FRONT VIEW

1 TFT Touch screen

Digital Video Broadcasting

Trademark of the DVB - Digital Video Broadcasting Project

TOUCH ICONS

- **Screenshot**
- **Back to previous screen**
- **Back to main screen**
- **Access to screenshots**
- **Access to dataloggers**
- **Access to settings menu**
- **Switch off**
- 123 **Edit value**
- abc **Select parameter**

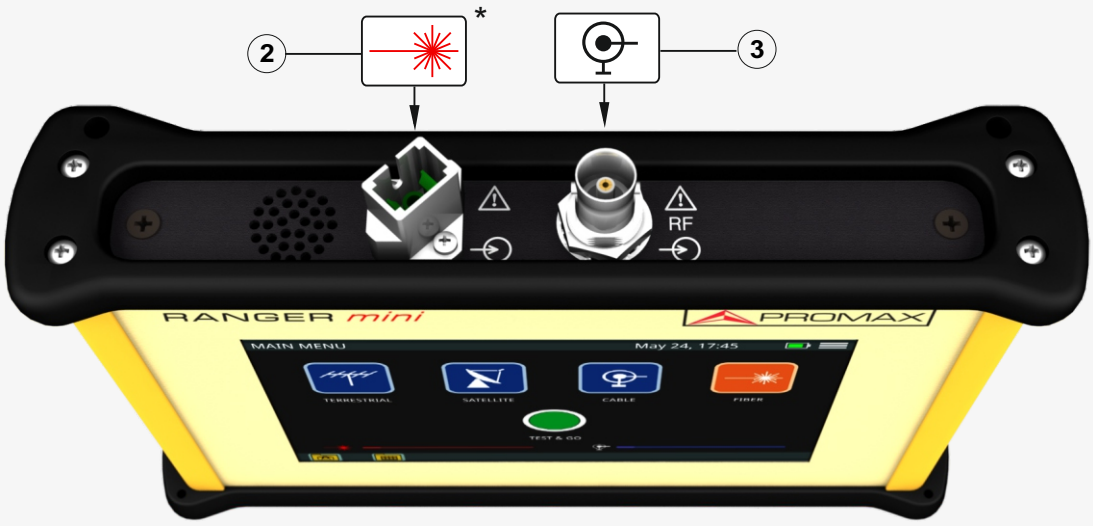
INDICATIVE ICONS

- **USB flashdrive connected and detected**
- **Connected to Ethernet network**
- **Battery charging**
- **Battery charged**
- **Low battery**
- **Terrestrial**
- **Satellite**
- **Cable**
- **Fiber**

ON:

OFF:

UPPER VIEW

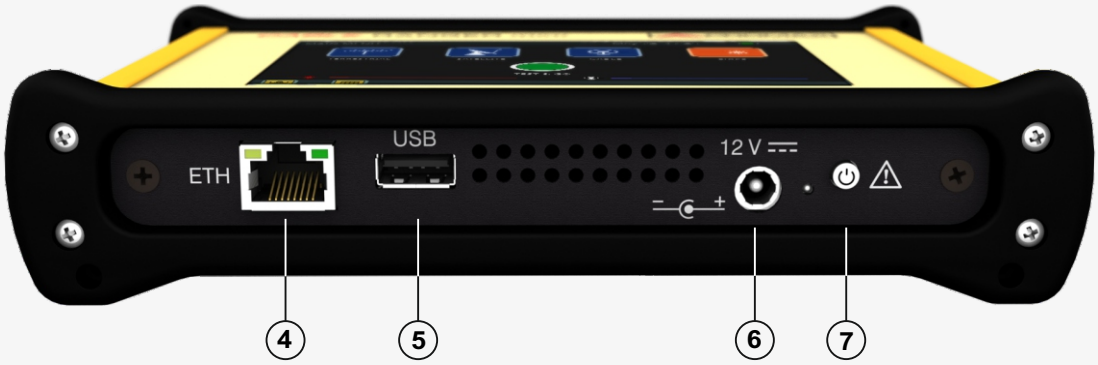


(2) **SC-APC* connector** (fibre optics signal input)

(3) Universal connector for F / F or F / BNC adapter (cable input with RF signal)

*(Optional)

BOTTOM VIEW



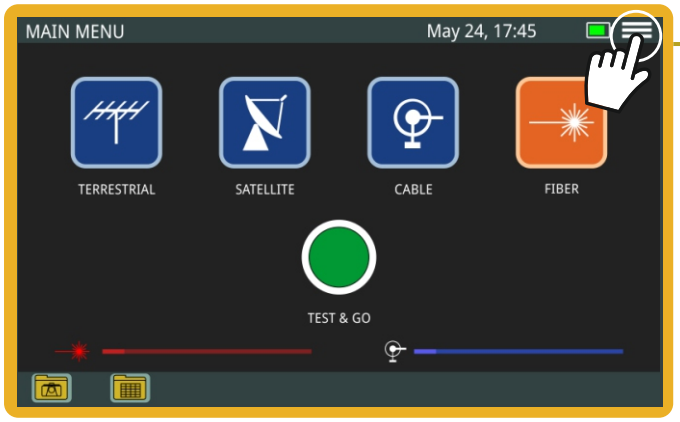
(4) **ETHERNET** connector for network / webControl

(5) **USB** connector for flashdrive device

(6) **12 V DC power** input connector

(7) Power On / Power Off button

MAIN SETTINGS MENU

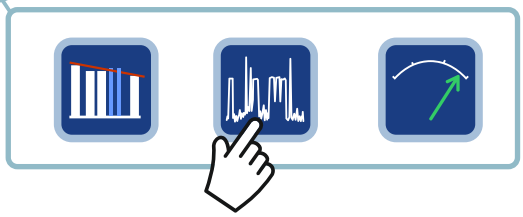


SETTINGS MENU
Language
Date
Time
Audio
Auto power off
Display
Equipment information
Ethernet Configuration
Test & Go Configuration
Web Server

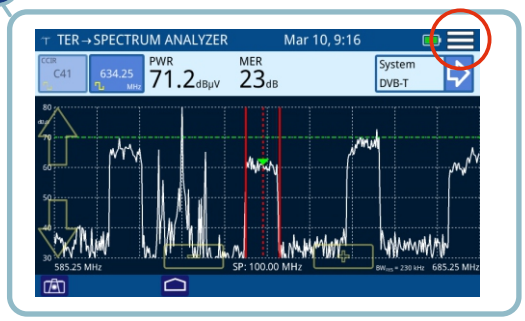
BEFORE MAKING MEASUREMENTS, SELECT THE SUITABLE CHANNEL PLAN TO THE GEOGRAPHICAL AREA

1 SELECT THE TYPE OF MEASUREMENT

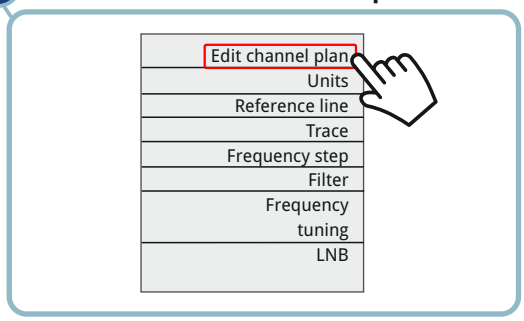
2 SELECT SPECTRUM



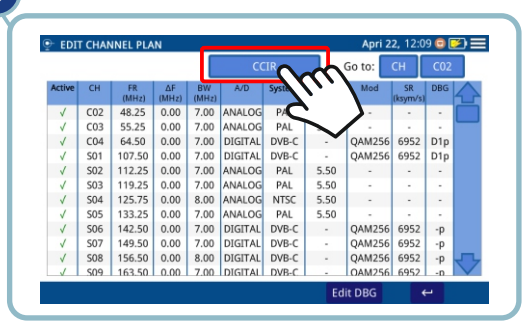
3 SELECT MENU



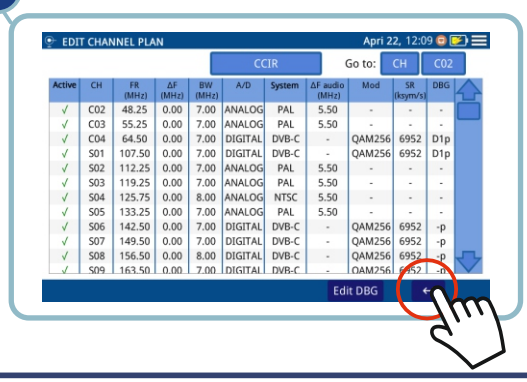
4 SELECT "Edit channel plan"



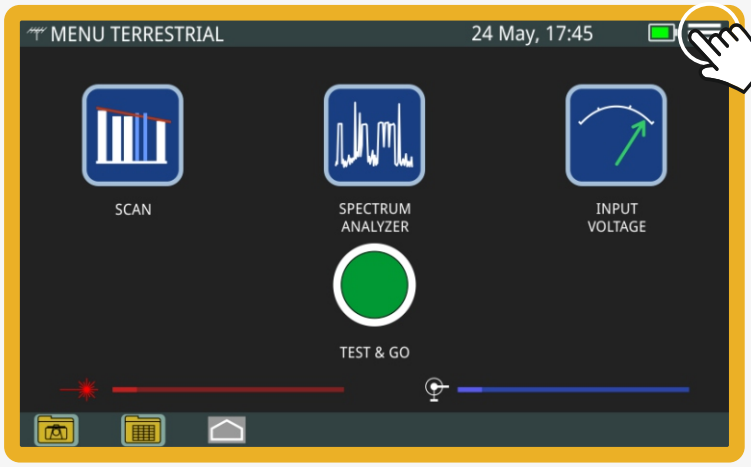
5 SELECT CHANNEL PLAN



6 EXIT

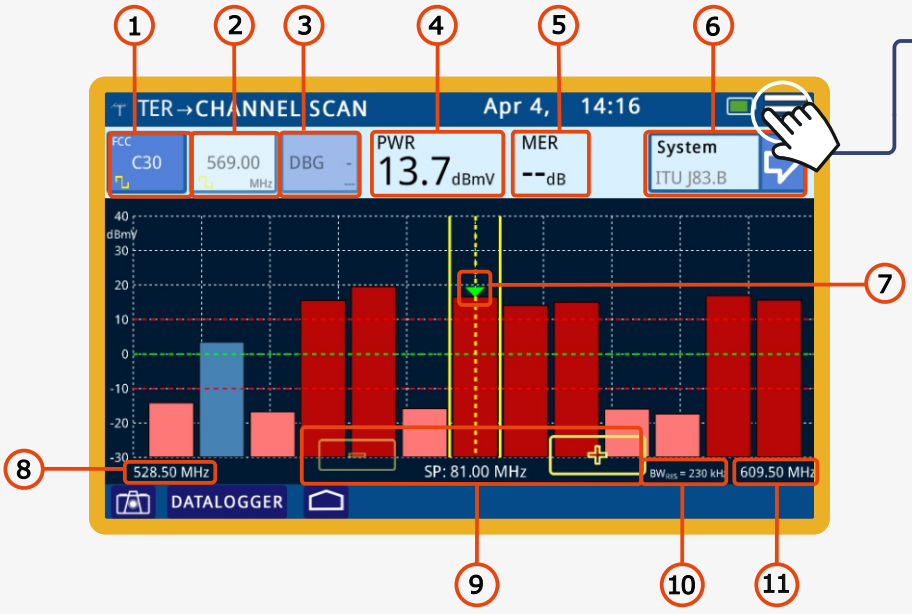


TERRESTRIAL



SETTINGS MENU
Language
Date
Time
Audio
Auto Power off
Display
Equipment information
Ethernet configuration
Test & Go configuration
Web Server

SCAN



SETTINGS MENU
Edit channel plan
Units
Reference Line
Trace
Frequency step
Frequency tunning
LNB
Measurement range

1 Selected channel. When pressing on it deploys a list of available channels

2 Frequency selected. When pressing on it pops up a virtual numeric keypad to edit frequency.

3 DOCSIS Bonding Group selected and carrier.

4 According to signal type:
Digital signal: Power for channel bandwidth or frequency.
Analogue signal: Level for channel or frequency selected.

5 Measurement of the MER value for each one of the carriers.

6 Signal type. Access to measurements and constellation.

7 Marker for selected channel/frequency.

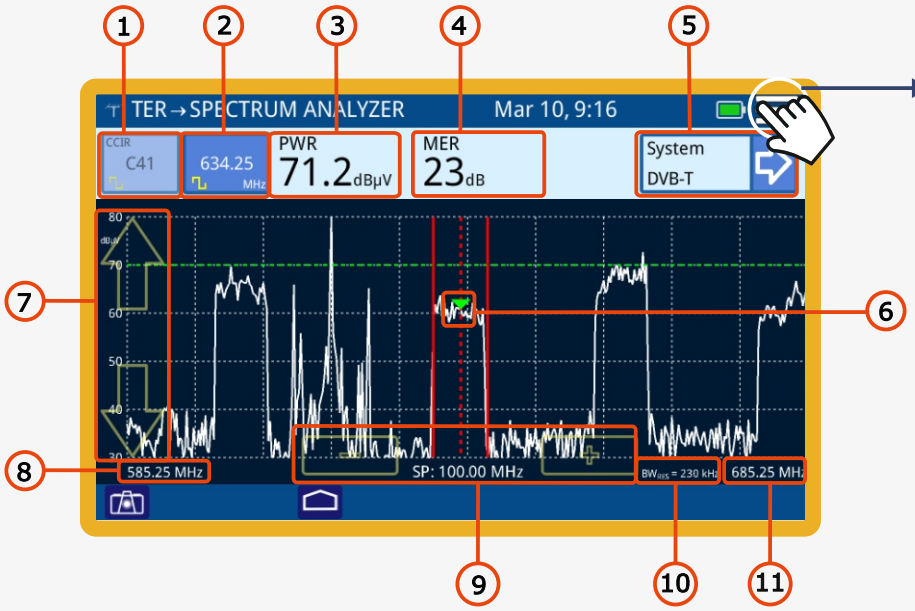
8 Span lower frequency.

9 Arrows to increase / decrease span.
Current span.

10 Bandwidth resolution.

11 Span upper frequency.

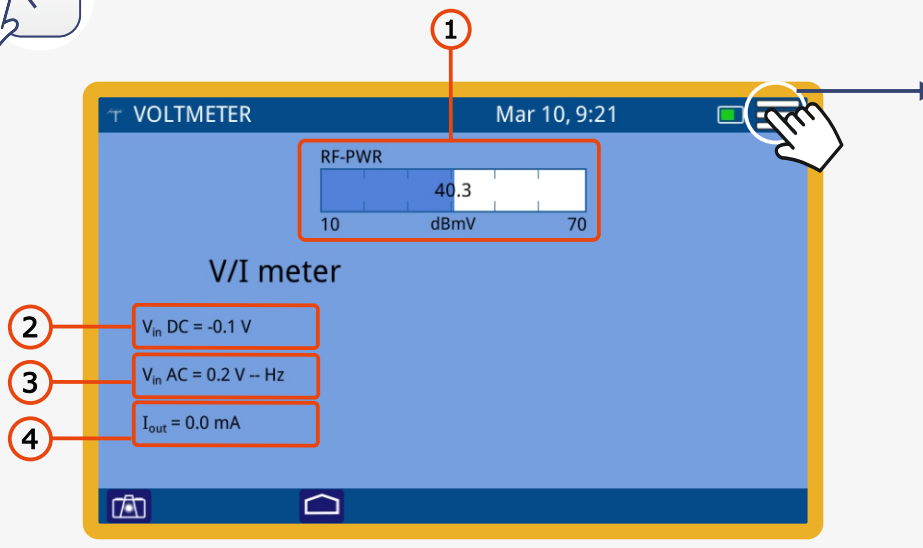
SPECTRUM ANALYZER



SETTINGS MENU
Edit channel plan
Units
Reference line
Trace
Frequency step
Filter
Frequency tunning
LNB

1 Selected channel. When pressing on, it deploys a list of available channels.
2 Frequency selected. When pressing on, it pops up a virtual numeric keypad to edit frequency.
3 Channel bandwidth power or frequency.
4 Measurement of the MER value for each one of the carriers.
5 Signal type. Access to measurements and constellation.
6 Marker for the selected Channel / Frequency signal.
7 Arrows to change the reference level.
8 Lower frequency range of span.
9 markers to increase / decrease span Current span.
10 Bandwidth resolution.
11 Upper frequency range of span.

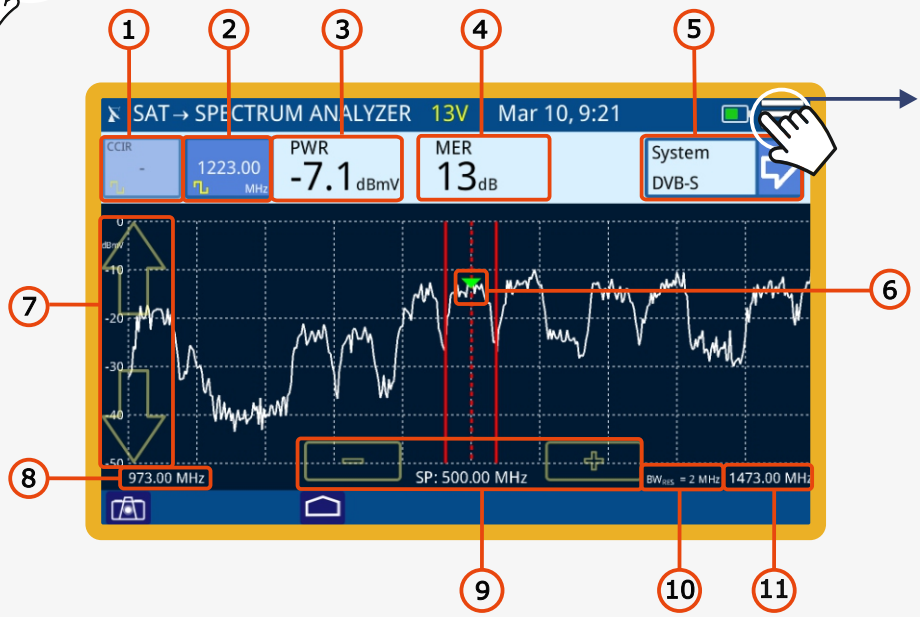
VOLTMETER



SETTINGS MENU
Units

1 RF-PWR: Full bandwidth power.
2 Vin DC: DC input voltage.
3 Vin AC: AC input voltage and frequency.
4 Iout: Current out

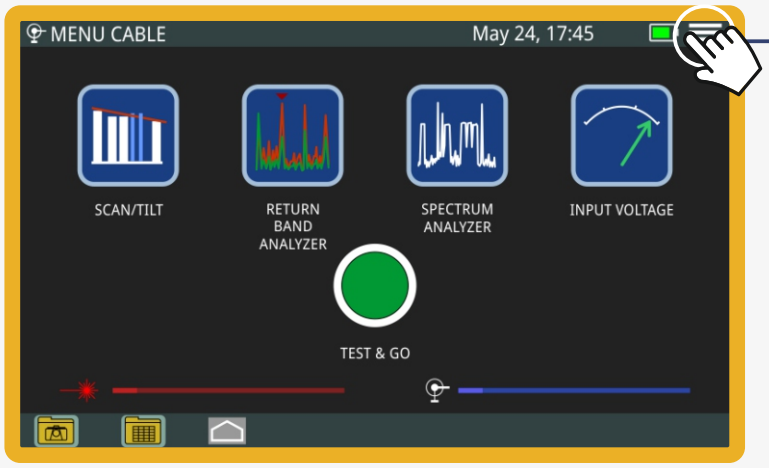
SAT SPECTRUM ANALYZER



SETTINGS MENU
Edit channel plan
Units
Reference line
Trace
Frequency step
Frequency tuning
LNB

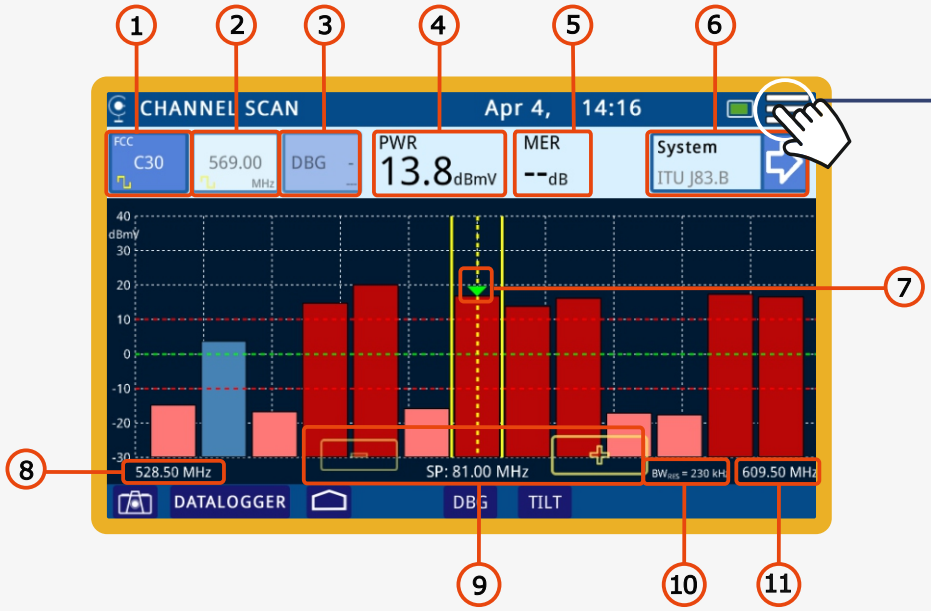
1 Selected channel. When pressing on, it deploys a list of available channels.
2 Frequency selected. When pressing on, it pops up a virtual numeric keypad to edit frequency.
3 Channel bandwidth power or frequency.
4 Measurement of the MER value for each one of the carriers.
5 Signal type. Access to measurements and constellation.
6 Marker for the selected Channel / Frequency signal.
7 Arrows to change the reference level.
8 Lower frequency range of span.
9 markers to increase / decrease span Current span.
10 Bandwidth resolution.
11 Upper frequency range of span.

CABLE



SETTINGS MENU
Language
Date
Time
Audio
Auto power off
Display
Equipment information
Ethernet configuration
Test & Go configuration
Web Server

SCAN / TILT

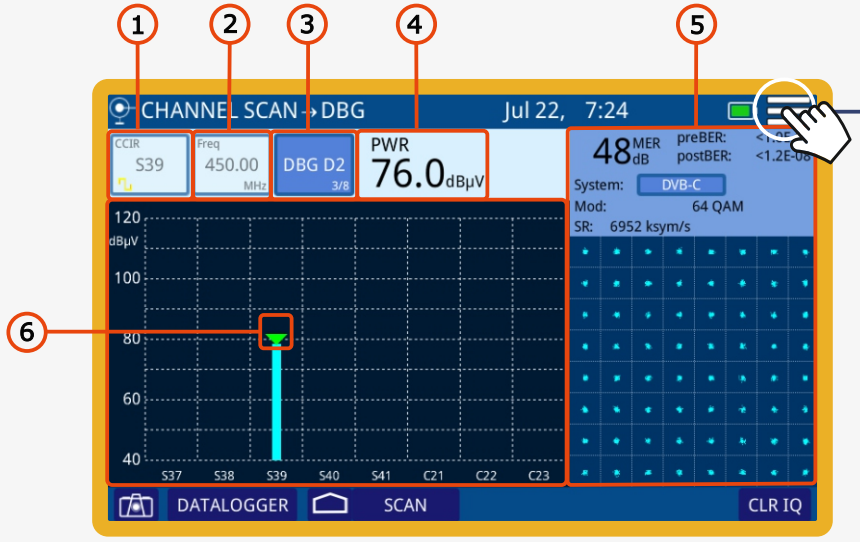


SETTINGS MENU

- Edit channel plan
- Units
- Reference line
- Threshold
- CTB /CSO
- Measurement range

1 Selected channel. When pressing on it deploys a list of available channels.
2 Frequency selected. When pressing on it pops up a virtual numeric keypad to edit frequency.
3 DOCSIS Bonding Group selected and carrier.
4 According to signal type:
Digital signal: Power for channel bandwidth or frequency.
Analogue signal: Level for channel or frequency selected.
5 Measurement of the MER value for each one of the carriers.
6 Signal type. Access to measurements and constellation.
7 Marker for selected channel/frequency.
8 Span lower frequency.
9 Arrows to increase / decrease span.
Current span.
10 Bandwidth resolution.
11 Span upper frequency.

DGB (DOCSIS BONDING GROUP)

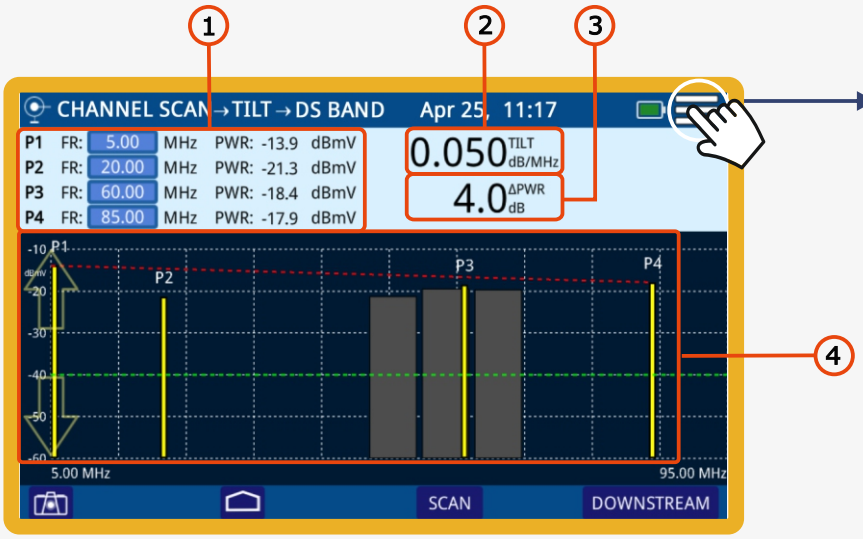


SETTINGS MENU

- Edit channel plan

1 Selected channel. The selected channel must belong to a DBG.
2 Selected frequency. Pressing on it allows you to change the frequency using the virtual keyboard.
3 DOCSIS Bonding Group selected. When clicking on it, the list of available DBG groups appears.
4 Power in the channel bandwidth selected.
5 Channel demodulation and constellation o tuned frequency (for details see the "Demodulator" section in the user manual).
6 The graph shows the group of channels of the DBG. The marker is placed on the selected carrier.

SCAN / TILT



1 It shows pilot signals' frequency and power. Press on frequency to change its value.

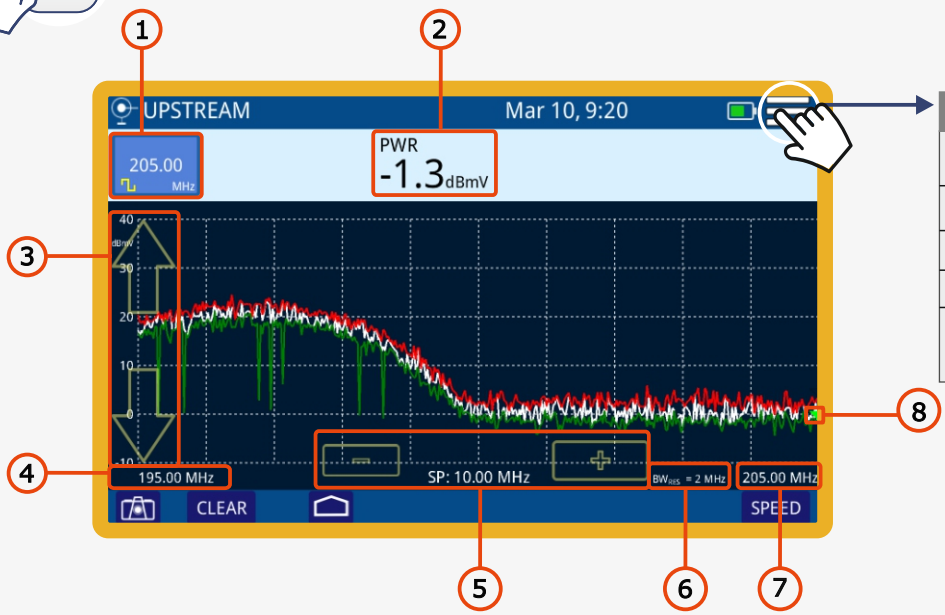
- **P1/P4:** End pilot signals.
- **P2/P3:** Intermediate pilot signals.

2 TILT: Inclination rate in dB per MHz.

3 Power difference between P1 and P4.

4 Bar graph showing signal level for each pilot signal and TILT.

UPSTREAM



1 Frequency selected. When pressing on it pops up a virtual numeric keypad to edit frequency.

2 Power level for the selected frequency.

3 Arrows to change reference level.

4 Span lower frequency.

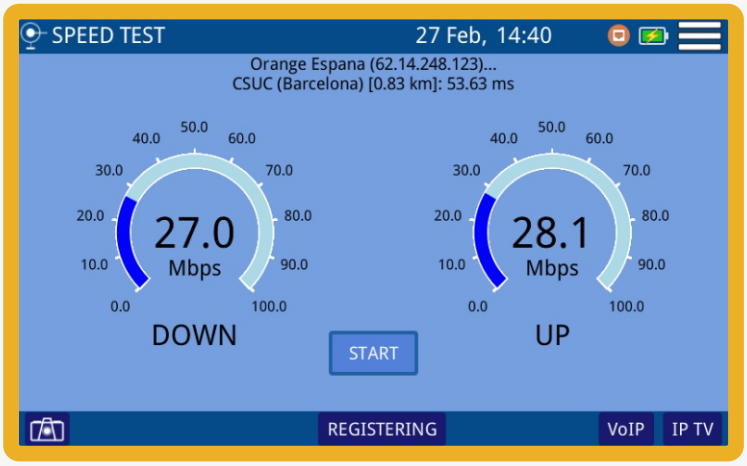
5 Arrows to increase / decrease span. Current span.

6 Bandwidth resolution.

7 Span upper frequency.

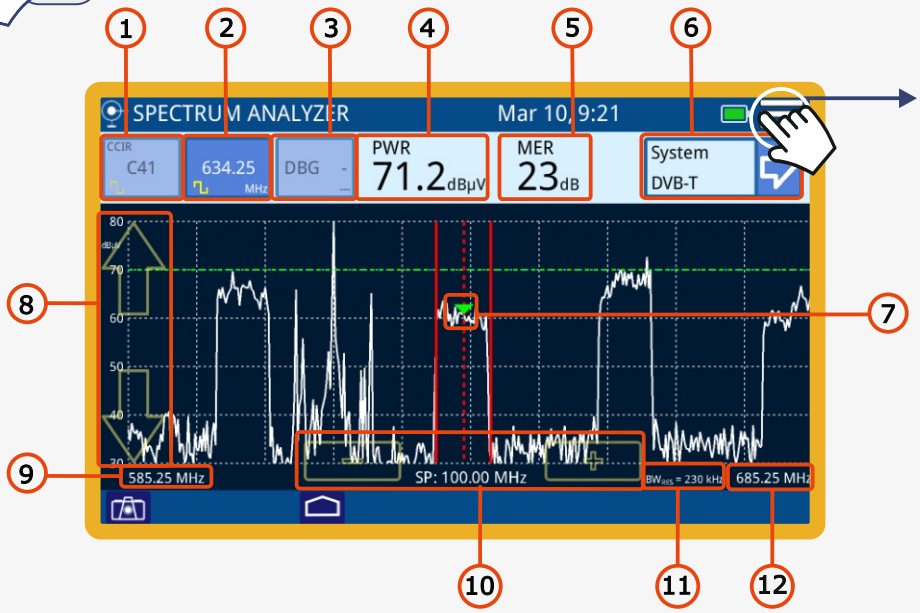
8 Marker at the selected frequency.

VELOCIDAD (Test de velocidad)



Press START to start the speed test. It measures the speed of the upstream and downstream channels. It also gives data from the service provider.

SPECTRUM ANALYZER



SETTINGS MENU
Edit channel plan
Units
Reference line
Trace
CTB/CSO
Filter
Frequency tunning

1 Selected channel. When pressing on, it deploys a list of available channels.
2 Frequency selected. When pressing on, it pops up a virtual numeric keypad to edit frequency.
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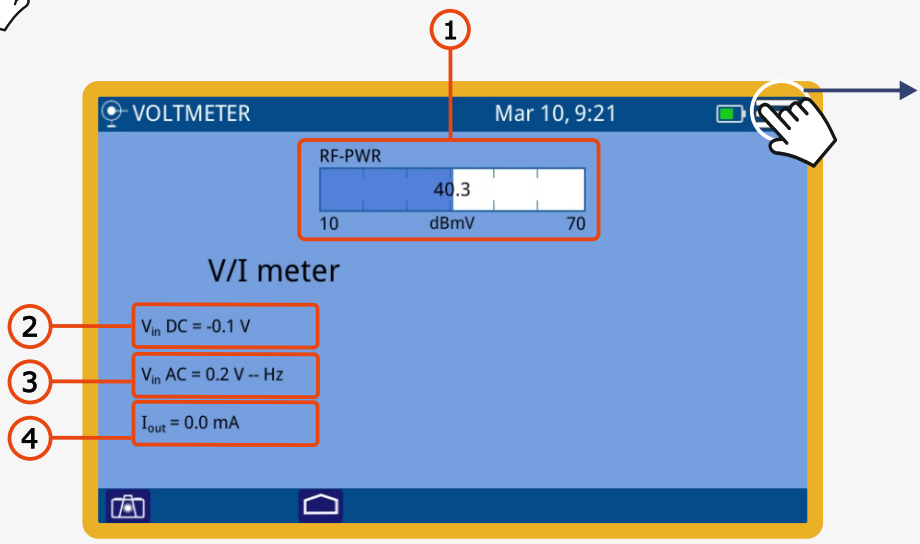
4 Power for channel bandwidth or frequency.
5 Measurement of the MER value for each one of the carriers.
6 Signal type. Access to measurements and constellation.
7 Marker for the selected Channel / Frequency signal.
8 Arrows to change reference level.
9 Lower frequency range of span.
10 Arrows to increase / decrease span. Current span.
11 Bandwidth resolution.
12 Span upper frequency.

VOLTMETER



SETTINGS MENU
Units

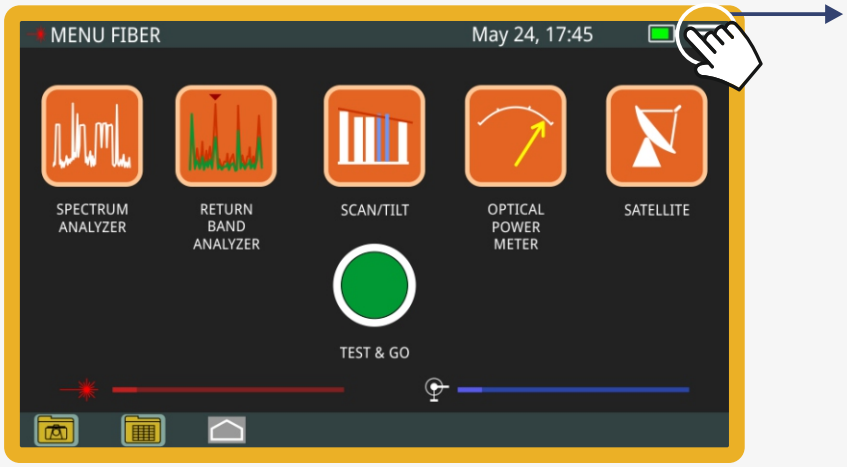
1 RF-PWR: Full bandwidth power.

2 Vin DC: DC input voltage.

3 Vin AC: AC input voltage and frequency.

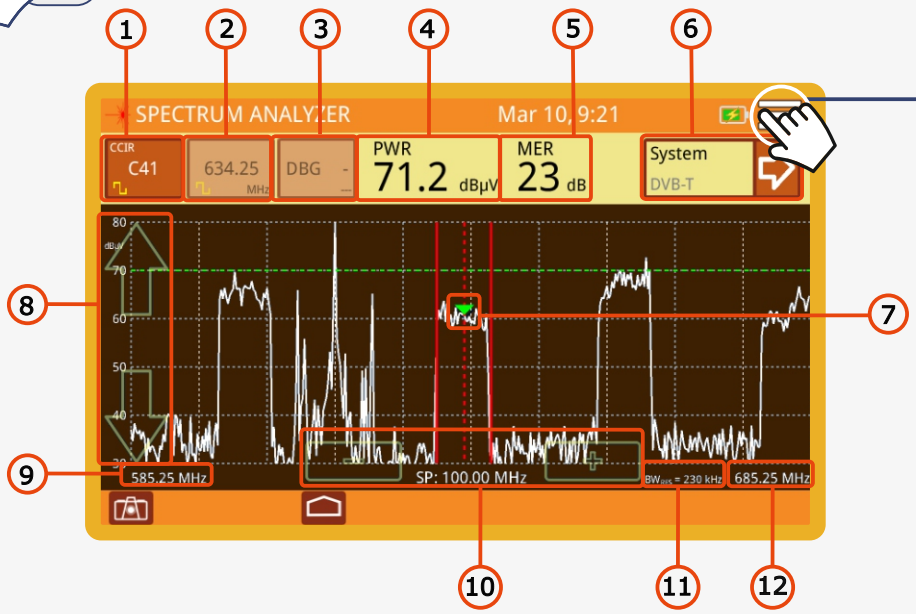
4 Iout: Output current.

FIBER



SETTINGS MENU
Language
Date
Time
Audio
Auto power off
Display
Equipment information
Ethernet configuration
Test & Go configuration
Web Server

SPECTRUM ANALYZER



SETTINGS MENU
Edit channel plan
Units
Reference line
Trace
CTB/CSO
Filter
Frequency tunning

1 Selected channel. When pressing on, it deploys a list of available channels.
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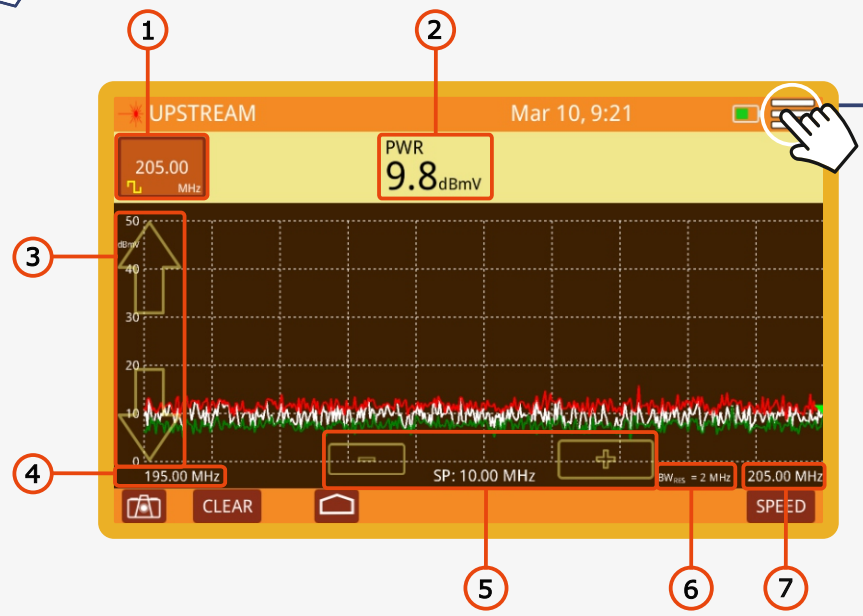
5 Measurement of the MER value for each one of the carriers.
6 Signal type. Access to measurements and constellation.
7 Marker for the selected Channel / Frequency signal.
8 Arrows to change reference level.
9 Lower frequency range of span.
10 Arrows to increase / decrease span. Current span.
11 Bandwidth resolution.
12 Span upper frequency.

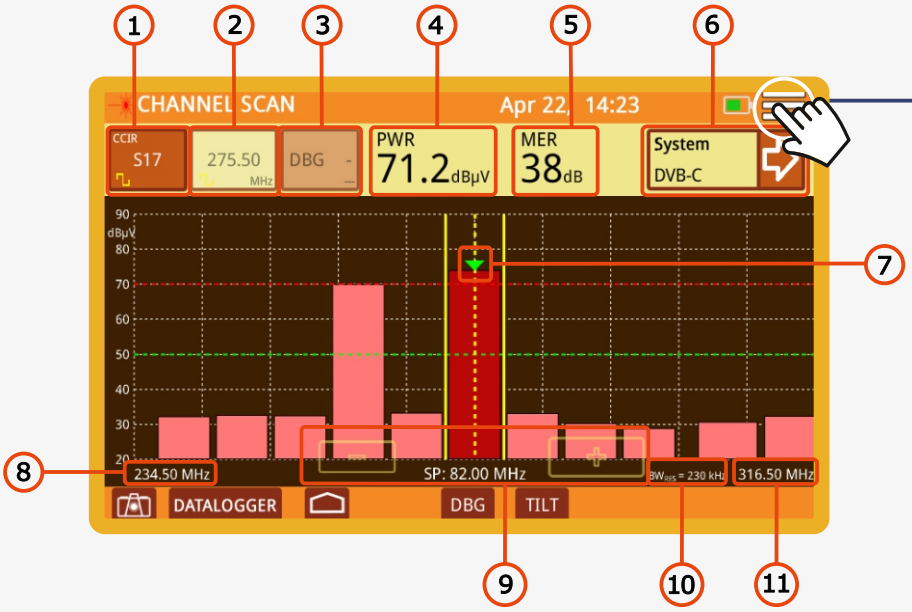
UPSTREAM



SETTINGS MENU
Units
Reference line
Frequency step
Trace
Filter

1 Frequency selected. When pressing on it pops up a virtua numeric keypad to edit frequency.
2 Level for the selected frequency.
3 Arrows to change reference level.
4 Span lower frequency.
5 Markers to increase / decrease span. Current span.
6 Bandwidth resolution.
7 Span upper frequency.

SCAN / TILT



SETTINGS MENU
- Edit channel plan
- Units
- Reference line
- Threshold
- CTB /CSO
- Measurement range

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2 Frequency selected. When pressing on it pops up a virtual numeric keypad to edit frequency.
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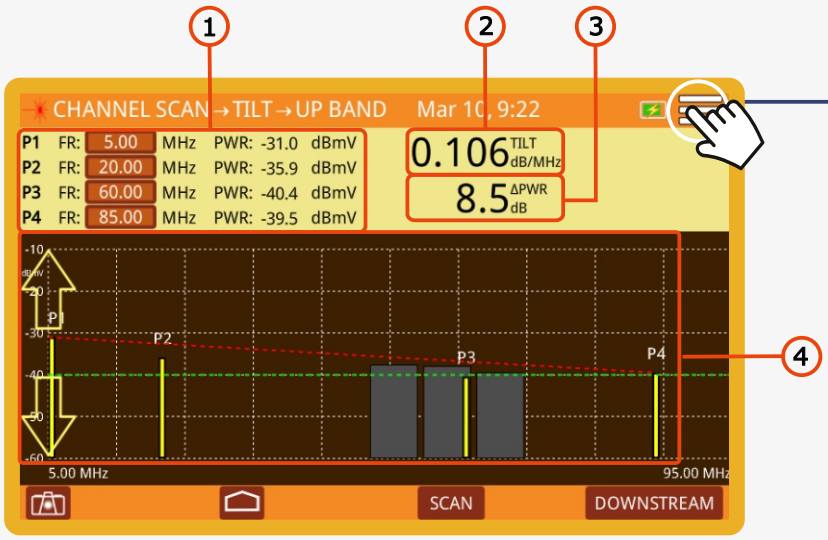
5 Measurement of the MER value for each one of the carriers.
6 Signal type. Access to measurements and constellation.
7 Marker for selected channel/frequency.
8 Span lower frequency.
9 Markers to increase / decrease span. Current span.
10 Bandwidth resolution.
11 Span upper frequency.

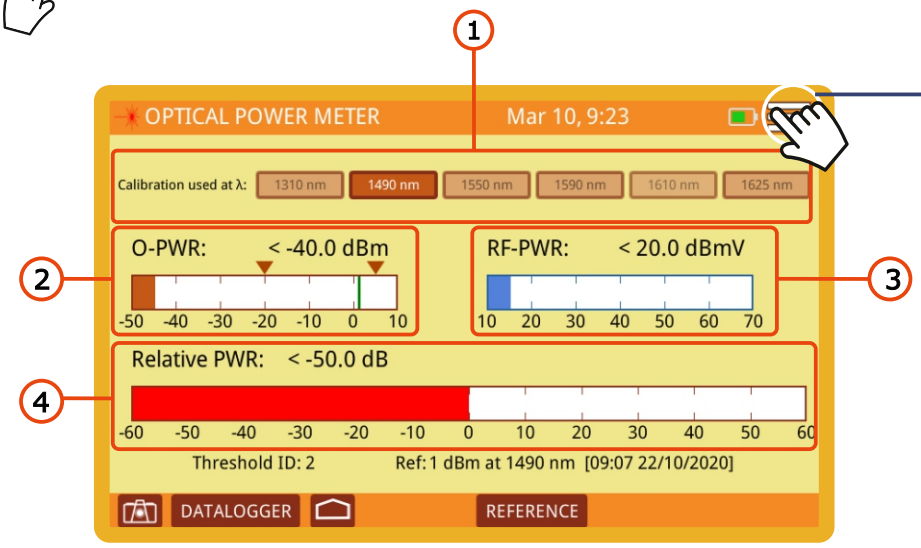
SCAN / TILT



SETTINGS MENU
- Units
- Measurement range

1 P1/P4: End pilot signals. It shows pilot signals frequency and power.
P2/P3:Intermediate pilot signals. It shows pilot signals frequency and power.
Press on frequency to change its value.
2 TILT: Inclination rate in dB per MHz.
3 Power difference between P1 and P4.
4 Bar graph showing signal level for each pilot signal and TILT.

OPTICAL POWER METER



SETTINGS MENU
Set optical threshold

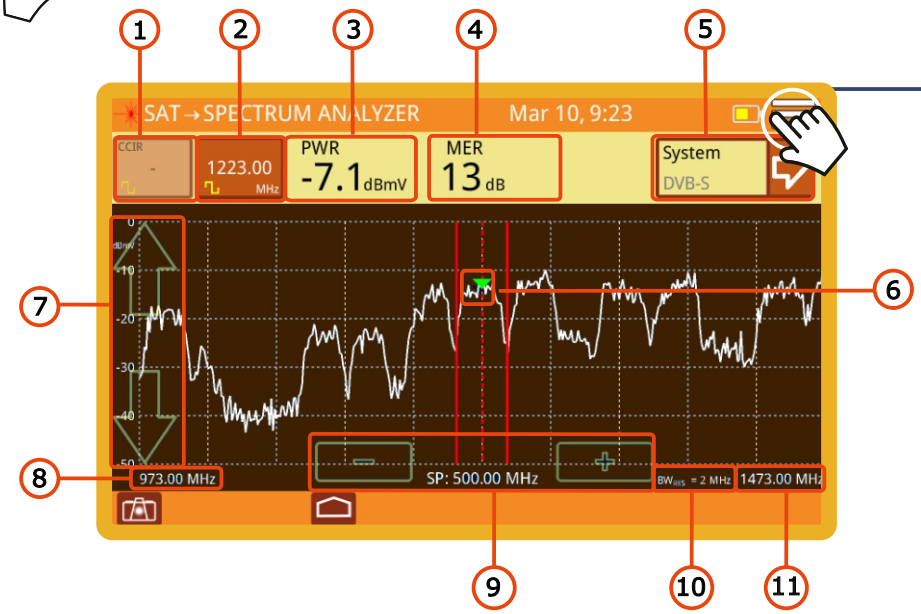
1 Calibration used: Select wavelength for power measurement.

2 O-PWR: Graphical bar and value of optical power with a high and low threshold. Threshold values can be selected on the settings menu.

3 RF-PWR: Graphical bar and value of RF power.

4 Relative Power: Graphical bar and value of power signal loses. It is equal to: Relative Power = Reference value - Attenuation.

SATELLITE



SETTINGS MENU
Edit channel plan
Units
Reference line
Trace
Frequency step
Frequency tuning
LNB

1 Selected channel. When pressing on, it deploys a list of available channels.

2 Frequency selected. When pressing on, it pops up a virtual numeric keypad to edit frequency.

3 Channel bandwidth power or frequency.

4 Measurement of the MER value for each one of the carriers.

5 Signal type. Access to measurements and constellation.

6 Marker for the selected Channel / Frequency signal.

7 Arrows to change the reference level.

8 Lower frequency range of span.

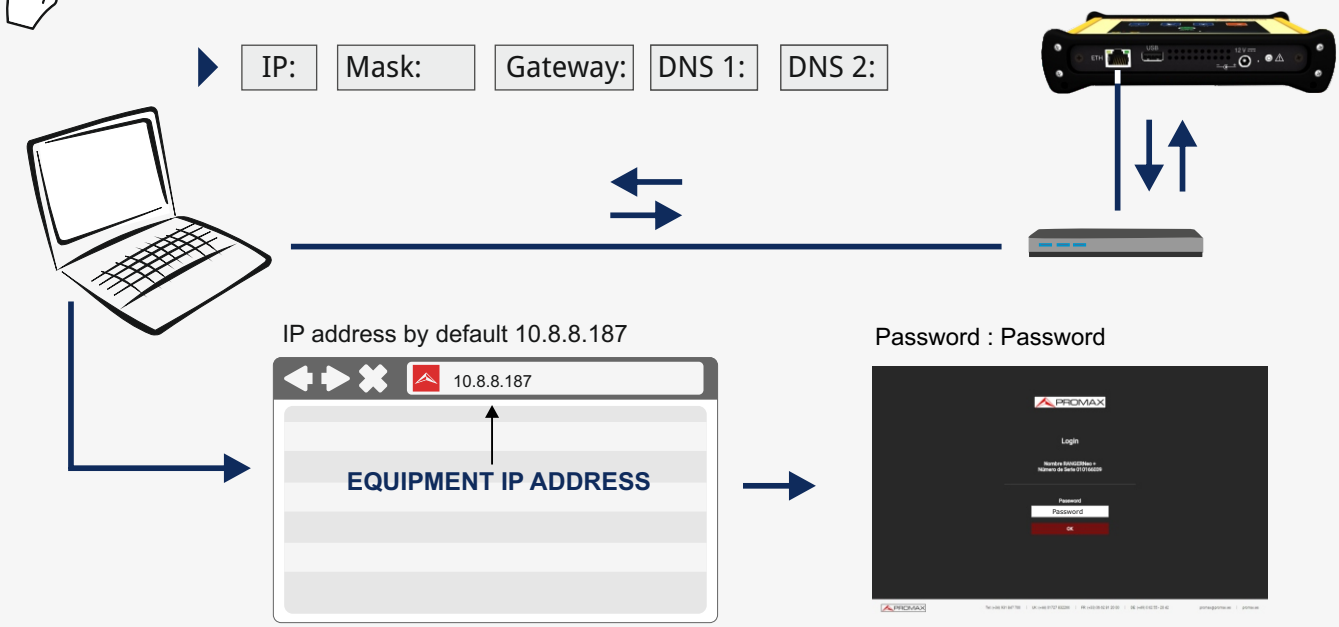
9 markers to increase / decrease span Current span.

10 Bandwidth resolution.

11 Upper frequency range of span.

WEBCONTROL: NETWORK SETTINGS

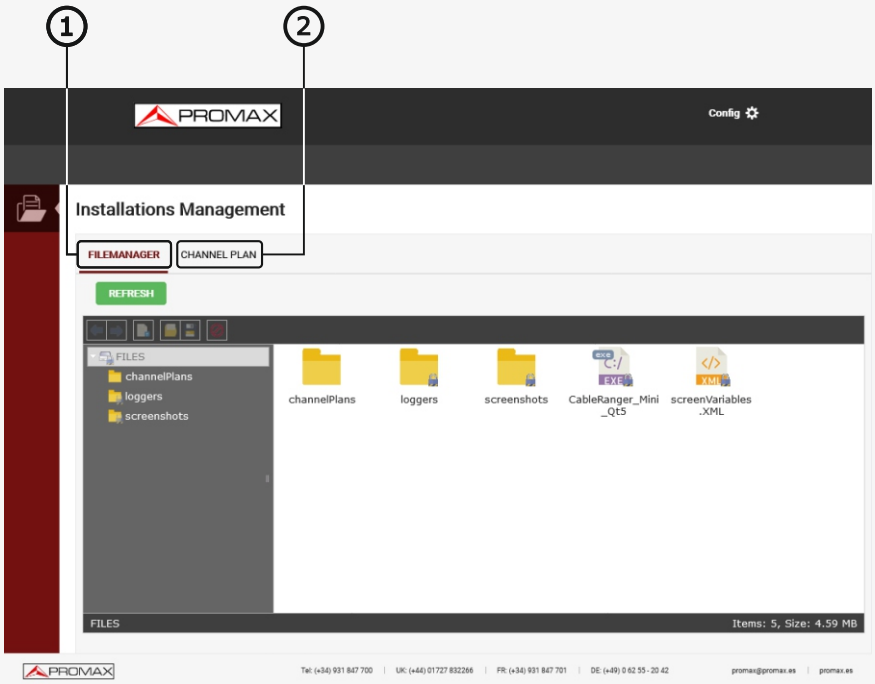
ETHERNET CONFIGURATION



WEBCONTROL: UTILITIES

1 FILEMANAGER
- Upload and download files between the RANGER mini and the PC.
- View screenshots.
- Launch the CHANNEL PLAN editor to modify the CHANNEL PLAN in the device memory.

2 CHANNEL PLAN EDITOR
- Create a channel plan with total control of all parameters of the channels.
- Edition of the launched channel plan from the file manager.



NOTES

	Procedimiento de actualización del firmware del RANGER *mini*	RANGER *mini* firmware update procedure	RANGER *mini* Firmware-Update-Verfahren	Procédure de mise à jour du firmware de RANGER *mini*	Процедура обновления прошивки RANGER *mini*
1	Utilizar una memoria USB con formato FAT32.	Use a USB flash drive in FAT32 format.	Nur einen USB-Stick im FAT32 Format verwenden.	Utilisez une clé USB formatée en FAT32.	Используйте флэш-накопитель USB в формате FAT32.
2	Copiar en la raíz de la memoria USB el archivo de la actualización (update_usb.tar). No descomprimir el archivo.	Copy the update file (update_usb.tar) to the flash drive root. Do not unzip the file.	Update-Datei (update_usb.tar) direkt ins Root-Verzeichnis des USB-Sticks kopieren (die Datei nicht entpacken).	Copiez le fichier de mise à jour (update_usb.tar) dans la racine de la clé USB. Ne décompressez pas ce fichier.	Скопируйте файл обновления (update_usb.tar) в корневой каталог флеш-накопителя (не распакуйте файл).
3	Apagar el RANGER mini e insertar la memoria en el puerto USB.	Turn OFF the RANGER mini and insert the flash drive into the USB port slot.	RANGER mini ausschalten und dann den USB-Stick in die USB-Schnittstelle einstecken.	Éteignez le RANGER mini et branchez la clé dans le port USB du mesureur.	Отключите RANGER mini и вставьте флэш-накопитель в слот USB-порта.
4	Encender el RANGER mini. Se iniciará el proceso de actualización. Esperar hasta que aparezcan las indicaciones “SWITCH OFF” y “SWITCH ON”.	Turn ON the RANGER mini. The update process will start. Wait until the screen displays the messages “SWITCH OFF” and “SWITCH ON”.	Den RANGER mini. Der Update-Vorgang startet, warten Sie dann bis das Display "SWITCH OFF" und "SWITCH ON" anzeigt.	Allumez le RANGER mini. Le processus de mise à jour démarrer. Attendre jusqu’à ce que l’écran affiche les messages «SWITCH OFF» et «SWITCH ON».	Включите RANGER *mini*. Начнется процесс обновления. Подождите, пока на экране не появятся сообщения выключить «SWITCH OFF» и Включить «SWITCH ON».
5	Extraer la memoria USB.	Remove the flash drive.	USB-Stick entfernen.	Débranchez la clé USB.	Удалите флешку.
6	Pulsar la tecla de apagado durante más de 5 segundos hasta que el equipo se apague.	Press the ON/OFF button for more than 5 seconds until the equipment turns OFF.	EIN/AUS Schalter länger als 5 Sekunden gedrückt halten, bis sich das Gerät vollständig abschaltet.	Gardez le bouton de marche/arrêt enfoncé pendant 5 secondes jusqu'à ce que le mesureur s'éteigne.	Нажмите кнопку ON/OFF в течение более 5 секунд, пока оборудование не выключится.
7	Encender el equipo de nuevo.	Turn ON the equipment as usual.	Das Gerät wie gewohnt einschalten.	Allumez le mesureur normalement.	Включите оборудование, как обычно.

v10.2.7 25-04-2022 (0 DG0332)