Release Notes

Firmware Update Version 1.93

R&S EM050

VXI V/UHF MONITORING RECEIVER

4060.3501.02

R&S EM550

V/UHF DIGITAL WIDEBAND RECEIVER

4065.5083.02

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4060.3830.00

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and EM550 is generally used as an abbreviation for R&S EM550.

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1 General Information

Manual for EM050

The following manual is supplied with the EM050:   **Manual EM050**

The new firmware version 1.93 corresponds with the manual 4060.3547.34-07

Manual for EM550

The following manual is supplied with the EM550:   **Manual EM550**

The new firmware version 1.93 corresponds with the manual 4065.5119.34-06

How to get a current version of the manual?

• Order a printed manual at Rohde & Schwarz, order no. 4060.3547.34-06 for EM050 or
   4065.5119.34-06 for EM550

2 Firmware Update

The entire firmware (software for the PPC and DSP processors and for the FPGA) of the EM050 can be updated. The CPLD on the mainboard is only programmed in production by JTAG.

The firmware update of EM050 can be done via LAN interface or via VXI.

Update via LAN interface is possible with the update tool UPD32.EXE which runs under WinNT, Win2000, WinXP, WinVista and Win7.

2.1 System Requirements

- IBM-compatible PC with WinNT, Win2000 , WinXP, WinVista or Win7 and LAN interface

- LAN crossed over cable with RJ45 connector, for point to point connection

or

- LAN patch cable with RJ45 connector, direct for connection via HUB or network

2.2 Preparations before Update

- Use the crossed over LAN cable to connect the Ethernet port of the PC directly to the X11 of the EM050 and switch off the automatic power save mode for the LAN connection of your PC

or

- Use the patch LAN cable to connect the hub or network to the X11 of the EM050

2.3 Update Procedure

2.3.1 Prepare Update Data

* Create a new directory on your PC by command:
  ```
  md EM050_EM550\V01_93
  ```

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

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

  ```
  EM050_EM550_Application_V01_93.exe
  ```

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

`Rel_V01_90e.pdf`	this document
`UPD32.EXE`	update program
`UPD32.HLP`	help file for update program
`4.1.2-WinPcap.exe`	Ethernet component for update via LAN
`EM050P1P.cfg`	configuration file
`BOOTLOAD.ELF`	boot loader
`EM050P1P.elf`	firmware update code

2.3.2 Installation of WinPcap ©

If you want to update your target via Ethernet you have to install the necessary WinPcap components. If WinPcap is already installed, you only have to reinstall WinPcap if your version of WinPcap is lower than 4.1.2

The versions 3.31 and higher of UPD32.EXE are using WinPcap and its API for its Ethernet capabilities. WinPcap is a free, public system for direct network access under Windows.

The version of WinPcap delivered with EM050 Update has not necessarily to be the newest. To obtain the newest version of WinPcap and for further information about the software kit, see the home page at http://winpcap.polito.it/ .

The version 3.52 of UPD32.EXE is developed and tested with WinPcap 4.1.2.

Install WinPcap simply by double clicking the supplied WinPcap installation file. Read the installation instructions carefully.

Read the following disclaimer as well very carefully and see also the About Box:

Important notes about WinPcap:

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This product includes software developed by the University of California, Lawrence Berkeley Laboratory and its contributors.

2.3.3 Update via Ethernet (LAN)

In this mode one can bring several targets with the same update-software on the new status.

- Switch off the target(s) EM050 before running the update program.

- Start Update Program UPD32.exe under WinNT, Win2000, WinXP, WinVista, Win7

- Select configuration file EM050P1P.CFG through menu "File - Config File"

- If there are more than one network adapters mounted in your computer, UPD32 takes the first as the default adapter which is used for the update. To change the network adapter select "Network Adapter" in the "Config" menu.

- Then select "via Ethernet" within the "Update" menu.
  If the menu item is selected, the system sends out broadcast telegrams.

- Switch on or reset the target(s) EM050
  The targets receive the broadcast telegrams and answer it with the hardware identification telegram. If this ID corresponds to the selected configuration file, the target is listed in the next line.

- Now one can select the desired targets from the list.

- Start the "Update-procedures" with the "START" button. Now one after another target will be updated with the new software.

2.4 Messages and Indication

2.4.1 Update Messages

UPD32 displays the following messages while „Load Program Code":

STARTING COMMUNICATION FOR TARGET (ADR: 00 90 B8 10 01 14)

Load boot code....

Erasing...

Loading program code...

Calculating checksum...

UPDATE COMPLETE

2.4.2 Indication on EM050 front panel

The lighted ACCE LED on the front panel of the EM050 shows, that the update is in progress.

After update the ACCE LED is switched of and the FAIL LED is switched on.

If there is no problem detected, the EM050 application starts automatically and switches the FAIL LED of after approximately 10 seconds.

If a problem appears, the FAIL LED toggles the error codes.

Error Code	Definition	Note
0	ERROR_NO_ERROR	No error
1	ERROR_CPLD_NOT_PROGRAMMED	Internal
2	ERROR_EEPROM_NO_IDENT_BLOCK	Internal
3	ERROR_EEPROM_NO_SERIAL_NUMBER	Internal
4	ERROR_EEPROM_NO_ETH_ADDR	Internal
5	ERROR_WRONG_LOCATED	Internal
6	ERROR_NO_APPLICATION	There is no application in the Flash EEprom

3 New Features, Improvements and Changes

3.1 New Features

- The system time can now be set via NTS (Network Time Server) with the following command.
SYSTem:NTS <ip_address>

This command queries a network time server for the current time.
Parameters:
<ip_address> IP address of the network time server to be queried.
Example: SYSTem:NTS "10.0.2.166"

3.2 Improvements

- When using IF3 output in receiver mode wideband 50 MHz a unwanted signal at 384 MHz could be observed. This signal was caused by the LO3. Since LO3 is not necessary in wideband mode it is switched off now and the unwanted 384 MHz signal is not there anymore.

- Service tool eeprom functions have been improved.

3.3 Changes

- None

3.4 Version History

Changes from Version 1.86 to Version 1.90:

New Features:

- The device's internal time, date and time zone can now be configured with e.g. the commands SYSTem:TIMe 17,5,0 .and SYSTem:DATe 2010,4,15 and SYSTem:TZONe 2,0 . Due to the fact that the internal real time clock is not power supplied when the device is switched off, the clock has to be set after each power on.

- The optional headers of UDP and TCP mass data outputs have been expanded to include time stamps.

- Additional to UDP now also TCP mass data output is available.

- Data output via LAN with IF data format for AMMOS is now available.

Improvements:

- None

Changes:

- With new SDRAM chips and high temperature a hardware problem occurred in the production. To solve this problem a hardware change was necessary. This firmware V 1.90 is necessary to react to the hardware change.
  The new hardware can be detected via TAZ of the mainboard. If major version is 04 the new hardware has a minor version equal or greater 14. If major version is 06 the new hardware has a minor version equal or greater 07.
  New hardware can also be detected with the command diag:info:module? z1 The answer looks like Z1,4060.3553.02,105,02.05,100.347/002,2003,10,02,"IF SECTION" If the third parameter (HW code) is greater or equal 105, then a firmware version equal or greater V 1.90 is necessary. Do not downgrade new hardware to old firmware versions.

- The parameters "CycleCount" and "DwelTime" in the optional header of FSCAN and MSCAN now contain -1 to show the state "infinite".

- The optional header of VDPAN now contains the parameter "DisplayVariants" (AM, FM, IQ, AMSquare, FMSquare, IQSquare) .

- Update via serial is not any more supported.

Faults Remedied:

- If the device has been controlled via serial (or EM050 also VXI) once after power on the unfounded error message 1,"Device dependent error; OCXO not calibrated" has been reported. This problem has been solved.

- The measurement time in the optional header of IFPAN trace has always been 0. this problem has been solved.

- UDP Ports greater 32767 are now available.

Changes from Version 1.81 to Version 1.86:

New Features:

- A newly implemented LOCK mechanism enables a particular client to attain exclusive use of the device. Within the SYSTem:LOCK system the following commands are implemented: SYSTem:LOCK:OWNer? returns what session currently has the lock on this device. The return strings are "NONE" or the "<IP address>" of the session which has locked the device. SYSTem:LOCK:REQest? attempts to attain the lock on this device and returns 1 if successful and 0 if it fails. SYSTem:LOCK:RELease releases the lock if owned by this session.

- The mechanism to check the connection to UDP clients by means of periodic pings can now be configured with the remote commands SYSTem:COMMunicate:LAN|[SOCKet]:PING[:STATe] ON|OFF switches the periodic ping on or off. For safety reasons surveillance of the connection by periodic ping is switched on after power-on. SYSTem:COMMunicate:LAN|[SOCKet]:PING:PERiod <numeric value> sets the period or repetition time of the periodic ping function in seconds. The minimum time is 1 and the maximum time is 20 seconds.

- With the new command SYSTem:COMMunicate:CLIents? a list of IP addresses of all connected is reported. For example the answer could be "10.8.10.230","172.16.2.10" ,"0.0.0.0". The string "0.0.0.0" represents the permanent available serial connection. Maximum 10 clients can be connect to the device at the same time.

- With the new command SYSTEM:ERROR:ALL? the whole error queue can be read out.

- With the new command SYSTEM:ERROR:COUNT?   the error count of the error queue can be read out.

Improvements:

- During a running PSCAN to receiver frequency is not any more changed and can now be used as a marker frequency in external GUIs. After stopping the PSCAN the receiver is set to this marker frequency.

- Changing the FSCAN parameters start frequency, step frequency and stop frequency during running scan and during dwell time is now possible. The FSCAN is then restarted automatically.

- The amount of possible udp paths has changed from 3 to 7.

Changes:

- The hold time of SSB and PULS control characteristic has been shortened.

- The default udp path can not be deleted with the command TRACE:UDP:DELETE ALL but with the command TRACE:UDP:DEFAULT:DELETE ALL

Faults Remedied:

- Since V01.80 the IF-Panorama via TCP did not work correctly. The command TRACE? IFPAN delivered only two measurement points. This problem has been solved. The commonly used IFPAN data output via UDP worked always correctly.

- If UDP path was configured with FREQ:RX and CHANNEL flags to output frequencies and channel numbers during FSCAN or MSCAN no frequencies were put out but double channel numbers. This problem has been solved.

- Due to compatibility reasons to newer receivers with enhanced frequency range a FREQ:HIGH:RX flag has been implemented. If UDP path was configured with FREQ:HIGH:RX flag the upper 32 Bits of the 64 Bit frequency were not 0. This problem has been solved.

Changes from Version 1.75 to Version 1.81:

New Features:

- Supported TV Standards: B,G,D,I,K,L,M,N

Improvements:

- If a client configures the device to send UDP data, the connection to this client is now continuously checked with a ping every second. In case of no response for five times, the UDP data output to this client is stopped. The device goes on to check with ping, if the client is risen from the dead again. If so the UDP data output is switched on again.
  Implementation of this behavior was necessary, because some switches in a network react to a disconnection of a client with broadcasting the UDP data to all their outputs. This could lead to a network collapse.

Changes:

- The number of samples within the IFPAN has been increased by 2 points. Control software which uses the IFPAN data output via UDP and is programmed properly analyses the "`number_of_trace_values`" in the `IFPanAttribute` and therefore should not have a compatibility problem with this change.

- The additional IF bandwidth 8 MHz has been integrated.

Faults Remedied:

- With synthesizer mode NORMAL an FSCAN in the frequency range 807 MHz to 890 MHz an offset of 9.6 MHz occurred. This problem is solved now.

- After setting the receiver to a new frequency it could happen that one sample of the IQ data stream got lost. This problem has been solved now.

- With RARP switched off and 32 bit IQ data output via LAN sometimes packets got lost. This problem has been solved now.

- If an internal temperature test point was out of range, the error message "Mainboard defective" was generated instead of "Temperature too high" or "Temperature too low". This problem has been solved now.

- With RDS statistics data there was a overflow of the packet counter after a few hours. This problem has been solved now.

Changes from Version 1.68 to Version 1.75:

New Features:

- The dynamic IP address configuration is now possible via RARP or DHCP. The configuration can be done via UPD32 "CONFIG"-"LAN Settings via Ethernet" or via remote command "SYST:COMM:LAN:AUTO RARP | DHCP
  If DHCP is used and a name server is present in the network the EM050 can be addressed with his name. The name is put together for example like RS-EM050-100016-002 if serial number is 100016 and the variant is 002.

Improvements:

- The EM050IM option includes the EM050SU option. Thus the EM050SU option is reported as installed via Flexcomm if the EM050IM option is installed.

Changes:

- With new SDRAM chips and high temperature a hardware problem occurred in the production To solve this problem a hardware change was necessary. This firmware V 1.76 is necessary to react to the hardware change.
- With low receiver frequencies (20 to 400 MHz) some RF-Converters have the behavior that the measured test point IF1 OVR sometimes comes above the defined upper limit. This test point is now only evaluated with frequencies above 400 MHz.
- With new synthesizer TAZ 05 and synthesizer mode FAST the receiver now works also with frequencies above 3409,2 MHz.

Faults Remedied:

- The command clear memory channels caused also to copy the flags of memory channel 0 to all the cleared memory channels. This problem has been solved.

- It was possible to copy a memory channel with frequency set to zero to the receiver. This is no more possible.

- Due to a bug in the firmware V01.68 after 121 continuous open-close cycles of the TCP/IP socket the firmware hang. This problem has been solved.

- The test output on the left corner of the video panorama is now eliminated.

- With RF converter 1130.4047 TAZ 05 the synthesizer sporadically did not lock at 1400 MHz. This problem has been solved.

- With no input signal and bandwidths greater than 1 MHz the peak detector showed 80 dBuV. This problem has been solved.

- There were level variations up to 3 dB when running PSCAN with step width lower than 3.125 kHz. This problem has been solved.

Changes from Version 1.61 to Version 1.68:

New Features:

- The synchronization of the AMMOS watch is now implemented.

Improvements:

- The speed of PSCAN in the instantaneous window with step width 100kHz has been improved by factor 2. Thus the speed up to 34 GHz/s can be reached.

Changes:

- The polarity of the VXI Trigger Signal has changed to triggering the AMMOS watch with negative transition.

Faults Remedied:

- If the receiver was equipped with EM050PS and not with EM050SU the PSCAN was running in averaging mode with 200 ms averaging time. Therefore the speed was very slowly. This problem has been solved.

- The SCPI command `ATT:RFC` for setting the attenuation in the RF-converter accepted only values divided by 10. This problem has been solved.

- The service tool can now also program the EEPROM data of the synthesizer and RF-converter.

- The network subnet mask and the gateway are now handled correctly. Thus communication via router is possible.

Changes from Version 1.54 to Version 1.61:

New Features:

- The number of memory location has been raised from 1000 to 10 000.

- The audio filter mode can now be configured to notch, noise reduction or speech filter.

- A new command defines a hold time for attenuation changes.

- With a new command the BFO frequency for CW can be changed.

- A new command specifies the timing behavior of the gain control.

- The new audio mute function can be activated by setting low level to X12.B5 of the AUX connector. While being activated the audio outputs AF_HEADPONE on X10 and AF_MONO on X12A.2 are muted.

Improvements:

- The squelch function is now activated immediately after the signal has disappeared.

- A resynchronization to the magic word has been added in the Flexlink driver.

- To improve the noise figure both IF amplifiers are now switched on in LOW NOISE mode.

- The following PSCAN step widths have been added: 2.5 kHz, 1.25 kHz, 625 Hz, 500 Hz, 250 Hz and 125 Hz.

- With all LAN configuration SCPI commands the syntax 'SOCKet' is also possible instead of 'LAN'.

- The short form BYT and BIT of the commands BYTaux and BITaux are also accepted.

Changes:

- The ADLC error message in recording mode has been removed in the Flexlink driver.

- A Flexcomm command failure sends the same exFaultId to the DEBITEMAN as the confirmation contains.
- After configuration the event reports the current status is immediately reported via event reports.
- MGC can now also be used in replay mode.
- Replay mode can be switched on also if AFC is ON. AFC has no effect in replay mode.

Faults Remedied:

- The audio was crackling with full if panorama span and demodulation bandwidth greater than 300 kHz. This problem has been solved.

- If the sweep is stopped, the sweeping bit in the status reporting register was already cleared before all sweep result data were transferred to the trace buffer. This problem has been solved.

- In PSCAN mode running over more than one hop a square shaped signal seemed to rise around the real signal when the step width was reduced. This problem has been solved.

- The MEM parameter changed bit in the extended status register of the status reporting system is now set correctly if the memory contents is changed from another client.

- Also the new RF converters are now identified with the service tool.

- With measure mode periodic the measurement value of bandwidth is now set to invalid during measuring time.

- If a stereo signal was received with measure mode periodic and FM stereo decoder, the audio crackled. This problem has been solved.

- After power on of a cold receiver the error message "Component failure; Synthesizer defective" could be produced. The reason was the still cold OCXO reference oscillator. This problem has been solved.

- The 9 kHz filter in SSB demodulation mode had 6 dB too much attenuation. This problem has been fixed.

- Up to now the squelch function had only effect to the audio outputs AF_HEADPONE on X10 and AF_MONO on X12A.2. Now the squelch function has effect to all audio outputs.

Changes from Version 1.50 to Version 1.54:

New Features:

- The component "Source Counter" has been included for AMMOS test purposes.

Improvements:

*   This firmware runs also on synthesizer with part number 1166.3170.04

Changes:

*   The maximum number for Flexlink driver slaves has been increased from 2 to 5.

*   The messages in AMMOS replay mode have been changed. Instead of the error message "buffer empty" to the Debiteman the messages DATA_BEGIN or OUT_OF_DATA are sent to the configured ekERROR_STATE_ADDRESS.

*   The layout of the RDS HTML page has been changed to fit into small resolution displays.

Faults Remedied:

*   The ID of VXI driver error messages did not contain the EM050 offset. This problem has been solved.

*   On UDP data output of PSCAN an overflow could happen with smallest step width, synthesizer mode fast and all Tags (Level, Freq und Channel) selected. This problem has been solved.

*   The service tool runs now also with EM550.

Changes from Version 1.42 to Version 1.50:

New Features:

*   The video panorama mode IQ² has been added.

*   The suppress commands SORT, SUPP, and DEL ALL are now implemented.

*   With the new upd32 version 3.39 and the included new bootload.elf the configuration of the LAN parameters via ethernet is possible now (see manual annex D).

*   With FM the EM050 can now be switched to stereo.

*   With the new command: "DIAG:INFO:MOD? ALL" you can read out all the hardware information like board versions.

*   With software option EM050IM (ITU Measurement) the EM050 can now detect RDS and ARI.

*   With software option EM050SL (Sel Call Analysis) the EM050 can now detect the following Selective Call procedures: CCIR7, CCIR1, CCITT, EEA, EIA, EURO, NATEL, VDEW, ZVEI1, ZVEI2, DTMF, CTCSS, DCS

*   This is the first version which supports also EM550.

Improvements:

*   The Flexcomm interface description header file EM050Common.h contains now the definitions for the EM050 internal component Ids.

*   From this version on the new synthesizer module 1155.6408.02 and the new rf-converter 1130.4047.02 are supported.

Changes:

*   The IF panorama span can now be changed, although the software option EM050SU(Spectrum Unit) is not installed.

*   The default value of the IF panorama span has been changed from 256kHz to 100 kHz. This has been done to allow the automatic selection of the smallest roofing filter with IF bandwidth smaller than 120 kHz especially if the IF panorama software option EM050SU(Spectrum Unit) is not installed or not used.

*   A new version of the FlexLink-Driver has been included.

Faults Remedied:

*   With firmware version 1.42 the gain control for if output via VIDEO A/B connector was not working.

- The VXI command ekChannel works now also for frequencies greater then 2.147 GHz.
- Audio via LAN is now also output with long measurement times in measuring mode periodic.
- A communication problem via VXI occurred rarely. This was due to a problem with the interrupt controller in the CPLD up to CPLD version 2.05. The problem has been solved with a software workaround.

- In replay mode a clock synchronization problem in the FPGA occurred with some EM050 devices. The effect was, that the audio was replayed to fast. This problem has been solved.

- The common command to configure the cross point switch works now correct.

- Any calibration date is now accepted.

- In the status reporting system the "Rx-Data changed" –bit is set if the measure time or the measure mode is changed.

- The level correction works now also correct with IF panorama in MGC.

- The problem with corrupt analogue video output if switching over the video output directly from IF to video has been solved.

- The Flexcomm question command ekANT_IQ_ATT delivers now always the current attenuation value.

Changes from Version 1.33 to Version 1.42:

New Features:

- The receiver mode REPLAY and commands for the configuration of the replay mode has been added for AMMOS.

- With the new command `VIDeo:PICture DOUBle | SINGle |INTErlaced` you can select the format of the bitmap output with demodulation TV.

- The receiver mode WBMSCAN (wideband memory scan) and commands for dwell time and cycle count have been added for AMMOS.

- Transfer of IF data via LAN is now available with AMMOS data format.

- Blanking event and information bit setting in IF data format for AMMOS is now available.

- A command to set the signal source state in IF data format for AMMOS is available.

- Data output via FPDP with IF data format for AMMOS is now available.

- The common FlexComm commands for AMMOS are now all implemented.

- With demodulation TV audio is also available now.

- A command for selecting the roofing filter manually has been added for AMMOS.

- An additional audio data format for AMMOS has been implemented.

Improvements:

- The synchronisation of the TV bitmaps has been improved. A complete TV bitmap is now always output.

- A frame checker for IF-data format is included in the FPGA code for test purposes.

Changes:

- The format of the firmware version number via FlexComm command is now BCD.

- The scan data format for AMMOS has changed slightly.

Faults Remedied:

- There is no more occasional hang up of the PPC to DSP communication.

- There is no longer a system hang up if the demodulation TV is switched on and off frequently.

- The UDP data format for PSCAN data now contains the correct channel number.

- With new mainboards (fast PowerPC and fast DSP) and memory modules from specific manufacturers there was a timing problem with high temperatures on the EM050. This could occasionally lead to system hang up. The problem has been solved with a different timing configuration for the DSP host interface.

Changes from Version 1.30 to Version 1.33:

New Features:

- The demodulation mode TV has been added.

- The SW option EM050PS (Panorama Scan) is now available. The EM050PS is a very fast FFT supported scan.

- A new command has been added to equalize the roofing filter for 10 MHz demodulation bandwidth.

Improvements:

- The concept of LSB and USB demodulation has changed in a way, that there is no more side step of the signal in the IF panorama.

- The speed of FFT which is used for EM050SU(Spectrum Unit) and EM050PS(Panorama Scan) has been improved.

Changes:

- If temperature measurements during BIT are out of range the message "Temperature too high" is sent instead of "Module defective".

Faults Remedied:

- With version 1.30 in the IQ data output via FPDP the order of I and Q data was wrong. The order is now again as it is described in the manual.

- With level output via LAN in ASCII format was a formatting problem with values between –0.1 and –0.9. The minus operator was missing. This problem has been solved.

- Occasionally the continuous BIT produced a wrong error message Device Error 10 "Component failure; Synthesizer defective". This problem has been solved.

Changes from Version 1.25 to Version 1.30:

New Features:

- The demodulation mode PM has been added.

- The SW option EM050IM (ITU Measurement) is now available. With EM050IM the following measurements can be done:
  AM modulation index, AM positive modulation index, AM negative modulation index,
  FM frequency deviation, FM positive frequency deviation, FM negative frequency deviation,
  PM phase deviation and band width measurement.
  With EM050IM the EM050SU(Spectrum Unit) is included.

- The SW option EM050SU (Spectrum Unit) is now available. The IF Panorama bandwidth can be configured from 10 kHz to 9.6 MHz. The averaging modes clearwrite, minhold, maxhold or average can be selected. Panorama data are available via TCP/IP or via UDP.

- Commands for FPDP and Gigacast cross point switch have been added.

Improvements:

- For Datagram Communication the Optional Header for Audio Data , IF Data and Video Data has been extended.

- This firmware runs also on synthesizer with part number 1155.6408.

- This firmware runs also on preselection with hardware code 1.

- The IF control is now implemented.

- FlexComm error report for overload, power temperature or frequency error.

- FlexComm test result of long test is now available.

Changes:

- The command "display:menu IFPAN" to switch on the test IF panorama has no function any more.

Faults Remedied:

- There is no more occasional hang up of the DSP if digital audio via LAN is switched on.

- Switch delay inserted in test point analysis of external / internal reference.

- With the new version of the operating system the switch off of the "nagle" algorithm in the TCP/IP stack works properly now. Therefore the EM050 answers always immediately.

Changes from Version 1.20 to Version 1.25:

New Features:

- SSB Demodulation

- VXI scan data output

- Audio via LAN

- Variable measurement time

Changes:

- Clock frequency is now calculated by the boot program and transferred to the application.

Faults Remedied:

- FSCAN and MSCAN maximal cycle count command is correct.

- The command *rst handles now correct the reset values of the parameters receiver mode, attenuation mode, sensor function, tnosig, format registers of and trace feed control.

Changes from Version Beta 1.19 to Version 1.20:

Changes:

- Not registered because V01.20 was the first official release.

Improvements:

- All necessary functions for type approval 2 are now implemented.

Faults Remedied:

- Not registered because V01.20 was the first official release.

4 Faults Remedied in Firmware Version 1.93

- The time stamps in the optional header of the datagram output were not correct. This problem has been solved now.

- The EEPROM Block "USERBLK_LAN_CONFIG" is now set correctly with the default IP address.

5 Restrictions - Known Problems - Workarounds

5.1 Restrictions

This new firmware version can be run on every EM050 or EM550 hardware. Until now there is no problem known which causes incompatibility to higher firmware versions. After a firmware downgrade, the device may not function anymore because the older software will not recognize the new hardware.

5.1.1 Boot Program Version

The boot program is the root boot loader located at a secure section of the flash memory. It is not changed with the normal flash update procedure. You can read out the boot program version with the command: "DIAG:INFO:SVER5?"

The feature "firmware update via VXI" is available from boot program version 2.20 on. The current version is 2.50. This version is prerequisite for "firmware update via VXI" if the CPLD version is greater or equal x.13. See also chapter 5.13.

Please contact R&S if you need to change the boot program.

5.1.2 Main Board Version

The first few main boards (version less than 02.03) were equipped with slower clocked DSP and PPC microprocessors. You can read out the main board version with the command: "DIAG:INFO:MOD? MB". Some recently implemented features like RDS and the software option EM050SL (Sel Call Analysis) run only on main boards with at least version 02.03.

5.1.3 Main Board CPLD Version

The main board CPLD in EM050 is mainly responsible for communication via VXI. You can read out the main board CPLD version with the command: "DIAG:INFO:SVER4?"

If the CPLD version is greater or equal x.13 (for example 2.13 or 3.13) firmware version older than V1.59 do not run. Please do not downgrade the firmware in this case.

5.2 Known Problems

For UDP data output if for example audio tag and audio flag are set within one command string the first setting is ignored.

Work around: Use separate strings for setting UDP configurations.

Hotline

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

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