

SW Release Notes

EVS300 SW Release 5.4

Table of content

- 1. DOCUMENT HISTORY 3**
- 2. GENERAL INFORMATION 3**
- 3. RELEASE HISTORY 4**
 - 3.1 EVS300 SW Release 5.4 4
 - 3.2 EVS300 SW Release 5.3 5
 - 3.3 EVS300 SW Release 5.2 - withdrawn 8
 - 3.4 EVS300 SW Release 5.1 12
 - 3.5 EVS300 SW Release 5.0 13
 - 3.6 EVS300 SW Release 4.2 14
 - 3.7 EVS300 SW Release 4.1 15
 - 3.2 EVS300 SW Release 4.0 16
 - 3.3 EVS300 SW Release 3.3 18
 - 3.4 EVS300 SW Release 3.2 19
 - 3.5 EVS300 SW Release 3.1 21
 - 3.6 EVS300 SW Release 3.0 21
 - 3.7 EVS300 SW Release 2.2 23
- 4. UPDATE PROCEDURES 25**
 - 4.1 Update by USB memory stick 25
 - 4.2 Complete update of application and operating system 25
 - 4.3 Compatibility 25

1. Document History

Rev.	Date	Modification
01.00	15.06.2009	First version, covering EVS300 SW Release 4.0 Contains the complete EVS300 software history, starting from the first official Release 2.2
02.00	22.01.2010	Updates for Release 4.1
02.01	16.12.2011	Release 4.2
02.02	18.12.2012	Release 5.0
02.03	17.03.2014	Release 5.1
02.04	15.01.2015	Release 5.2
02.05	11.11.2015	Release 5.3
02.06	19.07.2018	Release 5.4

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

These 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

3.1 EVS300 SW Release 5.4

Release Date: 7.2018

RELEASE 5.3	Version
Main EVS Software	1.68i
EVS DSP Software	1.35-11
EVS Keyboard Software	1.60 / 2.20 / 2.40

General remarks:

This software release offers bugfixes and improvements that were collected over the last 3 years. After more than 10 years there is no further development planned for the EVS300 (no new features). This is very likely to be the last software for the EVS300.

Functionality:

- Support of USB-GPS-Receivers (CR496)
See section "GPS-Receiver on USB-Port" below.

Bugfixes and Improvements:

- AGC acts faster to prevent compression on signals with high modulation (e.g. SDM on glideslope, CR 495)
- GBAS Message Type 1 with 0 satellites is now displayed and logged properly (CR 493)
- Average power measurements with NRP-Sensor are now stable for lower levels (CR 492)
- GPS: Support for receivers with Glonass integration. The second character of each message is now just ignored, so the EVS300 accepts "GNRMC" just as well as "GPRMC"
- GBAS: more tolerance for signals with delayed training sequence (CR487)
- GBAS Message Type 1: The first Sat of the transmission is now marked with a "+" sign. This indicates that the "low rate information" belong to this Sat. (CR486)
- VOR signals with low level (-80dBm) showed occasional blips → corrected (CR485)
- Empty GBAS-slots now have a time and GPS-position (CR484)
- The calculation of the ILS 2F level was corrected and acts now like Release 5.1 and before. (CR 481)
- GPS: tolerate 2 consecutive GPS positions without time difference (CR480)
- Introduced remote commands "SETUP:LOGCH" and "SETUP:BOOTONPOWERUP" (CR479)
- Both RX-boards are switched ON as soon as there is a remote connection. This allows direct remote configuration on both boards. (CR478)
- GPS-Fix values 9 and 10 are now accepted (CR476)
- NRT-Sensor: Selftest is performed as soon as the sensor is connected. In case of errors a permanent UNCAL indication is displayed (CR482)

- Detection that battery is empty optimized for older batteries. Correction of the battery status when the battery gets fully discharged (CR502)

Known issues:

- The “Auto Power Down” functionality is no longer supported (CR489)
- When the battery (EVS-B3) of the EVS300 is getting older, this usually influences the performance and characteristics of the battery. Some of these batteries may get empty so suddenly that the EVS300 has no time for a proper shutdown. This may lead to a loss of the current device settings.
- When the GPS-Interface is set to “USB” the NRT-Sensors connected by a FSH-Z144 adapter do not work (CR501)

GPS-Receiver on USB-Port:

Recent GPS-Receiver may offer a USB-interface. There is no real standard for USB-GPS, so most of them use an internal RS232-USB-converter, which opens a virtual COM-port on the connected PC or device. The Linux-System on the EVS300 supports an impressive number of those chips, so some USB-GPS can work with the EVS300.

The GPS-screen offers a new setting “Interface”:

- RS232: default, like the older software versions
- USB: standard-chips like FTDI and Prolific, which open a port at “/dev/ttyUSB0”
- USB-uBlox: these chips use the port “/dev/ttyACM0”. Please note that the baudrate setting has no effect when using uBlox chips

The remote command is SETUP:SETGPSINTERFACE (“RS232”, “USB”, “UBLOX”).

The USB support of the LINUX operating systems of the EVS300 is limited. Please boot the EVS300 without the USB-GPS device plugged in and connect the device to the USB port of the EVS300 when the EVS300 has finished the boot process. Do not unplug a USB-GPS device during operation.

Some USB-GPS device will work with the EVS300. Nevertheless Rohde&Schwarz does not guarantee that all types of USB-GPS-Receiver are supported.

3.2 EVS300 SW Release 5.3

Release Date: 12.2015

RELEASE 5.3	Version
Main EVS Software	1.66-j
EVS DSP Software	1.35-6
EVS Keyboard Software	1.60 / 2.20

General remarks:

Release 5.3 is a bugfix release that does not introduce new features by itself. Since it contains all changes from the withdrawn Release 5.2, the new features from that Release are now available again.

Functionality:

- GBAS / SCAT1 datalogging: Additional parameters C/No per satellite, GPS Noise, GPS-Jam, GPS-AGC. These parameters are intended to verify the quality of GPS reception. (CR 459 + 467)

Bugfixes and Improvements:

The following section describes the bugs fixed by release 5.3:

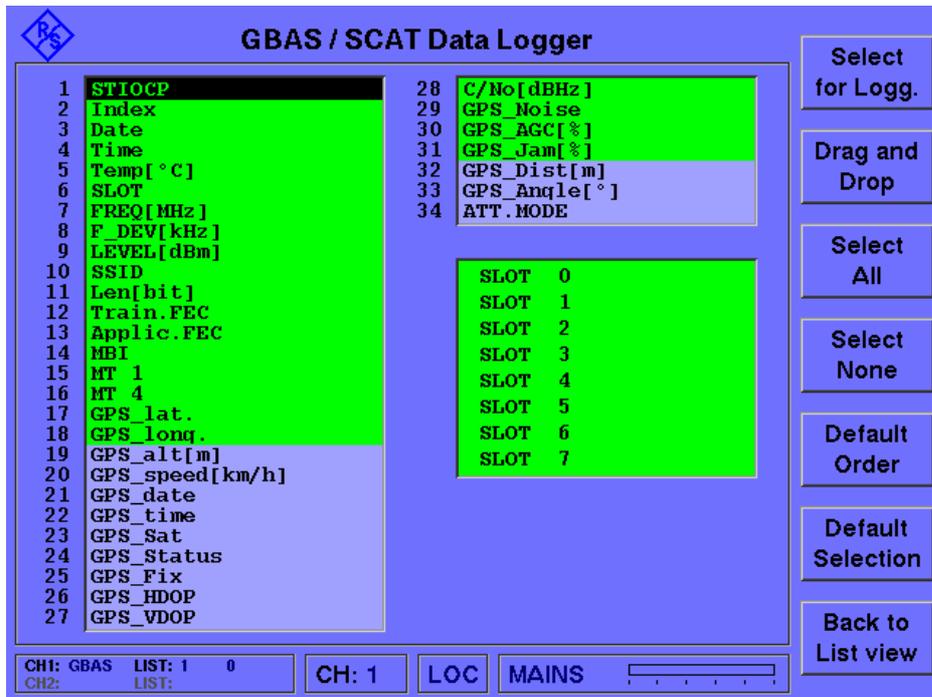
- EVS300 with 2 RF boards newer than 6.07: the software crashed immediately after startup, with no possibility to do downgrades (CR 471)
- EVS300 with 2 RF boards: the second board is set idle whenever it's not visible and there is no logging or remote operation (CR469)
- After long time of operation (several days) a memory leak caused instabilities (CR 470)
- On some EVS300 the battery indicator was set to 100% long before charging was finished (CR 468)
- 90 days after the last autocalibration the EVS300 displays a warning message on startup. This message blocked automatic datalogging. Therefore this message now disappears after 10s (CR 466)
- The order of GBAS/SCAT1 parameters in was not processed correctly (CR 464)
- Improved AGC-handling of strong FM radio stations (CR 474)

Known issues:

- The LABVIEW driver "rsevs V1.0.0" does not support the re-structured commands for GBAS and SCAT-I since R5.1.
- Release 5.3 does not support RF boards \geq Rev 3.06 and \leq 5.0. (CR408)
- The web interface does not contain all EVS features. Some settings are missing, and the GBAS/SCAT modes are not available. It is recommended to use the VNC remote control instead of the web interface (no updates of the web interface in the future). (CR379)

Modifications to the documentation:

The additional GPS values appear in GBAS / SCAT Data logger parameters:



C/No[dBHz]: carrier to noise ratio for each satellite.

To have this information, the GPGSV message of the GPS receiver needs to be active. In exported or streamed data this value comes as a colon-separated list of values

Example:

..., 43:::0:26:::0:::0:::48:::49:::0:::42:0:::35:::0:38:32:::32: , ...

The position of each value refers to the satellite number, so in this example SAT 1 has a C/NO of 43dBHz, SAT2 + 3 are not present.

SAT 1 .. 32 are the regular GPS satellites, 33 .. 38 are EGNOS (120 .. 126).

GPS_Noise, GPS_AGC, GPS_Jam:

These values are only available on µBlox-based GPS receivers, and help to indicate if the GPS was jammed or interfered. See uBlox documentation for a more details.

To have this information, the uBlox-proprietary HW-MON message needs to be active. Attention: If this message is switched on the GPS will not work with older versions of the EVS300/EDS300 software.

3.3 EVS300 SW Release 5.2 - withdrawn

Release Date: 1.2015

RELEASE 5.2	Version
Main EVS Software	1.65p
EVS DSP Software	1.35-5
EVS Keyboard Software	1.60 / 2.20

General remarks:

Release 5.2 is a maintenance and bugfix release which only introduces minor new features. They are mostly related to GBAS/SCAT and long term monitoring, however ILS and VOR also profit from some general enhancements.

Thus the GBAS/SCAT manual (1176.9212.02 V2.00) is updated for this release. The general EVS300 manual (3544.4486.07) that describes all other modes except GBAS/SCAT remains unchanged.

Remark:

After the release of 5.2, it was found that this version crashes on EVS300 devices with 2 RX boards newer than 6.07. Therefore this version was withdrawn and should not be used. While this bug compromised the stability, it does not have any influence on measurements, so measurements done with Release 5.2 are considered to be correct.

Functionality:

- EVS clock time synchronisation by GPS or NTP
- ILS level calculation as true RMS. This results in a typical level difference of 0.2 dB (LLZ) or 0.4 dB (GS) compared to prior EVS300 software.
- K5 Power meter support: Sensor self test added.

Bugfixes and Improvements:

GBAS/SCAT

- Autocalibration independent of the selected mode (did not work if GBAS mode was selected). (CR410)
- The term "SL ID" is replaced by SSID (station slot ID)
Also renamed in the remote and data logger headlines. (CR412)
- GBAS/SCAT: GPS information is saved even when the slot does not contain any data. (CR416)
- GBAS/SCAT Cycle time: correct time even for 2 consecutive slots (CR420)
- GBAS/SCAT: Sometimes slots were measured "empty" even when data was present. (CR428)
- GBAS/SCAT: EVS SW crashed during long term monitoring (CR429)
- GBAS message type 1: The satellites were shown in the order they were transmitted. As the GBAS stations send them in a rotating order it was hard to read the data on the display. Now the satellites are sorted by the SAT ID. (CR442)
- GBAS message type 4: TAP message caused EVS300 crash. TAP messages are still not decoded, but handled properly. (CR444)
- GBAS: The FASDB display was cleared every time a new slot content was received. This behaviour did not work for slots with alternating MT4 content. Now the FASDB data is hold for 22s, no matter if there are other contents on that slot. (CR456)

General

- The maximum number of data logger lists is increased from 999 to 9999. This is prerequisite for the new logging mode "24/31" to store one list every hour for a complete month. (CR414)
- Remote Control: Certain combinations of CR and NL caused the EVS to crash. (CR432)
- Command "GETMDEF" works during data stream (CR430)
- Setting of the RF frequency possible via remote control in 100 Hz steps (was only possible manually. (CR431)
- FSCAN: Every time the spectrum data is queried the remote control waited until the next sweep is finished, causing a delay of several seconds. While waiting the streaming of the other channel was blocked. Now the remote control answers without delay, sending the last complete spectrum available. (CR433)
- The GPS height was calculated wrong in cases of high altitude and low GPS update rate (e.g. 5000 m and only 2 updates per second). (CR434)
- Support for the new EVS verification system EVS-Z11. (CR447)
- Settings are lost if the EVS is not shut down properly (e.g. caused by a power interruption). To lower the risk, the settings are saved to flash more often. The settings can also be saved via the remote command "SAVEDATA". (CR455)
- The configurable "Display Update Rate" is omitted. The rate of display updates now depend on the measurement time only (CR460).

Known issues:

- The LABVIEW driver "rsevs V1.0.0" does not support the re-structured commands for GBAS and SCAT-I since R5.1.
- Release 5.2 does not support RF boards \geq Rev 3.06 and \leq 5.0. (CR408)
- The web interface does not contain all EVS features. Some settings are missing, and the GBAS/SCAT modes are not available. It is recommended to use the VNC remote control instead of the web interface (no updates of the web interface in the future). (CR379)

Modifications to the documentation:

Most of the changes are internal and do not require changes to the user manual. But some require explanation:

Setup → *Data Logger* → *Listmode*:

Intended for long term monitoring, the EVS300 will automatically create a new list every hour or every day. The standard behaviour is "SINGLE", which does not change lists.

- SINGLE: Do not change lists
- 24/7: One list every hour, starting Monday with list 100,101, .. 123, Tuesday list 200,201...
After one week, the first lists are overwritten.
- Week: One list every day, starting Monday with list 1
- Month: One list every day, starting on first day of month with list 1
- 24/31: One list every hour, starting on first day of month with list 100,101, .. 123, up to list 3100 .. 3123 on the 31. of month.
Next month, the first lists are overwritten.

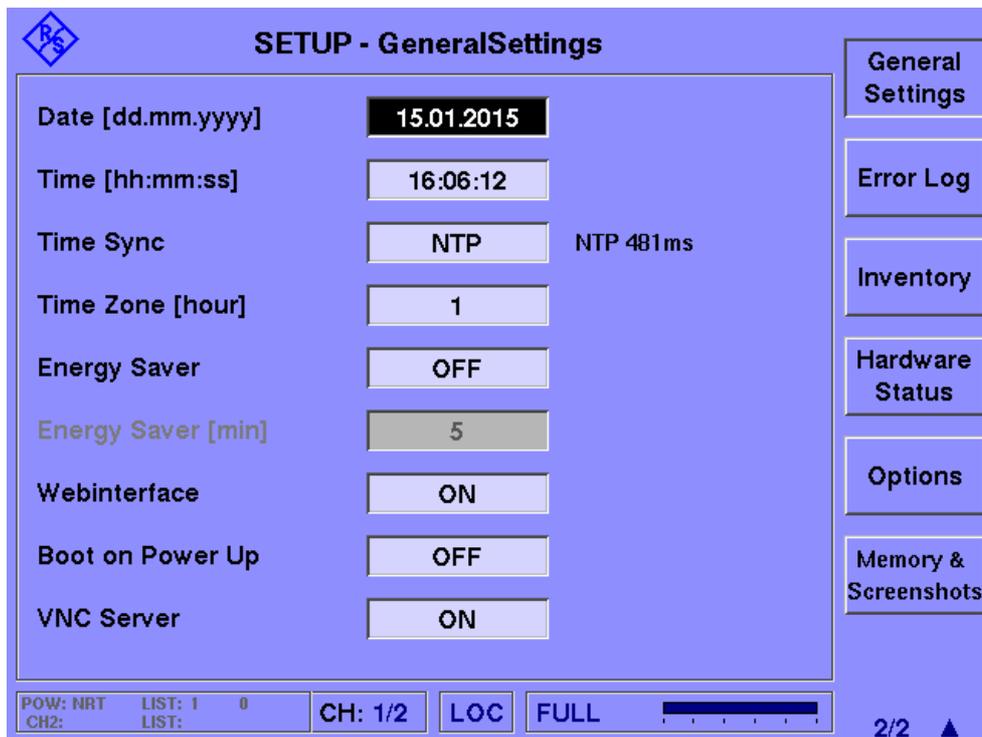
Setup → Remote Control → NTP server

Enter the IP of your NTP server here. You also need to enable NTP synchronization to take this setting into effect. If NTP sync is not used, the NTP server field can be left empty

Setup → General Settings → Time Sync

With this setting the EVS300 clock can be controlled by an external GPS or by an NTP server. The motivation to implement this setting was the clock drift in long term monitoring scenarios. Please note:

- The time is synced only if the difference between controller time and reference time is > 1000 ms. This depends on the accuracy of the EVS CPU clock and may happen every few hours. The current difference is shown right beside the setting. A positive value indicates that the NTP or GPS time is ahead of the EVS time.
- The controller clock has no influence on the GPS timestamps of measurements. Therefore the time sync has no positive effect on real time applications like runway measurements.
- To avoid clock changes during measurements, the sync is not done during data logging or data streaming. Only if the logmode is not "SINGLE" it is assumed that a long term measurement is taking place and the sync is activated
- While the controller clock is synced, the time is not saved to the battery buffered RTC chip. So after a restart the synced time is no longer available.



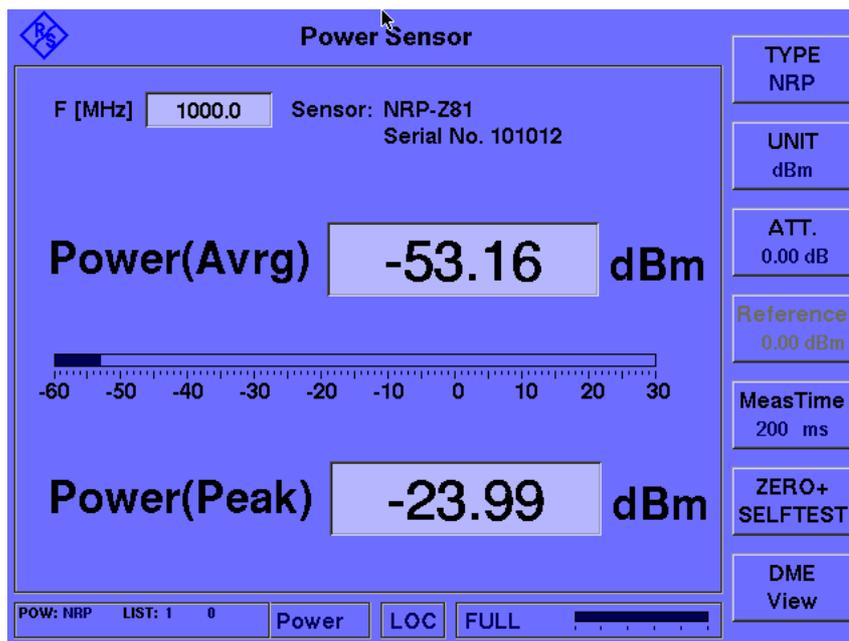
- The GPS/NTP time sync will not provide an accuracy better than 1000 ms. If timestamps with high precision are required it is recommended to use a GPS with PPS connected to the EVS trigger input.

Setup → General Settings → Time Zone [hour]

GPS or NTP always have UTC time. If a local time zone is required the offset can be entered here. The EVS300 does not maintain any DST time settings.

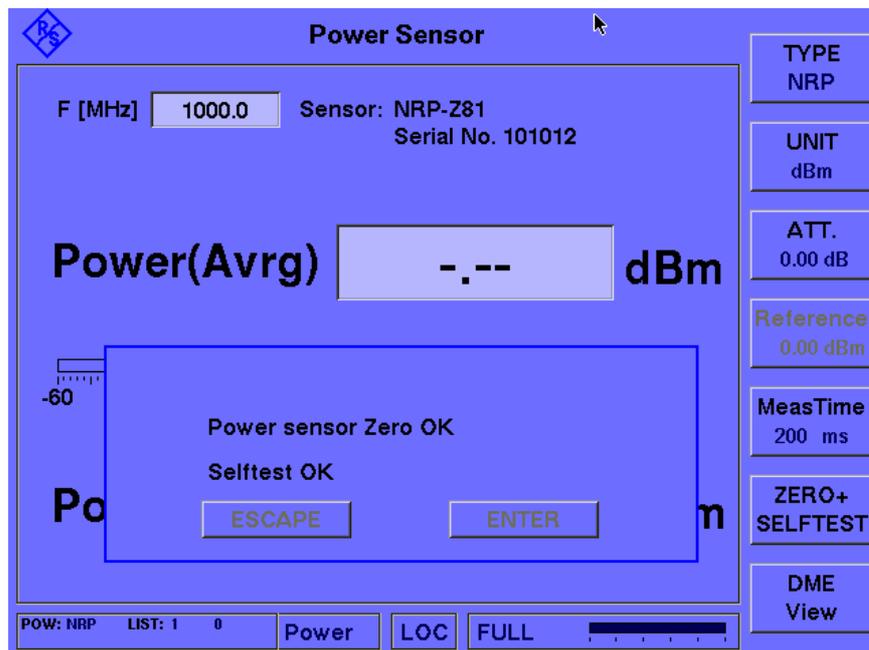
NRT or NRP Power Sensor (EVS-K5)

The existing button “ZERO” is extended to “ZERO+Selftest”



After the zeroing process a self-test is started, resulting in a slightly longer time to wait.

After the process the result is shown for 5 seconds.



If the self-test indication is “OK” there was no error. If the indication is “ERROR” the sensor can be assumed to be defective. Use the sensor PC software (“Power Meter+” or “Virtual NRT”) for further analysis.

3.4 EVS300 SW Release 5.1

Release Date: 4.2014

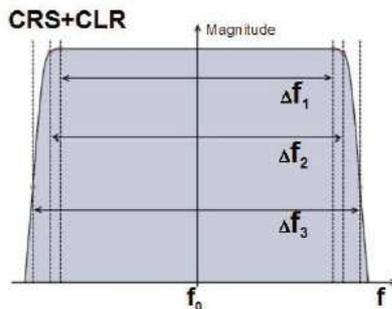
RELEASE 5.1	Version
Main EVS Software	1.60g
EVS DSP Software	1.34-7
EVS Keyboard Software	1.60 / 2.20

Modifications to the documentation:

Addendum to operation manual (chapter 3.10.7.3):

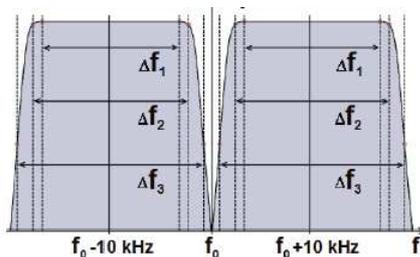
3.10.7.3 Course and Clearance Signal measuring

Two frequency ILS signals can be measured in the CRS+CLR mode. The filter bandwidth is 32.0 kHz (± 0.1 dB) nominal:



Filter bandwidths CRS+CLR signal measuring		
Δf_1	Filter flatness (ripple <0.1dB)	32.0 kHz
Δf_2	-3 dB bandwidth	34.9 kHz
Δf_3	-60 dB stop band attenuation	39.1 kHz

These filter characteristics apply for all measurements in CRS+CLR mode (like DDM, SDM, ...) **except** the level measurement of the two carriers. For level measurement the following measurement filters are used:



Filter bandwidths CRS CLR signal measuring		
Δf_1	Filter flatness (ripple <0.1dB)	12.4 kHz
Δf_2	-3 dB bandwidth	14.8 kHz
Δf_3	-60 dB stop band attenuation	18.8 kHz

The levels of both carriers are measured separately and then added.

REMARK: The measurement of a **Single frequency ILS** in the CRS+CLR mode can lead to wrong level measurements as a carrier at f_0 is then notched by the filter for level measurements.

Addendum to operation manual (chapter 3.10.7.5):

Some two frequency ILS installations operate with a frequency offset of the carriers to the nominal frequency. The carriers are placed asymmetrically around the nominal center frequency (ICAO limit 0.002% of carrier frequency).

Measurements on these ILS systems can lead to wrong measurement results if one of the carriers falls on the slope of the band-pass filters. To ensure accurate measurements it is recommended to tune the EVS300 to the *real* center frequency of the two carriers.

REMARK: To avoid manual tuning of the center frequency of the EVS300 in automatic measurement systems the ILS-Checker software offers the possibility to set the center frequency for all required sites in the data base editor.

General remarks:

Release 5.1 introduces the new software option “K10 SCAT-I Mode”

The K9 GBAS Mode was improved and is now capable of decoding message type 1 and 4. There is a datalogger functionality for GBAS and SCAT, similar to the datalogger of ILS.

Release 5.1 comes with an extra manual (1176.9212.02) which covers GBAS and SCAT. For all other modes the general manual (3544.4486.07) shall be used.

Functionality:

- K10 SCAT-I Mode
- Datalogger for GBAS and SCAT-I
- VNC remote access

Bugfixes and Improvements:

- CR378, CR395: GBAS level measured acc. DO246 during synchronisation & ambiguity resolution
- CR396: GBAS Slot assignments are correct, even on consecutive slots with identical ID
- CR393: Level measurement in ILS Wideband Mode is enabled, but comes with an additional error when measuring 2-frequency ILS installations. See datasheet for specification.
- CR 398: Support for GPS receivers with more than 300ms latency between PPS and NMEA
- CR405: Remote Streaming / Datalogger: the date was incorrectly set to “1.1.1970” every few minutes
- CR406: EVS crashes when 2 consecutive NMEA GPRMC messages have the same time
-

Known issues:

- The LABVIEW driver “rsevs V1.0.0” does not support the re-structured commands for GBAS and SCAT-I.
- CR408: Release 5.1 does not support RF boards >= Rev 3.06 and <= 5.0.

3.5 EVS300 SW Release 5.0

Release Date: 1.2013

	Release Notes EVS300 SW Release 5.4 5202.6116.00	Page:13 of 25
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RELEASE 5.0	Version
Main EVS Software	1.54m
EVS DSP Software	1.32-7
EVS Keyboard Software	2.20 (ok to use 1.60)

General remarks:

Release 5.0 introduces the new software option “K9 GBAS Mode”

It also offers some general Bugfixes and performance improvements, like a complete redesign of the GPS connection.

Since the GPS data is stored with improved accuracy the internal datalogger lists are not compatible with lists from earlier SW releases. It is recommended to export all existing lists (if needed) with the old software before the update is performed.

Functionality:

- K9 GBAS Mode: Analysis of level, frequency and data content for each GBAS timeslot
- GPS: Synchronisation with external PPS pulse, adjustable GPS delay compensation

Bugfixes and Improvements:

- CR369: GPS data with more than 15 Satellites becomes invalid
- Performance improvements for TCP/IP networking
- Screenshots on USB now have correct colours

Known issues:

- Experimental support for GPS receivers on USB has been removed
- CR408: Release 5.0 does not support RF boards >= Rev 3.06 and <= 5.0.

3.6 EVS300 SW Release 4.2

Release Date: 12.2011

RELEASE 4.2	Version
Main EVS Software	1.47e
EVS DSP Software	1.30-4
EVS Keyboard Software	2.20 (ok to use 1.60)

General remarks:

Release 4.2 is a maintenance release with little changes in comparison to Release 4.1.

Most changes are related to the DME-analysis with NRP-Z81, users who do not own this option have no real reasons to upgrade.

Functionality:

- DME Analysis (K6): Display of peak power during automatic analysis. Re-arrangement of parameters.

Bugfixes and Improvements:

- CR326: "Trigger Source" disables automatic analysis → fixed
- CR356: NRP sensor sometimes not recognized → fixed
- CR358,CR359: Performance improvement for NRP analysis for 2 Channel EVS300.
- CR216,320: 75MHz Level out of spec after autocal, reboot required (→ fixed, reboot is no longer required)

3.7 EVS300 SW Release 4.1

Release Date: 25.1.2010

RELEASE 4.1	Version
Main EVS Software	1.45k
EVS DSP Software	1.30-4
EVS Keyboard Software	2.20 (ok to use 1.60)

General remarks:

Release 4.1 is released to provide improvement and bugfixes that have been made since the last release. It offers only little new functionality. The linux system is the same as in Release 4.0, therefore it can be updated by USB memory stick only.

Functionality:

- ILS: MeasMode "Wideband" offers a possibility to analyze 1 or 2 frequency installations with the same setting
- Export of screenshots in colour or black&white for printouts
- The SPLIT button now offers a selection to jump to any EVS300 measurement mode This is the only way to activate the K5 and K6 options
- EVS-K6 DME View : Analysis for "all parameters" at the same time, Improved handling of automatic analysis and manual cursor operation
- Performance improvements for data export by USB memory stick or remote stream

Bugfixes and Improvements:

- CR330: new GPS baudrates 57600baud and 230400 baud
- CR329: patch for units which display the "LO2_TUNE" error
- CR324: serial number of NRP sensor is permanently displayed in DME view

- CR322: EVS-K5 NRP additional unit "W" to display large power values (usefull when using a large attenuator)
- CR321: EVS K5 NRP: display for peak power now as big as for average power
- CR320: Autocal: warning message to reboot after autocal. Still necessary to get accurate measurements at 75MHz
- CR319: New remote command GETGPSGPGSA to get HDOP/VDOP information
- CR312: New remote command to select GPS baudrate
- CR310: DME pulse view with 0.3V/div
- CR305: Limit check for remote command "RF"
- CR300: DME View average after changing sample rate
- CR299: remote STREAM: trigger indication was missing in STIOC field
- CR293: ILS Datalogger graph: "MARKER" renamed to "CURSOR"
- CR288: EVS K5/K6: NRP sensor lost connection when level > 100mW
- CR287: Datalogger with 2channels: SAVE used to save the currently active channel, which was not displayed in the status indication. Now SAVE is working on the channels selected in SETUP, so the status indication is also correct
- CR285: Confirmation when clearing errorlog
- CR283: RS232-1 (remote): Baudrate 230400 was selectable, but did not work for hardware reasons. Removed from selection
- CR276: DME view, single shot: after pressing return the indication "Aquire" confirms that the new measurement is running
- CR270: EVS-K5, NRP+NRT, unit db (relative): bargraph from left to value does not make sende, replaced by pointer indicator
- CR268: EVS-K7 Scope: Cursors labelled with "1" and "2"
- CR266: EVS-K7 Scope: Overload indication was missing
- CR265: with some batteries the "empty" indication was coming to soon, and the devices switched off. The according voltage limits were reduced, so especially older batteries shall work longer
- CR185: Setup Datalogger: Trigger Count not available when no external trigger is selected

3.2 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

3.3 EVS300 SW Release 3.3

Release Date: 27.5.2008

RELEASE 3.3	Version
Main EVS Software	1.27m

	Release Notes EVS300 SW Release 5.4 5202.6116.00	Page:18 of 25
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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

3.4 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

3.5 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 powerful 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

3.6 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.

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

3.7 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

4.1 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.

4.2 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.

4.3 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:

Compatibility:	
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 >= 6.05 and RF-Boards >= 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.
- Release 5.0 and above does not work with RF boards >= Rev 3.6 and <= Rev 5.0