

# R&S®AREG800A

## Release Notes 5.30.047.46

**Firmware Version 5.30.047.46**

© 2024 Rohde & Schwarz GmbH & Co. KG  
Muehldorfstr. 15, 81671 Munich, Germany  
Phone: +49 89 41 29 - 0  
E-mail: [info@rohde-schwarz.com](mailto:info@rohde-schwarz.com)  
Internet: <http://www.rohde-schwarz.com>

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The software makes use of several valuable open source software packages. For information, see the "Open Source Acknowledgment" provided with the product.

The following abbreviations are used throughout this document: R&S®AREG800A is abbreviated as R&SAREG800A

PA0-TM-3574\_3288\_02/04\_00/CI/EN



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# 1 Information on the current version and history

To ensure the R&S AREG800A remains highly secure when being updated, only signed updates will be released.

This will make it possible to detect all future unsigned or manipulated updates.

The instrument's behavior can also be configured via "Setup>Security>Security>General>Secure Update Policy".

These settings are password protected.

For more information, see the R&S AREG800A User Manual.

## 1.1 Version 5.30.047.46

Released March 2024

### Firmware package contents

New Functionality	
Adjust the input level manually and restore the previous value after reboot or preset.	976977
Cable and antenna correction for external frontends, or IF frequency	1227669
Improvements / Fixed Issues	
Sporadic wrong EIRP measurements from the power sensor	1242734
Only first entry of antenna gain list is visible after preset with 'Preset Behavior ON'	1252972
Adding FE44S takes a long time when no network is available	1250119
Known Issues	
RCS cannot be entered when unit is square meters	1261526

## 1.2 Version 5.30.047.39

Released October 2023

## Firmware package contents

## New Options

<b>AREG8-K814</b>	AREG8-K814 NEAR OBJECT RANGE
<b>AREG8-K553</b>	AREG8-K553 FRONTEND CONTROL

## New Functionality

<b>AREG8-K814 Near Object Range for FMCW Radar Sensors</b>	1090139
<b>External Frontend FE44S fully functional with the AREG800A</b>	1079843
<b>Frontends AREG8-81WD and AREG8-81WS in AREG800A software supported</b>	1090146
<b>Message is generated when system is overheated</b>	1197905
<b>Object marker delay is now possible in static mode and for immediate update</b>	1065553

## Improvements / Fixed Issues

A false error message is shown, when a long scenario with a higher update rate is active	1178306
After long time of usage, the busy state may not be displayed in UI	978731
Automatic cleanup of internal temp files after 10 days causes sometimes a SW crash	1092698
In rare cases image suppression in 5GHz mode worse than expected	975254
Internal Adjustment sometimes fails with ASDL Doppler Error	1215402
Interpolation of the antenna gain values between the table values is not correct for low sensor bandwidth	1206240
QAT band 76-80GHz is missing	1210511
Range jump with QAT multiple mode with OSP between subchannel 1.1 and 1.2	1093301
Realtime Control and System Control can not be connected to the same network	1048624
Slightly different RCS between Fast and High Quality Mode	1214672
The cable delay and attenuation is not included in the Save/Recall mechanism	1189864

### 1.3 Version 5.10.121.41

Released February 2023

#### Firmware package contents

## New Options

**AREG8-K980** Health and Usage Monitoring System

## New Functionality

<b>AREG8-K980 HUMS: New option Health and Usage Monitoring System</b>	983723
Improved level linearity for QAT100 frontend. Hardware option B1 is evaluated for level calculation.	1015939
Internal adjustments can be configured to start automatically after warm up period and switch off instrument after execution. This facilitates performing adjustments in absence of operator.	1042855
QAT100 Frontends can now be configured for elevation angle simulation.	997225

Support for Switching Unit in AREG800A with multiple frontends. Currently supported switching unit is the R&S OSP with B127, B128, B119 and B111 modules. 997946

The Antenna Gain of the mmWave frontends can now be set frequency dependent. Antenna Gain Tables can also be exported and imported later on. 976967

The speed of light can be adjusted for different propagation medium now. 1007350

Time protocols were extended by gPTP. The user connectors on the rear side can be configured as a marker output. It can be used to generate marker signals for object settings for object switching, scenario restart and time-based via HiL protocol. Object monitoring feature was implemented. Active objects can now be streamed via UDP to an external PC. 1002227

Update Rate for Scenario Mode and UDP Raw HiL/ViL Protocol was increased. Additionally, buffering of future objects according to OSI Timestamps is supported now. 1003788

#### Improvements

An issue was resolved that for specific combination of SW options, the limits for the object parameters were not calculated correctly 1059066

Realtime or system control network hostname can be changed now without an unrequested power cycle 978405

It was possible to set a different antenna gain for monostatic frontends. Now it is only required to set the RX antenna, the TX is adjusted automatically. 1007352

Maximum Airgap increased to 30 meters for all different frontend types. 1012954

Angle definition in UI was inconsequent and now in all cases counterclockwise angles are positive defined 1062368  
1058242

Radar Objects Overview plot displays the object setting ranges correct, even if the sensor has set a relative distance to the origin 1064830

TCXO correction is now working correctly 1005719

The level adjustment procedure is no more executed, if the channel is deactivated in the channel config dialog 1051014

Sign convention in UI for doppler speed and doppler shift was inconsequent: Now positive doppler speed and negative doppler shift equals object movement away from the radar sensor. 1044939

#### Known Issues

After long time of usage, the busy state may not be displayed in UI, SCPI control is not affected 978731

Focus in Security-dialogue cannot be set after display-only mode. Focus can be set again with a mouse click.	1065289
In rare case, the IQ image suppression is bad during 5 GHz mode. Toggling the Optimization Mode solves the issue	975254
Realtime Control and System Control can not be connected to the same network.	1048624
The RF Output is currently not disabled when the external reference is missing in case of use external reference and selected Deactivate RF Output	906156
IP Address after Factory Preset in Static mode not adjustable. Please reboot to repair.	1071931

## 1.4 Version 5.00.209.46

Released September 2022

### Firmware package contents

#### New Options

<b>AREG8-B63</b>	Analog stepped delay
<b>AREG8-B97</b>	System Alignment
<b>AREG8-B98</b>	Customer Specific Alignment
<b>AREG8-K528</b>	Digital baseband extension to 5 GHz
<b>AREG8-K549</b>	Multi instrument sync
<b>AREG8-K813</b>	Extended doppler frequency shift
<b>TRX81_RO</b>	Firmware Support

#### New Functionality

Equivalent Isotropic Radiated Power (EIRP) can now be calculated for the millimeter wave frontend using an R&S power sensor	938255
Performance optimized HiL Interface (UDP Raw) is now supported	927854
Radar Cross Section (RCS) can now be set directly instead of attenuation	912128

#### Modified Functionality / Changed Behavior

Improved zoom functionality in overview dialog 916447

#### Improvements

Changing the Bandwidth Configuration in the System Operation Setup reactivates the disabled channels in Measurement Setup / Channel Config 937303

The use of s2p files for frontend cable delay and attenuation is not evaluated correctly 940602

#### Known Issues

After long time of usage, the busy state may not be displayed in UI, SCPI control is not affected 978731

An error message is sporadically displayed during device preset 998872

Changing Realtime or system control network hostname requires an unrequested power cycle 978405

LAN Services cannot be disabled 990469

The RF Output is currently not disabled when the external reference is missing in case of use external reference and selected Deactivate RF Output 906156

## 1.5 Version 5.00.057.63

Released March 2022

### Firmware package contents

#### New Functionality

**AREG8-B9** Digital Baseband

**AREG8-K109** Real time interface

**AREG8-K527** Digital baseband extension to 2 GHz

**AREG8-K570** Digital baseband 2nd path

**AREG8-K740** Analog IF input interface

**AREG8-K741** Analog IF output interface

**AREG8-K812** Digital baseband additional object



**AREG8-K986** | Remote Control GPIB

Modified Functionality / Changed Behavior

None

Improvements

None

Known Issues

**Changing the Bandwidth Configuration in the System Operation Setup reactivates the disabled channels in Measurement Setup / Channel Config** 937303

**The RF Output is currently not disabled when the external reference is missing in case of use external reference and selected Deactivate RF Output** 906156

**The use of s2p files for frontend cable delay and attenuation is not evaluated correctly** 940602

## 2 Modifications to the documentation

The current documentation is up-to-date.

## 3 Firmware update

### 3.1 Validity information

Device	Order Number
R&S® AREG800A Radar Echo Generator	1437.4400K02

### 3.2 Downgrade

Generally it is not recommended to use an earlier version than the latest version available. In some cases the older versions do not support the hardware used in your instrument. Before installing this firmware, check if this could happen:

- ▶ Start System Config / Setup / Instrument Assembly / Version/Options
- ▶ In the tab "Firmware", you find the

Downgrade Info	
Package	Version
Factory Version	5.00.057.63
Min. Version	5.00.057.20

- ▶ If the version to be installed is greater or equal than the "Min. Version", the hardware will be supported after downgrading. (However, this cannot be guaranteed for all software options)
- ▶ If the version to be installed is lesser than the "Min. Version", not all of the modules will be supported. **Your instrument will not work after downgrading!**
- ▶ Downgrading may fail using standard rsu-Files (eg. due to changes in the instrument configuration file). In this case, press PRESET-Button during power-on or install ISO image available from service department. Update information

### 3.3 Updating Information

The update procedure requires that the instrument is operational. There is no need to uninstall the current firmware. Instrument settings are preserved during the update, including user data and network settings.

To perform this procedure, USB Storage must be enabled in security settings. Press the SETUP key, select Security and check USB Storage setting

## 3.4 Updating the Firmware

### Required Equipment

**Software:** Firmware update file AREG800A\_5.30.047.46.rsu

**Hardware:** USB memory stick with enough free space to save the update file.

The memory stick does not need to be bootable and previous data on the stick is not affected. Several update files may reside on the stick in parallel. During update procedure the stick is not modified by the instrument.

### Prepare Memory Stick



- Download update file to a PC
- Connect USB stick to PC and copy the update file to the root directory
- Wait until copy procedure has finished and remove USB stick

### Install new firmware on R&S®AREG800A:

- Connect USB stick to instrument
- Switch on instrument, if instrument is powered off
- Wait a few seconds until "Process Software Update?" message box appears. Confirm by touching the YES Button or pressing the rotary knob.
- Select firmware version using the arrow keys and press knob to start update
- Wait until "Software update successful" message box appears. This may take several minutes
- Remove USB stick and touch the Reboot button
- The instrument now reboots.

### Execute internal adjustments (only if indicated)

Internal adjustments can be initiated manually (e.g. after warming up) by performing the followings steps:

- Press  on the instrument front panel.
- Press , select "Internal Adjustments..." and execute "Adjust All". This procedure updates all internal instrument adjustments and will take several minutes.

**NOTICE****Risk of DUT damage**

During internal adjustments, the instrument temporarily applies high power at the RF output. High power at the RF output may destroy a connected DUT (device under test).

Adjustments requiring external measurement equipment are not affected by the firmware update and need not to be performed.

### 3.5 Alternative update procedures

The USB firmware update is recommended for most situations. However, alternative methods for updating the firmware are available:

#### 3.5.1 Firmware update over LAN

Instrument settings are preserved during the update, including user data and network settings.

- Get access to the file system of the instrument using ftp (other methods like samba share is also supported, see application note 1GP72 for details).  
Enter `ftp://<ip address or host name>` in the file manager
- Copy **AREG800A\_5.30.047.46.rsu** to directory update
- The update procedure starts immediately
- Execute internal adjustments, if indicated

#### 3.5.2 Firmware update using ISO image

**NOTICE****Potential loss of data!**

User data and user specific instrument settings will be lost during this procedure. Instrument serial number, software license keys and all adjustments requiring external measuring equipment are not affected.

##### 3.5.2.1 Required equipment

**Software:**

- ISO image for firmware update **AREG800A\_5.30.047.46.iso**  
**Please contact the service department to get this file!**

### Hardware:

- **External** USB CD or DVD ROM burner with USB cable.
- 1 CD Recordable.
- PC with burn program that can burn ISO images onto CD.

### About ISO image

This is a standardized file format for creating CD images. A CD image is a single file encapsulating the whole data of a CD including directories and files. Unpacking the image to a CD restores the original data. Almost any CD burning program is able to write CDs based on ISO images.

#### 3.5.2.2 Update procedure

### Burn ISO image onto a CD

On most computers, burning an ISO image can be initiated by simply double clicking the ISO image file. If this is not the case, the manual procedure is similar to the following instructions. Nero Burning ROM (StartSmart) is used in this example.

- Connect the external USB CD/DVD drive to the PC
- Insert a recordable CD
- Start Nero StartSmart
- Select medium „CD“
- Select „Create Data CD“
- From the **Files menu**, open file **AREG800A\_5.30.047.46.iso**
- Click "Burn"
- When finished, close Nero and disconnect external USB CD/DVD drive

### Install new firmware on R&S®AREG800A

- Instrument must be switched off
- Connect the external USB CD/DVD drive to the R&S®AREG800A
- Switch on Instrument
- The instrument boots from external drive
- Follow the instructions on screen
- Disconnect the external USB device
- Reboot instrument
- Execute internal adjustments, if indicated

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**NOTICE**

If the CD refuses to boot please ensure that you have burned the ISO-image as an “image” and not as a single file. Check the CD regarding presence of several files.

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## 4 Customer support

### Technical support – where and when you need it

For quick, expert help with any Rohde & Schwarz product, contact our customer support center. A team of highly qualified engineers provides support and works with you to find a solution to your query on any aspect of the operation, programming or applications of Rohde & Schwarz products.

### Contact information

Contact our customer support center at [www.rohde-schwarz.com/support](http://www.rohde-schwarz.com/support) or follow this QR code:



Bild 4-1: QR code to the Rohde & Schwarz support page