Release Notes

Firmware Update V 2.80

MINIPORT RECEIVER EB200

4052.2000.02
4052.2000.03
4052.2000.22

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Contents

1 General Information

Manual for EB200

The EB200 CD Set 4052.9410 contains the Documentation CD 4052.9456 with the manual.

The new firmware version 2.80 corresponds with the manual 4052.2039.32-07.

How to get a current version of the manual?

- Order a printed manual at Rohde & Schwarz, order no. 4052.2039.32-07

- 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 EB200 Firmware & Utilities CD (order no.: 4052.9462.00)

The folder \EB200_FlashUp contains all necessary files and this description.

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\V0280`

- Copy the self-extracting archive file to this directory.

- Unpack the self-extracting archive file in the directory by command:

  `EB200_V02_80.exe`

- After unpacking you will find the following files in your directory:

`Rel_V280e.pdf`	this document
`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

- The new display variant "LEV-DBM" shows the signal level with the unit dBm. This display variant can also be selected with the remote command `DISPlay:MENU LEVDBM`.

3.2 Improvements

- None

3.3 Changes

- None

3.4 Version History

Changes from Version 2.78 to Version 2.80:

- See 3.1 to 3.3 and Faults Remedied in firmware version 2.80

Changes from Version 2.77 to Version 2.78:

Faults Remedied:

- With version 2.77 it could happen occasionally that with switched off IF-panorama after test the error message "IFPAN: Sensitivity out of range" was generated. This problem is solved.

Changes from Version 2.76 to Version 2.77:

Improvements:
- The accuracy of AFC has been improved.

Changes from Version 2.74 to Version 2.76:

Improvements:

- The AF is switched off now immediately with squelch function on and signal below threshold. As a result the noise gets shorten after carrier switch off while radio telephone. This change has been canceled again. See also Faults Remedied in firmware version 2.77

Changes :

- The level tone is now also switched off like AF with squelch function on and signal below threshold.

Faults Remedied:

- The Optional Header of the FSCAN Datagram contained two not documented bytes between stopSignal and f_start. This problem existed from version 2.54 on and is solved now.

- A problem occurred in the following situation. The EB200 is configured with a IP-Address 172.x.x.x which is per default a class B network. But the subnet mask is configured for a class A network. If RARP finished and no dynamic IP-address was configured, the TCP/IP stack in the EB200 decided to be in a class B network and overwrote the set subnet mask with a class B mask. So the ping didn't work anymore.
  This problem occurred after implementation of the RARP functionality in firmware version 2.70 and is solved now.

Changes from Version 2.73 to Version 2.74:

New features:

- From this version on also Flash EEPROMs from manufacturer STM (0041.8712.00) are supported.

Faults Remedied:

- If the TCP/IP connection is opened and closed about 1100 times and only setting commands are sent without sending query commands, the device shows 'OUT OF MEMORY' . This problem is solved.

- If the TCP/IP connection is configured for data output via Trace buffers and the connection is closed during data output, it can happen, that the buffer memory is not freed. If this happens a few thousand times in succession, the device does not output data any more. This problem is solved.

- If the UDP data output is configured to the default path and the device is switched off without resetting this configuration, the device remains in the start display after power on. This problem exists from version 2.71 on and is solved now.

- Changing the measure mode now also sets the RX-DATA-CHANGED Bit in the STAT:EXT register of the status reporting system.

- With data output of level values in ASCII format the minus sign was missing at values between - 0.1 and - 0.9. This problem is solved.

Changes from Version 2.72 to Version 2.73:

Improvements:

- The order of module initialisation has changed. As a result there is no more 2 seconds noise to hear out of the speaker after power.

- With audio via LAN the current demodulation is inserted into the Optional Header not only as enum but also as string.

Faults Remedied:

- With version 2.72 it could happen occasionally that with switched off IF-panorama after test the error message "IFPAN: Sensitivity out of range" was generated. This problem is solved.

Changes from Version 2.70 to Version 2.72:

Improvements:

- If the EB200 is equipped with a front panel without controls (EB110), after power on or *RST command the front panel is set to „CONTROLLED BY REMOTE" state. This provides additional processor capacity for remote control and hardware control.

- Now also in front panel state "CONTROLLED BY REMOTE" changed data are updated in non volatile ram.

Changes:

- The information in the Java-Plugin Security window has changed. With Java version 1.3.10 and later this Security window pops up before Antenna Factor Tool starts. The publisher of the Java Applet is "Rohde & Schwarz GmbH.

Faults Remedied:

- If the EB200 is equipped with the LAN remote interface, the lowest byte of the IP-address and the gateway can now be configured up to the value 254.

- The whole frequency suppress table, TRAC SSTART and TRAC SSTOP can now be loaded to the receiver within one string.

Changes from Version 2.64 to Version 2.70:

New features:

- When remotely controlled via LAN the EB200 can now accept an IP-address which is dynamically assigned by RARP. For the purpose of RARP server configuration it is possible to query for the ethernet address of the EB200. See also Annex L of the current EB200 manual.

- Now the EB200 can be equipped also with a front panel without controls.

- If the EB200 is equipped with a front panel without controls the remote-control interface parameters can be configured via the RS232 update interface and a standard terminal program. See also Annex L of the current EB200 Manual.

- With this release the firmware runs also on a EB110.

Faults Remedied:

- The Bit 10 (IFPAN total full) in the Status:Trace register is now set, if the maximum fill level of the IFPAN Trace is reached.

- Now the remote output of the suppress trace does not lead to a system outage under any conditions.

- The interface parameters of the RS232 remote interface could not be modified only with firmware version 2.64.

Changes from Version 2.62 to Version 2.64:

Changes:

- The new firmware now also detects a Frontend 1 with the new identification number 1093.5910.02

Changes from Version 2.61 to Version 2.62:

Changes:

- The EEPROM type on the DSP module in the IF-Panorama was changed. The resulting power-on problems have been solved by a changed initialisation procedure.

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 sections of a characteristics diagram into the EB200 without problems.

- The system-outage problem occurring while transferring binary Trace data via RS232 in the STANDARD mode has been solved.

Improvements:

- For D-SCAN operation with level detector FAST the frequency accuracy has been improved.

Changes:

- 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 the 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 an F-SCAN-like D-SCAN channel behaviour. As a result, the number of channels within the frequency span increases by one and the level values are measured on the output frequency values.

  With the remote commands:
  [SENSe]:FREQuency:DSCan:FCHannel OFF or **RST*
  the default state can be produced 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.

- In the futuree the EB200 will also be offered without remote control. In this case the start-up image changes from "REMOTE RS232   -" meaning "not installed" to
  "REMOTE RS232   ?" meaning "not identified".

Changes from Version 2.54 to Version 2.55:

Faults Remedied:

- In the 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:

<u>Improvements:</u>

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

<u>Faults Remedied:</u>

- 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 has been 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 has been eliminated.

Changes from Version 2.31 to Version 2.50:

<u>New Features:</u>

- Now the "measure time" can also 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 14.

- The marker in the D-SCAN menu shows the level on the current position.

- With ATT ON and levels greater than 113 dBμV an overload detection symbol is displayed.

- In the menu DISPLAY-LEVEL-CONFIG a big numeric level display can be selected.

- 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 a jump to the next left or right signal can be done 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. A warning is output 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, the display limits of the spectrum, reference level and the range can be configured so that also very low levels are displayed

- The lower limit of the level bar can be configured to –30 dBμV , –10 dBμV or 10 dBμV.

- The endian order of the UDP result data can be selected.

- The SETUP-POWER menu has a better structure and more common terms.

- The receive frequency can be rounded 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 dBμV (formerly 50 dBμV).

- The *RST value of the antenna number is 0 (formerly 1).

- The lowest SQU value is –30 dBμV (formerly –10 dBμV).

- The lowest MGC value is –30 dBμV (formerly –10 dBμV).

- The lowest TONE value is –14 dBμV (formerly 6 dBμV).

- In the menu DISPLAY-IFPAN-CONFIG the function of the AVG softkey has been 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 can also be done in a single process.

- 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 dBµV 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 dBµV.

- The symbolic offset display has been 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 there is a choice 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" has been implemented.

- 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 2.80

- None

5 Restrictions - Known Problems - Workarounds

5.1 Restrictions

This new firmware version can be run on every EB200 hardware. Until up to now there is no problem known which could cause 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:AVERerage:TIME is only available with DDC2.

5.1.3 Old or New IF Section

From 2000/Q2 on, the EB200 is delivered with an IF section with improved dynamics. 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 dBµV an overload detection symbol is displayed.

- With ATT AUTO the 30-dB attenuation is switched on with levels greater than approx. 85 dBµV and is switched off with levels lower than approx. 78 dBµV.

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 hardware the rise time of the pulses is improved.

5.2 Known Problems

5.2.1 Cold Boot after Update

If some firmware releases have been ignored before, an update could change the structure of the nonvolatile parameters, 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 a huge data stream is transferred 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

For questions or suggestions, please use the hotline:

Telephone: ++49-180-5124242

FAX : ++49-89-4129-13777

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