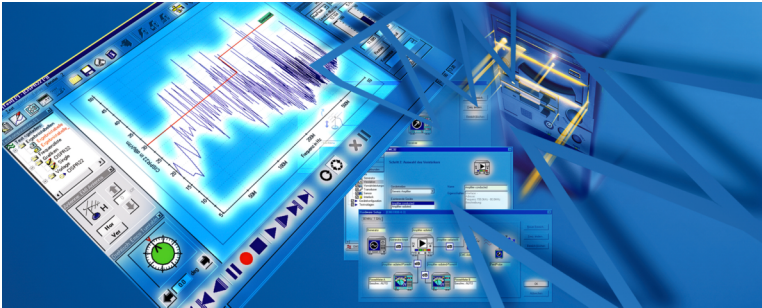




**ROHDE & SCHWARZ**

Test and Measurement  
Division



## *Installation Guide*

# EMC32

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# Installing EMC32

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## INTRODUCTION

This document will guide you through the installation process of EMC32. You will find the necessary instructions for installation, update, 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:

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Telephone: +49-180-512 4242

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## Registration of your License

Before you start using EMC32 you should register your license at Rohde & Schwarz. You will benefit from the registration by receiving support from our customer support and information about news and updates of EMC32.

EMC32 may be registered by using the help menu item ? → **EMC32 on the Web** → **Register Now** . To register in this manner, your computer must be connected to the Internet.

Alternatively the registration form can be opened via the Autostart program of the EMC32-CD clicking on the menu button **Registration**.

You will find your **Product ID** in the **Info to EMC32** dialog which you can open via the help menu ? → **About**. For the correct display of your Product ID you must start EMC32 with all iKeys connected.

## Installing EMC32

### System Requirements

Before installing EMC32 you should check that your computer fulfills the following minimum system requirements:

- **Operating System**
  - Windows Vista
  - Windows XP with SP2 (recommended)
  - or Windows 2000 with SP4
- **Administrator Access Privileges** (during installation)
- **CPU:** Pentium 3GHz or higher (or compatible)
- **RAM:** 256 MB (Windows 2000) or 512 MB (Windows XP) or 1024 MB (Windows Vista)
- **Hard Disk Space:** at least 200 MB free
- **Screen Resolution:** at least 1024 x 768 Pixels, 65536 colors (higher resolution like 1280 x 1024 Pixels recommended)
- **USB interface:** For using USB measurement instruments Windows XP SP2 or Windows Vista is required.
- **IEEE bus interface:** National Instruments with IEEE488 driver Recommended version is V2.50 (not necessary for demo mode) Compatible cards from other manufactures are not supported !

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

## Installation Fundamentals

### Installation Folder

The following considerations shall give the administrator of the EMC32 computer some hints for the selection of the installation location.

The folder structure of EMC32 can be split into two sections:

- Executables and device drivers  
(*require only read access during EMC32 runtime*)
- Data files like configuration and calibration files, test templates and test results  
(*require full file access during EMC32 runtime*)

Due to security reasons the standard EMC32 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 EMC32 executables and device drivers will be installed by default.

For solving this issue the setup program allows to define another location for the EMC32 data folder (for example "C:\ProgramData\EMC32" or "D:\EMC32", for installations on Windows Vista the data folder is set to the common application data folder by default). For all EMC32 operators the computer administrator must set full read and write access to this folder, to all its subfolders and to all EMC32 shortcuts.

### 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 EMC32 are not designed to ensure data security and can therefore only be used to prevent 'Standard Users' from modifying essential settings inside the EMC32 (for example the device configuration).

In case EMC32 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**.

## Software Installation



### **Note:**

Both the multiple installation of EMC32 and the installation of different EMC32 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 EMC32 is already installed, then first you have to uninstall that one!

Please also refer to the chapters "Updating EMC32" and "Uninstalling EMC32".

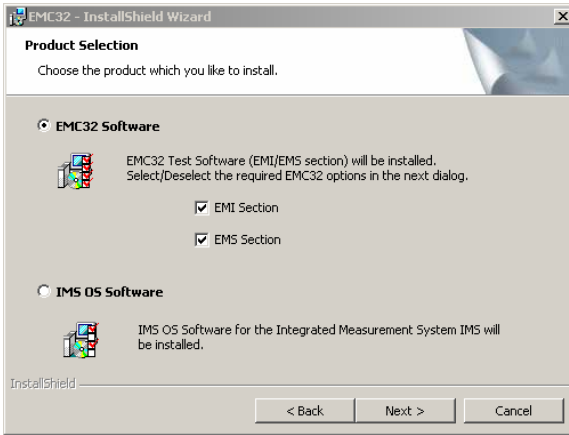
## EMC32 Installation

All necessary information for the installation and the installation process of EMC32 are provided by the **Autostart** program on the EMC32 CD-ROM. Just follow the few easy steps described below and you will have the software installed on your computer, ready to use.


### **Start of the Installation:**

1. Close all running programs.
2. Insert the **EMC32-CD** into your CD-ROM drive. If Autorun is enabled on your system, the installation starts automatically and you can skip steps 3 and 4.
3. From the **Start** menu, select **Run**.
4. Type **D:\HTMLVIEW.EXE** (substitute the correct letter of your CD-ROM drive for **D:**).
5. Click on the **Install EMC32 Software** button and follow the instructions on the screen (read the license agreement, enter your name and company name).
6. The installation program prompts you to select the product which you want to install.
  - **EMC32:** EMC32 EMC test software with EMI and/or EMS section will be installed
  - **IMS OS Software:** IMS operating software will be installed to operate the R&S IMS Integrated Measurement System.

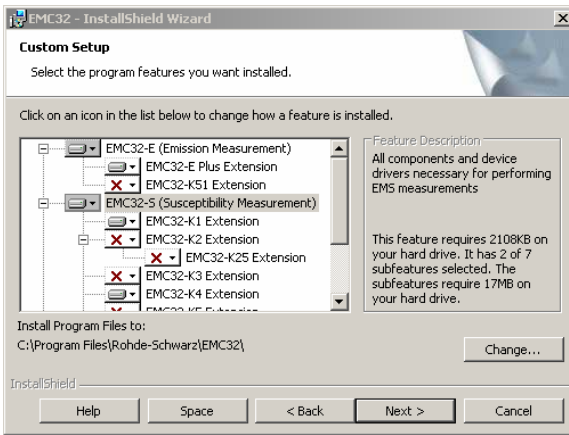




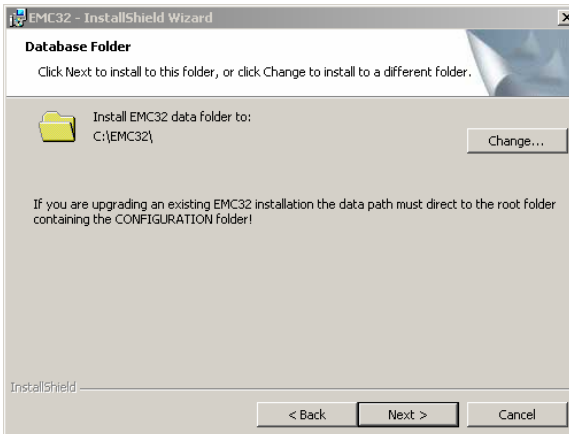
If you are updating from V6.10.20, this dialog will not appear since the V6.10.20 setup program has stored your settings in the registry. These settings will appear in the next step as default selection.

7. Select EMC32 Software and click on the **Next>** button. In this step you must select the EMC32 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 < V6.x please refer to the 'Product Cross Reference Table' in the chapter **Upgrading EMC32** for further information about which EMC32 options correspond to your product.



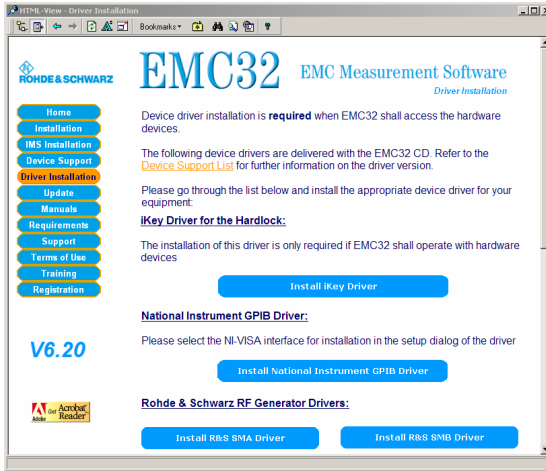
8. Click on the **Next>** button and change the path for the installation of the EMC32 data (refer to **Installation Fundamentals** for further information). In case of an update, use the path where your EMC32 data is located.



When installing on Microsoft Windows Vista the default data folder path will be set to the system common application data path (for example "C:\ProgramData\EMC32").

9. Click on the **Next>** button and start the installation process.
10. On a successful installation you will receive a confirmation which you can close by clicking on the **Finish** button.

11. Alternatively the installation process may be started directly via the command **D:\SETUP.EXE** (substitute the correct letter of your CD-ROM drive for **D:**).
12. After the completion of the EMC32 main installation the appropriate device drivers have to be installed (e.g. NI-GPIB, VXI Plug & Play or USB driver). For this purpose an elaborate description is available on the page “Device Installation” in the EMC32 Auto start program.



### **Note:**

EMC32 uses the installation service **Windows Installer 3.1** from Microsoft. It is already available on Windows 2000/XP/Vista with the newest service pack installed. If the Windows Installer is not already installed, it will be installed automatically before EMC32 installation is started. In this case the setup program will perform a re-start of the computer and will resume the installation process afterwards.

Please note that for each EMC32 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.

## Network Installation Tips

Typically the installation of the EMC32 application software should be done in the Program Files folder of your local hard disk. But it is possible to place the EMC32 data folder on a network server. Hereby it should be guaranteed that an appropriate network speed is available. Otherwise performance problems in EMC32 may appear.

Hence you should first install EMC32 on your local hard disk as described above (administrator rights will be required). After this step you can move the paths of the EMC32 folders onto the network server. For more details about this item please refer to the chapter **OPTIONS** → **File Location** in the **EMC32 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 EMC32.

## EMC32 Data Backup

The data backup of the measurement data as well as the system configuration is recommended cyclically. Hereby all selected EMC32 files are written into a compressed file in the ZIP format.

EMC32 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 **EMC32 Online Help**.



### **Attention:**

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 EMC32. 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 EMC32 refer to the appropriate section of the EMC32 online help.

## iKey Software Protection

EMC32 is copy protected by a hardware key **iKey** that contains the license information. Before running EMC32 with devices, the iKey driver must be installed and the iKey itself be connected to the PC.

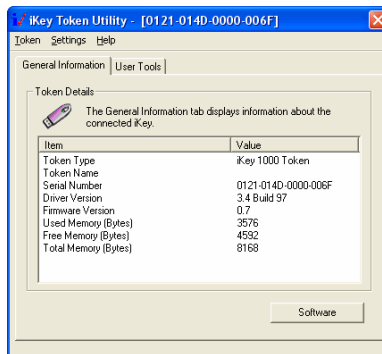
The installation of the iKey software is started via the button "Install iKey Driver" from the installation page of the Autostart program.

Alternatively you may run the setup program **IKEYALL.EXE** which is located on the EMC32 CD in the folder "**!\_Key**".

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.



*iKey Token Utility Program Dialog*

### **Note:**



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 EMC32-Kxx options to a EMC32-E/-S main license key in order to reduce the number of iKeys required to run EMC32.

## Starting the program

Once the installation of EMC32 is finished, an EMC32 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**.

### Selection of the User Interface Language:

The user interface language of the EMC32 can be changed in the EMC32 via the dialog **Extras** → **Language...** The new language will be activated after a re-start of EMC32.

## EMC32 Configuration

Before running a measurement with 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 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 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).**

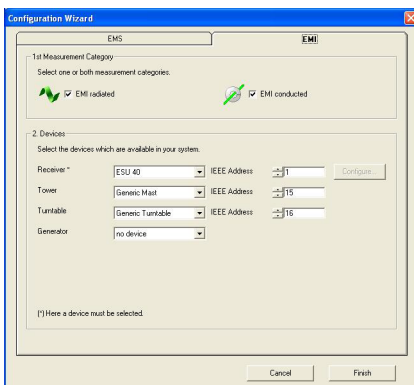
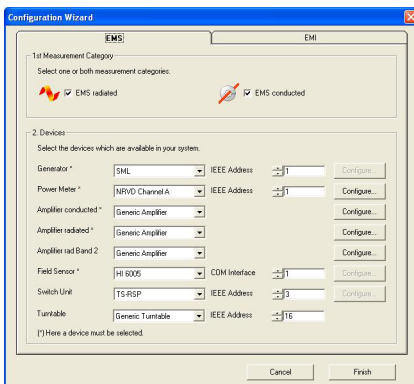
To run the Configuration Wizard perform the following steps:

1. Run 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.



*Start Dialog of 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**.



Dialog of the Configuration Wizard (EMI and EMS tab index)



**Tip:**

The 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.



## Upgrading EMC32

### Product Cross Reference Table

The following cross reference table shows what EMC32 V6 application(s) and option(s) you must install to cover the functionality of a previous product version.

<b>EMC32 V5.x Product</b>	<b>EMC32 V6.x Product + Options</b>
EMC32-S	EMC32-S EMC32-U6
EMC32-C	EMC32-E EMC32-S EMC32-U6 EMC32-K7 (optional)
EMC32-A	EMC32-E EMC32-S EMC32-K1 EMC32-U6 EMC32-K7 (optional)
EMC32-A+	EMC32-E EMC32-E Plus Extension EMC32-S EMC32-K1 EMC32-U6 EMC32-K7 (optional)
EMC32-W+	EMC32-E EMC32-E Plus Extension EMC32-S EMC32-K2 EMC32-U6 EMC32-K7 (optional)
EMC32-E	EMC32-E
EMC32-E Plus	EMC32-E EMC32-E Plus Extension

Any upgrades for **EMC32-S** (susceptibility section) from software versions older than **V6.0** requires an upgrade package **EMC32-U6** which you can order contacting your R&S sales representative.

## Migrate EMC32 Data Folders

Since EMC32 version 6.10 now allows to fully separate the executable and data folder, you may want to migrate the data folders to the new EMC32 data root folder which has been defined during the setup (refer to the chapter EMC32 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 **EMC32 Data Backup** for further information).
2. Now update EMC32 (refer to the chapter **Update Procedure** for further information).Update Procedure
3. Run EMC32 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 EMC32 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 EMC32 and restore all data using the EMC32 restore function.

**Note:**

**If you use the EMC32 user login or a split EMC32 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
```

## Update Procedure

If you update the software, the EMC32 system data and test results will not be deleted – the update only replaces the program.

**Note:**

**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 *EMC32 Data Backup* for further information).**

**For updating EMC32, perform the following steps (provided that you have not received other instructions together with the update):**

1. Run a backup within EMC32 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 EMC32 Installation. Use the same installation path as used by the currently installed EMC32. For the selection of the main applications and options to install refer to Product Cross Reference Table above.
4. Do **not** run the configuration wizard after a successful update.
5. Restore any device driver configuration files if you have changed the original files delivered with the EMC32 setup program.

## Uninstalling EMC32


To uninstall EMC32 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 EMC32 application (follow the instructions when it asks you to insert the EMC32 installation CD-ROM, 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:

1. Exit first the program **iKey Token Utility** if this is active in the task bar.  

2. From the **Start** menu, select **Settings → Control Panel**.
3. Double-click on **Add/Remove Programs (Software)**.
4. Click the **Install/Uninstall** tab.
5. Remove the iKey from the USB port.
6. From the list of programs that you can remove, select **Rainbow iKey Components**. Click **Add/Remove**.
7. From the list of programs that you can remove, select **Rainbow iKey Driver**. Click **Add/Remove**.

## Using the iKey Merge Tool

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



**Note:**

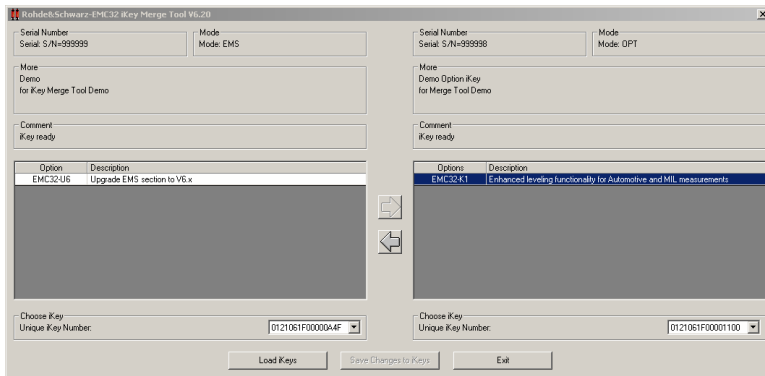
**Combining an EMC32-E and an EMC32-S iKey is not supported by the iKey Merge Tool !**

**For merging an EMC32-Kxx option iKey to an EMC32-E or –S main license iKey perform the following steps:**

**Note:**

**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.**

1. Connect both iKeys to your PC (the source and the target iKey).
2. Click the **Start** button on your desktop.
3. Select **Programs → Rohde & Schwarz → EMC32 → Tools → iKey Merge Tool**. A dialog will appear.
4. In the iKey Merge Tool click on the **Load iKeys** button to read the information stored on both iKeys.



*Rohde & Schwarz iKey Merge Tool Program Dialog*

5. 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.

6. Click on the button to **Save Changes to iKeys** to start the transfer process.
7. Do not remove any iKey as long as the transfer process is running.
8. Close the program after the transfer is completed.
9. Store the source EMC32 option iKey as a confirmation of your option license.

## 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.

- 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 EMC32 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 updated, 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 EMC32.
- 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 EMC32 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).
- A "Hibernating" or Standby" mode of Windows may not be supported by the drivers for the IEEE interface or for the I-Key. 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.
- Virus scan programs with an active real-time scanning process may decrease the performance of EMC32. If possible deactivate this process or exclude EMC32 files from this process.

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