



ROHDE & SCHWARZ

Radio monitoring and
radiolocation division

Quick Start Guide

R&S[®] PR100 Portable Receiver

4071.9006.02



Dear Customer,

R&S® is a registered trademark of Rohde & Schwarz GmbH & Co.
KG.
Trade names are trademarks of their respective owners.

Contents

Symbols and safety labels	5
Tags and their meaning	6
Basic safety instructions	6
Quality certificate	12
CE certificate.....	13
Set-up	15
Front view	15
Top view	16
Unpacking the instrument.....	16
Setting up the instrument.....	18
Inserting the battery	19
Connecting to the power supply	20
Charging the Battery.....	21
Switching on the monitoring receiver.....	23
Ambient and operating conditions	24
Preventive maintenance	24
Monitoring receiver connectors.....	25
RF input.....	25
Headphone connector.....	26
AUX1 IN/OUT (at top)	26
AUX2 IN/OUT	27
External reference input	27
IF output.....	28
USB interface.....	28
LAN interface	29
Mechanical hardware protection.....	29
SD memory card	30
Basic Settings.....	31
Screen settings	31
Country-specific settings	32
Setting the date and time	33

Setting the date.....	33
Setting the date format.....	34
Setting the time.....	34
Software update.....	35
Option code activation	37
Brief Introduction	38
Demodulating a channel with analogue modulation	38
Center frequency level measurement.....	43
Field strength measurement	46
Level measurement and IF spectrum display	48
IF spectrum display.....	50
Short-duration signal display using spectrum displays and waterfall diagrams.....	53
Frequency scan (FScan) for cyclic processing of several radio service channels	57
Memoryscan (MScan) for cyclic processing of several radio service channels	61
Performing a broadband panorama scan (PScan)	65
PScan in DUAL SCREEN Mode	69
PScan in DIFFERENTIAL Mode	70
Internal Recording	72
External Triggered Measurement.....	75
RX setting options.....	77
Saving Screenshots.....	79
Saving Traces.....	80
Saving user settings.....	80

Version history

Version	Date	Validity starts with FW version	Comment
3.3	June 24, 2009	2.0	
3.4 EN	Feb 02, 2010	2.1	

Before using the product for the first time, please read the following:

















Rohde & Schwarz makes every effort to maintain the most stringent safety standards as regards its products and to guarantee its customers the highest possible level of safety. Our products and the necessary auxiliary equipment are designed and tested in accordance with the relevant safety standards. Compliance with these standards is continuously monitored by our quality assurance system. This product has been designed and tested in accordance with the EC Certificate of Conformity and has left the manufacturers' plant in a condition that complies fully with safety standards. To maintain this condition and to ensure safe operation, please take note of all the instructions and warnings appearing in this manual. Should you have any questions regarding these safety instructions Rohde & Schwarz will be happy to answer them.

Furthermore, you are responsible for using the product in an appropriate manner. This product is designed solely for use in industrial and laboratory environments, or in the field, and must not be used in any way that may cause personal injury or damage to property. The user bears responsibility if the product is used for any purpose other than that for which it was designed or if the manufacturer's instructions are disregarded. The manufacturer accepts no liability for misuse of the product.

The product is considered as being used for its designated purpose where it is used in accordance with the relevant operating manual and within its performance limits (see data sheet, documentation, the following safety instructions). Using the products requires technical skills and a knowledge of English. It is therefore essential for the products to be used only by skilled and specialized staff or thoroughly trained personnel with the required skills. Should personal protective equipment be necessary for using R&S products, this will be indicated at the appropriate place in the product documentation.

Symbols and safety labels

Symbols and safety labels

							
Observe operating instructions	Weight indications for units >10 kg	Danger of electric shock	Warning! Hot surface	PE terminal	Ground	Ground terminal	Attention! Electrostatic sensitive devices
							
Supply voltage (U _N /U _{EH})	Standby indication	Direct current (DC)	Alternating current (AC)	Direct/alternating current (U _N /U _{EH})	Device fully protected by double reinforced insulation		

Compliance with safety instructions will help prevent personal injury or damage caused by hazards of any kind. It is therefore essential to carefully read and comply with the following safety instructions before commissioning the product. It is also absolutely vital to comply with additional safety instructions relating to personal safety which appear in other sections of the documentation. In these safety instructions, the word "product" refers to all goods sold and distributed by Rohde&Schwarz, including all instruments, systems and accessories.

Tags and their meaning

DANGER	Indicates a hazard area that carries a high risk of danger for users. The hazard area can cause death or serious injuries.
WARNING	Indicates a hazard area that carries a medium risk of danger for users. The hazard area can cause death or serious injuries.
CAUTION	Indicates a hazard area that carries a slight risk of danger for users. The hazard area can cause minor injuries.
ATTENTION	This tag indicates the possibility of incorrect use which may cause damage to the product.
NOTE	This tag indicates a situation where the user should take special care when operating the product but which will not damage the product.

Basic safety instructions

1. The product should be operated only under the operating conditions and in the situations specified

by the manufacturer; its ventilation must not be obstructed during operation. Unless otherwise specified, the following requirements apply to R&S products: IP protection 2X, pollution level 2, excess voltage category 2, for indoor use only, maximum operating altitude 2000 meters above sea level

2. Applicable local or national safety regulations and accident prevention rules must be observed when performing any operations. The product should only be opened by authorized, specially trained personnel. Prior to carrying out any work on the product or opening the product, it must be disconnected from the mains power supply. Any adjustments, replacement of parts, maintenance or repairs must only be carried out by specialist electricians authorized by R&S. Original parts only should be used to replace safety-related components (e.g. power switches, power transformers or fuses). A safety test must always be carried out after safety-related components have been replaced (visual inspection, ground/earth test, insulation resistance and leakage current measurements, function test).

3. As with all manufactured goods, the use of substances that may cause an allergic reaction (allergens), such as aluminium, cannot be ruled out. Should you develop an allergic reaction (such as a skin rash, frequent sneezing, red eyes or breathing difficulties) when using R&S products, consult a doctor immediately to determine the cause.

4. For certain functions, some products, such as HF radio equipment, can produce a high level of electromagnetic radiation. Given that unborn children require increased protection, appropriate measures should be taken to protect pregnant women. People with pacemakers may also be harmed by electromagnetic radiation. Employers are required to assess workplaces where there is a specific risk of exposure to radiation and, where necessary, take measures to avert the danger.

5. Special training and a high level of concentration is needed to operate the products. Disabled people should only use the products if it is certain that there will be no impairment due to the nature of their disability when operating the products.

6. Before switching on the product, ensure that the rated voltage setting on the product matches the rated voltage of the mains supply. The product's mains fuse should also be changed if it is necessary to alter the voltage setting.
7. In the case of safety class I products with a flexible power cord and connector, operation is only permitted using sockets with an earth/ground contact and a protective earth/ground connection.
8. Intentionally breaking the protective earth/ground connection, either in the feed line or in the product itself, is not permitted; doing so may result in an electric shock hazard from the product. Where extension cables or connector strips are used, they must be checked on a regular basis to ensure that they are safe to use.
9. If the product is not equipped with a power switch for disconnection from the mains supply, the plug on the connecting cable is to be regarded as the disconnecting device. In such cases, you must ensure that the mains plug can be easily reached and is accessible at all times (length of the connecting cable approx. 2m). Function or electronic switches are not suitable for disconnecting the mains supply. If products without a mains switch are integrated into racks or systems, a disconnecting device must be provided at the system level.
10. Never use the product if the power cable is damaged. Take appropriate safety measures and carefully lay the power cable to ensure that the latter cannot be damaged and that no one can be hurt, for example by tripping over the cable or receiving an electric shock.
11. The product may be operated only from TN/TT mains power networks with a maximum 16A fuse.
12. Do not insert the plug into sockets that are dusty or dirty. Insert the plug firmly and all the way into the socket, otherwise there is a risk of sparks, fire and/or injury.

13. Do not overload any sockets, extension cables or connector strips; doing so may cause fire or electric shocks.

14. For circuit measurements with Vrms voltages above 30V, suitable measures (e.g. appropriate measuring equipment, fuses, current limiting, electrical separation, insulation, etc.) should be taken to avoid any hazards.

15. Ensure that any connections with computer equipment comply with IEC950/EN60950.

16. Never remove the cover or part of the housing while you are operating the product. This will expose circuits and components and may cause injury, fire or damage to the product.

17. If a product is to be permanently installed, the earth/ground connection on site and the product's earth/ground conductor must be connected before any other connection is made. The product must only be installed and connected by a specialist electrician.

18. For permanently installed equipment without built-in fuses, circuit breakers or similar protective devices, the mains circuit must be fuse-protected in such a way that users and products are sufficiently protected.

19. Do not insert any objects which are not designed for this purpose into the openings on the housing. Never pour any liquids onto or into the housing. This may cause a short circuit inside the product and/or electric shocks, fire or injury.

20. Take appropriate measures to protect against excess voltage caused by adverse weather conditions (e.g. thunderstorms) reaching the product, otherwise, operating personnel will be exposed to the risk of electric shocks.

21. R&S products are not protected against water penetration unless otherwise specified (see Point 1). If this is not observed there is a risk of electric shocks or damage to the product, which may also result in personal injury.

22. Never use the product in conditions where condensation has formed or may form in or on the product, for example when the product is moved from a cold to a warm environment.

23. Do not obstruct any slots or openings on the product, since these are necessary for ventilation and prevent the product from overheating. Do not place the product on surfaces that are not rigid, such as sofas or carpets, or inside a closed housing, unless this is well ventilated.

24. Do not place the product on equipment that generates heat, such as a radiator or fan heater. The ambient temperature must not exceed the maximum temperature specified in the data sheet.

25. Batteries and storage batteries must not be exposed to high temperatures or fire. Store batteries and storage batteries out of the reach of children. If batteries or storage batteries are not replaced appropriately there is a risk of explosion (warning: lithium cells). Batteries and storage batteries must only be replaced with the corresponding R&S type batteries (see spare parts list). Batteries and storage batteries are classed as hazardous waste. Dispose of them only in specially marked containers. Comply with local regulations concerning waste disposal. Do not short-circuit batteries or storage batteries.

26. Please be aware that in the event of a fire, the product may emit toxic gases that can be harmful to your health.

27. Be aware of the weight of the product. Move the product carefully, as its weight may cause back or other physical injuries.

28. Do not place the product on surfaces, vehicles, cabinets or tables whose weight and stability make them unsuitable for this product. Always follow the manufacturer's installation instructions when installing the product and attaching it to objects or structures (e.g. walls and shelves).

29. Should you decide to use the product inside a vehicle, it is the sole responsibility of the driver to drive the vehicle safely. Secure the product properly inside the vehicle to prevent injury or damage in the event of an accident. Never use the product in a moving vehicle if doing so may distract the driver of the vehicle. The driver is always responsible for the safety of the vehicle; the manufacturer assumes no responsibility for accidents or collisions.

30. If a laser product (e.g. a CD/DVD drive) is integrated into an R&S product, do not use any settings or functions other than those described in the documentation. This may otherwise be hazardous to your health, since lasers may cause irreversible optical damage. Never attempt to take such products apart. Never look directly into the laser beam.

Quality certificate

Dear Customer,

Thank you for purchasing a Rohde & Schwarz product.

This product is manufactured using state-of-the-art production methods. It is developed, produced and tested in accordance with the rules of our Quality Management System. The Rohde & Schwarz Quality Management System is ISO 9001 certified.

Certified Quality System

ISO 9001

DQS REG. NO 1954-04

CE certificate

Please mind :

The respective CE norms are only met under the following operating conditions:

- The DC cable length must be less than 3 meters.
- It's not allowed to work at vehicular DC mains with PR100.

The receiver must not be operated when these conditions are not met.

RONDE & SCHWARZ
 RONDENSTÄTTEBETRIEBUNG gmbh.com Centralno Furbojungen und Telekomunikationsausrustungen (CTE)G
 und ein Modem 169555-0 (G8111) A-hang V, zertifiziert durch die Betreuerin Siele CETECOM ICT Services GmbH,
 Ring Nr. G812137M
 DECLARATION OF CONFORMITY in accordance with the Radio and Telecommunications Terminal Equipment Act (FTEG) and Directive
 1999/5/EC (RATTE Directive) Annex V, certified by the Notified Body CETECOM ICT Services GmbH, Reg. No. G812137M



Zertifikat Nr. / Certificate No.: 2009-08

Hiermit wird bescheinigt, dass die Funktionäre
 This is to certify that the test equipment

Gerättyp Equipment Type	Modellnummer Serial No.	Bezeichnung Description
PR100	4071.6206.02	Portable Receiver 9 kHz - 7.5 GHz
PR100-BP	4071.6206.02	Batterie Kit

Geräteklassen / Equipment class: 1.7 (Radio-only radio equipment)

Bei bestimmungsgemäßer Verwendung den grundlegenden Anforderungen des § 3 und den übrigen
 when used in accordance with the provisions of the FTEG (Article 3 and RATTE), entspricht
 complies with the essential requirements of § 3 and the other relevant provisions of the FTEG (Article 3 and RATTE)
 (Meeting, when used in accordance with the provisions of the FTEG (Article 3 and RATTE))

- Gesundheit und Sicherheit gemäß § 5 (1) 1, (Artikel 3 (1) a)
- Electromagnetic compatibility § 4 (2) 1, (Artikel 3 (1) a)
- Schutzanforderungen in Bezug auf die elektromagnetische Verträglichkeit § 3 (1) 2, (Artikel 3 (1) b)
- Protection requirements concerning electromagnetic compatibility § 3 (1) 2, (Article 3 (1) b)

Angewendete harmonisierte Normen: Harmonized standards applied:	EN 61010 -1: 2001 EN 55022: 2005 class B EN 301489-1 V1.5: 1 (2008-04) EN 301489-22 V1.3-1 (2008-11) EN 300339 V1.1.1 (1998-05)
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Einhaltung der grundlegenden Anforderungen auf
 andere Art und Weise, inwieweit verwendet:
 Standards/Specifications:
 Other means of complying with the essential requirements
 (Provided that the conditions are met)

RONDE & SCHWARZ GmbH & Co. KG
 Mühlenstr. 15, D-81871 München
 München, den 22. Dezember 2009
 Munich, 2009-12-22


 Zertifikat Qualitätsmanagement MF-CZ / Radda
 Central Quality Management MF-CZ / Radda

Support center address

Should you have any questions regarding this Rohde & Schwarz instrument, please call our Support center hotline at Rohde & Schwarz Vertriebs-GmbH.

Our team will be happy to answer your questions and work with you to find a solution.

The hotline is open Monday to Friday between 8 a.m. and 5 p.m.

Should you wish to contact us outside normal business hours, please leave a voice message or send us a fax or email. We will contact you as soon as possible.

If you would like to receive information on modifications and updates for a specific instrument, please send us a short email stating which instrument. We will ensure that you regularly receive the latest information.

Support center

Tel: +49 180 512 42 42

Fax: +49 89 41 29 137 77

Email: CustomerSupport@rohde-schwarz.com

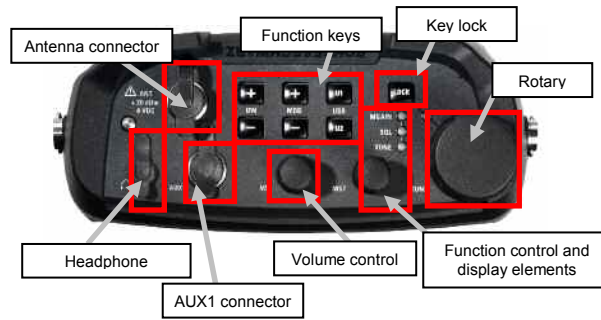
Set-up

Front view



- | | |
|-----------------------------------|-----------------------|
| 1 AUX2 / Ext Ref. / IF interfaces | 7 On/off switch |
| 2 LAN and USB interface | 8 Input keys |
| 3 Softkeys | 9 Unit keys |
| 4 Function keys | 10 Cursor keys |
| 5 Function keys | 11 Key lock |
| 6 (Alpha-)numeric keypad | 12 Rotary knob |
| | 13 Memory access keys |
| | 14 SD Card slot |

Top view



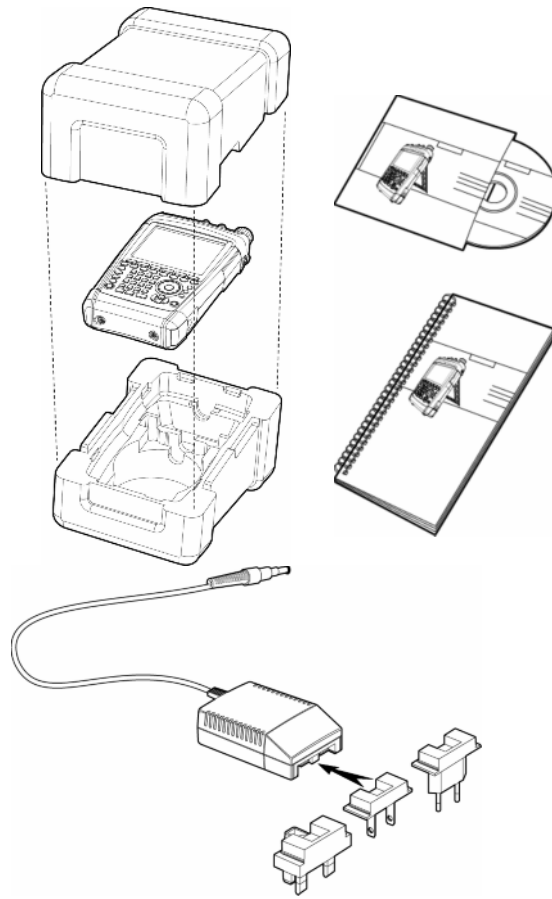
The following section describes how to set up the instrument and how to connect external devices including the charger. It then describes typical uses by means of screenshots.

Unpacking the instrument

The R&S PR100 is supplied in form-fit packaging consisting of an upper and lower shell. The two shells are held together by a sleeve which encloses the packaging.

The packaging contains all accompanying accessories.

- To unpack the instrument, remove the sleeve.
- Remove the R&S PR100 and the accessories.
- Remove the protective film from the screen.



Setting up the instrument

The R&S PR100 portable monitoring receiver is designed for stationary, in-vehicle and in particular for portable use.

Depending on operating conditions, the device can be set up perfectly for both operation and the viewing angle of the display.

When used as a desktop instrument, the R&S PR100 can either lie flat or stand up using the folding stand on the back.

For portable use, it is best to attach the receiver to the chest carrying strap. All the control buttons are then easily accessible and the display can be easily read.

Depending on operating conditions, the device can be set up perfectly for both operation and the viewing angle of the display.

When used as a desktop instrument, the R&S PR100 can either lie flat or stand up using the folding stand on the back.



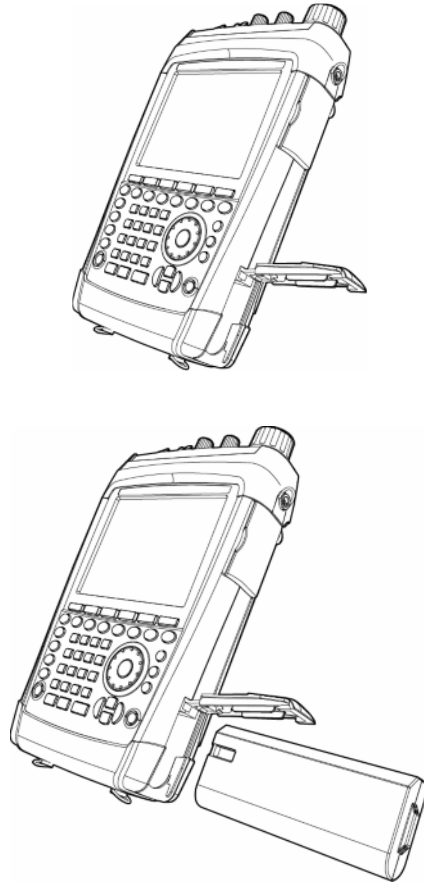
Inserting the battery

The R&S PR100 is fitted with a lithium ion battery. The HA-Z206 battery pack has a charging capacity of 6.75 Ah.

The battery is inserted into the bottom right of the instrument.

The cover must first be pulled downwards to unlock it and then folded upwards to open it.

The battery is NOT fitted in the R&S PR100 on delivery and must therefore be fitted before the device can be used for the first time.



Connecting to the power supply

The R&S PR100 can be powered using the mains power adaptor or the internal battery supplied. When fully charged, the built-in lithium ion battery permits approx. 3.5 hours of operation. When the R&S PR100 is delivered, the battery may be completely discharged. Should you wish to use it without a mains power connection you will therefore need to charge it. Charging time is approx. 4 hours with the device switched off. During operation using mains power, the R&S PR100 simultaneously charges the internal battery.

Insert the power adaptor plug into the POWER ADAPTOR socket on the left-hand side of the device until it clicks into place. Then connect the adaptor to the mains power socket. The adapter voltage range is 100 V to 240 V AC / 50 Hz to 60 Hz.

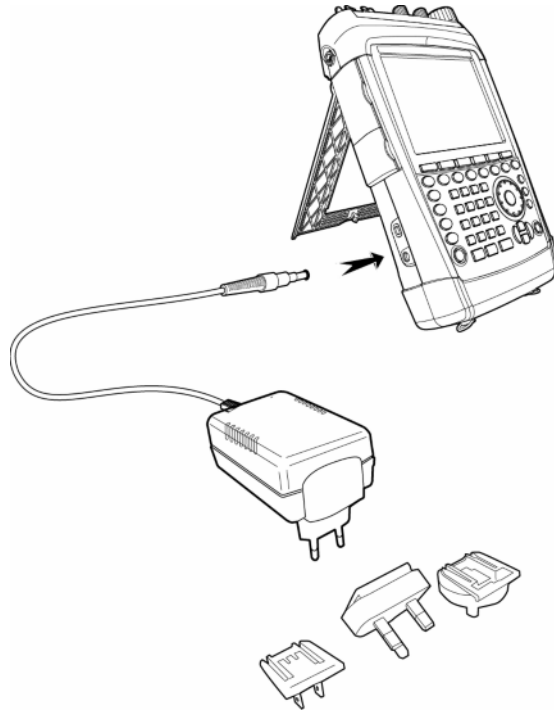
The PR100's DC supply range is +15 V DC +/-10%, max. 2 A.



Caution! *The R&S HA-Z201 power adaptor supplied should only be used to operate the device or to charge the battery using mains power. Ensure that the mains supply voltage is compatible with the voltage specified on the adaptor before use. Attach the appropriate connector before inserting the adaptor into the AC power outlet.*

The power adaptor HA-Z201 must not be used outside its operating temperature range of 0°C ... 45°C. Outside this temperature range, an external DC power supply must be provided by the user.

The external DC power supply must be in accordance with IEC / EN / UL / CSA 60950-1 or IEC / EN / UL / CSA 61010 -1 (current date of issue)



Charging the Battery

The R&S PR100 is equipped with a lithium ion battery. The battery permits approximately 3.5 hours' operation at room temperature when it is fully charged.

Caution! *On delivery, the R&S PR100's battery is not fully charged. The battery therefore needs to be charged before the device can be used for the first time.*



If the unit is stored for an extended period, self-discharge will reduce the battery's charge. The battery should therefore be charged before use if it is intended to be the sole power source for an extended period.

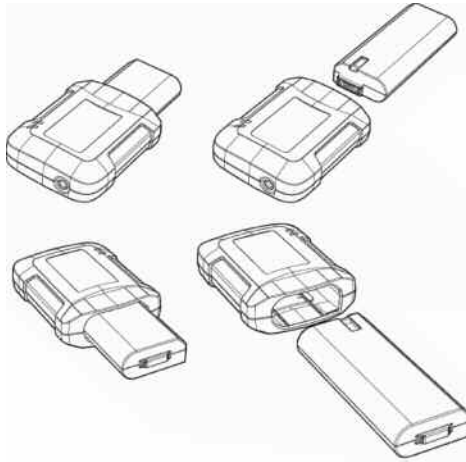
The charge status of the battery pack is shown on the instrument's display.

The battery can either be charged directly in the instrument by using the supplied adaptor or with the optional external R&S HA-Z203 battery charger.

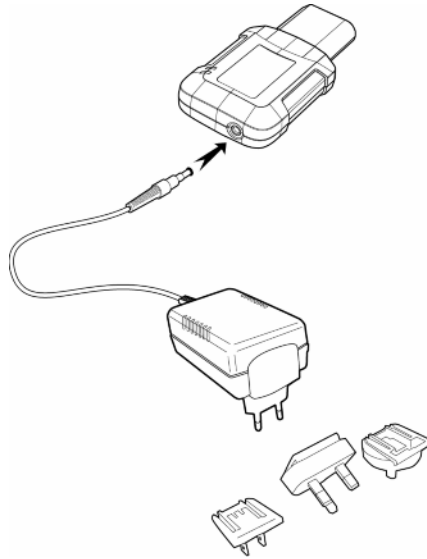
Charging takes approx. 7 hours with the device switched on.

For faster charging, switch off the instrument during charging. Charging takes approx. 4 hours with the device switched off or by using the external charging unit.

To charge the battery externally, place it in the external R&S HA-Z203 battery charger and charge it using the plug-in power adaptor.



The plug-in power adaptor is the same R&S HA-Z201 adaptor used for the receiver itself.



To increase operation time in battery mode, the R&S® PR100 is equipped with automatic power down after an adjustable time (5 or 30 minutes) following the last manual operation (Power down mode). This mode is inactive in default settings.

Switching on the monitoring receiver



To switch on the R&S PR100, press the grey button (7) at the bottom left of the front panel.

When the R&S PR100 is switched on, the settings in use when it was last switched off are loaded.

Should you wish to start the R&S PR100 with factory settings, the LOCK key (11) should be pressed and held for approx. 5 seconds when you switch the unit on.

Ambient and operating conditions

The R&S® PR100 will operate reliably in the following ambient and operating conditions:

Max. humidity 95 %
Rated operating altitude max. 4600 m above sea level
Transport altitude max. 12000 m above sea level
Excess voltage category 2
Pollution level 2

Preventive maintenance

Any dirt should be removed from the R&S® PR100 with a soft damp cloth and a mild detergent.

In case of a fault the following safety-critical parts should only be replaced with original Rohde & Schwarz spare parts:

Power adaptor	1309.6100.00
Battery charger	1309.6123.00
Six-cell battery pack	1309.6149.00

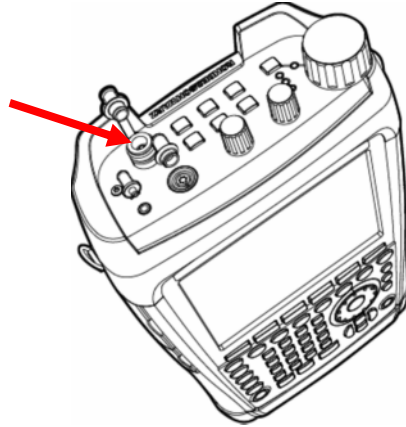
Monitoring receiver connectors

The R&S PR100 has the following connectors:

RF input

Connect the RF input to the antenna using a cable with an N connector.

Make sure that the input is not overloaded.



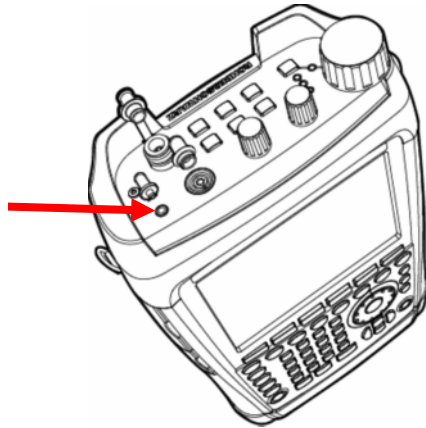
Caution!



The maximum permissible continuous power at the HF input is +20 dBm (100 mW).
The maximum permissible DC voltage at the HF input is 0 VDC.

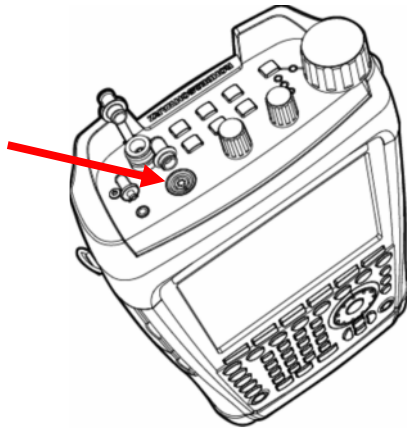
Headphone connector

A 3.5 mm stereo socket is provided for headphones. The connector's internal resistance is approx. 100 Ω .



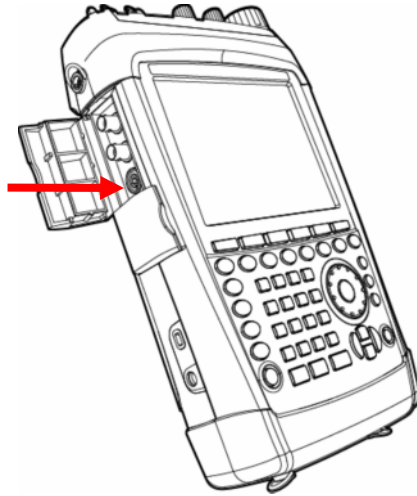
AUX1 IN/OUT (at top)

External control signals can, for example, be fed to the receiver via the AUX1 IN/OUT connector.



AUX2 IN/OUT

Control signals for measurements triggered externally can be fed in via the AUX2 input/output connector (e.g. for coverage measurement applications).



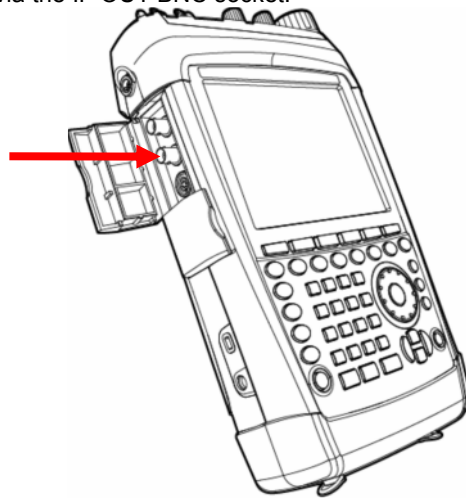
External reference input

A 10 MHz reference signal for frequency synchronization is received via the EXT REF BNC socket. The level for the reference signal must be greater than 0 dBm.



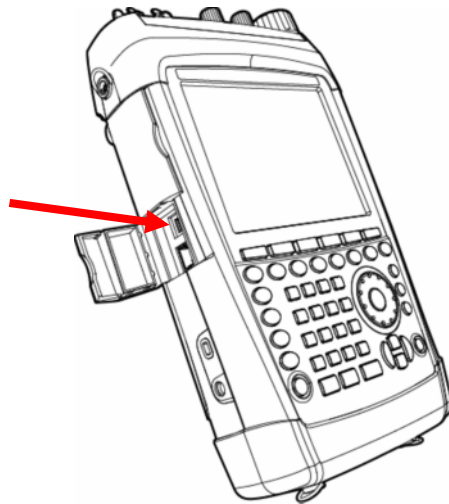
IF output

The unregulated 21.4 MHz IF signal is transmitted via the IF OUT BNC socket.



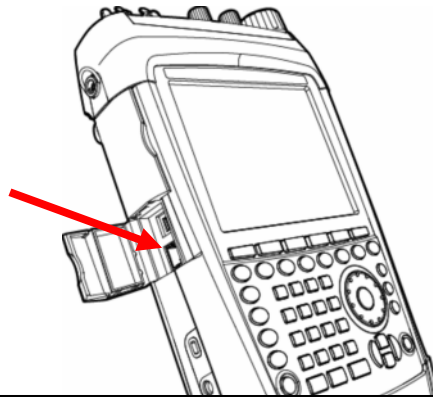
USB interface

The instrument is equipped with a USB1.1 interface for reading data stored on the SD card.



LAN interface

The instrument is equipped with a 10/100 Base T LAN interface for rapidly reading data stored on the SD card or for operating the receiver remotely.



In order to comply with electro-magnetic compatibility guidelines (R&TTE), only LAN cables shorter than 3 m may be used (see recommended accessories).

Mechanical hardware protection

Mechanical hardware protection for the R&S PR100 at a workstation can be provided by installing a Kensington lock in the receiver's housing.



SD memory card

The SD card for storing measurements or user settings is inserted into the upper right side of the R&S PR100.



Basic Settings

Screen settings

The R&S PR100 screen is a 6.5" VGA display. The brightness of the backlight can be adjusted between 0% and 100%.

To obtain a balance between battery operating time and screen display quality, set backlighting to the minimum level necessary.

Remark : The position number of the keys is given in brackets after the key name in the following text. (see Front view on page 15), e.g. „LOCK key (11)“.

Setting the backlight and color scheme

- Press the CONF key(5).
- Press the GENERAL softkey.



Adjust the backlight strength for the screen

- Use the rotary knob(12) or cursor keys(10) to select the setting you want and confirm by pressing ENTER.

Setting the display color

- Press the CONF key(5).
- Press the GENERAL softkey.



Adjust the screen colors.

Use the rotary knob(12) or the cursor keys(10) to select the setting you want and confirm by pressing ENTER.

Country-specific settings

The R&S PR100 supports multiple languages and can display text in the language of your choice. Softkey lettering is always in English. The default setting (factory setting) is also English.

Operation

- Press the CONF key(5).
- Press the GENERAL softkey.



Set the receiver's menu language

Use the rotary knob(12) or the cursor keys(10) to select the setting you want and confirm by pressing ENTER(8).

Setting the date and time

The R&S PR100 has an internal clock which can, for example, provide stored data records with a date and time stamp. The date and time can be adjusted by the user.

Setting the date

- Press the CONF key(5).
- Press the GENERAL softkey.



Set the receiver's date.

Enter the date using the numeric keypad(6) and then confirm by pressing ENTER(8).

- Press the CONF key(5).
- Press the GENERAL softkey.

Setting the date format



Set the date format

Use the rotary knob(12) or the cursor keys(10) to select the setting you want and confirm by pressing ENTER(8).

Setting the time

- Press the CONF key(5).
- Press the GENERAL softkey.



Set the time

Enter the date using the numeric keypad(6) and confirm it by pressing ENTER(8).

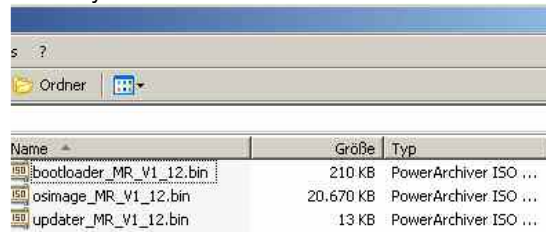
Invalid minutes are displayed inverse and need to be corrected by the user.

Software update

To operate the R&S PR100 with the latest features, it is recommended to install the newest firmware version.

A new firmware version can be down loaded via the R&S website (www.rohde-schwarz.com, search terms PR100 Firmware). In order to install the firmware, it must first be copied onto an SD Card, e.g. HA-Z231, order #1309.6217.00.

Copy the following files from your PC to the root directory of the SD-card:



The version number of the files varies with the stand of the firmware.

Note! Please make sure that only one file of each type is present on the SD card. The update mechanism will reject the card if it detects two versions of a file type and abort the update later on



- Switch the instrument off
- Insert the SD card into the SD card slot on the right side of the PR100.
- Connect a mains-adaptor (otherwise the PR100 will refuse to start the firmware update)
- During pressing the buttons [LOCK](11) and [8](numerical keypad, 6) at the same time, switch on the PR100.
Keep both buttons [LOCK] and [8] pressed for about 5 seconds after switching on the PR100.
- Continue following the instructions on the PR100's screen.

Caution! Risk of damage to the instrument



**DURING FIRMWARE UPGRADE,
DO NOT TURN OFF THE PR100!**

- In order to make the update effective, turn off the PR100 and turn it on again.
- During the first start up after updating the firmware, press the buttons [LOCK](11) and [F6](3, right) for about 5 seconds. This will format the PR100's file system to start from a defined basis after the update.
- Formatting process takes about 5 minutes.
- Your PR100 is now updated successfully.
- Please mind : after upgrading firmware from 1.04 or 1.12 to a newer version, all option codes need to be entered initially.

Option code activation

- Press the CONF key(5).
- Press the GENERAL softkey.



Enter the option code

Confirm the option code by pressing the ENTER key(8).

If the correct code is entered the option will be activated and can be used.

Brief Introduction

This section provides a brief introduction to working with the portable R&S PR100 monitoring receiver. The operating manual on the CD ROM provides an in-depth explanation of the basic operating steps, for example selecting menus and setting parameters. The manual also describes the layout of the screen and the information displayed on it.

Demodulating a channel with analogue modulation

To analyze the content of a channel, the channel can be demodulated and the audio information can be output on the loudspeaker. The required frequency is set using the numeric keypad(6). The current number input is automatically assigned to the center frequency during fixed frequency operation.

The fixed frequency mode is set by the key sequence
SCAN (5) – F1 (3, left) – Selection „Mode:FFM“,
followed by
DISP (5) – F1 (3,left) – Selection „RX+Spectrum“

For demodulation, select the following settings:

- Set a demodulation range of 120 kHz using the BW + (or BW -) key(4, left) (for FM modulation using a radio transmitter as an example)



Set the demodulation range.

The maximum possible demodulation range is 500 kHz.

- Select FM demodulation using the MOD + (or MOD -) key (4)

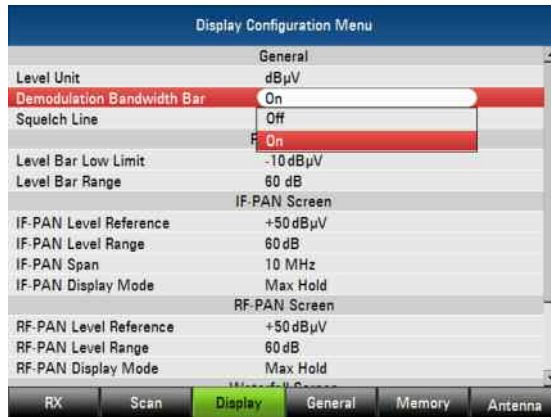


Set the demodulation type

The demodulated audio signal will now be output on the loudspeaker. The audio volume can be adjusted using the left rotary knob on the top of the receiver (see Top view, p. 16).

The chosen demodulation bandwidth can also be display graphically in a semitransparent colour.

- Press CONF (5) key.
- Press Softkey F3(Display).



Display of graphical demodulation bandwidth.

After the activation, the demodulation bandwidth is displayed in the spectrum.



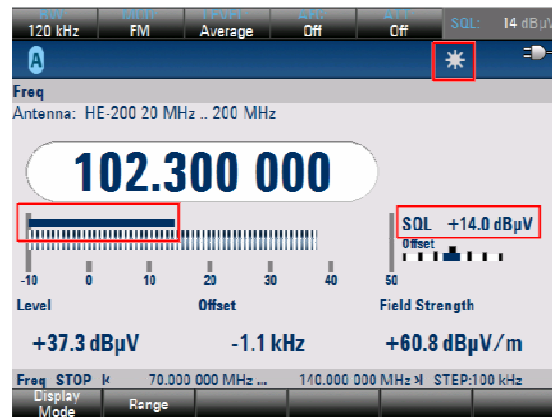
IF- panorama with demodulation bandwidth

Activate the adjustable noise limiter (Squelch):

- Press the RX key(5)
- Press the softkey F4(SQL)

Noise limitation can be adjusted using the center rotary knob on the top of the receiver. The squelch value is displayed graphically as a horizontal blue bar and numerically in dB μ V (noise limitation affects the receiver's demodulation path).

If the reception level is higher than the squelch value (audible audio) this is indicated by the sun symbol in the top right corner.



Squelch value is displayed as a blue bar

The automatic frequency regulator (AFC) can be used for easy demodulation of signals with an unstable frequency:

- Press the AFC key(4, right)

In the event of strong input signals, which may cause intermodulations, an attenuator can be switched into the reception path:

- Press the ATT key(4, right)

This attenuator is only effective for reception frequencies in between 20 MHz and 3.5 GHz. When the attenuator is switched on, it simultaneously bypasses the pre-amplifier.

Activation or Deactivation of Audio:

There are two different ways of activating or deactivating the audio output.

1. Assign a user key with MUTE:

- Press CONF (5) key.
- Press the softkey F4(General).

Choose the desired function to be assigned to the user key.

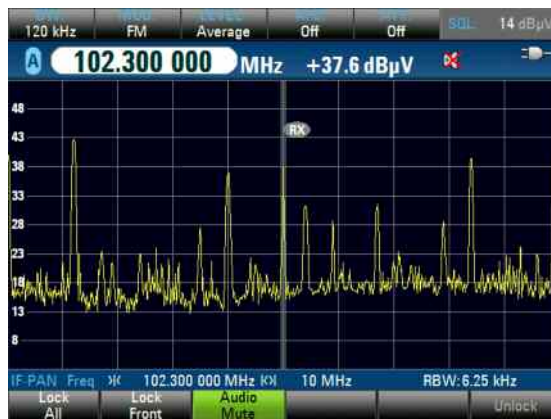


User key with MUTE function

2. MUTE via LOCK:

- Press the LOCK key.
- Press the softkey F3(Audio Mute).

The crossed loudspeaker symbol indicates the actual receiver status.



Mute audio by locking the receiver.

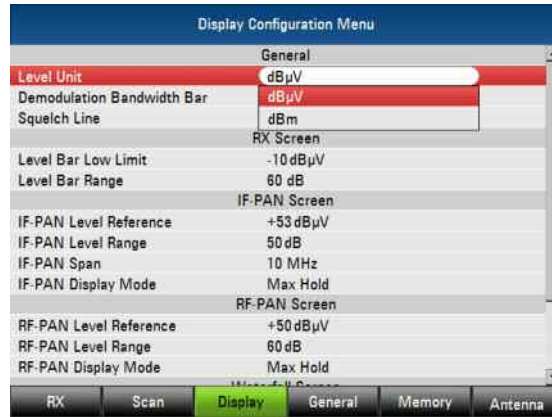
Center frequency level measurement

The level of the signal received on the set center frequency is constantly measured and output in dB μ V or dBm.

Change the display from dBm to dB μ V:

- Press CONF (5) key.
- Press the softkey F3(Display).

Choose dBm or dB μ V.

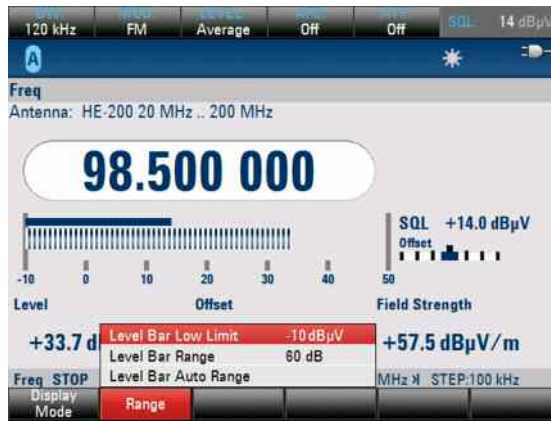


Measured values in dBm or dB μ V

The display area for the level axis can be adjusted:

- Press the DISP key(5)
- Press the softkey F2(Range)

The lower threshold and the dynamic range of the display can be adjusted using the menu that appears.



Adjust the display area for the level display

Various detectors are available for level measurement: AVG, RMS, SAMPLE and MAX PEAK. The Level key can be used to switch between the individual detectors:

- Press the LEVEL key(4)

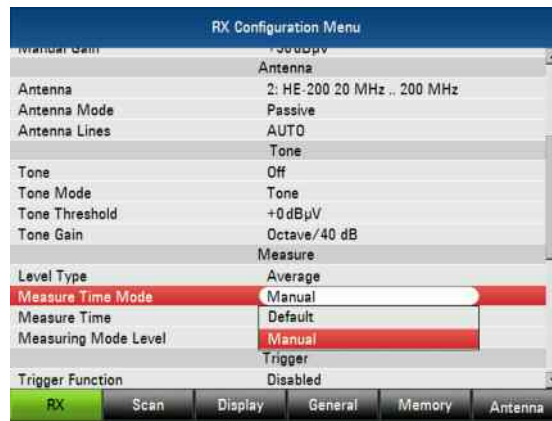
The detectors adjustable using LEVEL influence the level measurement and the demodulation path only, not the spectral path.

Setting the measurement time:

- Press the CONF key(5)
- Press the RX softkey

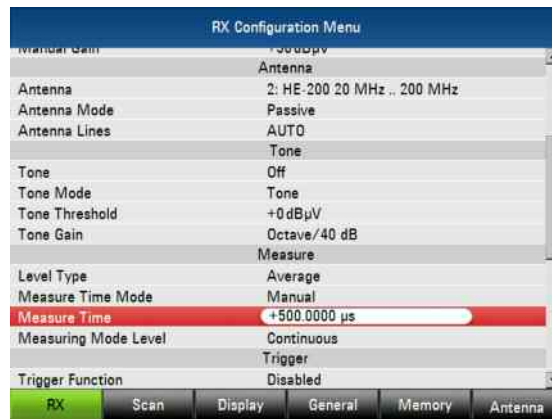
Set Measurement Time Mode to Manual'.

NOTE: The measurement time "Default" is not a fixed time, but is adapted automatically to the bandwidth.



Set the measurement time mode

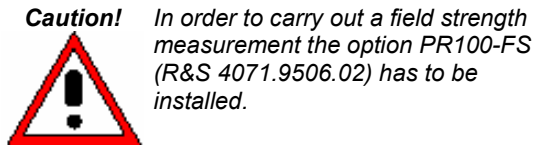
The R&S PR100 measurement time can now be set within a range of 500µs to 900s.



Set the measurement time

The appropriate receiver demodulation bandwidth for the signal must be selected for correct level measurement, i.e. a 120 kHz wide signal must be measured using a set demodulation bandwidth of at least 120 kHz or above.

Field strength measurement



To measure the signal's field strength, the input level in dB μ V is converted into the field strength in dB μ V/m using the antenna factor for the antenna in operation. The required antenna factor table must first be selected to perform this conversion:

- Press the CONF key(5)
- Press the softkey F6(Antenna)

Select the required antenna using the arrow keys(10) or the rotary knob(12) and confirm by pressing the

- F3(Select) softkey.

The antenna factors for the portable antennas R&S HE200 and R&S HE300 are already pre-installed when activating the option PR100-FS.

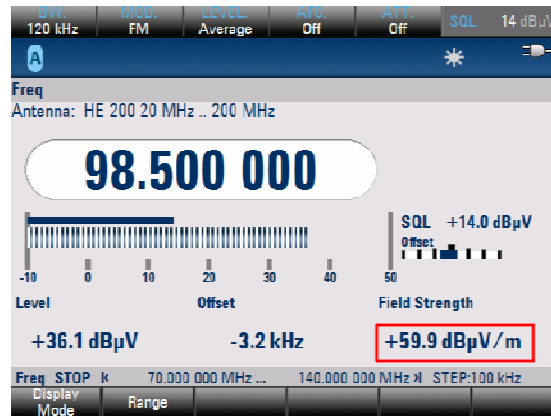
Antenna factor tables can be edited and exchanged between PC and instrument by means of the PRView software, which is included on the CD delivered with the instrument.



Antenna list

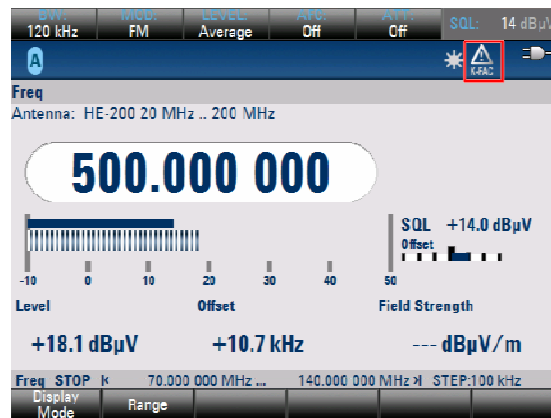
Select the antenna factor table using F3(Select)

The current measured field strength is displayed in dB μ V/m.



Bottom right: field strength display in dB μ V/m

The field strength will be not displayed any longer, when the set center frequency for the R&S PR100 rises or falls beyond the valid frequency range for the selected antenna factor table. This is also indicated by the K-FAC symbol.



Top right: the K-FAC symbol indicates the incompatible frequency range/antenna factor table combination.

Level measurement and IF spectrum display

The IF spectrum for the center frequency can be displayed alongside level information:

- Press the DISP key(5)
- Press the softkey F1(Display Mode)
- Select the RX + SPECTRUM display



Level information and IF spectrum display

The IF spectrum, with its maximum width of 10 MHz (minimum 1 kHz) is displayed symmetrically to the set center frequency for the R&S PR100. The receiver is in fixed frequency mode (FFM).

The level axis for the IF spectrum display can be adjusted to current signal strengths:

- Press the softkey F2(Range)

The upper reference threshold for the IF level axis and the dynamic range in relation to this reference threshold can be entered via the list menu.



Set the IF spectrum level axis

Should you wish to examine a signal for the set center frequency more closely, use the zoom function:

- Press the softkey F4(Zoom)

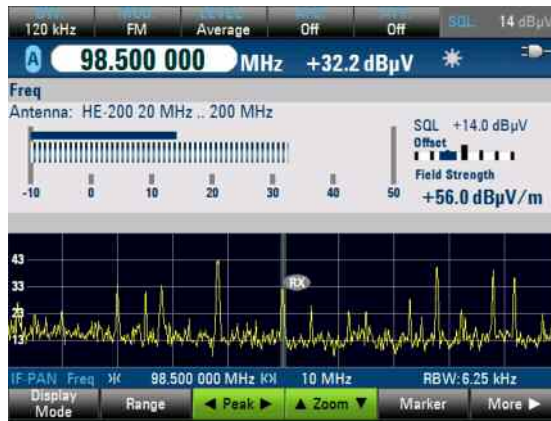
The user can zoom in or out of the spectrum using the up / down arrow keys(10). The set center frequency remains constant during the zoom process .

The Peak function can be used to switch rapidly between individual carriers:

- Press the softkey F3(Peak)

The user can change the receiver's current center frequency to the next signal using the left / right arrow keys(10).

The squelch setting determines the level the next signal must have in order to be accepted as the next jump mark.

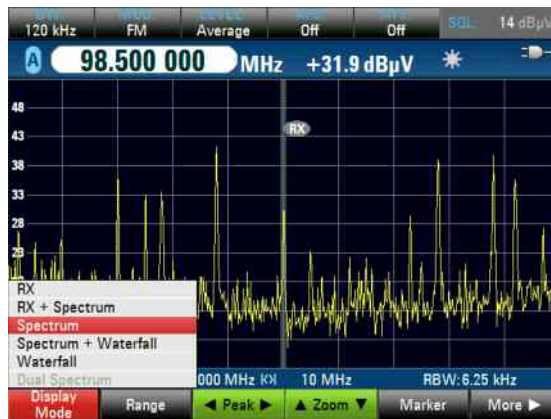


Zoom and Peak function in the IF spectrum

IF spectrum display

Exclusive display of the IF spectrum for the center frequency can also be set:

- Press the DISP key(5)
- Select the DISPLAY MODE softkey
- Select the SPECTRUM display



Full-screen IF spectrum display

The IF spectrum, with a maximum width of 10 MHz, is displayed on the whole screen and can be analysed using the marker functions, for example:

- Press the DISP key(5)
- Press the softkey F5(Marker)
- Press the Softkey F1(Marker)
- Press the Softkey F2(Lines)

The markers displayed can now be moved within the spectrum either using the rotary knob or by direct input via the keypad(6).



Marker functions within the IF spectrum display

To switch between the individual markers and the RX center frequency display:

- Press the softkey F5(Select)

The next marker is activated every time the SELECT key is pressed – as indicated by the blue highlighted marker text.

Each active marker can now be moved within the spectrum either using the rotary knob(12) or by direct input via the keypad(6).

The center frequency can be adjusted in one of three ways (if the RX display is activated):

1. Rotary knob on the front of the receiver:

The increment size of the rotary knob is determined by the number of horizontal pixels in the display (640 pixels), one step corresponds to one pixel.

With an IF width of 10MHz, one step of the rotary knob detunes the center frequency by 15,625.00 Hz. With an IF width of 1kHz, however, one step of the rotary knob detunes the center frequency by 1.5625 Hz, which will be rounded up to 2 Hz.

2. Rotary knob on the top of the receiver

The increment size of the rotary knob on the top of the receiver allows the receiver's center frequency to be consistently adjusted in a linear manner – independent of the pixels.

The increment size of the rotary knob can be adjusted by:

- Pressing the CONF key(5)
- Pressing the GENERAL softkey

The flywheel step size determines the increment size for frequency detuning in Hz for each adjustment step of the rotary knob. (Minimum value: 1Hz, maximum value: 500MHz)



The stepsize of the rotary knob can be adjusted

3. Direct input via the keyboard

Direct input via the keyboard adjusts the receiver precisely to the selected center frequency. Direct input is the best option, particularly for large frequency adjustment ranges, as tuning takes too long using rotary knobs.

Reviewing the pixel display using NORMAL, MAX HOLD, AVG and MIN HOLD can be adjusted by:

- Pressing the CONF key(5)
- Pressing the softkey F3(Display)

IF-PAN Display Mode provides a list of display modes.

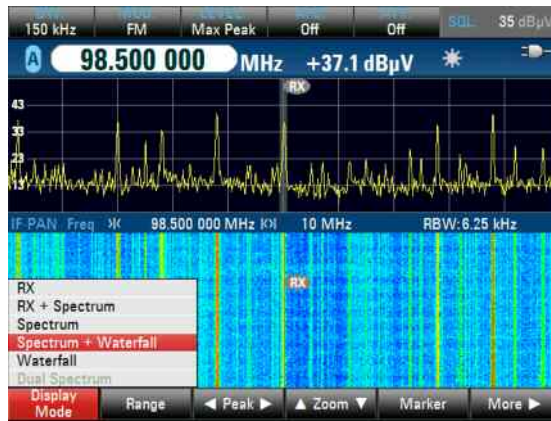


Selecting various reviewing parameters for IF spectrum display

Short-duration signal display using spectrum displays and waterfall diagrams

The combination of an IF spectrum display and a waterfall diagram is perfect for displaying short-duration signals (e.g. pulsed signals, monopulses, transceivers with frequency hopping, etc.):

- Press the DISP key(5)
- Press the softkey F1(Display Mode)
- Select display SPECTRUM + WATERFALL

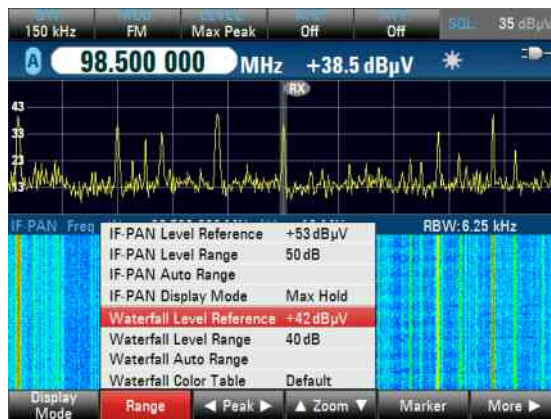


Select the Spectrum and Waterfall display combination

Both the scale of the level axis for the IF spectrum and the color of the waterfall diagram can be adjusted:

- Press the DISP key (5)
- Press the softkey F2(Range)

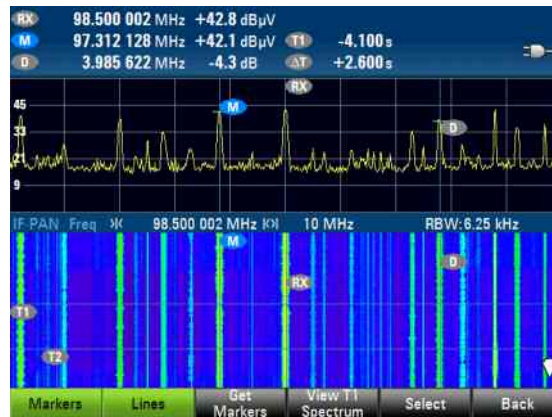
The upper reference threshold for the level axis and the dynamic range in relation to this reference threshold for spectrum and waterfall displays can be adjusted via the list menu.



Setting the color range limits for the waterfall diagram

To set the marker in the waterfall diagram:

- Press the DISP key(5)
- Press the MARKER softkey.
- Press the DELTA softkey
- Press the LINES softkey

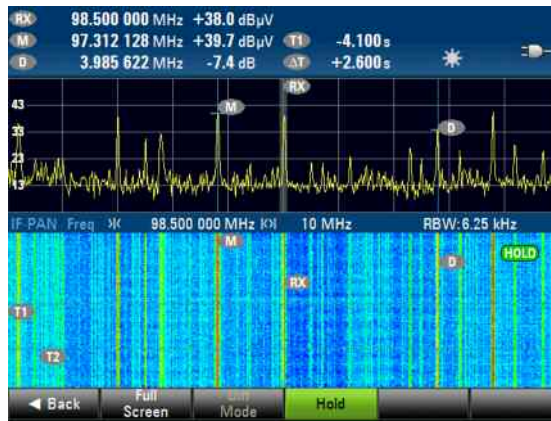


Marker displays in combination with the waterfall display

Use SELECT to choose the current marker to be set. What is distinctive about both markers (T1 and T2) in the waterfall display is that the time periods in the waterfall diagram are displayed in seconds.

The sequence of the waterfall diagram can also be stopped, for example to perform analyses:

- Press the DISP key
- Press the Softkey F6(More)
- Press the Softkey F4(Hold)

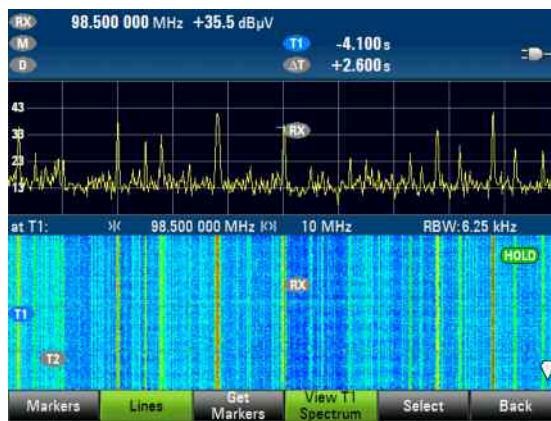


Waterfall diagram stopped for signal analysis

To view a spectrum from the memory:

- Press the DISP key(5)
- Press the softkey F5(Marker)
- Press the softkey F2(Lines)
- Press the softkey F4 (View T1 Spectrum)

The offline spectrum from the memory is displayed. The required time is selected using the T1 measurement line.

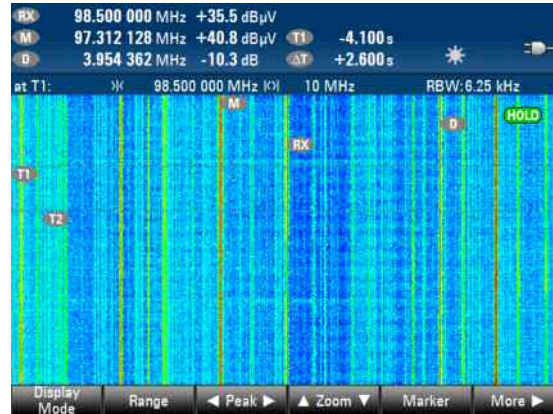


Displaying an IF spectrum from the memory at time T1

Approximately 35 seconds of a waterfall display can be recorded in the internal 64 MByte memory.

The waterfall display can be expanded to full-screen view both during operation and when the HOLD setting is activated:

- Press the DISP key(5)
- Press the softkey F6(More)
- Press the softkey F2(Full Screen)



Full-screen display of a waterfall diagram

Frequency scan (FScan) for cyclic processing of several radio service channels

In principle, the FScan function provides continuous toggling of fixed frequency modes (FFM). FScan is therefore particularly suited to cyclical processing of several channels from the same radio service (e.g. level measurement, monitoring audio quality, channel occupancy, etc.).

To set the FScan parameters:

- Press the SCAN key(5)
- Press the softkey F1 (Mode) repeatedly until "Mode FSCAN" appears at softkey F1
- Press the softkey F5 (Param)

Use the configuration menu to set the start and stop frequencies, as well as the step size for the FScan.



Set the FScan start/stop frequency and step size

Other FScan parameters can be set by:

- Pressing the CONF key(5)
- Pressing the softkey F2(Scan)

No Signal Time:

This is how long the receiver pauses at a channel without a carrier during the scan.

Dwell Time:

This is how long the receiver pauses at a channel with a carrier during the scan.

Scan Configuration Menu	
Frequency Scan	
Scan Start Frequency	70.000 000 MHz
Scan Stop Frequency	140.000 000 MHz
Frequency Scan Stepsize	0.100 000 MHz
RF Panorama Scan Resolution BW	100 kHz
Memory Scan	
Scan Start Line	000
Scan Stop Line	099
Use Squelch From Memory	Off
Scan Options	
No Signal Time Mode	Off
No Signal Time	+0.0 s
Dwell Time Mode	Manual
Dwell Time	+0.5 s
Scan Cycle Mode	Infinite
Number of Cycles	001

Set significant FScan parameters

The maximum FScan speed is set using the settings:

No Signal Time = 0
Dwell Time = 0
Measure time = 500µs

With these settings the receiver conducts a single level measurement for each FScan frequency and then immediately jumps to the next frequency. These settings are used to obtain a brief overview of channel occupancy for a particular radio service. The IF spectrum is only displayed during the scan process when the Dwell Time is set to ≥ 0.5 seconds. The IF spectrum is not updated for shorter Dwell Time settings.

Starting the FScan:

- Press the SCAN key(5)
- Press the softkey F1 (Mode) repeatedly until "Mode FSCAN" appears at softkey F1
- Use the softkey F3 (Run+) (oder F2,Run-) to start the FScan process



Start the FScan using RUN+

The demodulation type and bandwidth set here, as well as the squelch value, apply globally to all frequencies of the FScan.

Saving of a channel with DIRECT SAVE function:

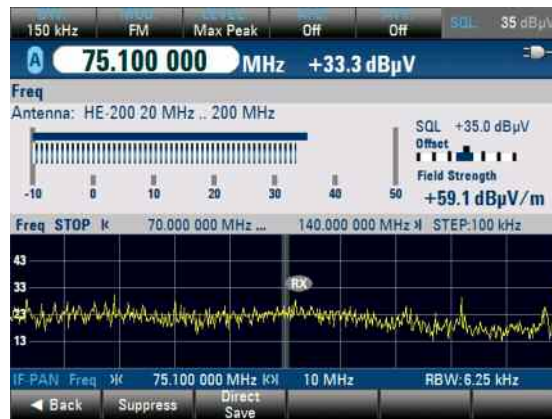
In FScan and FFM channels can be directly saved to the memory list by using the DIRECT SAVE button.

Suppressing of a channel during a FScan:

If single channels or even frequency bands have to be cancelled out during a FScan, the SUPPRESS function can be used in order to save put them on the SUPPRESS LIST.

Saving of FScan channels to the SUPPRESS LIST:

- Press button SCAN(5)
- Press the softkey F1 (Mode) repeatedly until "Mode FSCAN" appears at softkey F1
- Start FScan by using F3(Run+) (oder F2,Run-)
- Press softkey F6(More)
- Take the chosen channel out of the FScan by pushing the softkey F2(Suppress)

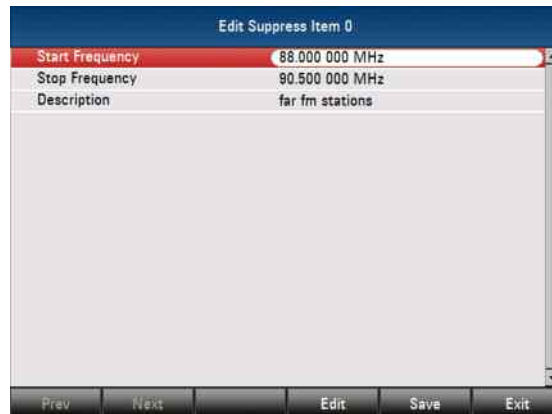


Cancel a channel with SUPPRESS

Editing the SUPPRESS LIST:

- Press button MEM (13)
- Press softkey F5(Edit Suppress)
- Go to the desired entry by using the rotary or by entering the line number

- Press softkey F5(View)
- Press softkey F4(Edit)
- By activating the different arrays the entries can be edited.
- Press softkey F5(Save)



Suppress List Entry

Memoryscan (MScan) for cyclic processing of several radio service channels

In the memory scan mode, predefined channels stored in memory locations are consecutively scanned and analyzed as to whether any signals are present. The R&S®PR100 offers 1024 user-definable memory locations. Receive parameters can be assigned separately to each memory location. The memory scan mode is especially useful for scanning individual frequencies that do not have fixed channel spacing or that use different modulation modes and bandwidths. The memory scan mode thus offers the user a greater degree of freedom than the frequency scan mode.

Saving a channel to the MEMORY LIST:

- Press button MEM (13)
- Press softkey F1(Save)
- Enter line number
- Enter description

- Press softkey F1(Save) again

By using the F4(Edit Memory) button it is possible to list all saved channels and to edit them.

Line	Stat	Mem	Frequency MHz	Mod	Description
000	■	000	90.000 000	FM	Memory_000
001	■	001	91.300 000	FM	Memory_001
002	■	002	92.400 000	FM	Memory_002
003	■	003	92.800 000	FM	Memory_0003
004	■	004	93.300 000	FM	Memory_0004
005	■	005	93.700 000	FM	Memory_0005
006	■	006	94.200 000	FM	Memory_0006
007	■	007	95.500 000	FM	Memory_0007
008	■	008	95.800 000	FM	Memory_0008
009	□	009	96.300 000	FM	Memory_0009
010	□	010	97.300 000	FM	Memory_0010
011	□	011	98.500 000	FM	Memory_0011
012	■	012	102.300 000	FM	Memory_0012
013	■	013	103.200 000	FM	Memory_0013
014	■	014	103.700 000	FM	Memory_0014
015	■	015	103.800 000	FM	Memory_0015
016	■	016	104.400 000	FM	Memory_0016
017	■	017	105.200 000	FM	Memory_0017
018	■	018	106.500 000	FM	Memory_0018
019	■	019	106.500 000	FM	Memory_0019

Display of saved MScan channels

The following parameters are saved individually per channel.

Edit Memory Item 2	
RX Frequency	92.400 000 MHz
Demodulation	FM
Bandwidth	150 kHz
Squelch	Off
Squelch Level	SQL: +0 dBµV
Attenuator	Off
Antenna Number	8
Automatic Frequency Control	Off
Description	Memory_002
Memory Status	Active

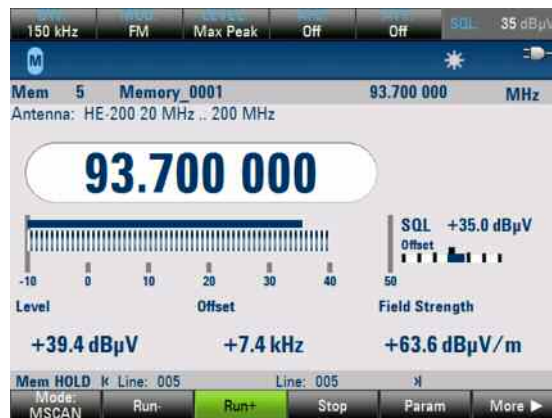
Saved parameters per channel

With the point MEMORY STATUS it is possible to activate or deactivate a channel for a MScan operation.

The use of the parameters No Signal Time, Dwell Time and Measurement Time is the same as for a FScan operation.

Start of a MScan:

- Press button SCAN (5)
- Press the softkey F1 (Mode) repeatedly until "Mode MSCAN" appears at softkey F1
- Start scan with F3(Run+) or F2(Run-)



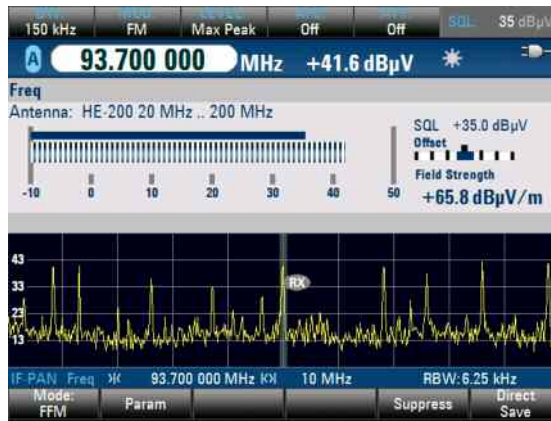
Start of a MScan with RUN+

Saving a channel with the DIRECT SAVE function:

During a FScan (see chapter FScan) and in FFM channels can be directly saved to the Memory List by using the softkeys DIRECT SAVE.

FFM:

- Start FFM by pushing the button SCAN(5)
- Press the softkey F1 (Mode) repeatedly until "Mode MSCAN" appears at softkey F1
- Press softkey F6 (Direct Save) in order to save the channel



Saving of a channel with DIRECT SAVE

The configuration of the memory within the 1024 lines that is used by DIRECT SAVE can be done through a CONFIG MENU.

- Press button CONF(5)
- Press softkey F6(Memory)
- Choose start and stop line and save

Memory Configuration Menu	
Direct Save & Auto Save	
Direct Save Start Location	800
Direct Save Stop Location	799
Auto Save Start Location	800
Auto Save Stop Location	999
Recording	
Recording Storage	Internal Memory
Internal Record Memory Size	8 MB
Recording Memory Mode	Cyclic
Digital Audio Mode	32kHz 16 bit stereo

Memory configuration menu

Performing a broadband panorama scan (PScan)

Caution!



In order to carry out a Panorama Scan operation, the option PR100-PS (R&S 4071.9306.02) has to be installed.

To display a broad frequency bandwidth which is independent of fixed channel spacing or of memory programming (e.g. from 870 MHz to 1.9 GHz), the R&S PR100 receiver can be operated in Panorama Scan mode:

- Press the SCAN key(5)
- Press the softkey F1 (Mode) repeatedly until "Mode PSCAN" appears at softkey F1
- Press the softkey F5 (Param)



Set the start/stop frequency and the resolution bandwidth of the PScan

The receiver now scans the frequency bandwidth in the specified step sizes and carries out an FFT calculation for each block (the frequency block size depends on the resolution bandwidth, selected) to display the spectral data.

- Press the SCAN key(5)

- Press the softkey F1 (Mode) repeatedly until "Mode PSCAN" appears at softkey F1
- Use the softkey F3 (Run+) oder F2(Run-) to start the PScan process
- The PScan process can be stopped by Softkey F4(Stop)



Continuous PScan between the defined start and stop frequencies

The receiver scans the set spectrum range using the selected parameters and displays the result on the screen (demodulation and level measurement are not possible during a PScan).

The Rx marker can be changed during a scan operation either by using the keypad or the rotaries. If the chosen frequency is within the shown range on the display, the measured channel power in accordance to the chosen detector is measured every time the PScan passes the marker position.

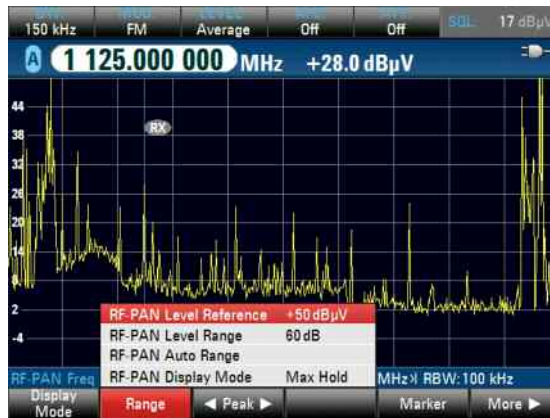


During a PScan the most important parameters of the scan can be changed by using the PARAM softkey (start/stop frequency and resolution). After the change of the parameters the PScan has to be restarted again.

The level axis can be adjusted during the scan process:

- Press the DISP key(5)
- Press the softkey F2(Range)

The upper reference threshold for the level axis and the dynamic range in relation to this reference threshold can be entered via the list menu.



Setting the level axis value range during the PScan

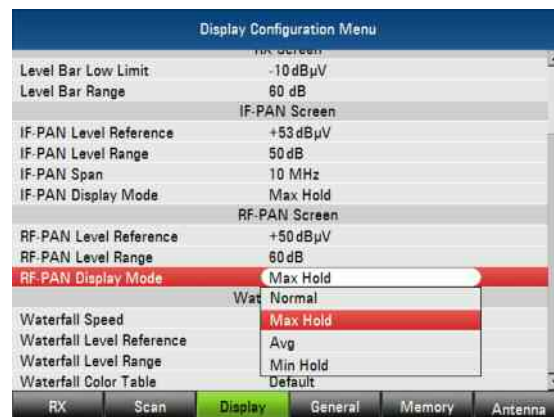
To obtain a rapid spectrum overview over a broad frequency range, we recommend using a PScan RBW of 100kHz and a measuring time of 500µs. These settings will generate the maximum scan speed.

For a detailed signal analysis of a (normally smaller) frequency range, a smaller PScan RBW is used (up to 125 Hz). This setting generates the highest signal resolution and the highest sensitivity with the lowest scan speed.

Evaluation of the pixel display using NORMAL, MAX HOLD, AVG and MIN HOLD can be adjusted by:

- Pressing the CONF key(5)
- Pressing the softkey F1(Display Mode)

RF-PAN Display Mode provides a list of display modes.



Selecting various reviewing parameters for RF spectrum display (PScan)

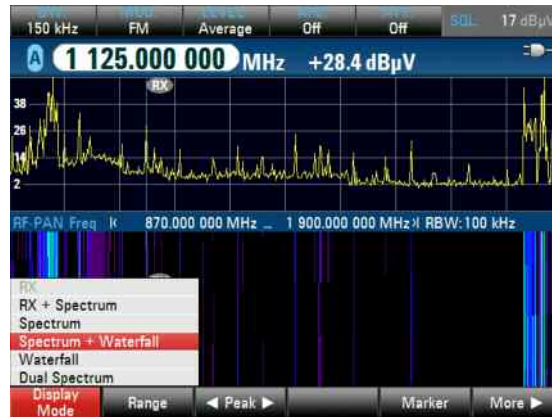
PScan with waterfall display

During a PScan is possible to activate the waterfall display. In this mode PScan and waterfall display are shown together.

To add a waterfall display to a PScan

- Press the DISP key(5)

- Press the softkey F1(Display Mode)
- Select display SPECTRUM + WATERFALL



Selecting Pscan with waterfall display

PScan in DUAL SCREEN Mode

During a PScan is possible to switch to DUAL SCREEN mode. In this mode PScan and IF panorama are shown.

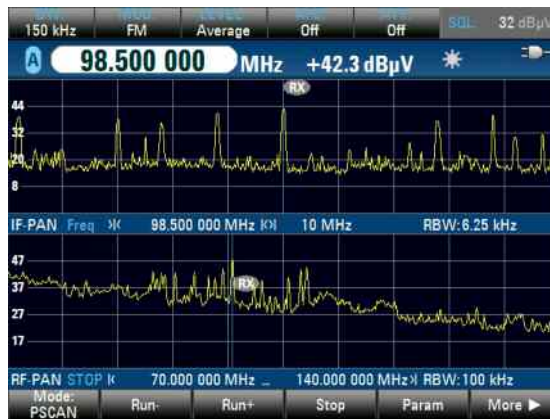
- Press the DISP key (5)
- Press softkey F1(Display Mode)
- Choose DUAL SPECTRUM mode
- Press button SCAN and choose PScan parameter

In the DUAL SCREEN mode the IF panorama is shown in the upper part and the panorama scan is shown in the lower part of the screen. While the PScan is running, the Rx marker can be set to an interesting signal by using the keypad, rotary or the PEAK functionality.



DUAL SCREEN mode while PScan is running

If the PScan is stopped, the IF panorama that corresponds to the chosen Rx marker frequency is shown in the upper part of the screen.



DUAL SCREEN mode with stopped PScan.

The user can now analyse the spotted signal with the complete functionality of IF panorama analysis.

PScan in DIFFERENTIAL Mode

During a running PScan it is possible to switch to DIFFERENTIAL MODE. In this mode the actual spectrum situation is used as a reference input signal and only changes from this reference (positive or negative) are shown in the display. The

DIFFERENTIAL mode is very well suited for the search of weak or seldom signals.

- Start PScan
- Press DISP key(5)
- Press softkey F6(More)
- Select F3(Diff Mode)

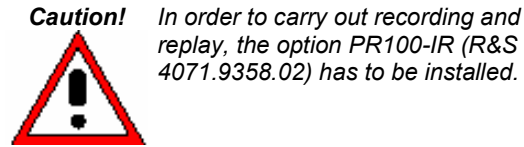


Reference spectrum in Pscan



Difference spectrum in PScan with signal at 433 MHz

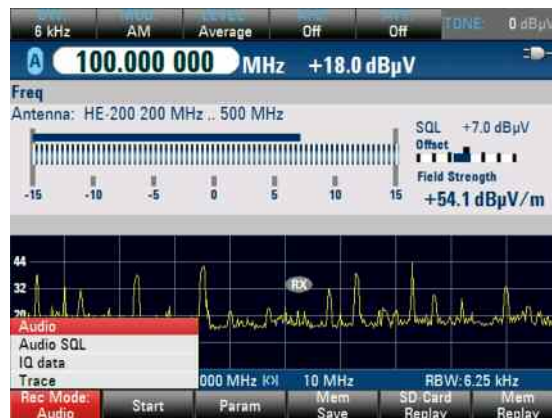
Internal Recording



Internal recording can record and replay spectra and audio data. IQ data can only be recorded. Recording is possible to RAM (volatile) and to SD card (permanent).

To **record Audio Data** (e.g. in RAM)

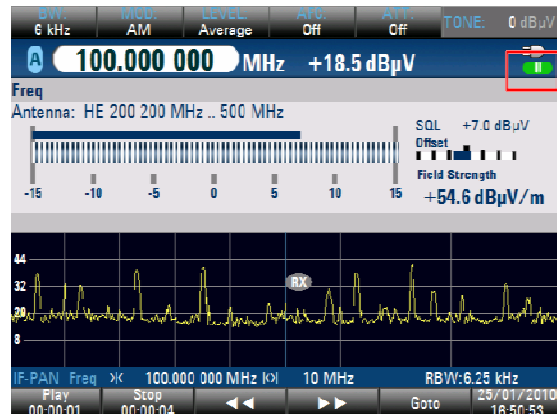
- Press REC key (13)
- Press softkey F1(Rec Mode)
- Choose "Audio" by front rotary or up/down arrow keys and press ENTER key
- Press softkey F1(Param)
- Choose "Recording Storage " and press ENTER key
- Choose "Internal Memory" and press ENTER key
- Start Audio Recording with softkey F2(Start)
- Stop Audio Recording with softkey F2(Stop) after desired time



Selection of audio recording

To **replay Audio Data** (here : from RAM)

- Press REC key (13)
- Press softkey F6(Mem Replay)
- Start replay with Softkey F1(Play)
- Stop replay with Softkey F2(Stop), if desired
- Press REC key to return to the recording menu

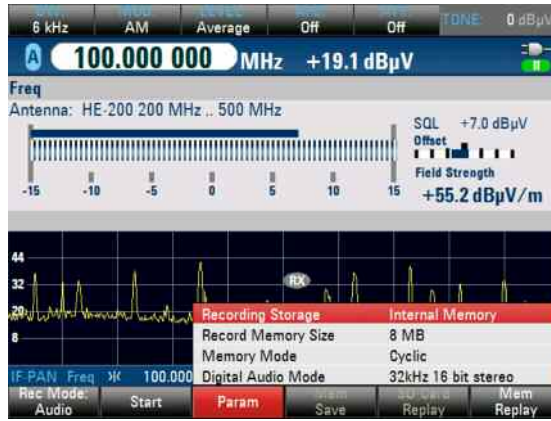


Audio replay, symbol for stop/pause/replay is shown top right

To **record spectra** (e. g. on SD card)

- Press REC key (13)
- Press softkey F1(Rec Mode)
- Choose "Trace" by front rotary or up/down arrow keys
- press ENTER key
- Press softkey F3(Param)
- Choose "Recording Storage"
- press ENTER key
- Choose "SD card" auswählen
- press ENTER key
- Start recording of spectra with softkey F2(Start)

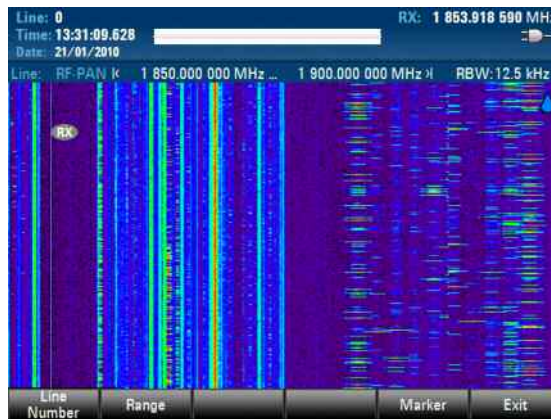
- Stop recording of spectra with softkey F2(Stop) after desired time



internal recording, switch storage between RAM and SD card

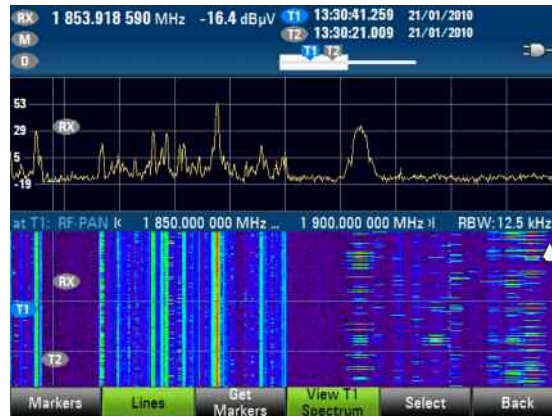
To **replay spectra** (here from SD card)

- Press REC key (13)
- Press softkey F5(SD Card Replay)
- Choose Trace-File (*.rtr) by front rotary or up/down arrow keys
- Start spectrum replay with F2(Replay)



Replay of recorded spectra

- Markers can be activated by pressing softkey F5(Marker)
- The spectrum under the T1 marker can be shown with softkey F4(View T1 Spectrum), if line markers are activated.



Markers and recorded T1-Spectrum

External Triggered Measurement

Triggering is explained here by an example: MSCAN starts after a button press and stops again after a defined time.

Caution! In order to trigger measurements, the option PR100-ETM (R&S 4071.9458.02) has to be installed.



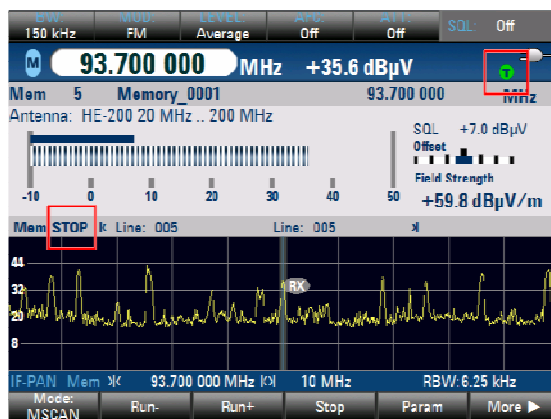
- Select MSCAN Mode, see section Memoryscan", p. 61
- Configure trigger :
 - Press CONF key (5)
 - Press softkey F1(RX) and enter the following settings:
 - Trigger Action → Scan Run+
 - Trigger Start Source → Rotary Button

- Trigger Stop Source → Trigger ON Duration T3
- Trigger ON Duration T3 → e.g. 10 s
- Activate trigger with Trigger Function→Enabled



Trigger configuration

- Press SCAN key to display spectrum
- Start measurement by pressing the center button of the front rotary
- Measurement stops after duration T3



MSCAN waiting for trigger signal

- Deactivate trigger again by
Trigger Function→Disabled

RX setting options

The RX key(5) provides access to various setting options.

Rapid correlation between two communication channels (e.g. 98.5 MHz and 89.0 MHz):

- Adjust the receiver to 98.5 MHz
- Press the RX key
- Press the A=>B softkey
- Adjust the receiver to 89.0 MHz
- Press the VFO-A/VFO-B softkey

The user can now use the VFO-A/VFO-B key to rapidly jump between the two channels (98.5 MHz and 89.0 MHz), in order to conduct correlative analyses, for example.

Manual gain control during AM modulation:

- Press the RX key(5)
- Press the softkey F3(MGC)



Active MGC to optimise audio demodulation

With MGC activated, the center rotary knob on the top of the receiver controls the audible volume of an AM-demodulated signal. To be used, for example, with fading effects and resulting variations in volume. The MGC only has a volume effect with AM demodulation.

Noise limiter (squelch) for time-dependent available communication channels:

- Press the RX key(5)
- Press the softkey F4(SQL)

The noise limiter mutes the audio path as soon as the signal receiving level falls below the set SQL threshold. The noise limitation value can be adjusted using the center knob on the top of the receiver. The noise limiter prevents audible and disruptive white noise on the audio path, for example during speech pauses in radio communication.



Eliminating background noise during speech pauses by using the squelch function

Acoustic backsignalling for a changing signal level:

- Press the RX key(5)
- Press the softkey F5(Tone)

The TONE function transforms the received signal level in dBµV into a whistling sound which is emitted via the loudspeaker. The pitch of this

whistling sound depends on the received signal level. The stronger the level, the higher the audible whistle.

The pitch of the basic tone (e.g. for a reference level) may be adjusted to the ear of the particular user by the center rotary knob on the top of the receiver.



Tone function for acoustic output of level information

Saving Screenshots

The current screen content can be saved to the SD card by means of a screenshot in .png format:

- Press the FILE key(13)
- Press the softkey F1(Save Screen)
- Give the screenshot a name using the alphanumeric keypad
- Press the softkey F1(Save)

The current screenshot is saved with the chosen name on the SD card in the receiver.



Note! *To reduce the consumption of toner or ink during printing, the screenshot is converted to a white background with a black coloured trace.*



Store a screenshot and name the file

Saving Traces

A current screen content can be saved to the SD card by means of a trace in .csv format:

- Press the FILE key(13)
- Press the softkey F2(Save Trace)
- Give the screenshot a name using the alphanumeric keypad
- Press the softkey F1(Save)

The current screenshot is saved with the chosen name on the SD card in the receiver.

Only traces that are obtained from IF panorama or panorama scan can be saved.

Saving user settings

The current user settings can be stored in the R&S® PR100 and called up again if necessary:

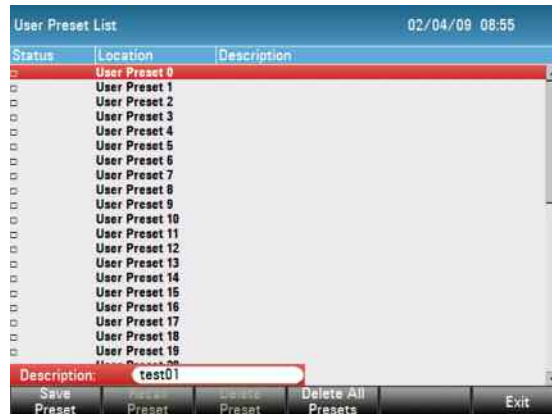
- Press the FILE key(13)
- Press the softkey F3(User Presets)

Select the required memory location using the rotary knob.

- Press the softkey F1(Save Preset)

For easy identification, additional descriptive text should be entered using the alphanumeric keypad . Entry is concluded by:

- Pressing the ENTER key
- Pressing the F1(Save Preset) softkey again



Saving user settings and naming the file

The user setting is now saved in the chosen memory location.

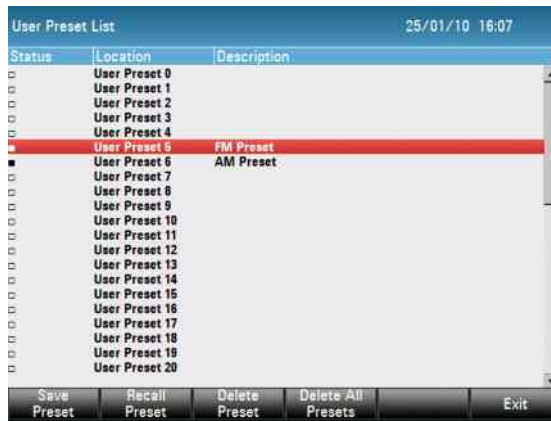
The required default setting can be recalled:

- Press the FILE key(13)
- Press the softkey F3(User Presets)

Select the chosen memory location using the rotary knob.

- Press the F2(Recall Preset) softkey

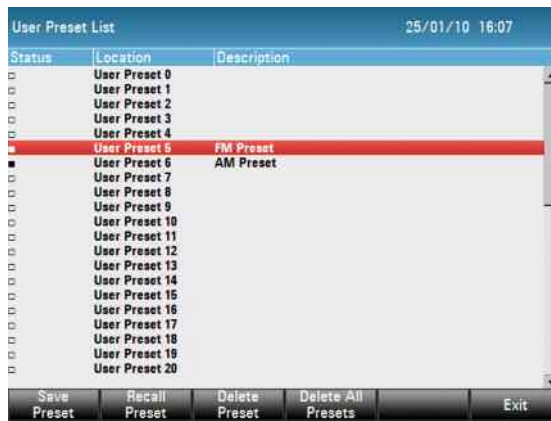
The receiver settings stored in the particular memory location are transferred into the R&S® PR100.



Calling up the stored user settings

Caution: the receiver DOES NOT issue a warning before deleting an individual memory location.

The receiver issues a warning before deleting all user settings.



Warning before deleting all memory locations

