

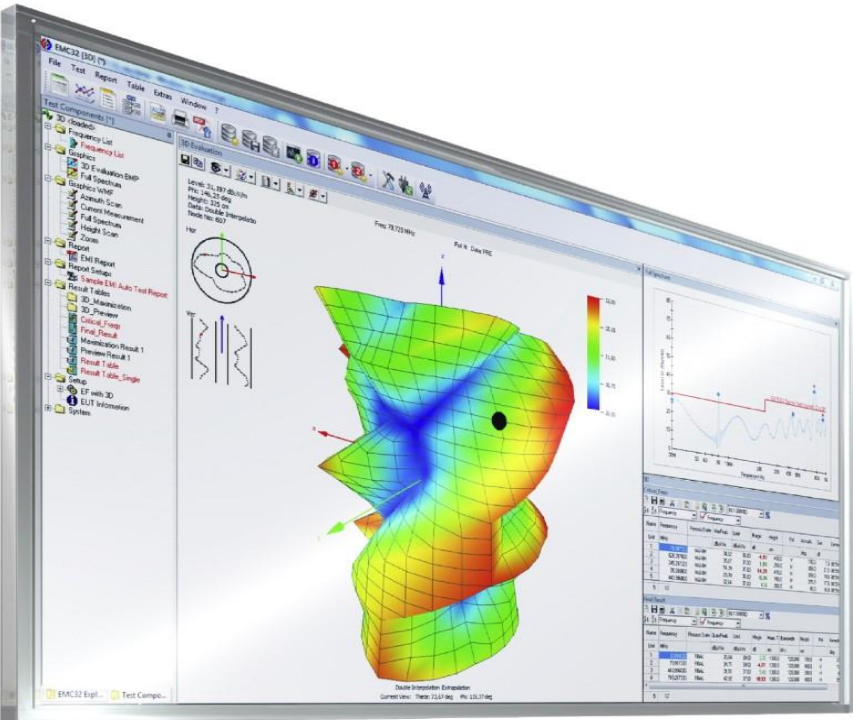
RF Test Suite

R&S®EMC32 - EMC Measurement Software

R&S®AMS32 - Antenna and OTA Measurement Software

R&S®WMS32 - Wireless Measurement Software

Installation Manual



1144.5428.42 – 14

© 2020 Rohde & Schwarz GmbH & Co. KG

Muehldorfstr. 15, 81671 Munich, Germany

Phone: +49 89 41 29 - 0

Fax: +49 89 41 29 12 164

E-mail: info@rohde-schwarz.com

Internet: <http://www.rohde-schwarz.com>

Subject to change – Data without tolerance limits is not binding.

R&S® is a registered trademark of Rohde & Schwarz GmbH & Co. KG.

Trade names are trademarks of the owners.

The following abbreviations are used throughout this manual:

R&S®EMC32, R&S®AMS32, R&S®WMS32 are abbreviated as R&S EMC32, R&S AMS32, R&S WMS32

Contents

1 Introduction	5
2 Newsletter Service	6
3 Installing R&S EMC/AMS/WMS32	7
3.1 System Requirements	7
3.2 Installation Fundamentals	7
3.2.1 Installation Folder.....	7
3.2.2 Data Security and User Administration	8
3.3 Software Installation	9
3.3.1 New Installation.....	9
3.3.2 Driver Installer Tool.....	13
3.3.3 Network Installation Tips.....	14
3.3.4 R&S EMC/AMS/WMS32 Data Backup	14
3.4 iKey Software Protection	15
4 Starting the program	17
5 R&S EMC32 Configuration	18
6 R&S AMS32 Configuration	20
7 R&S WMS32 Configuration	21
8 Upgrading R&S EMC32 / AMS32	22
8.1 R&S EMC32 Product Cross Reference Table	22
8.2 Migrate R&S EMC/AMS/WMS32 Data Folders	23
8.3 Upgrade Procedure	24
8.3.1 Base License iKey Upgrade	24

8.3.2 Software Upgrade Procedure	24
9 Uninstalling R&S EMC/AMS/WMS32	26
10 Using the iKey Merge Tool.....	27
10.1 Upgrading the Base License to V11.....	27
10.2 Upgrading the Base License to V9/10.....	27
10.3 Merging an Option iKey to a Base License iKey	29
10.4 Merging an Option License Keycode to a Base License iKey	30
10.5 Upgrading R&S TS8997 API to R&S WMS32.....	32
10.6 Updating an R&S WMS32 Standards Option	34
11 Troubleshooting	37
12 Index	38

1 Introduction

This document will guide you through the installation process of R&S EMC32 - EMC measurement, R&S AMS32 – Antenna and OTA measurement and R&S WMS32 – Wireless Measurement software. You will find the necessary instructions for installation, upgrade, the configuration of the software, the start of the program and tips on installation troubleshooting. If you need further assistance for solving problems during the installation, please contact your nearest Rohde & Schwarz Support Center:

ROHDE & SCHWARZ Customer Support Europe, Africa, Middle East

Phone: +49-4129-12345

E-Mail: customersupport@rohde-schwarz.com

ROHDE & SCHWARZ Customer Support North America

Phone: 1-888-TEST-RSA (1-888-837-8772) selection 2

E-Mail: customer.support@rsa.rohde-schwarz.com

ROHDE & SCHWARZ Customer Support Latin America

Phone: +1 410 910 7988

E-Mail: customersupport.la@rohde-schwarz.com

ROHDE & SCHWARZ Customer Support Asia/Pacific

Phone: +65 65 13 04 88

E-Mail: customersupport.asia@rohde-schwarz.com

ROHDE & SCHWARZ Customer Support China

Phone: +86-800-810-8228 / +86-400-650-5896

E-Mail: customersupport.china@rohde-schwarz.com

2 Newsletter Service

Before you start using R&S EMC/AMS/WMS32 system software you should register for the R&S EMC/AMS/WMS32 newsletter service. You will benefit by receiving news and updates of R&S EMC/AMS/WMS32 software.

Just send a short message with subject "Registration for EMC32 Update Notifications" to CustomerSupport@rohde-schwarz.com

Alternatively start the registration dialog via the help menu item ? → **EMC32 on the Web** → **Register Now**. To register this way, your EMC32 computer must be connected to the Internet.

3 Installing R&S EMC/AMS/WMS32

3.1 System Requirements

Before installing R&S EMC/AMS/WMS32 you should check that your computer fulfills the following minimum system requirements:

- **Operating System**
 - Windows 10, 64-bit
 - Windows 7, 32-bit and 64-bit
- **CPU:** Intel Core models or comparable with core speed > 2.4 GHz
- **RAM:** 4 GB
- **Hard Disk Space:** at least 1 GB free, usage of SSD recommended
- **Screen Resolution:** at least 1280 x 1024 Pixels, 65536 colors (higher resolution recommended). Screen size at least 17 inches.
- **LAN:** 100 Mbit LAN interface
- **National Instruments VISA I/O library with optional NI GPIB interface card:**
Compatible GPIB cards from other manufactures are not supported !
Not included in CD Image.

If your computer does not meet these requirements, the performance of the software may be not ensured.

3.2 Installation Fundamentals

3.2.1 Installation Folder

The following considerations shall give the administrator of the R&S EMC/AMS/WMS32 computer some hints for the selection of the installation location.

The folder structure of R&S EMC/AMS/WMS32 can be split into two sections:

- Executables and device drivers
(require only read access during R&S EMC/AMS/WMS32 runtime)
- Data files like configuration and calibration files, test templates and test results
(require full file access during R&S EMC/AMS/WMS32 runtime)

Due to security reasons the standard R&S EMC/AMS/WMS32 operator will be logged in the Windows computer as *Standard* or *Power User*. This account will not provide write access to the standard Windows program files folder where the R&S EMC/AMS/WMS32 executables and device drivers will be installed by default.

For solving this issue the setup program allows to define another location for the R&S EMC/AMS/WMS32 data folder (for example “C:\ProgramData\EMC32” or “D:\EMC32”, for installations on Windows the data folder is set to the common application data folder by default).



For all R&S EMC/AMS/WMS32 users the computer administrator must set full read and write access to this folder, to all its subfolders and to all R&S EMC/AMS/WMS32 shortcuts.

3.2.2 Data Security and User Administration

For ensuring the data security of the EMC data files the file protection functions of the Windows operating system have to be used (security section in the Windows file or folder properties dialog).

User administration features inside R&S EMC/AMS/WMS32 are not designed to ensure data security and can therefore only be used to prevent ‘Standard Users’ from modifying essential settings inside the R&S EMC/AMS/WMS32 (for example the device configuration).

In case R&S EMC/AMS/WMS32 is only operated by few users of comparable knowledge level, it may not be required to use file security features of the operating system. Here the user has to decide, if a user log-in and user list is required and if test data of different users shall be kept in different directories.

For further information on this issue refer to the Online Help chapter ***Data Security and User Administration***.

3.3 Software Installation



Both the multiple installation of R&S EMC/AMS/WMS32 and the installation of different R&S EMC/AMS/WMS32 versions on one computer is not possible! If you want to separate EMI and EMS measurements completely, you must follow the instructions in the Online Help, chapter **User Administration** → **Different User Profiles**.

If any previous version of R&S EMC/AMS/WMS32 is already installed, then first you have to uninstall that one!

Please also refer to the chapters "Updating R&S EMC/AMS/WMS32" and "Uninstalling R&S EMC/AMS/WMS32".



R&S EMC/AMS/WMS32 V11.0 requires an upgrade license for each main application EMI/EMS/AMS when the existing license is < V10. Thus do not install V11.0 on your test system PC when this license is not available. Regarding the upgrade procedure of the iKey please refer to chapter 10.1.

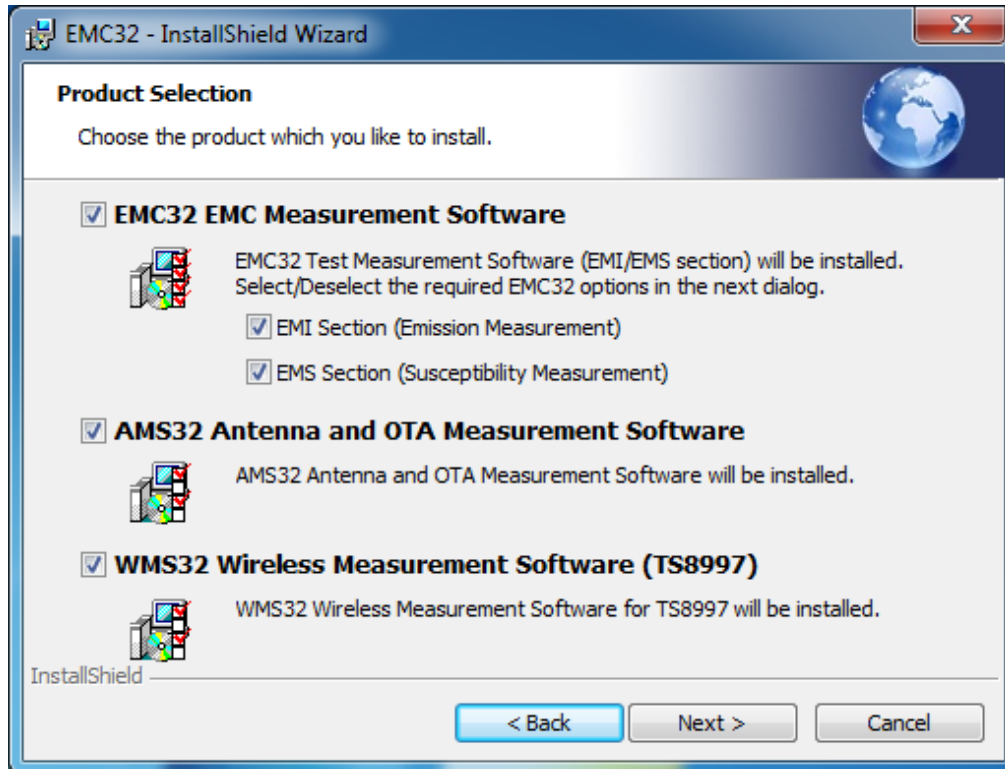
3.3.1 New Installation


All necessary information for the installation and the installation process of R&S EMC/AMS/WMS32 are provided by the **Autostart** program on the R&S EMC/AMS/WMS32 CD Image. Just follow the few easy steps described below and you will have the software installed on your computer, ready to use.

Start of Installation:

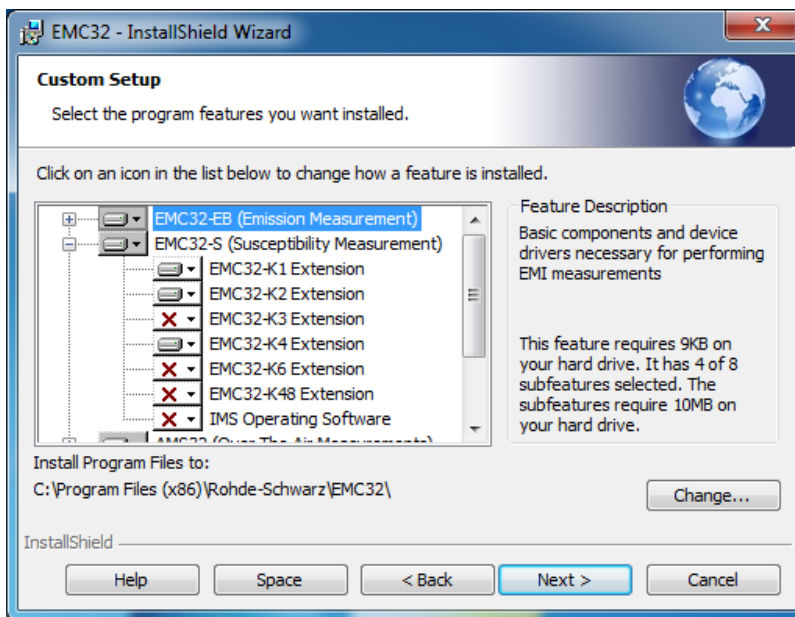
1. Close all running programs.
2. Go to download page <https://www.rohde-schwarz.com/software/emc32/> and download the latest R&S EMC/AMS/WMS32 release version you want to install.
3. Unzip the downloaded ZIP file with the password 'emcupgrade' to a temporary folder.
4. Run the Setup_EM32_AMS32.exe program from the unzipped CD image and follow the instructions on the screen (read the license agreement, enter your name and company name).
5. The installation program prompts you to select the product which you want to install.
 - **R&S EMC32 EMC Measurement Software:**
R&S EMC application with EMI and/or EMS section will be installed

- **R&S AMS32 OTA Measurement Software:**
R&S AMS32 OTA measurement software will be installed.
- **R&S WMS32 Wireless Measurement Software:**
R&S WMS32 Wireless Measurement Software (TS8997) will be installed.

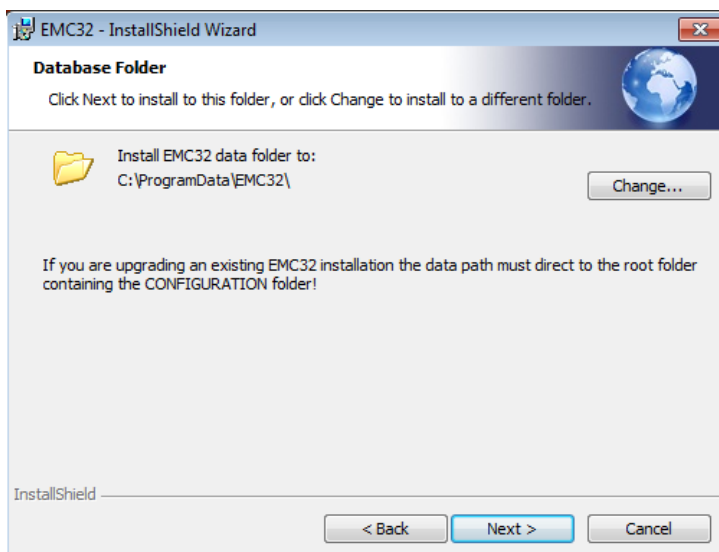


6. Select R&S EMC/AMS/WMS32 Software and click on the **Next>** button. In this step you must select the R&S EMC/AMS/WMS32 main applications and the options you want to install. Click on the disk drive or X symbol () to either select an option for installation or remove an option. If you select a main application you can change the installation path for the executables by clicking on the **Change...** button (refer to **Installation Fundamentals** for further information).

If you are upgrading from a version < V9.x please refer to the 'Product Cross Reference Table' in the chapter **Upgrading R&S EMC/AMS32** for further information about which R&S EMC/AMS/WMS32 options correspond to your product.



7. Click on the **Next>** button and change the path for the installation of the R&S EMC/AMS/WMS32 data (refer to **Installation Fundamentals** for further information). In case of an upgrade, use the path where your R&S EMC/AMS/WMS32 data is located.

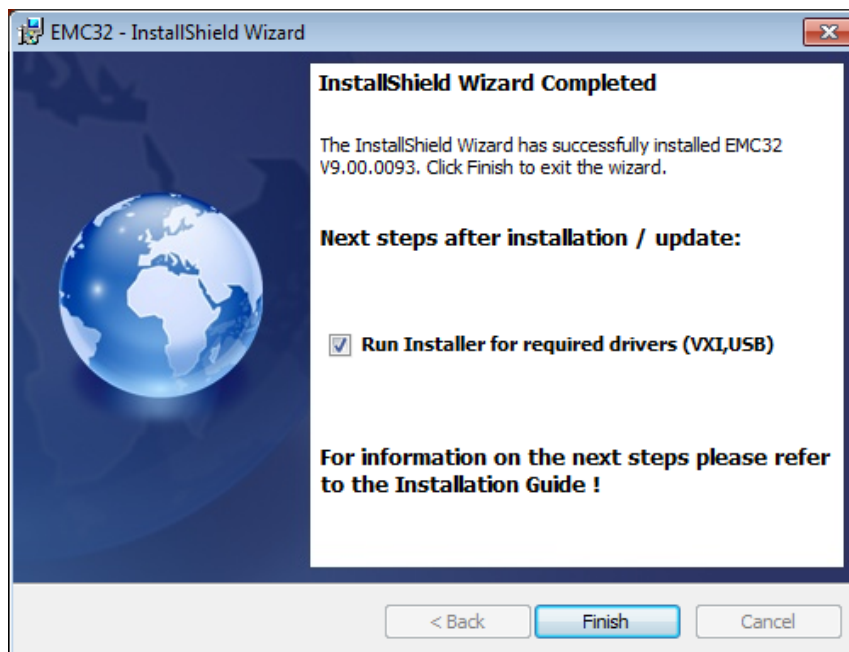


When installing on Microsoft Windows 7 the default data folder path will be set to the system common application data path (for example “C:\ProgramData\EMC32” on Windows 7 / 10).



By default this folder is not shown in the Windows 7/10 file explorer, so changing the path to “C:\EMC32” may be useful. Take also in mind that this path later contains all your configuration and test result data for backup purpose.

8. Click on the **Next>** button and start the installation process.
9. On a successful installation you will receive a confirmation which you can close by clicking on the **Finish** button.
10. After the completion of the R&S EMC/AMS/WMS32 main installation the appropriate device drivers have to be installed (e.g. NI-GPIB, VXI Plug & Play or USB driver). For this purpose the *EMC32 Driver Installer Tool* may be started immediately by ticking the *Run Installer for required drivers (VXI, USB)* option. Refer to the next chapter for further information on this tool.

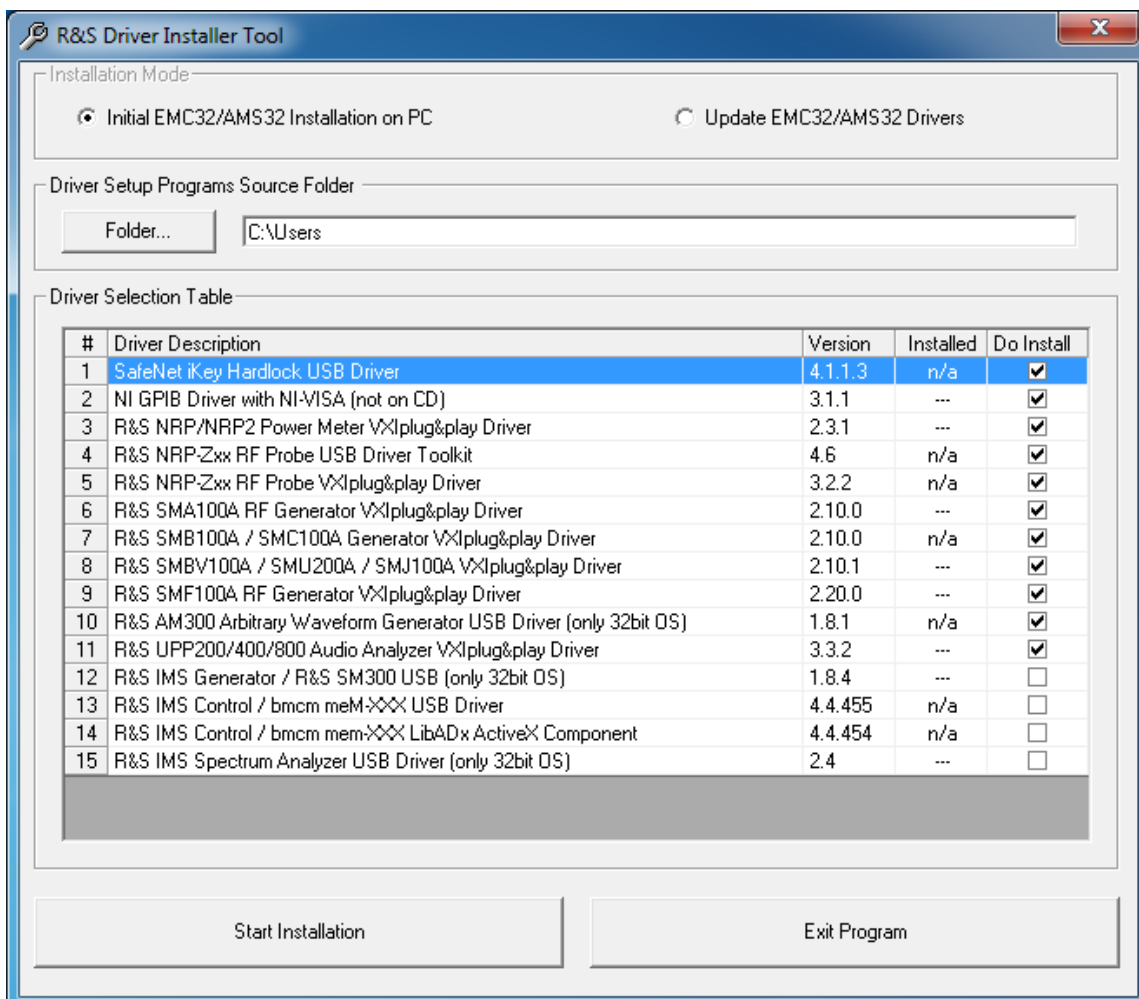


Please note that for each R&S EMC/AMS/WMS32 application or option an iKey must be available. Otherwise the software can only be operated in demo mode, which means that no devices can be addressed and measurements are only performed in a simulation mode. For demonstration purposes you can use this feature of the software

3.3.2 Driver Installer Tool

The *R&S Driver Installer Tool* is a utility program which allows to install all required USB, VXI plug&play and other device drivers in a sequence. The *Driver Installer Tool* may be started either immediately after the R&S EMC/AMS/WMS32 installation or via the entry in the Rohde & Schwarz program group.

The driver installer tool runs the setup programs from the R&S EMC/AMS/WMS32 CD image root folder which may have to be adapted if the CD image location was changed after the initial installation. Before running the installation ticks the device drivers which are required for the devices in your system. For further information on the supported devices by R&S EMC/AMS/WMS32 and the required drivers please refer to the list of supported devices in the R&S EMC/AMS/WMS32 CD Auto Start program on the R&S EMC/AMS/WMS32 CD.



If you update R&S EMC/AMS/WMS32 the R&S Driver Installer Tool will check for installed drivers and thus selects only drivers with older versions installed for updating.



If you add a new device to the R&S EMC/AMS/WMS32 device list which requires a VXI driver you may optionally start the Driver Installer Tool in R&S EMC/AMS/WMS32 from the driver missing warning dialog.

If you run an update of R&S EMC/AMS/WMS32 it may be required to update the drivers as well. Thus you see the new version of the driver delivered with this R&S EMC/AMS/WMS32 release in the appropriate column of the driver installer tool.

Some driver may need a Windows restart after installation is completed. In this case you either should postpone the Windows restart action or you must resume the driver installation after this driver manually.

3.3.3 Network Installation Tips

Typically the installation of the R&S EMC/AMS/WMS32 application software should be done in the Program Files folder of your local hard disk. But it is possible to place the R&S EMC/AMS/WMS32 data folder on a network server. Hereby it should be guaranteed that an appropriate network speed is available. Otherwise performance problems in R&S EMC/AMS/WMS32 may appear.

Hence you should first install R&S EMC/AMS/WMS32 on your local hard disk as described above (administrator rights will be required). After this step you can move the paths of the R&S EMC/AMS/WMS32 folders onto the network server. For more details about this item please refer to the chapter **OPTIONS** → **File Location** in the **R&S EMC/AMS/WMS32 Online Help**.

It is required that you have read / write access on the corresponding network drive.

If you are not sure about any of the options, have your system administrator help you with installing R&S EMC/AMS/WMS32.

3.3.4 R&S EMC/AMS/WMS32 Data Backup

The data backup of the measurement data as well as the system configuration is recommended cyclically. Hereby all selected R&S EMC/AMS/WMS32 files are written into a compressed file in the ZIP format.

R&S EMC/AMS/WMS32 therefore provides a utility function which allows to backup or a restore the complete system configuration and measurement results. The backup / restore dialog is opened via **File** → **Backup/Restore**.

For more details about this item please refer to the chapter **Backup and Restore Data and Configuration** in the **R&S EMC/AMS/WMS32 Online Help**.

⚠ CAUTION

You can archive (or move) either individual files or complete tests out of these directories. These files and tests will no longer be accessible by R&S EMC/AMS/WMS32. Moving of important calibration or configuration files may also prevent other tests from being opened or started. For detailed information on the file structure of R&S EMC/AMS/WMS32 refer to the appropriate section of the R&S EMC/AMS/WMS32 online help.

3.4 iKey Software Protection

R&S EMC/AMS/WMS32 is copy protected by a hardlock **iKey** that contains the license information. Before running R&S EMC/AMS/WMS32 with devices, the iKey driver must be installed and the iKey itself be connected to the PC.

The installation of the iKey software is easily started via the R&S Driver Installer Tool (refer to the previous chapters).

Follow the instructions in the setup program. You may need to restart your computer or connect the iKey to a free USB port of your PC during the installation.

You can check the correct functionality of the iKey as follows:

After restarting the computer a utility program appears in the task list called **iKey Token Utility** with which you can check whether the iKey can be detected by the driver. By double clicking on that icon the program is started and the following dialog appears on the screen. If the serial number of the iKey is displayed here, the iKey has been detected correctly.

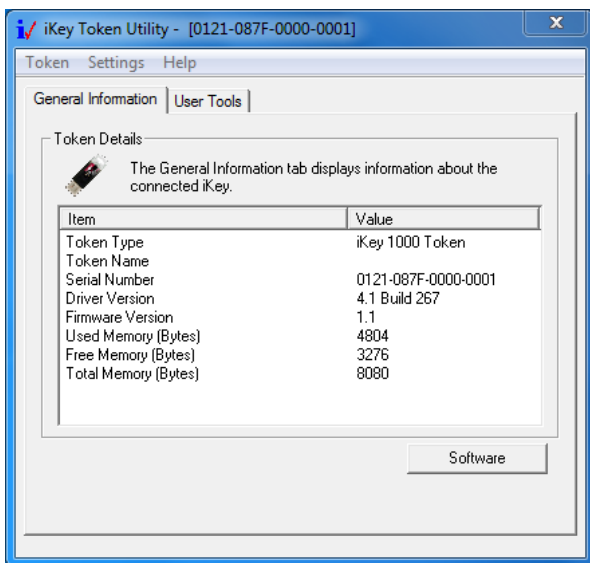


Figure 3-1 iKey Token Utility Program Dialog



Make sure that the USB interface is activated in the BIOS settings of your computer. The standard installation only supports up to 4 iKeys to be connected at once. Use the **EMC32 iKey Merge Tool** (refer to chapter below) to add R&S EMC32-Kxx options to a EMC32-E/-S main license key in order to reduce the number of iKeys required to run R&S EMC/AMS/WMS32. Disable Windows energy saving modes since the communication between a running R&S EMC/AMS/WMS32 will be lost after re-starting the PC.

4 Starting the program

Once the installation of R&S EMC/AMS/WMS32 is finished, an R&S EMC/AMS/WMS32 icon is displayed on your desktop. Simply double-click it to run the program. You may also start the program from the **Start** button on your Windows desktop.

To launch the program using the Start button:

1. Click the **Start** button on your desktop.
2. Select **Programs** → **Rohde & Schwarz** → **EMC32** → **EMC32** or **Programs** → **Rohde & Schwarz** → **AMS32** → **AMS32**.

Selection of the User Interface Language:

The user interface language of the R&S EMC/AMS/WMS32 can be changed in the R&S EMC/AMS/WMS32 via the dialog **Extras** → **Language...** The new language will be activated after a re-start of R&S EMC/AMS/WMS32.

5 R&S EMC32 Configuration

Before running a measurement with R&S EMC32 the software must be adapted to your system, i.e. you must tell the application which measurement devices are available, through which interfaces these devices may be addressed, how the devices are connected with each other and how a test using this devices should be performed.

A **Configuration Wizard** is available in R&S EMC32 which determines the measurement categories and the measurement instruments available in the system through user queries. Using this information the configuration wizard creates a standard configuration for your system. Correction tables and test templates will also be copied into the appropriate directories. After this step R&S EMC32 is ready to run the first **demo measurement**.

Before the first start of a real EUT measurement the appropriate calibration data for the antennas/transducers and the signal paths have to be entered or calibrated (for more information on this subject refers to the chapter “system calibration” in the online help).

To run the Configuration Wizard perform the following steps:

1. Run R&S EMC32 as described in the previous chapter.
2. If the start dialog is activated you will find a symbol there to start the configuration wizard.

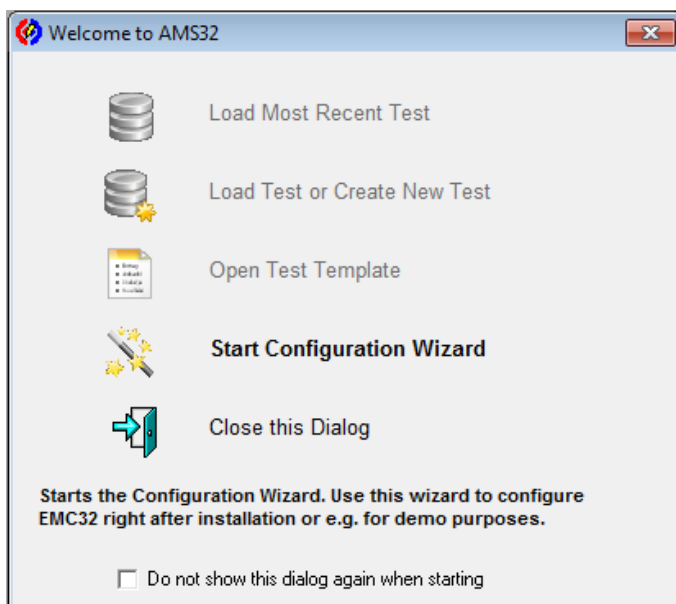


Figure 5-1 Start Dialog of R&S EMC32

3. You may also start the wizard via the menu entry:
Extras → Wizards → Configuration Wizard.
4. The following dialog will appear which contains a tab for EMI and/or EMS, depending on the installed main applications.
5. In the first step, select the measurement category: radiated and/or conducted.
6. In the next step you select the device type which is available in your system for each device class, and set the appropriate interface or interface address.
7. After you have completed all your inputs, you may start the configuration process by clicking the button **Finish**.
- 8.

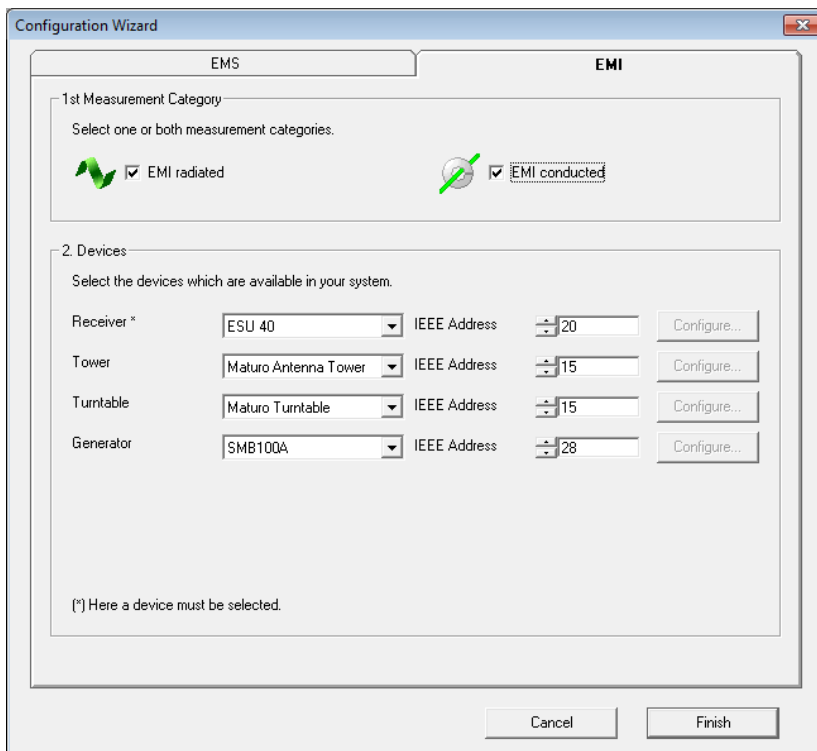


Figure 5-2 Dialog of the Configuration Wizard (EMI and EMS tab index)

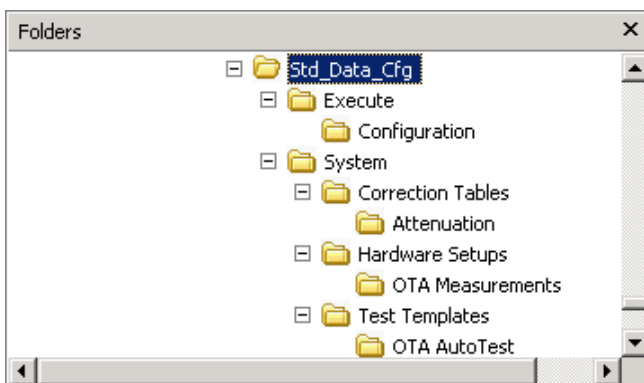


The R&S EMC32 software is now ready for the first start of a demo measurement. Before the first EUT measurement can be performed, a calibration of the signal paths and the input of the antenna and transducer calibration data may be required.

6 R&S AMS32 Configuration

Before running a measurement with R&S AMS32 the software must be adapted to your system, i.e. you must define the available measurement devices, through which interfaces these devices may be addressed, how the devices are connected with each other and how a test using this devices should be performed.

After the first installation of the R&S AMS32 the data base is empty. For a quick Demo installation, the CD contains a **Standard Data Configuration** which have to be copied to the corresponding directory of the actual R&S AMS32 installation:



Please copy all files of the subdirectories Configuration, Attenuation, OTA Measurements and OTA Auto Test to the corresponding directories of your actual installation. When copying the standard data the R&S AMS32 application should be closed. When starting the R&S AMS32 all the standard data are available.

After this step R&S AMS32 is ready to run the first **demo measurement**.

Before the first start of a real EUT measurement the appropriate calibration data for the antennas/transducers and the signal paths have to be entered or calibrated (for more information on this subject refer to the chapter “system calibration” in the online help).



The R&S AMS32 software is now ready for the first start of a demo measurement. Before the first EUT measurement can be performed, a calibration of the signal paths and the input of the antenna and transducer calibration data may be required.

7 R&S WMS32 Configuration

Before running a measurement with R&S WMS32 the software must be adapted to your system, i.e. you must define the available measurement devices, through which interfaces these devices may be addressed, how the devices are connected with each other and how a test using this devices should be performed.

After the first installation of the R&S WMS32 the data base is empty. Refer to the “Quick Guide Installation” for the necessary steps to get your TS8997 running. All Quick Guides, other files and a backup could be found on the system DVD that comes with your TS8997 or on the R&S TS8997 homepage.

<https://www.rohde-schwarz.com/software/ts8997/>

Before the first start of a real DUT measurement the appropriate calibration data for the cables and the signal paths have to be entered or calibrated (for more information on this subject refer to the “Quick Guide Calibration”.



The R&S WMS32 software is now ready for the first start of a demo measurement. Before the first EUT measurement can be performed, a calibration of the signal paths and the cables may be required.

8 Upgrading R&S EMC32 / AMS32

For running R&S EMC32 / AMS32 V11 you need to upgrade first your base license iKey EMC32-EB, EMC32-S or AMS32 (from a version < V11) with the appropriate upgrade options EMC32-K90 (EMI), EMC32-K91 (EMS) or AMS32-K90.

Please contact your sales representative for further information on the upgrade license.

8.1 R&S EMC32 Product Cross Reference Table

The following cross reference table shows what R&S EMC32 / AMS32 V11 application(s) and option(s) you must install to cover the functionality of a previous product version.

<i>R&S EMC/AMS/WMS32 Vx Product</i>	<i>R&S EMC/AMS/WMS32 V11 Product + Options</i>
EMC32-S	EMS32-S EMC32-U9S + EMC32-K91
EMC32-EB	EMC32-EB EMC32-U9E + EMC32-K90
EMC32-E Plus EMC32-E	EMC32-EB EMC32-K10 EMC32-U9E + EMC32-K90
EMC32-A+ EMC32-A	EMC32-EB EMC32-K10 EMC32-S EMC32-K1 EMC32-U9E + EMC32-K90 EMC32-U9S + EMC32-K91 EMC32-K7 (optional)
EMC32-C+ EMC32-C	EMC32-EB EMC32-K10 EMC32-S EMC32-U9E + EMC32-K90 EMC32-U9S + EMC32-K91 EMC32-K7 (optional)
AMS32	AMS32 AMS32-U9 + AMS32-K90

8.2 Migrate R&S EMC/AMS/WMS32 Data Folders

Since R&S EMC/AMS/WMS32 allows to fully separating the executable and data folder, you may want to migrate the data folders to the new R&S EMC/AMS/WMS32 data root folder which has been defined during the setup (refer to the chapter (refer to the chapter



R&S EMC/AMS/WMS32 V11.0 requires an upgrade license for each main application EMI/EMS/AMS when the existing license is < V10. Thus do not install V11.0 on your test system PC when this license is not available. Regarding the upgrade procedure of the iKey please refer to chapter 10.1.

New Installation). In that case apply the following steps:

1. Before you uninstall the previous version do a backup of all data folders using the Backup utility (refer to the chapter R&S EMC/AMS/WMS32 Data Backup for further information).
2. Now upgrade R&S EMC/AMS/WMS32 (refer to the chapter Upgrade Procedure for further information). Upgrade Procedure
3. Run R&S EMC/AMS/WMS32 once to complete the setup and close the application.
4. In the data root folder open the file <data root folder>\Configuration\EMC32.ini with Notepad or any other text editor.
5. Search for the section **[SystemPaths]** where R&S EMC/AMS/WMS32 stores the path information for all data folder (SYSTEM and TESTS). Change the folder path for all lines in this section and save the INI file.
6. Run R&S EMC/AMS/WMS32 and restore all data using the R&S EMC/AMS/WMS32 restore function.



If you use the R&S EMC/AMS/WMS32 user login or a split R&S EMC/AMS/WMS32 configuration with several INI files it will be necessary to do the adaptation of steps 4 + 5 for each INI file.

Example:

```
[SystemPaths]
Tables=C:\Program Files\Rohde-Schwarz\EMC32\System\Tables\
Correction=C:\Program Files\Rohde-Schwarz\EMC32\System\Correction Tables\
LimitLines=C:\Program Files\Rohde-Schwarz\EMC32\System\Limit Lines\
FreqLists=C:\Program Files\Rohde-Schwarz\EMC32\System\Frequency Lists\
Graphic=C:\Program Files\Rohde-Schwarz\EMC32\System\Graphic\
```

```

HWSetups=C:\Program Files\Rohde-Schwarz\EMC32\System\Hardware Setups\
TestTemp=C:\Program Files\Rohde-Schwarz\EMC32\System\Test Templates\
CalibTemp=C:\Program Files\Rohde-Schwarz\EMC32\System\Calibration Setups\
Icons=C:\Program Files\Rohde-Schwarz\EMC32\System\Icons\
Tests=C:\Program Files\Rohde-Schwarz\EMC32\Tests\
EutInfos=C:\Program Files\Rohde-Schwarz\EMC32\System\EUT Information\
ReportSetups=C:\Program Files\Rohde-Schwarz\EMC32\System\Report Setups\
Reports=C:\Program Files\Rohde-Schwarz\EMC32\System\Reports\
RefCalib=C:\Program Files\Rohde-Schwarz\EMC32\System\Reference Calibrations\
DeviceList=C:\Program Files\Rohde-Schwarz\EMC32\Execute\Configuration\
EMC32.DeviceList

```

8.3 Upgrade Procedure

8.3.1 Base License iKey Upgrade

Before starting the upgrade to version 11 check that you have the appropriate upgrade licenses available for your base licenses iKeys as listed in the table below.

<i>R&S EMC/AMS/WMS32 Base License</i>	<i>R&S EMC/AMS/WMS32 Upgrade License</i>
EMC32-S	EMC32-K91
EMC32-EB	EMC32-K90
AMS32	AMS32-K90

Please contact your sales representative for further information on upgrade licenses.

For upgrading the base license iKey please follow the instructions in chapter 10.1. Since the iKey Merge Tool is required for this action you need first to install R&S EMC/AMS/WMS32 V11 as described in the next chapter.

8.3.2 Software Upgrade Procedure

If you upgrade the software, the R&S EMC/AMS/WMS32 system data and test results will not be deleted – the upgrade only replaces the program.



Nevertheless, for the safety of your data we recommend making a backup of all test and calibration data stored in the EMC32 folder. Use the EMC32 backup / restore utility for this purpose (refer to R&S EMC/AMS/WMS32 Data Backup for further information).

For updating R&S EMC/AMS/WMS32, perform the following steps (provided that you have not received other instructions together with the upgrade):

1. Run a backup within R&S EMC/AMS/WMS32 to save your existing data.
2. Any uninstalling and reinstalling of the iKey software is not required.
3. Perform the steps 1 – 10 from the chapter 3.3.1. Use the same installation path as used by the currently installed R&S EMC/AMS/WMS32. For the selection of the main applications and options to install refer to chapter 8.1
4. Do **not** run the configuration wizard after a successful upgrade.
5. Restore any device driver configuration files if you have changed the original files delivered with the R&S EMC/AMS/WMS32 setup program.

9 Uninstalling R&S EMC/AMS/WMS32


To uninstall R&S EMC/AMS/WMS32 perform the following steps:

1. From the Start menu, select Settings → Control Panel.
2. Double-click on Add/Remove Programs (Software).
3. Click the Install/Uninstall tab.
4. From the list of programs that you can remove, select **Rohde & Schwarz EMC32**.
5. Click Add/Remove.
6. In the opened Windows Installer Dialog select **Remove** and confirm that you want to remove the R&S EMC/AMS/WMS32 application (follow the instructions when it asks you to insert the R&S EMC/AMS/WMS32 installation CD image, or press the Cancel button).

The uninstall program removes all program files, folders and registry entries which have been installed during the setup process.

7. When the files have been removed, the uninstall program indicates that the process is complete. Click on the **OK** button.
8. Delete the Rohde-Schwarz folder in the Windows Program Files folder using the Windows File Explorer.

To uninstall iKey software perform the following steps:

9. Exit first the program **iKey Token Utility** if this is active in the task bar. 
10. From the Start menu, select Settings → Control Panel.
11. Double-click on Add/Remove Programs (Software).
12. Click the Install/Uninstall tab.
13. Remove the iKey from the USB port.
14. From the list of programs that you can remove, select **Safenet iKey Components**. Click **Add/Remove**.
15. From the list of programs that you can remove, select **Safenet iKey Driver**. Click **Add/Remove**.

10 Using the iKey Merge Tool

10.1 Upgrading the Base License to V11

For upgrading your base license to version 11 you need the base license iKey (e.g. EMC32-EB), the upgrade license document with the license code (e.g. EMC32-K90) and the R&S EMC/AMS/WMS32 software V11 installed on your PC.

- A) If your base license is not yet upgraded to V9/10 please do this step first and follow chapter 10.2.
- B) If your base license is already upgraded to V9/10 then you can immediately add the SW maintenance options EMC32-K90/91 or AMS32-K90 following the procedure in chapter 10.4.

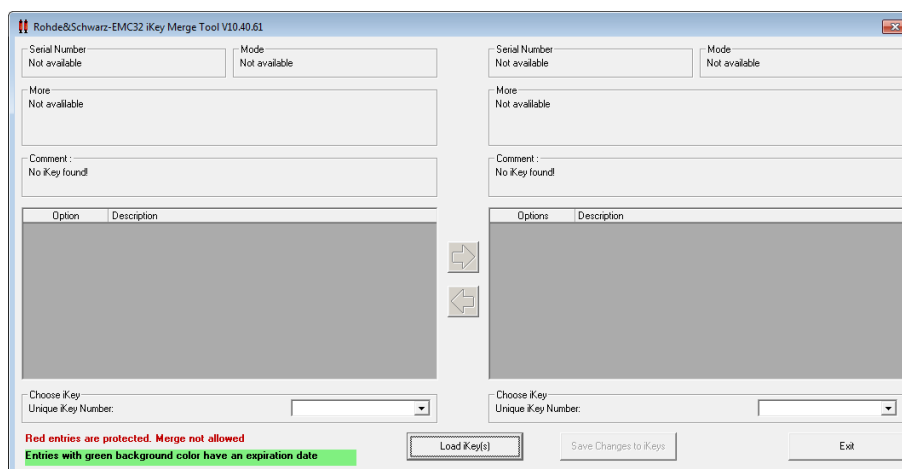


Do not remove an iKey or shutdown your PC when the iKey Merge Tool is running since the contents of the iKeys may be lost. Shut down any running programs.

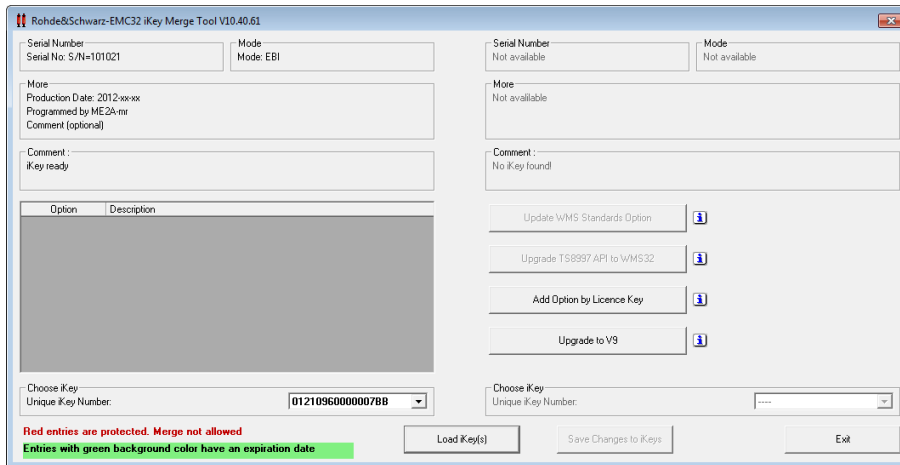
10.2 Upgrading the Base License to V9/10

For upgrading your base license to version 11 you need first upgrade to version 9/10 the base license iKey (e.g. EMC32-EB), the upgrade license document with the license code (e.g. EMC32-U9E) and the R&S EMC/AMS/WMS32 software V11 installed on your PC.

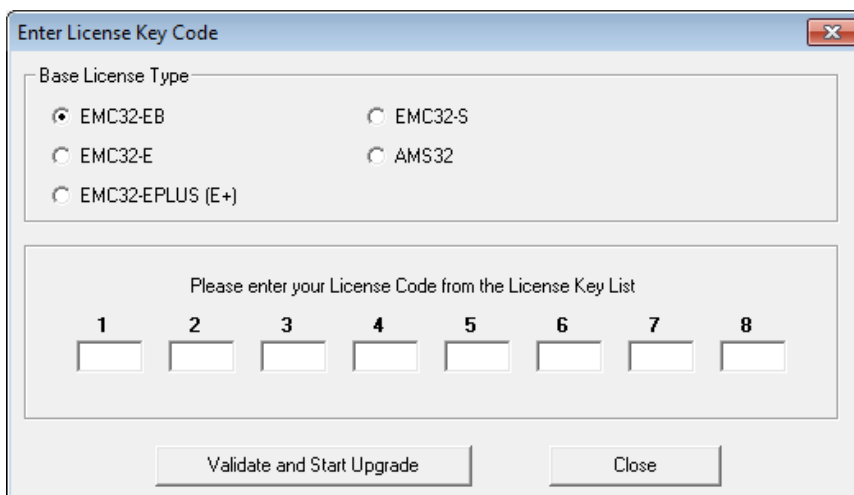
1. Start the iKey Merge Tool from the R&S EMC32 program group, connect only your base license iKey and press the "Load iKeys" button to read data of your connected iKey.



- If the currently connected iKey supports an upgrade to V9/10 the “Upgrade to V9” button will be shown on the right side.

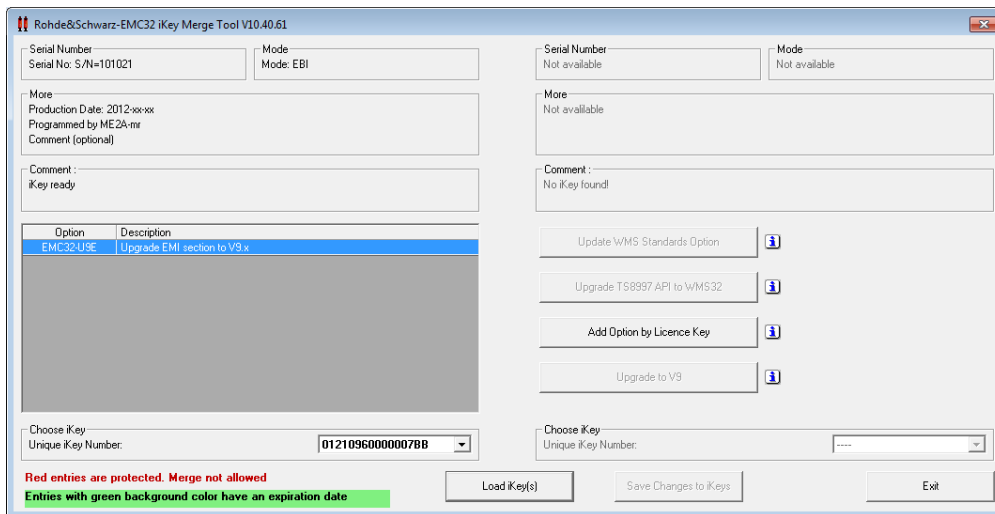


- The upgrade will be started by pressing the “Upgrade to V9” button. A new window opens where the license code from the license upgrade document EMC32-U9 has to be entered. Take care to verify the selected Base License Type.



- While reprogramming the iKey the actual status is shown in the information window. When the programming is finished successfully, the EMC32-U9 option is displayed in the left window and the tool can be closed with the “Exit” button.

Merging an Option iKey to a Base License iKey



- Please keep your upgrade license document as reference.

10.3 Merging an Option iKey to a Base License iKey

To reduce the number of required iKeys for running R&S EMC32 the iKey Merge Tool has been installed with R&S EMC32. This tool allows transferring the contents of an R&S EMC32 option iKey EMC32-Kxx to a main license iKey EMC32-EB or EMC32-S or vice versa.



Combining an EMC32-EB, EMC32-S or AMS32 iKey is not supported by the iKey Merge Tool!

For merging an R&S EMC32-Kxx option iKey to an EMC32-EB or –S main license iKey perform the following steps:



Do not remove an iKey or shutdown your PC when the iKey Merge Tool is running since the contents of the iKeys may be lost. Shut down any running programs.

- Connect both iKeys to your PC (the source and the target iKey).
- Click the **Start** button on your desktop.
- Select Programs → Rohde & Schwarz → EMC32 → Tools → iKey Merge Tool. A dialog will appear.

Merging an Option License Keycode to a Base License iKey

- In the iKey Merge Tool click on the **Load iKeys** button to read the information stored on both iKeys.

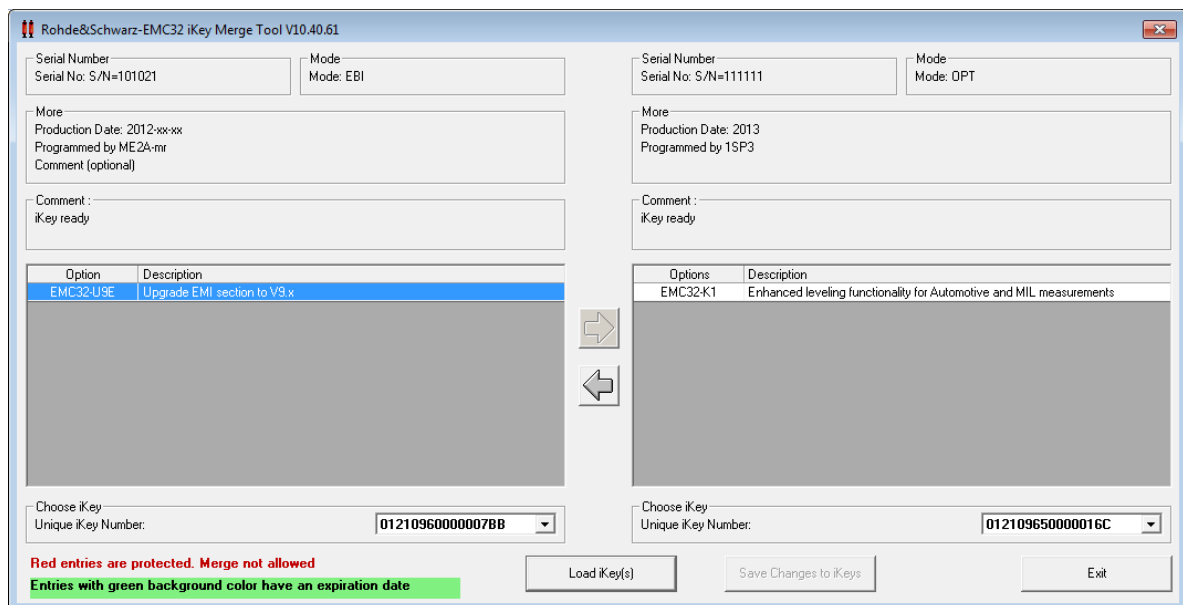


Figure 10-1 Rohde & Schwarz iKey Merge Tool Program Dialog

- Select the option you want to transfer in the table of the source iKey and click on the arrow buttons to move the option to the table of the target iKey.
- Click on the button to **Save Changes to iKeys** to start the transfer process.
- Do not remove any iKey as long as the transfer process is running.
- Close the program after the transfer is completed.
- Store the source R&S EMC32 option iKey as a confirmation of your option license.

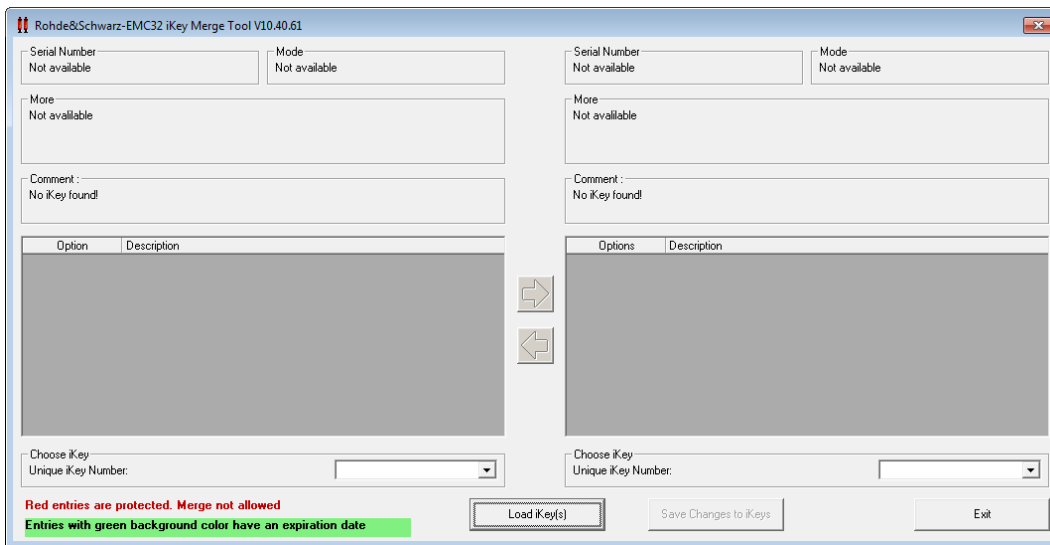
10.4 Merging an Option License Keycode to a Base License iKey

This chapter gives a step by step guidance how to install an R&S EMC32 / R&S AMS32 / R&S WMS32 option license keycode from a given document (e.g. received by email) to a base license iKey. This is also applicable for installing EMC32-K90/91 or AMS32-K90 software maintenance options.

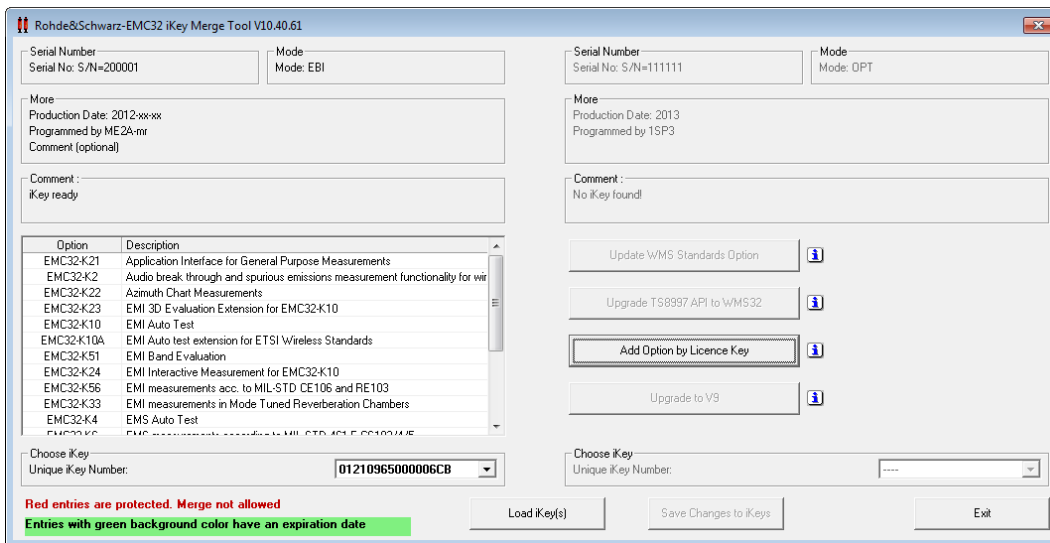
Upgrade procedure:

- Start the iKey Merge Tool from the R&S EMC32 program group


Merging an Option License Keycode to a Base License iKey



2. Connect only your base license iKey.
3. Press the “Load iKeys” button to read data of your connected iKey.



The button “Add Option by License Key” is enabled, if the connected iKey contains a base license.

Hint: Move the mouse over the  icons to see, which prerequisites are necessary for the corresponding buttons.

4. Start the upgrade by pressing the “Add Option by License Key” button. A new window opens.
5. Enter the **license code from this License Key document**.

6. If the License Key document provides an expiration date, check the checkbox '**An expiration date is specified...**' and click the button '**Select expiration date given...**' to select the date.

If the entered license key is valid, the corresponding R&S EMC32 / R&S AMS32 / R&S WMS32 option is added to the list.

7. Click the button "**Save changes to iKeys**" to save the changes.

While reprogramming the iKey, the current state is shown in the information window. When the programming is finished successfully, the new option is displayed in the left window.

8. Close the tool with the "**Exit**" button.

10.5 Upgrading R&S TS8997 API to R&S WMS32

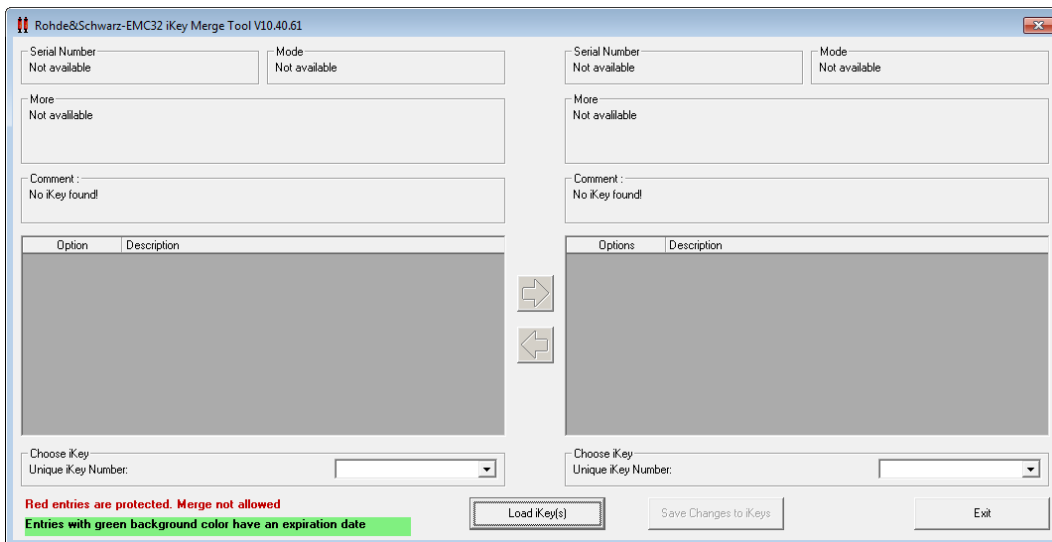
This chapter gives a step by step guidance how to upgrade licenses for the R&S TS8997 application programming interface (API) to the new R&S WMS32 measurement licenses.

The following requirements must be fulfilled.

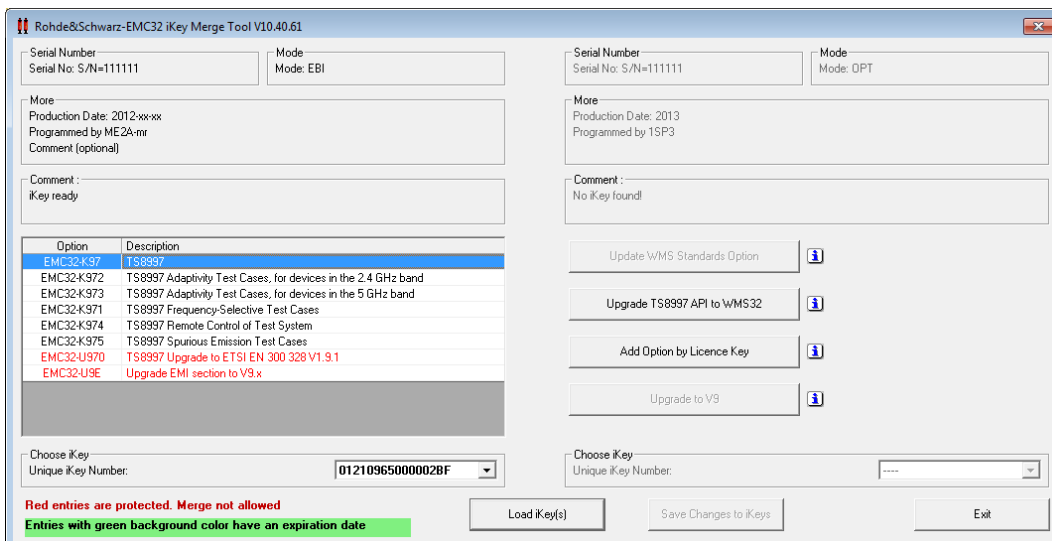
- For standard ETSI EN 300 328:
 - R&S EMC32 Base License -EB is available and
 - Options EMC32-U970+EMC32-K97 or options SWS-300328+EMC32-K97 are available on the iKey
- For standard ETSI EN 301 893:
 - R&S EMC32 Base License -EB is available and
 - Options EMC32-U976+EMC32-K97 or options SWS-301893+EMC32-K97 are available on the iKey

Upgrade procedure:


1. Start the iKey Merge Tool from the R&S EMC32 program group.



2. Connect only your base license iKey.
3. Press the “Load iKeys” button to read data of your connected iKey.



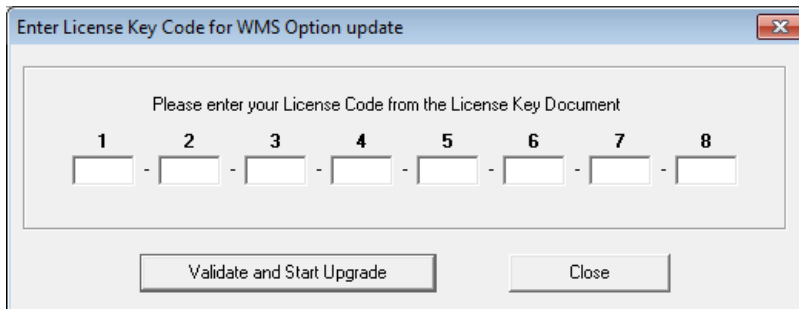
The button “**Upgrade TS8997 API to WMS32**” is enabled, if the preconditions described above are fulfilled.

Hint: Move the mouse over the  icons to see, which prerequisites are necessary for the corresponding buttons.

4. Start the upgrade by pressing the “**Upgrade TS8997 API to WMS32**” button.

A new window opens.

5. Enter the **license code** from this **License Key** document.



If the entered license key is valid, the corresponding API to R&S WMS32 options are added to the list.

6. Click the button **“Save changes to iKeys”** to save the changes.

While reprogramming the iKey, the current state is shown in the information window. When the programming is finished successfully, the option **U9** is displayed in the left window.

7. Close the tool with the **“Exit”** button.

10.6 Updating an R&S WMS32 Standards Option

This chapter gives a step by step guidance how to update a matching R&S WMS32 Standards Option license (e.g. FCC §15.407 from V2015 to V2016)

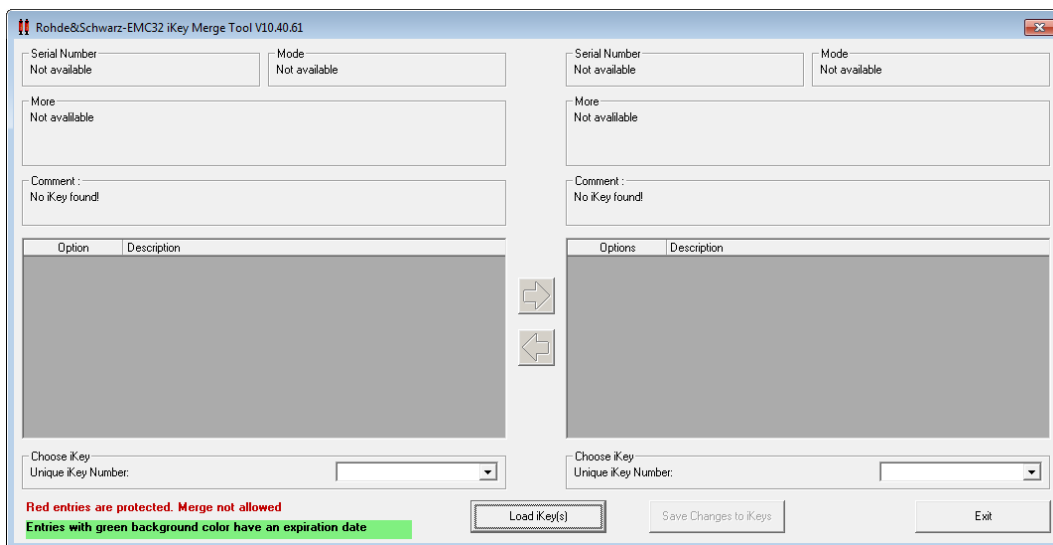
The following requirements must be fulfilled.

- An R&S WMS32 Base License (Mode 'WMS') is available
- At least one option R&S WMS32-K** is on the iKey

Upgrade procedure:

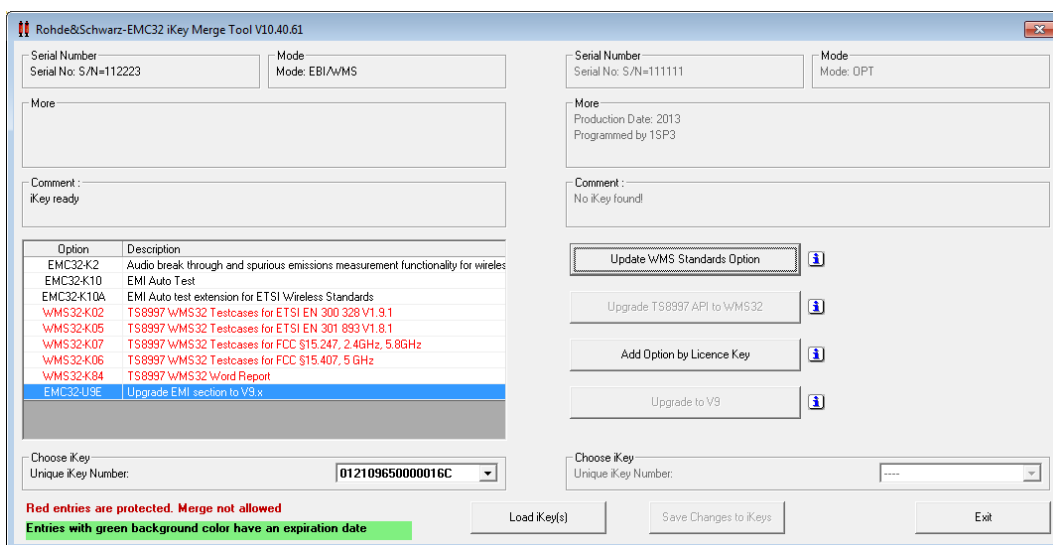
1. Start the iKey Merge Tool from the R&S EMC32 program group.

Updating an R&S WMS32 Standards Option




2. Connect only your R&S WMS32 license iKey, which contains the options described above.

3. Press the “Load iKeys” button to read data of your connected iKey.



The button “**Upgrade WMS Standards Option**” is enabled, if the preconditions described above are fulfilled.

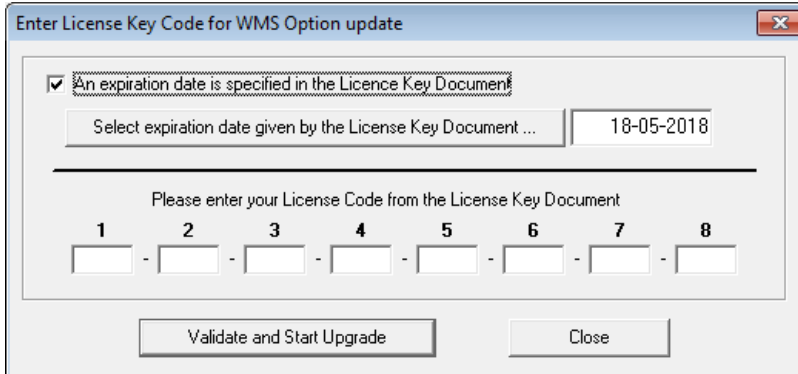
Hint: Move the mouse over the  icons to see, which prerequisites are necessary for the corresponding buttons.

4. Start the upgrade by pressing the “**Upgrade WMS Standards Option**” button.

A new window opens.

5. Enter the **license code** from this **License Key** document.

1. If the License Key document provides an expiration date, check the checkbox '**An expiration date is specified...**' and click the button '**Select expiration date given...**' to select the date.



If the entered license key is valid, the corresponding R&S WMS32 update option is added to the list.

6. Click the button "**Save changes to iKeys**" to save the changes.

While reprogramming the iKey, the current state is shown in the information window. When the programming is finished successfully, the option **U9** is displayed in the left window.

7. Close the tool with the "**Exit**" button.

11 Troubleshooting

Occasionally, users encounter problems during installation. Here are some troubleshooting tips you can use that may resolve the problem. If you have any further questions, read the Readme file or contact the Rohde & Schwarz Customer Support.

- A "Hibernating" or Standby" mode of Windows may not be supported by the drivers for the IEEE interface or for the iKey. Therefore to avoid any possible device driver access errors, such a mode should be deactivated in the Power Control dialog of the Windows control panel.
- Before installation, shut down any running programs, including virus-checking programs. Usually, virus-checking software has little or no impact on the installation process; however, if you are running such software and encounter difficulties with your R&S EMC/AMS/WMS32 installation, turning off the virus-checking programs and then re-installing often solves the problem.
- If you receive a message during the installation process that a DLL of Windows is used and therefore cannot be upgraded, quit this message with OK and the installation process will be continued (this typically indicates that the latest service pack is not installed). Usually this has no further influence on a successful installation of R&S EMC/AMS/WMS32.
- Delete any files in your temporary folder. (This folder is determined by the TEMP environment variable. Usually it is located in **C:\TEMP** or **C:\WINDOWS\TEMP**.)
- Run a disk scanning utility. Hard drive errors can cause problems with the installation process. (Some Microsoft Windows systems contain a utility named ScanDisk you can use. If you have questions about disk scanning utilities, see your system administrator.)
- Copy the R&S EMC/AMS/WMS32 setup CD to your hard drive, then run SETUP.EXE from your hard drive.
- Check to make sure there was enough free disk space on your hard drive. (The setup process should notify you if there is not enough free disk space prior to installation.)
- Always use in the Regional Options tab-index for Numbers and Currency the Decimal symbol "." instead of ",". Do not use the digit grouping symbol "," (use space character instead).
- Virus scan programs with an active real-time scanning process may decrease the performance of R&S EMC/AMS/WMS32. If possible deactivate this process or exclude R&S EMC/AMS/WMS32 files from this process.
- During the installation R&S EMC/AMS/WMS32 requires full access to the Windows registry key: "HKEY_LOCAL_MACHINE\Software\Rohde & Schwarz".

12 Index

Administration	8	Network.....	14
AMS32-K90.....	27	Software.....	9
Configuration		Language.....	17
Standard Data	20	Newsletter Service	6
Wizard	18	Online Help	17
Data		R&S AMS32 Configuration.....	20
Backup	14	R&S EMC32 Configuration	18
Security	8	R&S EMC32 Cross Reference Table	22
Data Folder	11	R&S WMS32 Configuration.....	21
EMC32-K90	27	Starting the program	17
EMC32-K91	27	Support	5
iKey.....	15	System Requirements.....	7
Merge Tool.....	27	Troubleshooting	37
Installation		Uninstalling	26
Drivers.....	13	Update	22
Folder.....	7	Upgrade.....	22
Fundamentals.....	7	Procedure	24
Hardware.....	15	Wizard	18