is not too long

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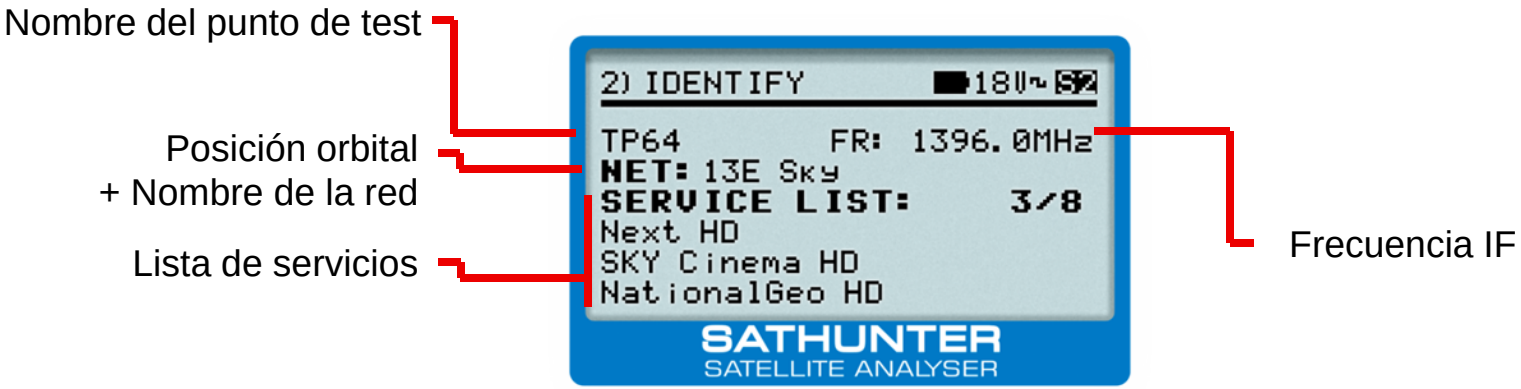
Step 2

Identifying satellite

- Una vez que tenga el máximo valor en la barra gráfica, pulse  .La etiqueta del primer punto de test aparecerá en pantalla (por ejemplo, TP64).
- Inmediatamente después de la etiqueta el **SATHUNTER+** mostrará toda la información.

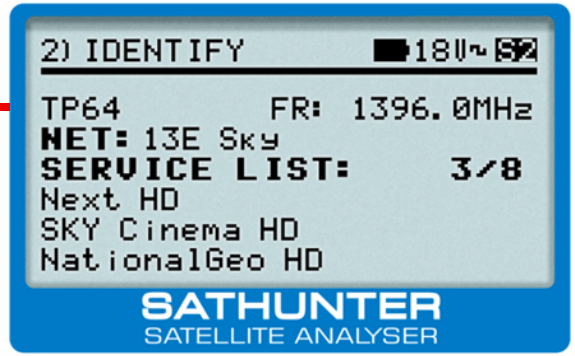


Step 2

Identifying satellite

- Every time you push the key 

, the next text point will be selected in a cyclic sequence.
- If no information is displayed, the test point does not correlate with the identified satellite. Please continue to the next test point.



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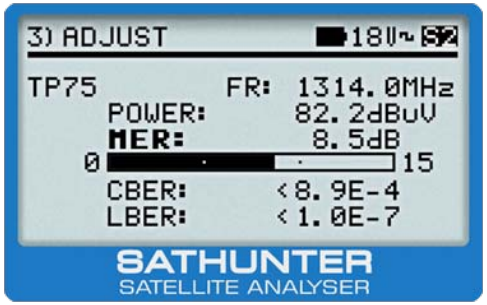
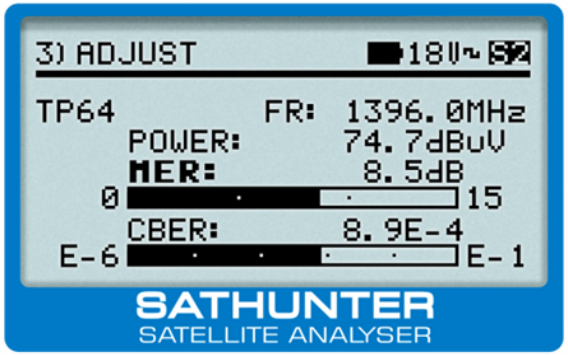
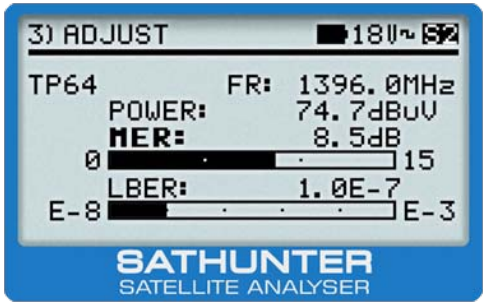
Step 3

Optimizing the quality

- Once you know you are on the right satellite, press key  .
- Another bargraph showing **MER** measurement (both graphically and numerically) will appear together with the **CBER** and/or **LBER*** measurement (configurable with the software).







* VBER for DVB-S
LBER for DVB-S2

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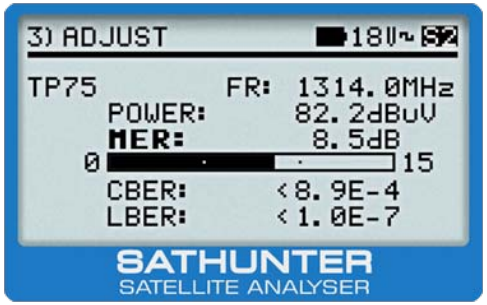
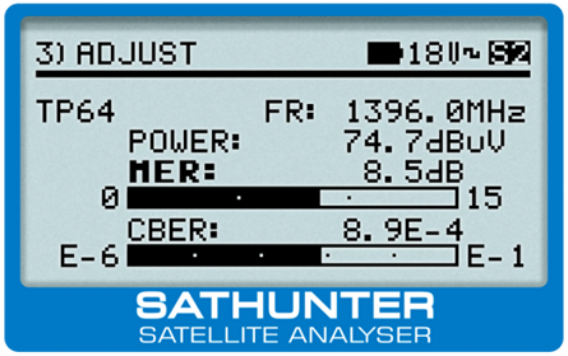
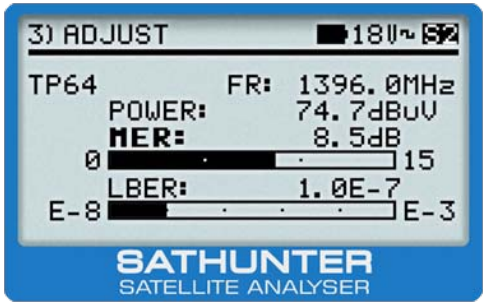
Step 3

Optimizing the quality

- MER is a quality indicator; its value should be as high as possible.
- CBER and VBER/LBER* are error rate measurements. Their values should be as low as possible.







* VBER for DVB-S
LBER for DVB-S2

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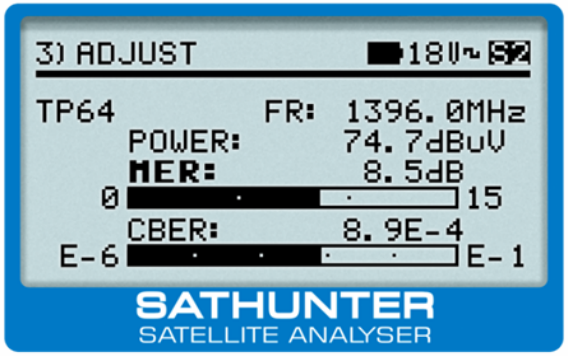
Step 3

Optimizing the quality

- Move the LNB to maximize the bargraph deviation (cross polarization adjustment)

MAXIMUM DEVIATION

OPTIMUM CROSS - POLARIZATION



Modifying configuration

If you wish to work with satellites different to those preprogrammed from origin or wish to change the test points in any way, you should proceed as follows:

1) Get information on the satellites and transponders of your choice.

2) Edit the configuration file accordingly by using the SATHUNTER+ software supplied and change the programming of the SATHUNTER+ using the communications cable included as well.

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Get information...

- Satellite and transponder information is available through different sources, mainly from websites or magazines.
- Several websites offer reliable data which can be used to configure the **SATHUNTER+**.

www.lyngsat.com

www.satbeams.com

kingofsat.net

- The following describes the procedure for the website www.lyngsat.com. For other websites, the procedure would be similar.

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Get information...

Enter Lyngsat web site and click on your region in “**Frequencies**”.

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Get information...

Click on the desired satellite:

62.0°E	Intelsat 902	090824
60.0°E	Intelsat 904	090827
57.0°E	NSS 703	090817
57.0°E	Astra 1F	
57.0°E	NSS 5	
56.0°E	Bonum 1	090617
55.0°E	Insat 3E	080220
53.0°E	Express AM22	090826
50.8°E	Galaxy 26	090607
49.0°E	Yamal 202	090821
48.0°E	Eurobird 9	
45.0°E	Intelsat 12	090814
42.0°E	Türksat 2A	090829
	Türksat 3A	090829
40.0°E	Express AM1	090801
39.0°E	Hellas Sat 2	090824
38.0°E	Paksat 1	090828
36.0°E	Eutelsat Sesat	090820
	Eutelsat W4	090824
33.0°E	Eurobird 3	090816
	Intelsat 802	090414
31.5°E	Astra 2C	090702
31.0°E	Türksat 1C (incl. 1.3°)	090824

25.5°E	Eurobird 2	090830
23.5°E	Astra 1E	090819
	Astra 1G	090824
	Astra 3A	090824
21.6°E	Eutelsat W6	090813
21.0°E	AfriStar 1	090205
19.2°E	Astra 1H	090824
	Astra 1KR	090824
	Astra 1L	090805
	Astra 1M	090819
16.0°E	Eutelsat W2	090830
	Eurobird 16	090826
13.0°E	Hot Bird 6	090830
	Hot Bird 8	090830
	Hot Bird 9	090830
10.0°E	Eutelsat W2A	090830
9.0°E	Eurobird 9A	090830
	Amos 1 (moving 0.4°E/day)	
7.0°E	Eutelsat W3A	090830
4.8°E	Sirius 4	090830
4.0°E	Eurobird 4A	090705
3.1°E	Eutelsat W2M	090825
	Telecom 2C (incl. 5.3°)	080316

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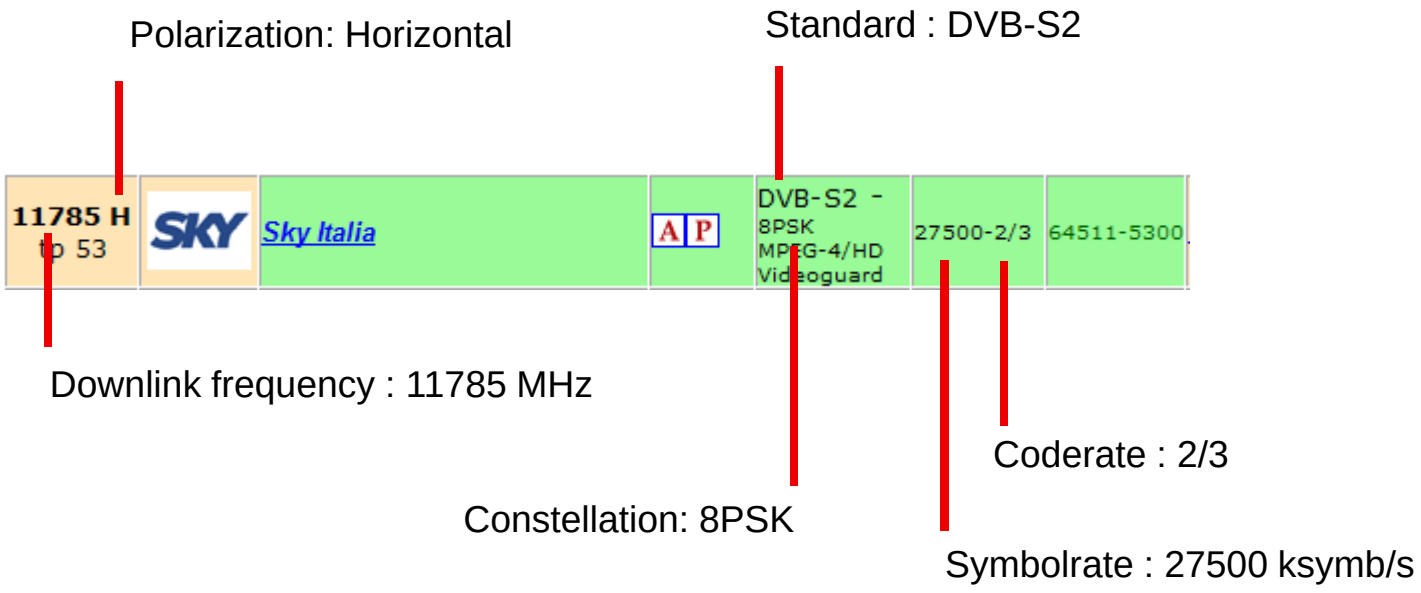
Get information...

Select a satellite transponder. These are the parameters to note for configuring this transponder on the **SATHUNTER+** meter:



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Get information...

- Locate and write down the transponder settings you wish to program into the measurement device.
- The **SATHUNTER+** has up to 50 test points (TP). Each test point corresponds to a satellite frequency (transponder). These transponders may all be from a single satellite, or from various satellites.
- For instance, you can set up one transponder per satellite (enabling to align up to 50 satellites). Alternatively, two transponders can be configured per satellite (enabling to align up to 25 satellites).

Get information...

NOTES:

- Having multiple satellite test points is recommended, to allow for the use of information from other transponders on the same satellite stored in the meter, in case the operator changes transponder parameters and a PC is unavailable to reconfigure the meter.
- Es recomendable programar 4 transpondedores por satélite, **uno en cada polarización**:
  - Low band + vertical polarization (13V)
  - Low band + horizontal polarization (18V)
  - High band + vertical polarization (13V +22kHz)
  - High band + horizontal polarization (18V +22kHz)
- Having too many TPs can make navigation difficult, so it's best to program only the ones you'll really need.

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Get information...

At the end of this phase, you should have a list of test points (up to 50) with this format:

#	Satellite	Downlink Frequency (MHz)	Polarization (V/H)	Standard (DVB-S/S2)	Constellation (QPSK/8PSK)*	Symbolrate (ksymb/s)	CodeRate (FEC)
1	Hotb13ºE	11785 MHz	Horizontal	DVB-S2	8PSK	27500	2/3
2							
3							
⋮							
50							

* DVB-S standard only allows for the QPSK constellation.

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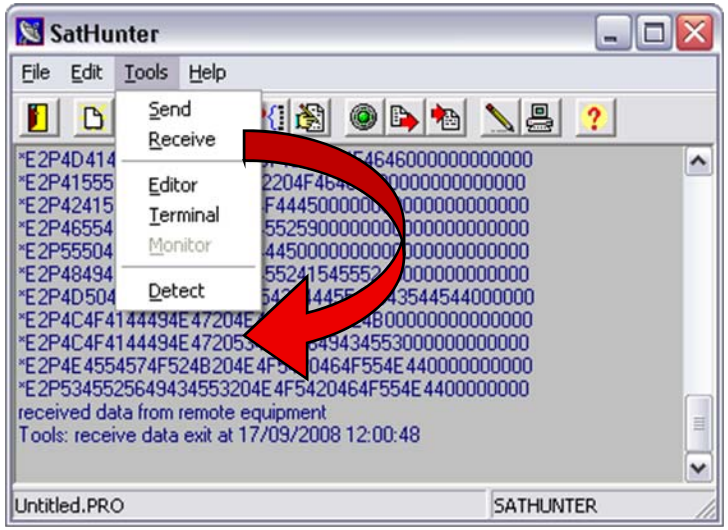
Connecting the meter to the PC...

- Install the **SATHUNTER+** software supplied on your PC.
- Connect the included cable to the USB port.
- Power ON the **SATHUNTER+** (if it wasn't already on).
  Run the software **SATHUNTER+**.
- Select **Tools → Detect** from the menu.

Connecting the meter to the PC...

- Select **Tools → Receive** from the menu
- Software should then take a few seconds to extract the test points which are currently installed on the **SATHUNTER+**.

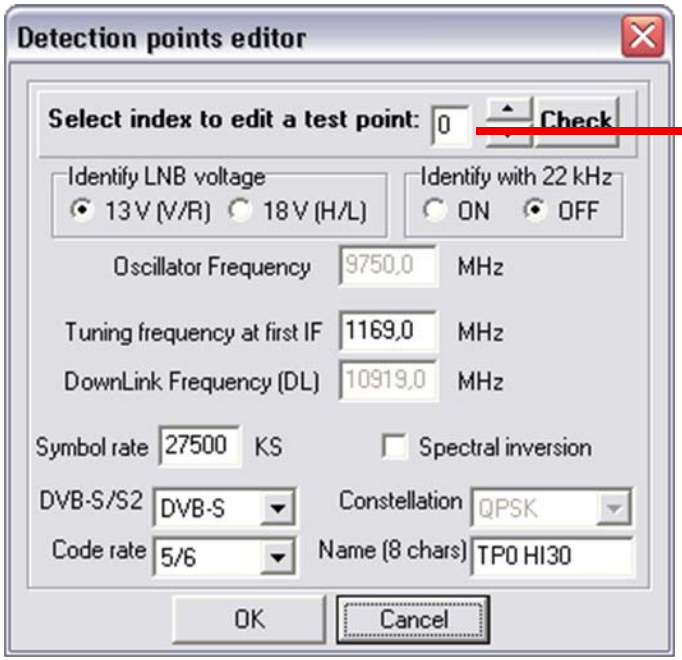


Connecting the meter to the PC...

- Meter configuration is now available in the PC software.
- It is recommended to create a backup in a file on the PC in case it is necessary to recover it in the future.
- To do this, click on the **File → Save As** menu and assign a name to the file.

Creación del fichero de configuración...

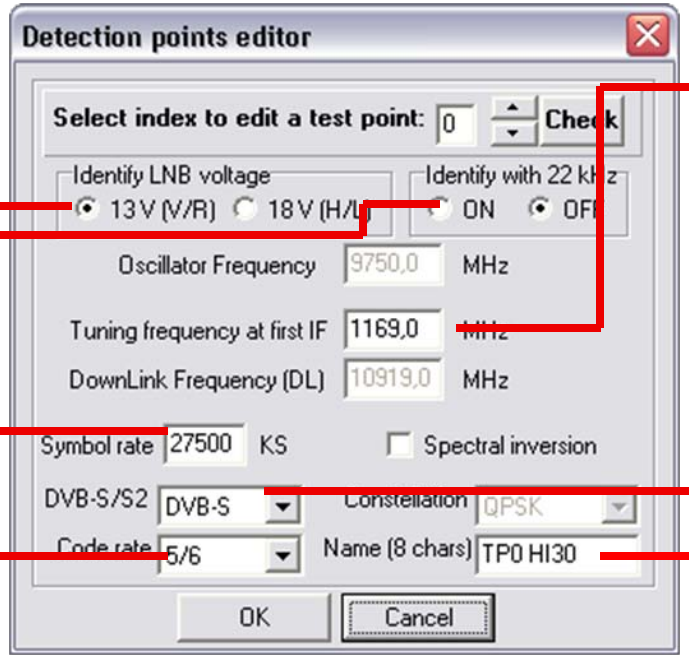
- Select **Edit → Point** from the menu.
  A window will pop up where you will be able to configure all the test points.



Select the test point you want to edit.

Creating the configuration file...

- Select **Edit → Point** from the menu.
  A window will pop up where you will be able to configure all the test points.



Select the LN voltage

Select ON/OFF for the 22 kHz signal if needed

Enter the symbol rate for this transponder

Select the Code Rate or leave it in **Auto** if you don't know the value

Enter the IF frequency for the desired transponder

Select whether the transponder is **DVB-S2** or **DVB-S**. For **DVB-S2**, **QPSK** or **8PSK** constellations are available.

Enter a name (4 chars) so that you can identify it when you see it on the **SATHUNTER+**.

Creating the configuration file...

Example : LNB Universal in Ku band

- **LNB voltage:** 13 V for Vertical polarization (V)
  18 V for Horizontal polarization (H)
- **22 kHz signal:** ON for high band (Downlink Freq > 11700 MHz)
  OFF for low band (Downlink Freq < 11700 MHz)
- **Intermediate Frequency (IF):** This is the frequency at the LNB output. Its value is between 950 and 2150 MHz. It is calculated as follows:

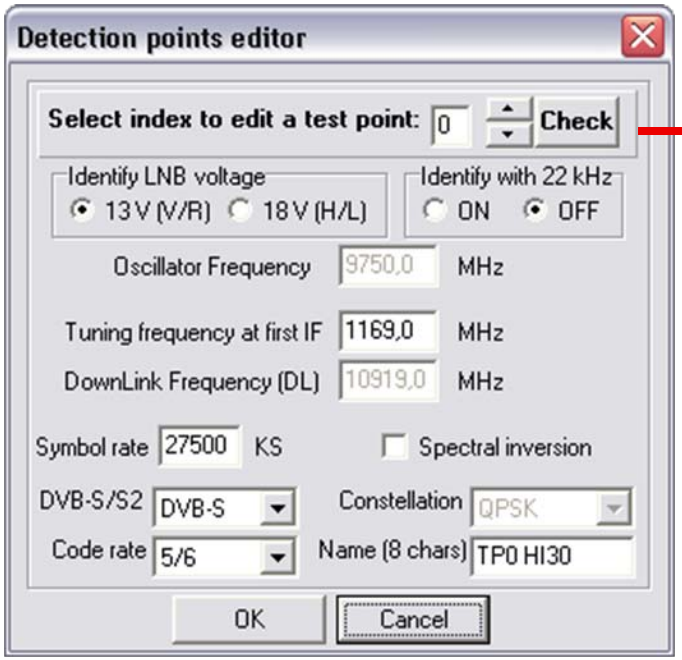
  [IF Frequency] = [Downlink Freq.] – [Local Oscillator Freq.]

  or Local Oscillator Freq = 10600 MHz high band (22kHz ON)
  9750 MHz low band (22kHz OFF)

IMPORTANTE : The SATHUNTER+ configuration menu allows you to select between the two frequency types for operation: IF or DL.

Creating the configuration file...

- You should perform the same procedure for every test point you need to charge.



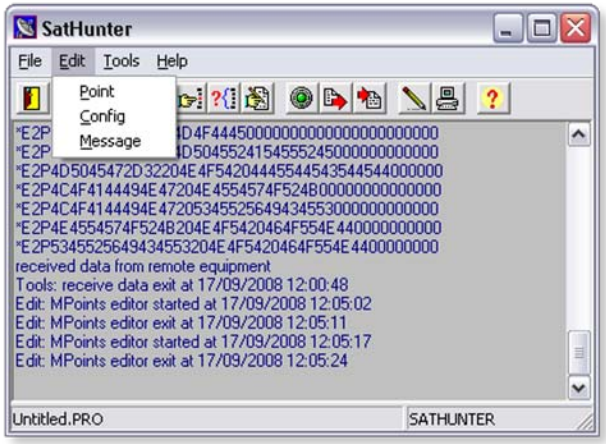
Prior to proceeding to the subsequent test step, select the “Check” button to verify the settings.

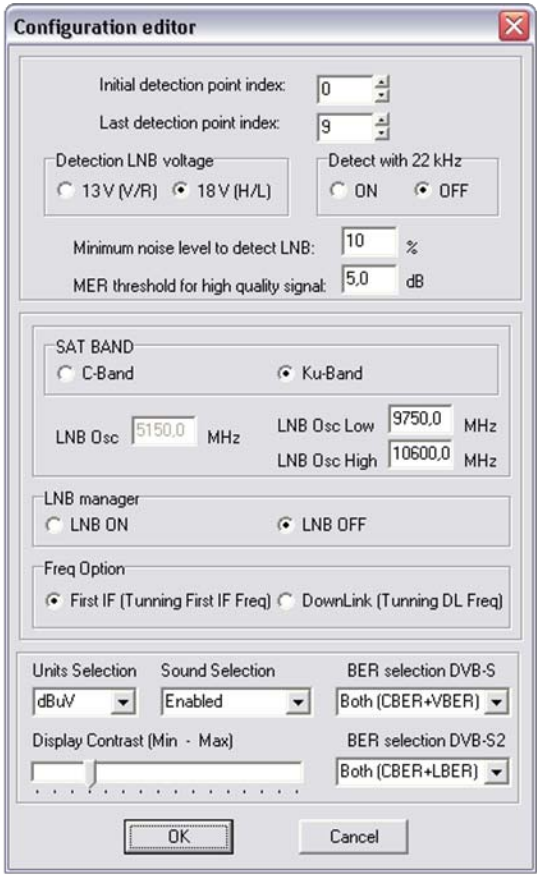
The meter will issue an alert should any data be invalid (e.g., out of range frequencies, etc.)

Creating the configuration file...

- Select **Edit → Config** from the menu.

- You should then get the screen where you can modify the configuration of all points.



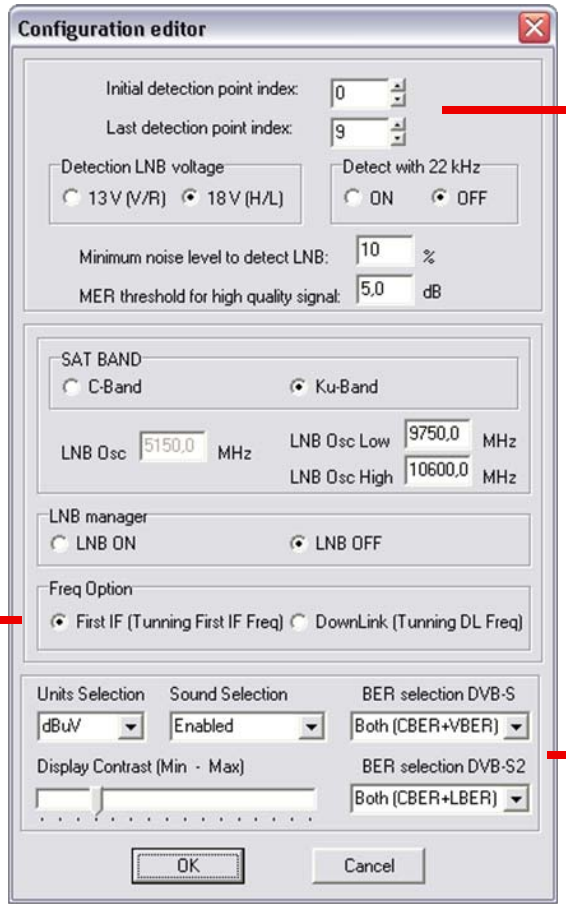


Creating the configuration file...

Select whether to use IF or Downlink frequencies.

For example, if Downlink is selected, you must enter the transponder's Downlink frequency in the test point settings. The meter will then automatically calculate the Intermediate Frequency.

And vice versa.



Select the range of test points that you want to be active on the meter. For example, in the picture displayed, user could only get access to the test points 0 to 9.

The remaining (10 to 15) would remain in memory but would be unavailable.

Select which measurements the meter must display in Step 3.

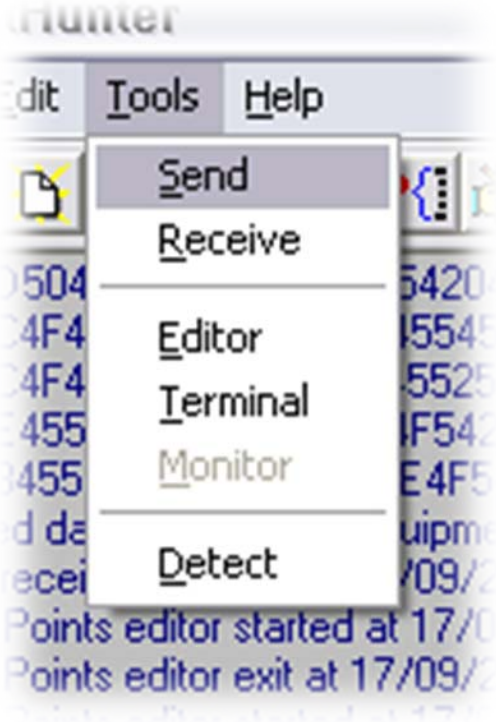
Creating the configuration file...

- Once all changes have been made, you should save the file, either with the same name, thus erasing the original, or with a different name thus keeping the original for future reference.

- Select **File → Save As** from the menu.
  You should then get a regular dialog where you can name and save the edited file.

Transferir la nueva configuración…

- Select **Tools → Send** from the menu.
  Software should then take a few seconds to install the new configuration onto the SATHUNTER+.



Transferir la nueva configuración…

- Select **File → Exit** from the menu.
- Turn OFF the **SATHUNTER+** and disconnect the cable from the computer.
- You are ready to work with a newly configured **SATHUNTER+**.

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For detailed information on all meter parameters, please check the instruction manual.

Feel free to contact us if you need more information.

promax@promaxelectronics.com

The PROMAX team
09/13