



**ROHDE & SCHWARZ**

# **SW Release Notes**

**EVS300 SW Release 4.0**

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# 1. Document History

Rev.	Date	Dept./ Name	Modification
01.00	15.06.2009	5CE1 / PB	First version, covering EVS300 SW Release 4.0 Contains the complete EVS300 software history, starting from the first official Release 2.2

## 2. General Information

This document describes the history of the EVS300 software development, starting with the latest software release. The intention is to give an overview of the different versions, their features and benefits as well as the fixed bugs. So users shall be able to decide if they need to upgrade, or if they can carry on with an existing version.

EVS300 software upgrades are free of charge, but some new features are only available as a software option. In these cases, a software option code has to be obtained by Rohde&Schwarz to activate the option.

The EVS300 software always consists of three pieces:

- Main Software: User interface, remote control
- DSP software: Receiver control, signal processing
- Keyboard Controller Software: Keyboard, power management

This three components are always bundled together as a "release". This means that a "release" always contains three specific versions which are intended and tested to work together.

### 3. Release History

#### 2.1 EVS300 SW Release 4.0

Release Date: 23.12.2008

RELEASE 4.0	Version
Main EVS Software	1.41o
EVS DSP Software	1.29-5
EVS Keyboard Software	2.20 (ok to use 1.60)

#### General remarks:

Release 4.0 is the first release which requires the arm-linux 2.6.26-evs71. All older EVS300 releases are running with an arm-linux 2.4.xx based operating system. Therefore it is not possible to update to Release 4.0 by using a USB stick. For updating the whole LINUX operating system please have a look at the chapter "Update Procedures".

Two reasons lead to the requirement of updating the linux system:

- the R&S NRP sensors require LINUX device drivers which are only available for 2.6 based linux kernels
- a new revision of the internal PC-board does not support the old 2.4 based linux kernel anymore

EVS300 units with the 2.6.26-evs71 linux installed cannot be used with any older EVS300 software releases. USB updates with older Releases are rejected.

Upgrades to future versions of the EVS300 shall be possible by USB stick again.

#### Functionality:

- **New option EVS-K5: Support for R&S power sensors (5201.8644.02)**  
R&S Power sensors NRT and NRP can be connected to the EVS300; average power values are read out. Full data logging functionality.
- **New option EVS-K6: DME pulse shape view with NRP-Z81 (5201.8650.02)**  
Powerfull graphical analysis of DME pulses. Measurement of pulse rise time, fall time, width time, spacing time
- **New option EVS-K7: Oscilloscope mode (5201.8667.02)**  
Graphical analysis of the demodulated (or baseband) signal in time domain
- **UNCAL message in case of severe errors**  
CR228: If hardware errors or any other anomalies occur during operation, a red "UNCAL"-message will be displayed on the EVS300 screen. This UNCAL message will not disappear as long as the EVS300 is running, even if the error condition is no longer present.
- **Datalogger list overview**  
CR207: When using the datalogger it was hard to see which list is empty and which one contains values. Therefore the "list overview" shows all lists and the number of measurements

## Bugfixes and Improvements:

- CR248: Marker Beacon: Modgrades 95% with low input levels have a tendency to be slightly out of tolerance → adjustment of accuracy
- CR239: Autocal: When the last autocal is older than 90 days a warning message appears at startup
- CR168: Autocal: when the autocal is aborted there is no adequate indication → fixed
- CR166: Preset: enter preset name when pressing SAVE → implemented
- CR237: FSCAN when baseband input is selected: shows OVL warning (which is nonsense) → fixed
- CR286: Export a datalogger list to USB stick: Warning message if a file with the same name already exists.
- CR250: Level Bargraph VOR/MB: display is messy when remote controlled → fixed
- CR249: After factory preset DDM-indicator does not match resolution → fixed
- CR202: Change from SETUP directly to MEM → implemented
- CR258: Remote: GETMDEF SHORT in Marcer Beacon does not match GETMEAS SHORT → fixed
- CR205: Screenshots can be exported directly to a USB stick. The filename can be selected.
- CR191: FSCAN: X-axis not labelled as MHz → fixed
- CR143: Datalogger graph: units missing → fixed
- CR131: Datalogger Auto Power Down: EVS300 is now booted 3 minutes in advance to ensure proper operation
- CR257: Remote: GETMDEF: does not contain channel information → fixed
- CR255: Remote: GETMEAS SHORT: no comma at the end → fixed
- CR252: Remote: command to query LLZ/GS setting
- CR251: Remote: command to query the ILS Measmode (Single, CRS+CLR,...)
- CR245: Remote: streaming command FA3 is re-implemented for EVS200 compatibility
- CR241: Remote: control of autocalibration
- CR181: Remote: Export of data logger lists via LAN → implemented
- CR246: Network Setup: a hostname can be entered. This name is used for DNS identification in a network. This name can also be used as a station name.
- CR208: Flag "invalid" in remote and datalogger: dependency between input level and measurement time (according to EVS300 datasheet) → implemented
- CR210: GPS longitude values missing when moving from a 2 digit location to a 3 digit location → fixed

## Known issues:

- error messages are difficult to understand; a complete list of error messages and explanations is not available → scheduled for next release

- The error message "GetILS IO Error" appears in some cases. As long as the measurement is working, this message can be safely ignored.
- CR216: After Autocalibration the level accuracy at 75MHz is out of limit until the EVS300 is rebooted
- CR126: "K-MAT" serial number is not displayed in inventory
- CR69: Some remote commands do not check for valid limits
- Battery indication is not as precise as it should be
- Boot time of the new linux is longer than it should be

## 2.2 EVS300 SW Release 3.3

Release Date: 27.5.2008

RELEASE 3.3	Version
Main EVS Software	1.27m
EVS DSP Software	1.26-5
EVS Keyboard Software	2.20 (ok to use 1.60)

### General remarks:

Release 3.3 is a bugfix release and does not offer any new functionality.

### Bugfixes and Improvements:

- CR231: ILS, Input BaseBand, View Distortion: K2, K3, THD 90, 150Hz not displayed → fixed
- CR233: FFT analysis on baseband input does not work properly → fixed
- CR232: Remote command "STREAM" does not return any channel indicator → fixed
- CR235: After start in baseband mode, switch to RF input, error "RF3 out of range" is displayed → fixed

## 2.3 EVS300 SW Release 3.2

Release Date: 20.3.2008

RELEASE 3.2	Version
Main EVS Software	1.27j
EVS DSP Software	1.26-3
EVS Keyboard Software	2.20 (ok to use 1.60)

### General remarks:

Release 3.2 is mainly a bugfix release, but some general improvements are introduced with this software release as well.

## Functionality:

- **Autorepeat on keyboard:**  
CR 62: with Keyboard-controller software 2.20 installed, keys like UP and DOWN now offer autorepeat
- **Boot on power up:**  
CR 214: when selected in Setup, EVS300 now automatically boots when device is powered. This is essential for remote controlled devices in flight inspection systems. This also requires Keyboard Controller Software 2.20.
- **Inventory**  
Release number is displayed

## Bugfixes and Improvements:

- CR209: Inhibit LLZ measurements on GS frequencies and vice versa  
When entering a GS frequency (320 .. 340MHz) the measurement mode automatically changes to GS. On LLZ frequencies (108 .. 112MHz) only the LLZ setting is possible. This avoids incorrect measurements.
- CR128: when measuring with changing level (e.g. fading), the AGC adjustment is causing problems. → an increased hysteresis helps to improve the AGC behaviour
- CR219: in Attenuator Mode “AUTO” the switching between LN, LD and NORM is optimized
- CR215: Autocal also measures the IF2-filter. This is taken into account when measuring the VOR 9960Hz Modgrade, resulting in an increased accuracy
- CR213: in remote STREAM the startflag is set correctly, or can be triggered with the MARKSTREAM command
- CR212: Remote command to change between “big” and “normal” view
- CR211: remote command to set the units
- CR210: GPS longitudes with 3 digits cannot be displayed (reported from Korea) → fixed
- CR200: Datalogger Graph view is not working with empty lists → fixed
- CR195: Datalogger Graph: volume bargraph is not working → fixed
- CR194: Datalogger: Default selection can be restored
- CR 184: ILS DDM Indicator GS: +/-800µA
- CR180: Webinterface can be deactivated in Setup
- CR177: Measurement time VOR+MB is limited to 30ms, because lower values does not make any difference anyway
- CR161: Autocal: When pressing “Clear Cal Values” the status remains “valid” → fixed
- CR155: GPS directions N,E,S,W are not saved → fixed
- Improved accuracy for ILS SDM measurements

## 2.4 EVS300 SW Release 3.1

Release Date: 2.8.2007

RELEASE 3.1	Version
Main EVS Software	1.25g
EVS DSP Software	1.23-4
EVS Keyboard Software	1.60

### General remarks:

This release offers some minor, but nice new features. The intention of this release is to make them available for customers as soon as possible.

### Functionality:

- **Web Interface**  
CR175: A simple but powerfull text based HTML-Webpage offers an additional possibility to control the EVS300 via LAN connections
- **Screenshots**  
Export on USB stick

### Bugfixes and Improvements:

- Support for test system R&S® EVS-Z10 (5201.7777.02)
- Number of trigger pulses ("triggercount") is recorded as data member
- DDM indicator needle with configurable ranges

## 2.5 EVS300 SW Release 3.0

Release Date: 8.5.2007

RELEASE 3.0	Version
Main EVS Software	1.23-3
EVS DSP Software	1.13-2
EVS Keyboard Software	1.60

### General remarks:

Release 3.0 introduces some major changes to the EVS300 software in order to make it even more stable and performant.

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## Functionality:

- **Dual Channel support**  
Second channel can be operated independently and simultaneously from channel 1
- **Baseband Input**  
All measurement modes (except FSCAN) can now operate on the baseband input.
- **Graphical FFT Analysis**  
The demodulated RF or baseband signal is shown in frequency domain
- **TCP / IP connectivity**  
Support for DHCP and gateways
- **Hardware Trigger**  
Recording of values can be triggered by a trigger input signal.
- **Distortion measurement for ILS**  
K2, K3, THD for 90Hz and 150Hz
- **Data Logger ILS:**  
CR91: Graphical analysis of DDM, SDM and level even during measurement.
- 

## Bugfixes and Improvements:

- Data Logger capacity increased from 50000 elements to 1.000.000 elements
- Course or Clearance configurable as upper frequency
- ILS CRS|CLR shows DDM, SDM and Level of CRS, CLR and CRS+CRS
- FSCAN: Improved user interface and marker handling
- CR150: Setup Analog Out: DDM Range GS CH2 always taken from DDM Range GS CH1  
→ fixed
- CR146: Datalogger Graph: Cannot place marker on last data element → fixed
- CR145: Datalogger Graph: Cannot enter decimal places for Y-Center → fixed
- CR123: Introduced Status column in datalogger (STIOC) for Startflag, Trigger, Invalid, Overload, Corrected
- CR122: ILS setting "Single" is factory default (instead of CRS+CLR)
- CR121: DDM values are not shown when SDM < 10% to avoid measurements with non-ILS-signals
- CR118: Data Logger Graph: X-axis now shows the measurement index instead of measurement time (easier to handle, faster)
- CR117: HW-revision of modules is displayed
- CR115: ILS CRS|CLR also shows combined DDM, SDM and level
- CR111: Re-work of FSCAN user interface
- CR88: ILS measurement rate reduced from 117 values/s to 100.5 values/s
- CR 79: VOR to/from setting

- CR37: Improved VOR demodulator. Increases sensitivity
- CR 73: Implementation of a dynamical battery capacity implementation
- Datalogger: common lists for ILS CRS|CLR and all other modes (in earlier releases ILS CRS|CLR had its own set of lists)
- Datalogger shows all values on the display

## 2.6 EVS300 SW Release 2.2

Release Date: 24.2.2006

RELEASE 2.2	Version
Main EVS Software	1.17
EVS DSP Software	1.13-2
EVS Keyboard Software	1.60

### General remarks:

This is the first official release of the EVS300 software. All earlier version are internal test versions and shall not be used for operational purposes.

### Functionality:

#### ILS Measurements:

- Level
- AM-Modulation and frequency 90Hz / 150 Hz
- DDM/SDM
- Phi 90/150 Hz
- Voice-Modulation
- ID modulation/frequency
- Carrier frequency
- Separated Course/Clearance measurement
- Simultaneous Course/Clearance (Option K3)
- Analog Outputs
- Graphical display of DDM-values (DDM-Graph)

#### VOR Measurements:

- level
- AM-modulation/frequency 30 Hz
- AM-modulation 9960 Hz
- FM-Demod frequency 30Hz
- Bearing
- Carrier frequency

- AM-Distortion on 9960Hz
- FM-Deviation
- FM-Index
- ID-Modulation/frequency

**Marker Beacon Measurements:**

- Level
- AM-modulation/frequency 300Hz/1300Hz/400Hz/ID
- Carrier frequency

**F-Scan:**

- arbitrary start and stop frequency
- Resolution Bandwidth 30kHz, 10kHz, 3kHz, 1kHz
- Trace Clr/Wr, Average, Max Hold
- Marker- and Delta-Marker

**General features:**

Data Logger for ILS, VOR, MB with 50000 Entries in one list

GPS with NMEA and PASHR protocol is supported

Level accuracy according to specifications

Remote control commands covering ILS, VOR, MB

Battery indicator

Large View for ILS and VOR

Screenshots

**Known issues:**

Dual channel possibilities are scheduled for release 3.

The remote control commands do not cover F-Scan.

Only partial compatibility to EVS200 remote control

Only a selection of basic values can be seen in the data logger.

## 4. Update Procedures

### 3.1 Update by USB memory stick

Software updates for the R&S®EVS300 are usually done by using an USB memory stick:

- an update file with ending .evs is copied to the memory stick
- go to Setup → Inventory → Press RETURN
- follow the instructions on the screen and confirm the update
- switch R&S®EVS300 off and on again
- after reboot the new software is running

With this procedure, the R&S®EVS300 application file is replaced by a new one. In most cases this is all you need to update an R&S®EVS300 to a new software.

### 3.2 Complete update of application and operating system

For updates from Release 2 or 3 (Main Software <= 1.27) to Release 4 or newer (Main Software >= 1.41) the USB Update is not sufficient, because the newer R&S®EVS300 software also requires an update of the LINUX operating system. This affects all R&S®EVS300 units which were sold before 1.2009.

If you intend to update an EVS300 with software release 3.3 (or older) to software release 4.0 (or newer), please contact your local Rohde & Schwarz support or contact Rohde&Schwarz, department 5CE, ariane.knappe@rohde-schwarz.com.

### 3.3 Compatibility

Backward compatibility is maintained whenever possible. In general, all EVS300 units shall work well with all present and upcoming software releases.

If not otherwise quoted, the minimum requirement for the EVS300 software is:

<b>Compatibility:</b>	
Mainboard Revision	>= 5.xx
RF-Board Revision	>= 3.xx
Power Supply Revision	>= 2.xx

A few exceptions exist:

- some EVS300 units are found to work perfectly stable with Release 3.3 while crashing with Release 4.0. It was found that this is caused by the new LINUX system, and can only be solved by a hardware patch. Please contact R&S service in that case.

- The baseband input is only available with Mainboards  $\geq 6.05$  and RF-Boards  $\geq 5.08$   
With older boards, the baseband input cannot be selected. A patch for older boards is available,  
please contact R&S service if required.