



**ROHDE & SCHWARZ**

Division  
Radiomonitoring and Radiolocation

## **Release Notes**

# **Firmware Update V 2.62**

## **MINIPOINT RECEIVER EB200**

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# 1 General Information

## Manual for EB200

The following manual is supplied with the EB200: **EB200 Manual**

The new firmware version 2.62 corresponds with the manual 4052.2039.34-06.

### How to get a current version of the manual?

- Order a printed manual at Rohde & Schwarz, order no. 4052.2039.34-06
- You will also find pdf-files of the current release of the manual in the SALES INFORMATION Board on GLORIS. If you don't have access to this Board, please ask your local support for a manual in pdf format.

# 2 Firmware Update

## 2.1 System Requirements

- IBM-compatible PC with RS232 interface COM1 or COM2
- Serial null-modem cable (RxD, TxD crossed), 9-pin female to 9-pin female
- Adapter 25-pin female to 9-pin male (is included in the EB200 accessories set)

## 2.2 Preparations before Update

- Plug the adapter (25-pin to 9-pin) in X6 (OPTION Connector).
- Use the null modem cable to connect the COM port of your PC to the adapter of your EB200. For Update do **not** connect to X9 RS232 !

## 2.3 Contents of Firmware Update Kit

The update kit comprises the following disks (3.5"/1.44MB):

- EB200 FlashUp (order no.: 4052.4677.00) contains the current firmware
- EB200 Utilities (order no.: 4052.4660.00) contains the update program

You will also find the current firmware release in the FIRMWARE section of the Service Board on GLORIS or on the web page of the Rohde & Schwarz:

<http://www.rohde-schwarz.com>

Search for EB200 download area.

## 2.4 Update Procedure

### 2.4.1 Prepare Update Data

- Create a new directory on your PC by command:  
md EB200\V0262
- Copy the self-extracting archive file to this directory.
- Unpack the self-extracting archive file in the directory by command:  
EB200262.exe
- After unpacking you will find the following files in your directory:

UPDATE.EXE	update program for DOS
UPDATE.HLP	help file for DOS update program
UPD32.EXE	update program for Win95, Win98, WinNT, WinME, Win2000
UPD32.HLP	help file for update program for Win95, Win98, WinNT, WinME, Win2000
EB200P1.CFG	configuration file
EB200P1B.ELF	boot loader
EB200P1P.ELF	firmware update code

### 2.4.2 Prepare EB200 for Update

Switch off the EB200 before running the update program.

### 2.4.3 Start Update Program

#### Run UPDATE.EXE under DOS and Win3.1

- Select configuration file EB200P1.CFG through:  
File - Open Config File
- Configure the connected COM port through:  
File - COM port
- Start update through:  
Actions - Update device

#### Run UPD32.exe under Win95, Win98, WinNT, WinME, Win2000

- Select configuration file EB200P1.CFG through:  
File - Config File
- Configure the connected COM port through:  
Config - COM Port
- Start update through:  
Update - via COM

### 2.4.4 Start Update Process

Switch the EB200 on within 30 seconds after the update has been started on the PC. This will start the update process on EB200.

With 115200 Baud the update process will take about 6 minutes.

## 3 New Features, Improvements and Changes

### 3.1 New features

None

### 3.2 Improvements

None

### 3.3 Changes

- The EEPROM type on the DSP module in the IF-Panorama was changed. The resulting power on problem could be solved by a changed initialisation.

### 3.4 Version History

#### Changes from Version 2.61 to Version 2.62:

- See 3.1 to 3.3 and Faults Remedied in Firmware Version 2.62

#### Changes from Version 2.55 to Version 2.61:

##### Faults Remedied:

- With the software option EB200FS (Field Strength) it is now possible with the "Antenna Factor Tool" to load more than 20 parts of a characteristics diagram into the EB200 without problems.
- The problem with system hang-up while transferring binary Trace data via RS232 in STANDARD mode is solved.

##### Improvements:

- In D-SCAN operation with level detector FAST the frequency accuracy is improved.

**Changes:**

- Change of the channel pattern behaviour in D-SCAN.  
Up to now there was a shift of 1/4 IF bandwidth between measured level value and delivered frequency value on D-SCAN remote data output.  
With the new firmware at first the channel pattern behaviour is the same.  
But with the command:  
`[SENSe]:FREQuency:DSCan:FCHannel ON`  
it is possible to change the status of the equipment to a D-SCAN channel behaviour to F-SCAN like. As a result, the number of channels within the frequency span increases by one and the level values are measured at the delivered frequency values.

With the remote commands:

`[SENSe]:FREQuency:DSCan:FCHannel OFF` or `*RST`  
the default state is set again.

If D-SCAN data are send via UDP, the *minor\_version\_number 0x24* indicates, that the *OptionalHeader* contains the additional Flag *newStepScheme*. This flag indicates whether the old or the new channel pattern is used.

- The EB200 will also be offered without remote control. In this case the startup image has changed from "REMOTE RS232 -" meaning "not installed" to "REMOTE RS232 ?" meaning "not identified".

**Changes from Version 2.54 to Version 2.55:****Faults Remedied:**

- In CONTINUOUS measure mode the remote control command "INIT;SENS:DATA?" now delivers in any case the current level measurement value.

**Changes from Version 2.50 to Version 2.54:****Improvements:**

- In the D-SCAN menu the selector is set to the receiver frequency, if the softkey 'MARK to PEAK' is pressed.

**Faults Remedied:**

- In DSCAN the number of measurements in the MTRACE and the ITRACE buffer is now correct also in the first cycle.
- System error 2319 does not occur any more when the receiver mode is being changed through the remote control interface while the editor window is open.
- There is no UDP problem any more when the remote control command `FUNC:OFF "FREQ:OFFS"` is sent by a second TCP/IP client.
- The problem "signal > threshold result data" to more than one TCP or UDP client is eliminated.
- The problem "OUT OF MEMORY" which occurred when the EB200 has been configured for UDP without any client connected, does not exist any more
- If the parameter MESSAGE DISPLAY is set to DURATION INFINITE, messages remain displayed until QUIT or any other key is being pressed.
- Very rarely there was a communication problem, when many query commands were sent to the EB200 at a high rate. This error in the TCP/IP stack is eliminated.

**Changes from Version 2.31 to Version 2.50:****New Features:**

- The "measure time" can be configured in the menu RXCONF-MEASURE and in some other CONFIG menus.
- CONTINuous or PERIODIC "measure mode" can be selected.
- The characteristics of the EB200 up to firmware version 2.31 correspond with the default setting of the new firmware version 2.50. This setting is "measure time" DEFAULT and "measure mode" CONTINuous. If another configuration is selected it is indicated by P, MC or MP.
- The D-SCAN menu has its own CONFIG menu with a few new configuration parameters.
- The D-SCAN SPEED can be set to LOW, NORMAL, HIGH or MTIME PER CHANNEL.
- The D-SCAN has a maximum hold function.
- The number of cycles can be set in D-SCAN.
- In D-SCAN level measurement depends on the selected level detector AVG, PEAK or FAST. This is only valid with DDC2. See also "DDC1 or DDC2" on page 11.
- The marker in the D-SCAN menu shows the level on the current position.
- With ATT ON and levels greater than 113 dB $\mu$ V an overload detection symbol is displayed.
- In the menu DISPLAY-LEVEL-CONFIG you can select a big numeric level display.
- The squelch line is displayed with the IF-panorama when the squelch function is switched on.
- MIN, MAX, AVG and CLRWRITE can be selected in the menu DISPLAY-IFPAN-CONFIG. The "measure time" has only an effect on MIN, MAX and AVG.
- In the DISPLAY-IFPAN-CONFIG you can jump to the next left or right signal by two softkeys.
- The numeric level is also displayed in IFPAN .
- "REM RS232.2" is displayed if the new RS232 hardware EB200R2 is installed.
- A test point for the backup lithium battery is implemented. You will receive a warning if the backup lithium battery is low.
- The SW option EB200CM (Coverage Measurement) is available.

**Note:**

*A RAM-expansion is prerequisite for the software option EB200CM.  
Furthermore the DDC2 must be part of the IF-section of the EB200.*

- The SW option EB200FS (Field Strength Measurement) is available.

**Note:**

A RAM-expansion is prerequisite for the software option EB200FS.

**Improvements:**

- In the D-SCAN menu you can configure the display limits with the reference level and the range to show also very low levels.
- The lower limit of the level bar can be configured to -30 dB $\mu$ V , -10 dB $\mu$ V or 10 dB $\mu$ V.
- The endian order of the UDP result data can be selected.
- The SETUP-POWER menu has a better structure and more common names.



- Now you can round the receive frequency to the next channel frequency by pressing the FRQ key if FRQ (receive frequency) is already selected. The channel spacing is defined by the ROLLKEY INCR VALUE in the submenu SETUP-KEYS.
- With the improved remote command for antenna selection, for example:  
`ROUTE:PATH "123 45ANT" , (@10)`  
it is also possible to define antenna names starting with numbers and containing spaces.
- The receiver mode CW, SWEEP, MSCAN, DSCAN, FASTLEVCW or LIST is displayed in the state "Controlled by Remote".

**Changes:**

- Every DISPLAY menu has its own CONFIG menu.
- If the SW option EB200FS is installed, the upper display limit in the D-SCAN CONFIG menu can be selected independent of the reference level.
- The \*RST value of the reference level is 70 dB $\mu$ V (formerly 50 dB $\mu$ V).
- The \*RST value of the antenna number is 0 (formerly 1).
- The lowest SQU value is -30 dB $\mu$ V (formerly -10 dB $\mu$ V).
- The lowest MGC value is -30 dB $\mu$ V (formerly -10 dB $\mu$ V).
- The lowest TONE value is -14 dB $\mu$ V (formerly 6 dB $\mu$ V).
- In the menu DISPLAY-IFPAN-CONFIG the function of the AVG softkey has changed. "AVG OFF" corresponds to "CLRWRITE" and AVG average time (for example "AVG 500") corresponds to AVG and "measure time" 500 msec.

**Faults Remedied:**

- Binary loading of the 1000 memory locations also works in one stream.
- With demodulation CW, USB, LSB, IQ and level detector peak the fall time is not too long any more.
- The level correction was faulty during the first D-SCAN cycle, if the receiver frequency was outside the span. This fault has been remedied.
- Faulty levels up to 10 dB were measured in D-SCAN if the start frequency was lower than 20 MHz and the stop frequency higher than 20 MHz. This fault has been remedied.
- Faulty levels up to 3 dB were measured In D-SCAN if the span was very narrow in upper frequency ranges. This fault has been remedied.
- In the state "Controlled by Remote" changed display labels are shown immediately.

**Changes from Version 2.30 to Version 2.31:**

- A bug has been fixed in the DSP SW of the IF section. The signal-to-noise ratio is now again within the defined limits.

**Changes from Version 2.22 to Version 2.30:**

- The firmware supports the new IF section 40523106.02 with the extended dynamic range with HW-Code 1. If this IF section is installed the module name "IF SECTION.2" is displayed in the menu RX-CONF:TEST.
- With the new IF section (IF SECTION.2) in the mode ATT AUTO the 30-dB attenuation is switched on above approx. 85 dB $\mu$ V and switched off with a hysteresis of 7 dB.
- For IF sections with DDC2 the new DSP SW will be loaded. It is based on the ESMB software. It will be discernible by DSP SW version 3.00 or higher. The DDC2 is prerequisite for further SW options like EB200CM.
- The demodulation mode IQ has been added so that for IF sections with DDC2 there will still be a digital IF output on the rear panel.
- With the new IF section (IF SECTION.2) there is an overload detection with AGC and MGC.
- The level bar range in mode "attenuation off" is extended to 88 dB $\mu$ V.
- The symbolic offset display is extended to +/- 3/4 of the current bandwidth.
- The EBD190 can be controlled by BCD frequency information being output at the AUX connector X8 on the rear panel.
- With the RS232 remote control you can choose between PPP and Standard.
- Current level measurements are displayed while running F-SCAN or M-SCAN with dwell time 0.
- The speed of D-SCAN is selectable in 3 steps via remote control.
- With LAN or RS232 PPP there is also data output via UDP.
- The new feature digital "audio via LAN and UDP" is included.
- The IF panorama is checked during the start of the unit for availability of the calibrating block (18013) in the EEPROM. In its absence a self-calibration is carried out and the EEPROM is provided with this block. After the self-calibration the receiver frequency is set to 8 MHz.
- The service tool is now also able to print out the Device Card.
- An expanded tuning table avoids spurious signals in the D-SCAN.
- Due to the new release of the TCP/IP-stack there are no memory leak problems at F-SCAN via remote, also for units without Expansion RAM.
- The AFC and offset measurement works also always with bandwidth 150 Hz or 300 Hz.
- While tuning via spinwheel no more level spikes will be produced which formerly disturbed the detector PEAK measurement.
- Offset measurement at DDC2 IF sections is not possible anymore at CW, USB, LSB, IQ.

**Changes from Version 2.00 to Version 2.22:**

- The hardware option EB200SU (IF Panorama) is supported.

**Changes from Version 1.17 to Version 2.00:**

- The software option EB200DS (Digiscan or D-SCAN) is supported.
- The hardware option EB200R4 (LAN) is supported.

## 4 Faults Remedied in Firmware Version 2.62

None

## 5 Restrictions - Known Problems - Workarounds

### 5.1 Restrictions

This new firmware version can be run on every EB200 hardware. Until now there is no problem known which causes incompatibility to higher software versions.

But some new features can only be used with newer hardware releases. The following chapters show the dependencies.

#### 5.1.1 Expansion RAM Installed or Not

The first EB200 were delivered without Expansion Ram. From firmware version 2.00 on you can find out whether or not your EB200 is equipped with Expansion Ram. If there is no Expansion Ram then "PROCESSOR" is displayed in the RX-CONF-TEST menu. If there is Expansion Ram then "PROC / ERAM" is displayed instead.

The Expansion Ram is required for extensive data transfer via remote control with more than one remote client. Without Expansion Ram in such cases probably you will get the error message "OUT OF MEMORY". This message may also be displayed if option 'Coverage Measurement' or 'Field Strength Measurement' is installed without the "RAM EXPANSION MODULE" being fitted in the EB200.

#### 5.1.2 DDC1 or DDC2

The first EB200 were delivered with DDC1 instead of DDC2 on the DSP module of the IF section. From firmware version 2.31 on you can find out whether your EB200 is equipped with DDC1 or DDC2. If DDC2 is installed, the version of the IF DSP is greater than 3.00.

The following new functions are only available with DDC2:

- Configuration of "measure time" and "measure mode"
- SW option EB200CM (Coverage Measurement)
- Audio via remote control
- Level measurement in D-SCAN depending on the selected level detector. With DDC1, the level is always measured with level detector AVG.
- The command CALCulate:IFPan:AVERage:TIME is only available with DDC2.

### 5.1.3 Old or New IF Section

From 2000/Q2 on, the EB200 is delivered with a dynamic improved IF section. From firmware version 2.31 on you can find out whether or not your EB200 is equipped with the new IF section. If the new IF section is installed, "IF SECTION.2" is displayed in the RX-CONF-TEST menu.

The following functions are only available with the new IF section:

- With ATT OFF and levels greater than approx. 85 dB $\mu$ V an overload detection symbol is displayed.
- With ATT AUTO the 30-dB attenuation is switched on with levels greater than approx. 85 dB $\mu$ V and is switched off with levels lower than approx. 78 dB $\mu$ V.

### 5.1.4 Old or New RS232 Interface

From 2001/Q2 on, the EB200 is delivered with a new hardware release of the RS232 EB200R2. From firmware version 2.50 on you can find out whether or not your EB200 is equipped with the new RS232 interface. If the new RS232 interface is installed, "REM RS232.2" is displayed in the RX-CONF-TEST menu.

Depending on the combination of RS232 receiver (PC) and RS232 transmitter (EB200) in some cases the highest baudrate 115200 could lead to transmit errors. Under normal conditions these errors are corrected in PPP mode. With the new RS232 the rise time of the pulses is improved.

## 5.2 Known Problems

### 5.2.1 Cold Boot after Update

After update with some firmware version increments, the structure of the nonvolatile parameters changed, which may lead to corrupt parameters (for example receiver frequency 0 MHz). If malfunction of the receiver remains after a RESET in the menu RX-CONF-SYSTEM, you should force a **cold boot**. For that briefly connect pin 31 of connector X8 on the rear panel to ground.

### 5.2.2 RS232 PPP Connection to WinNT 4.0, Service Pack 5

When you transfer a huge data stream from a PC (WinNT 4.0 and Service Pack 5) to the EB200 via RS232 PPP this will work only for a certain period of time.

Workaround: Install Service Pack 6 or higher on the PC.

## Hotline

Should you have any questions or suggestions, please use the hotline:

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E-mail: CustomerSupport@rsd.rohde-schwarz.com