



ROHDE&SCHWARZ

Test and Measurement Division

R&S TSMx IEEE1394 FireWire Interface

General Information

and

Migration from *Old* to *New* Driver

Manual Version 1.0

Contents

Contents	1
1. Introduction	1
2. Driver Description	1
2.1 <i>Old</i> FireWire Driver	1
2.2 <i>New</i> FireWire Driver	4
2.3 Package Overview	9
3. Migration Old to New Driver	1
3.1 Firmware Update TSMx	1
3.2 Installing the <i>New</i> Driver	2
3.3 Return to the <i>Old</i> Driver	2

1. Introduction

The R&S TSMU, TSML-x and TSMQ are connected to the controller by the IEEE1394 FireWire interface. Due to measurement requirements, the standard Microsoft FireWire interface has to be slightly modified.

In the beginning, the original Microsoft driver file **ohci1394.sys** was replaced by a R&S file with the same name. Two major disadvantages were:

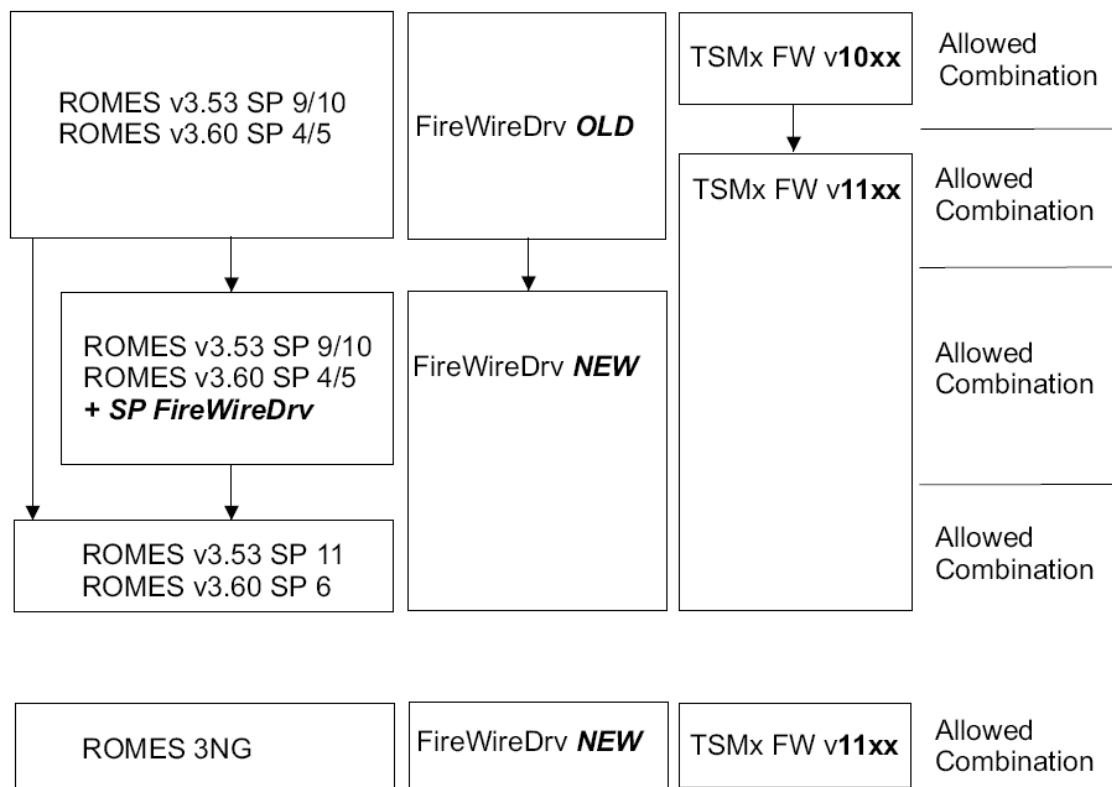
- The R&S driver file was not digitally signed, in contrary to the original MS files. And so Windows will always prefer its own file – if not fooled by some smart tricks, performed by the R&S installer tool *R&S_OHCI1394_InstallationTool.exe*. However, on some PCs this did not work in the first run, and sometimes Windows re-installed the original file later, as it is impossible to remove it from the system completely.
- The R&S driver did not work with all IEEE1394 interface hardware. Some devices were successfully tested and therefore recommended, but it might happen that a manufacturer i.e. changes the chipset without announcement – and without notification on the label.

So the idea was, to use the original driver file again and install an additional R&S driver instead, providing the required TSMx functions.

To keep things simple, we call the first one (replacement of the original ohci1394.sys by a R&S file) the **Old FireWire driver**, and the installation of an additional driver the **New FireWire driver**.

However, there are two important conditions for both Old and New driver: The TSMx firmware version and the ROMES version.

This diagram shows the relationships between ROMES version, FireWire driver and TSMx firmware:

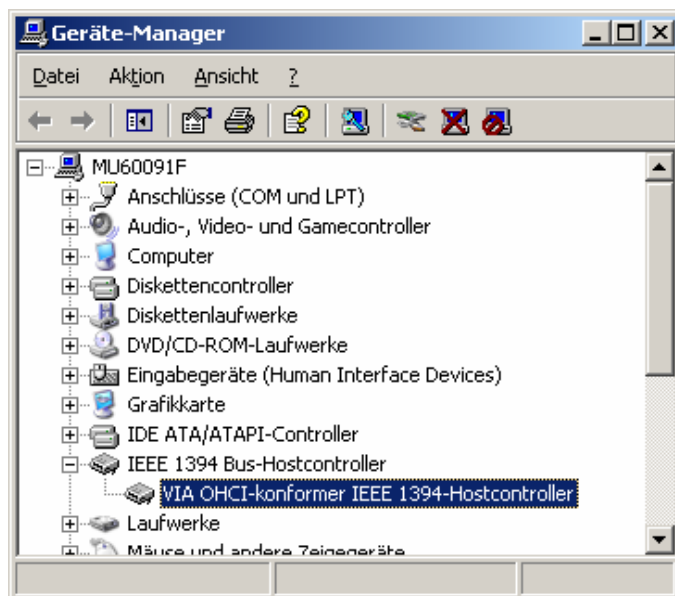


To be sure if the future Service Packs 6 and 11 contain the new FireWire driver support or not yet, read their release notes carefully.

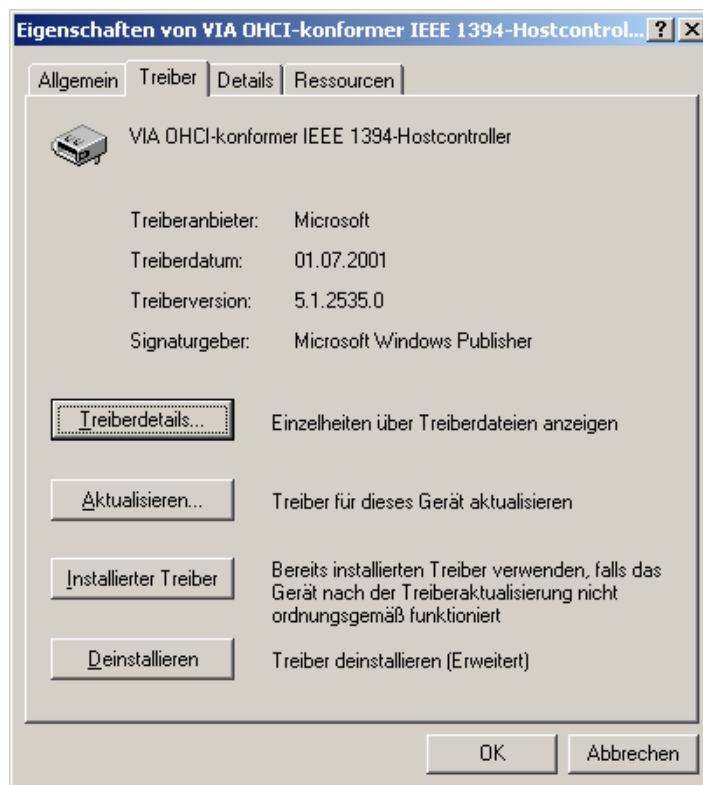
2. Driver Description

2.1 Old FireWire Driver

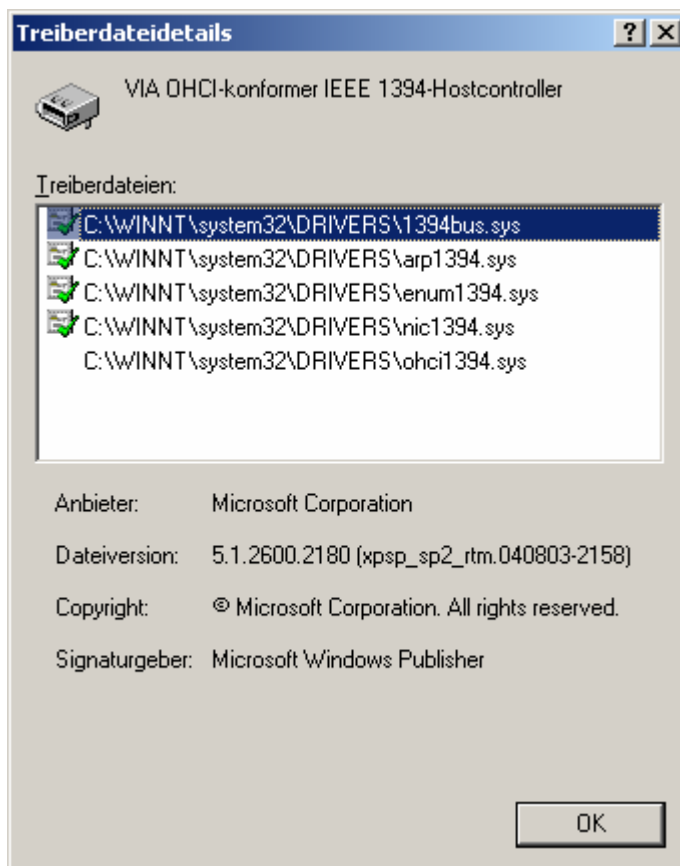
To check the driver properties, go to the Device Manager and select the IEEE1394 controller:



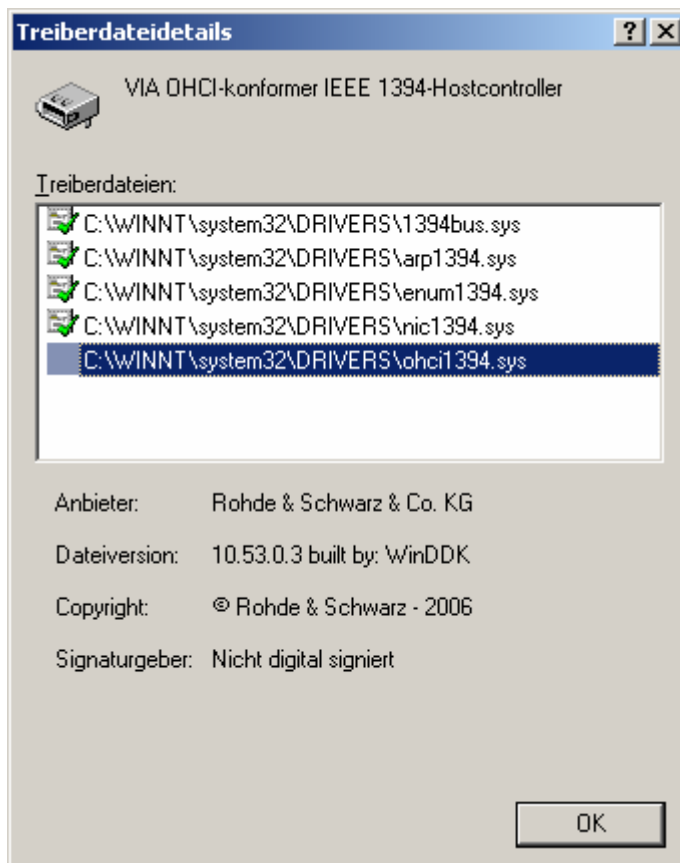
Enter *Properties*, select *Driver* and then *Driver Details*:



You will notice that all files are from Microsoft and digitally signed, except one, the **ohci1394.sys**. If this files would come from MS as well, the (old) driver will not work properly.



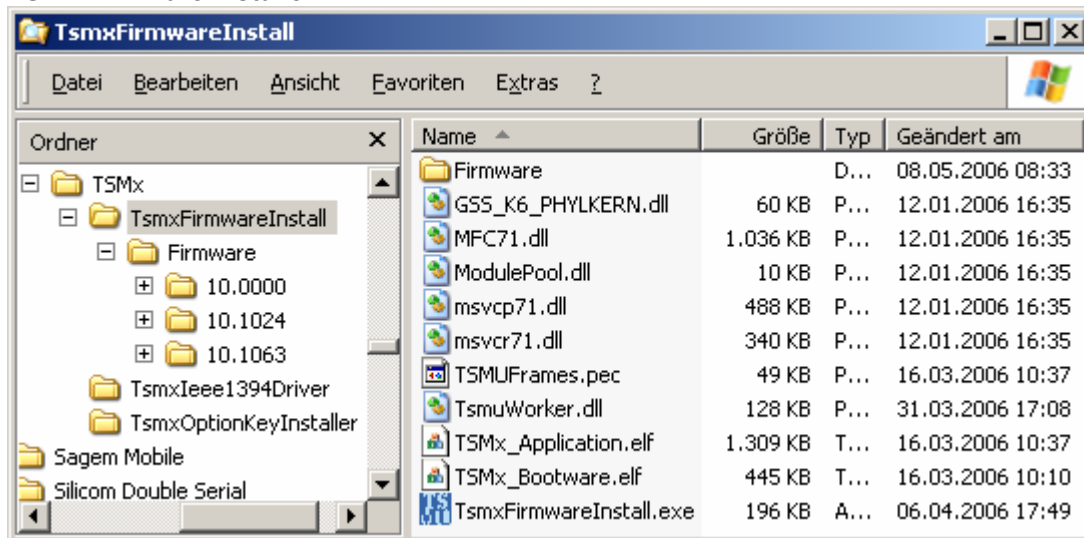
Microsoft driver files



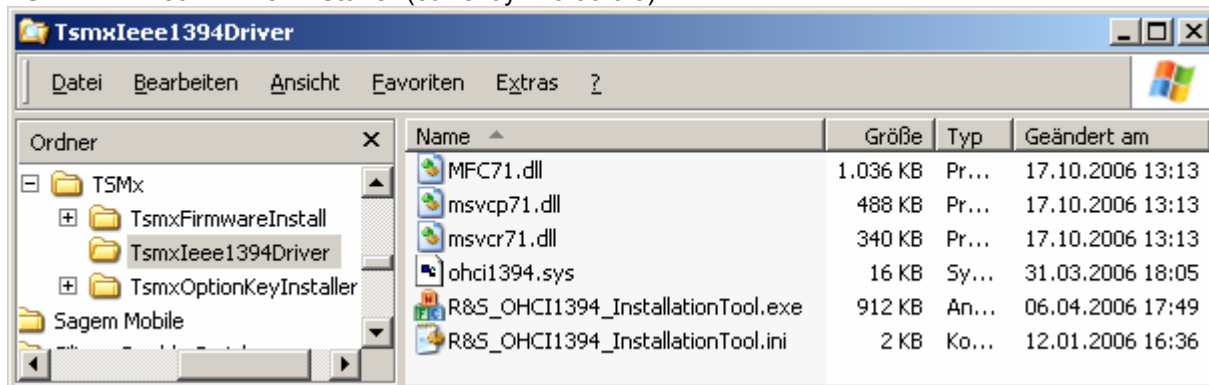
Rohde & Schwarz ohci1394.sys file

With the driver comes a set of tools (on the ROMES CD):

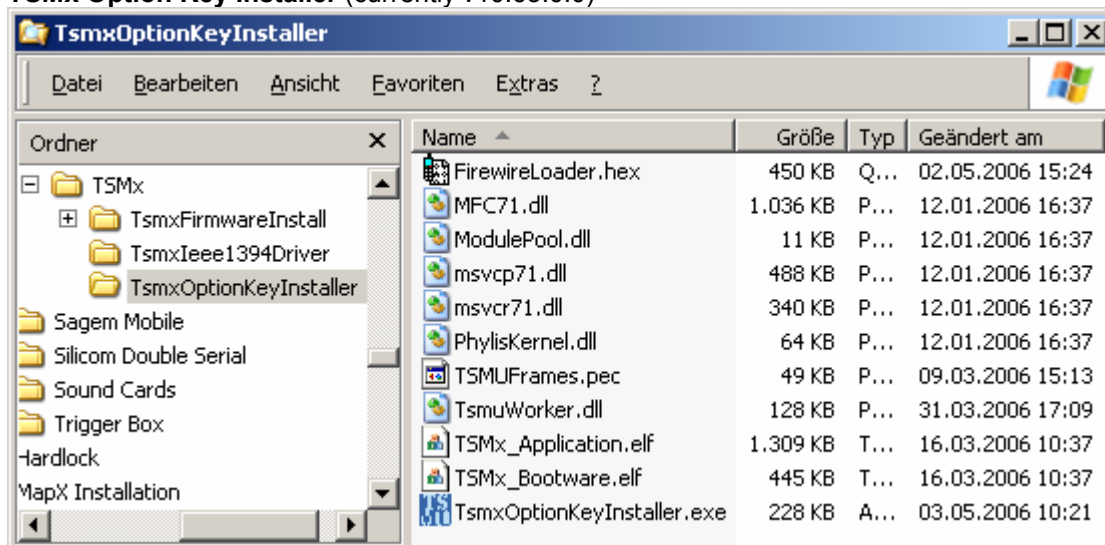
TSMx Firmware Installer



TSMx IEEE1394 Driver Installer (currently v10.53.0.3)

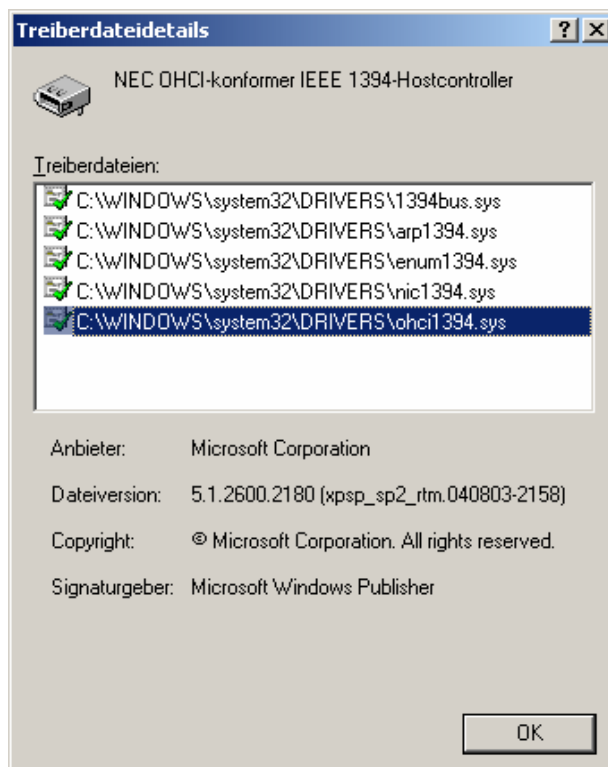


TSMx Option Key Installer (currently v10.63.0.0)

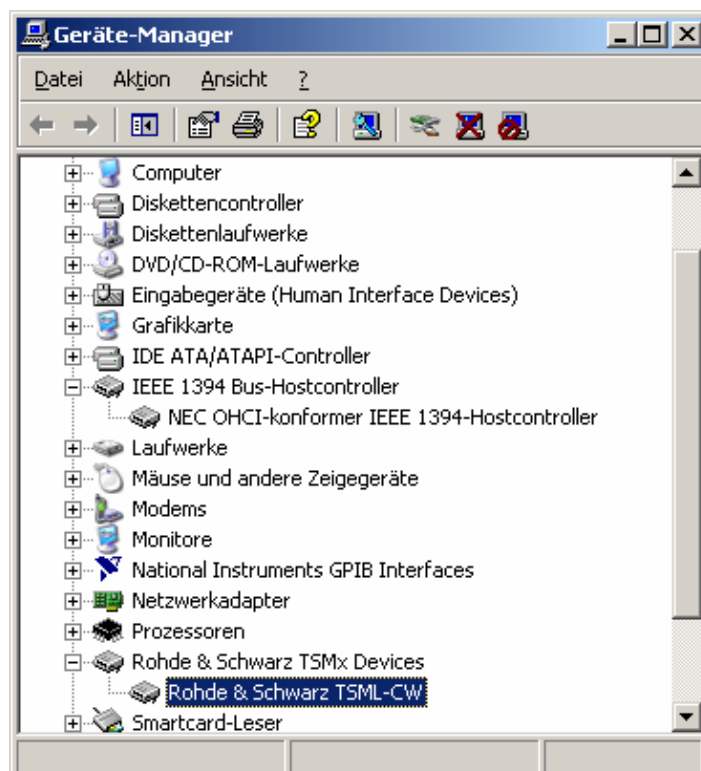


2.2 New FireWire Driver

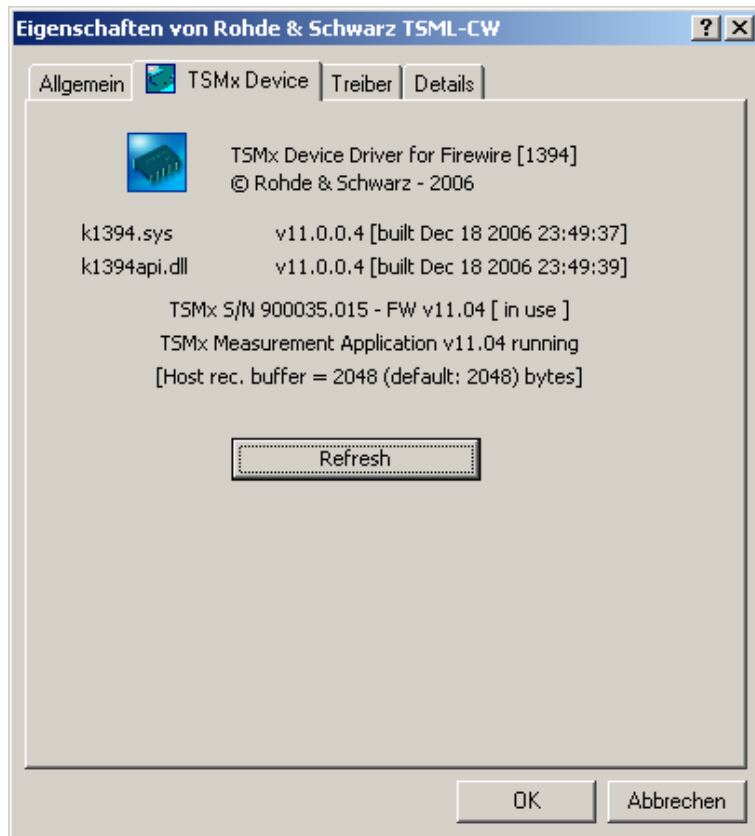
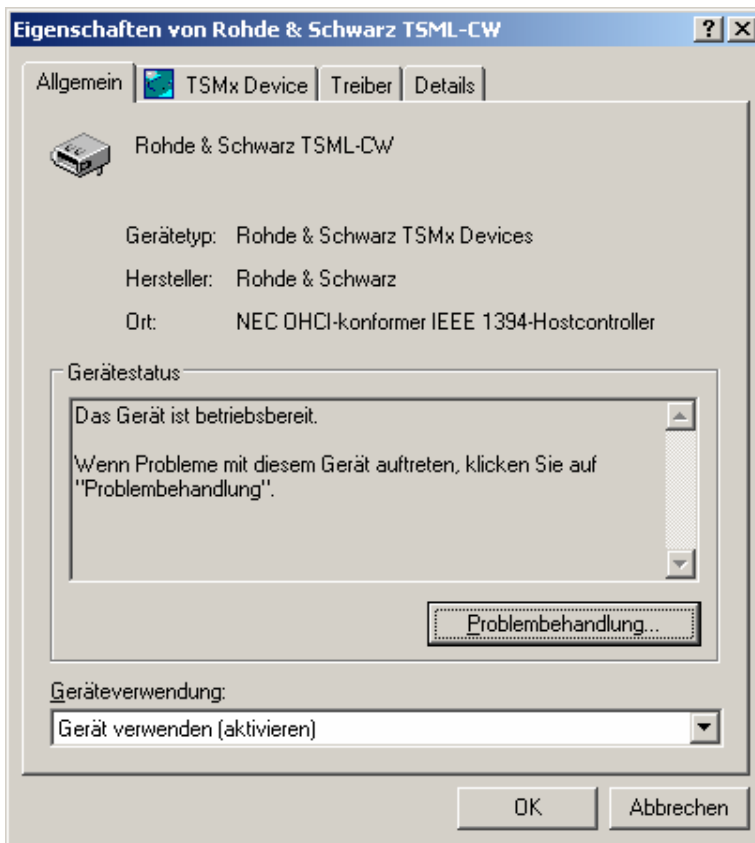
To check the driver properties, go to the Device Manager and select the IEEE1394 controller. Go to Driver Details as described before:



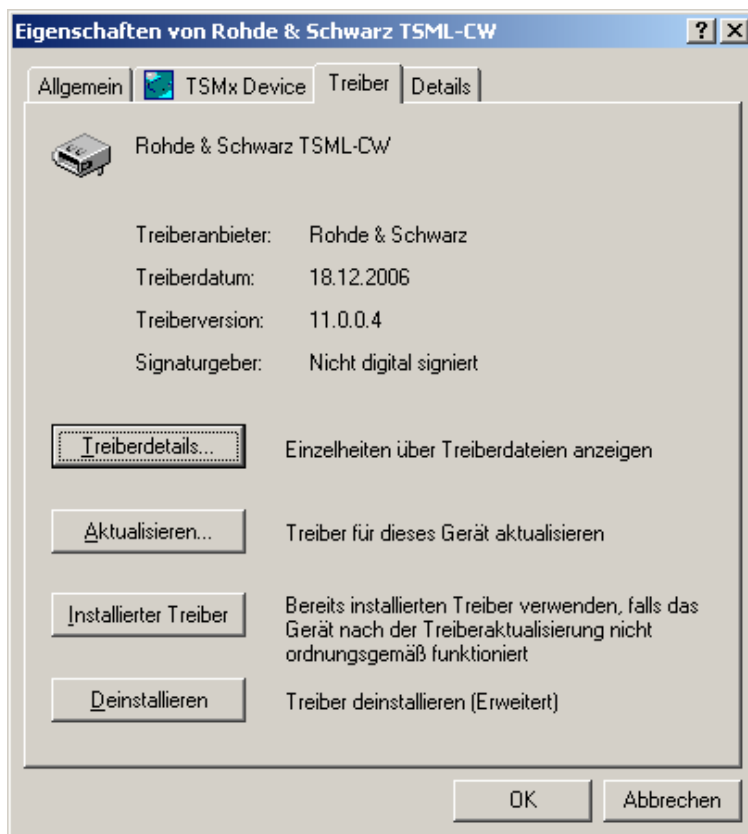
You can see that the **ohci1394.sys** file is the original one from Microsoft. As soon as a TSMx (here: TSML-CW) is connected, the **new add-on driver** will show up:



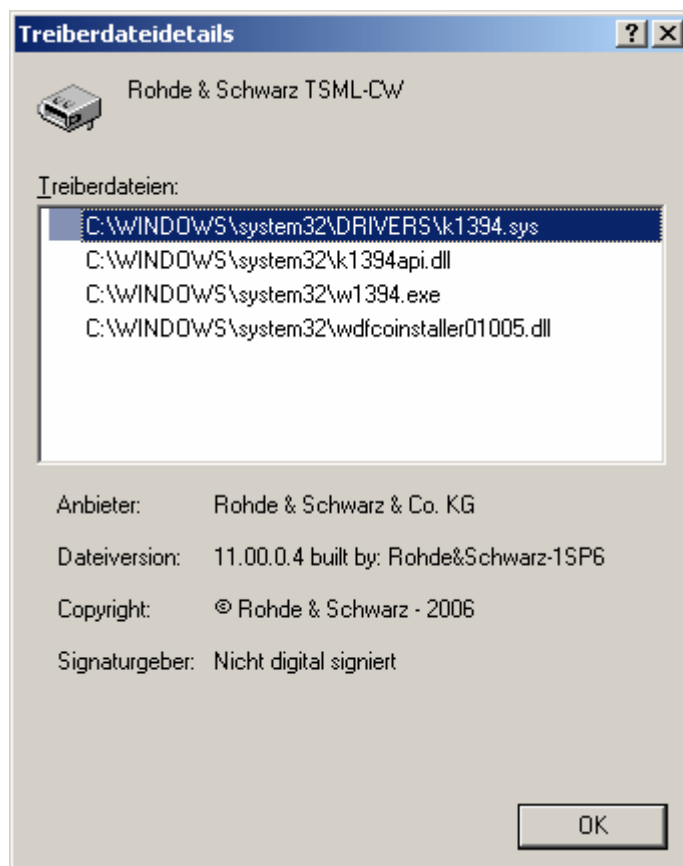
Driver Properties:



According to the file names, we can also call the new driver **K1394 driver**.

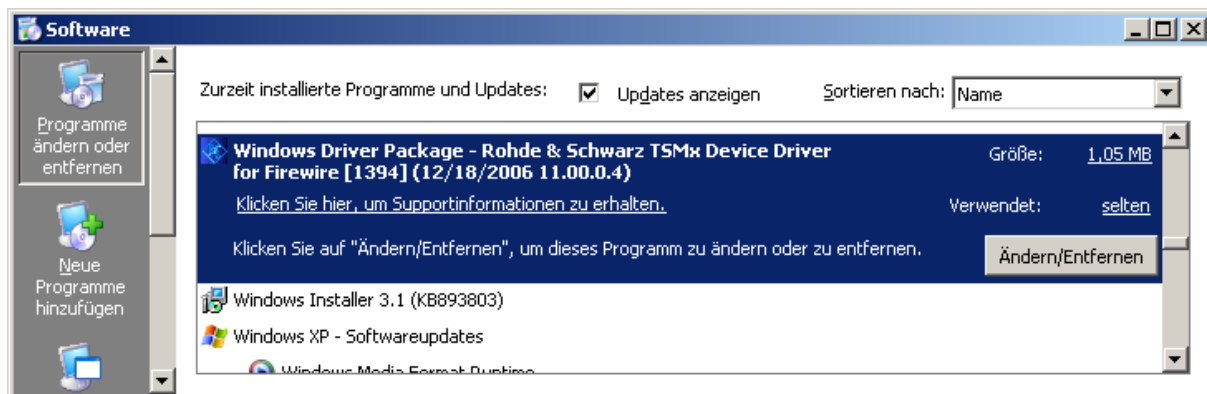


Driver Details:



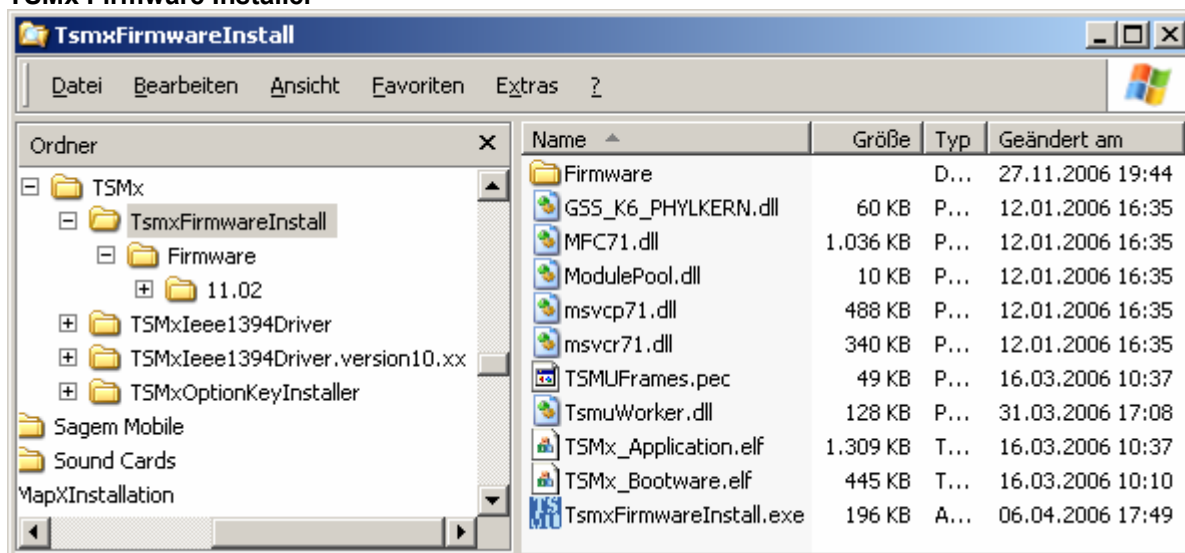
You can see that these driver files are not digitally signed as well, but as it's a new driver from R&S without a Microsoft counterpart in Windows, this will cause no problems.

You can also see the new add-on driver in the *Windows Software manager*:



With the driver comes another set of tools (on the ROMES CD from 3.60 SP6 and 3NG):

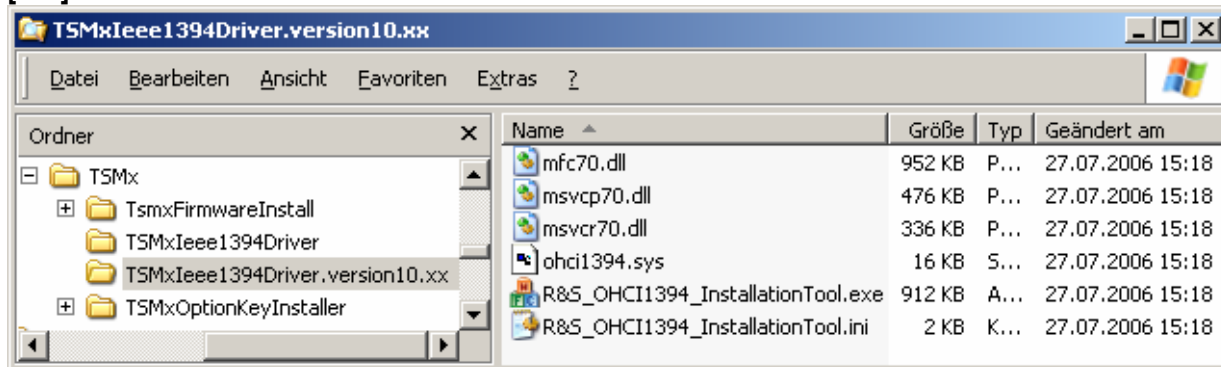
TSMx Firmware Installer



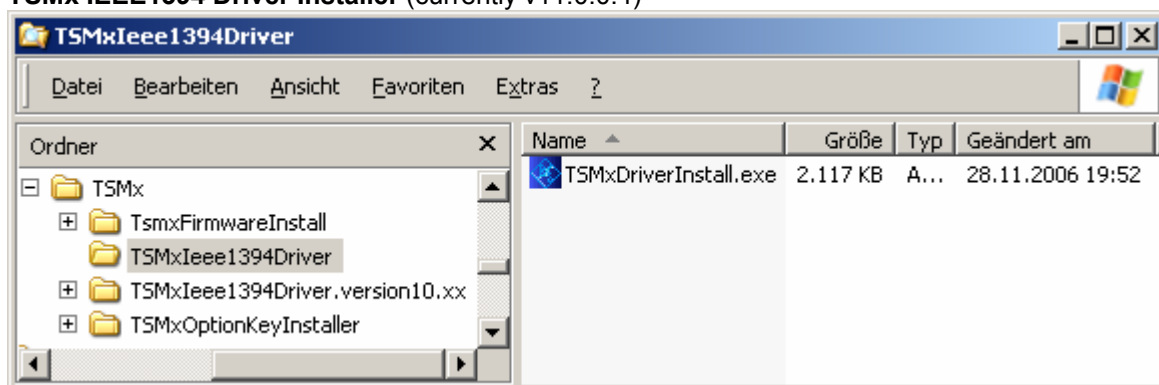
IMPORTANT NOTE: The TSMx Firmware Installer for the new driver is still under development, and so for all firmware updates the old tool has to be used, which makes it necessary to switch back to the old driver temporarily, even if you go i.e. from FW 11.04 to 11.05.

For this reason, the installation tool for the old driver is added as well:

[Old] TSMx IEEE1394 Driver Installer v10.xx

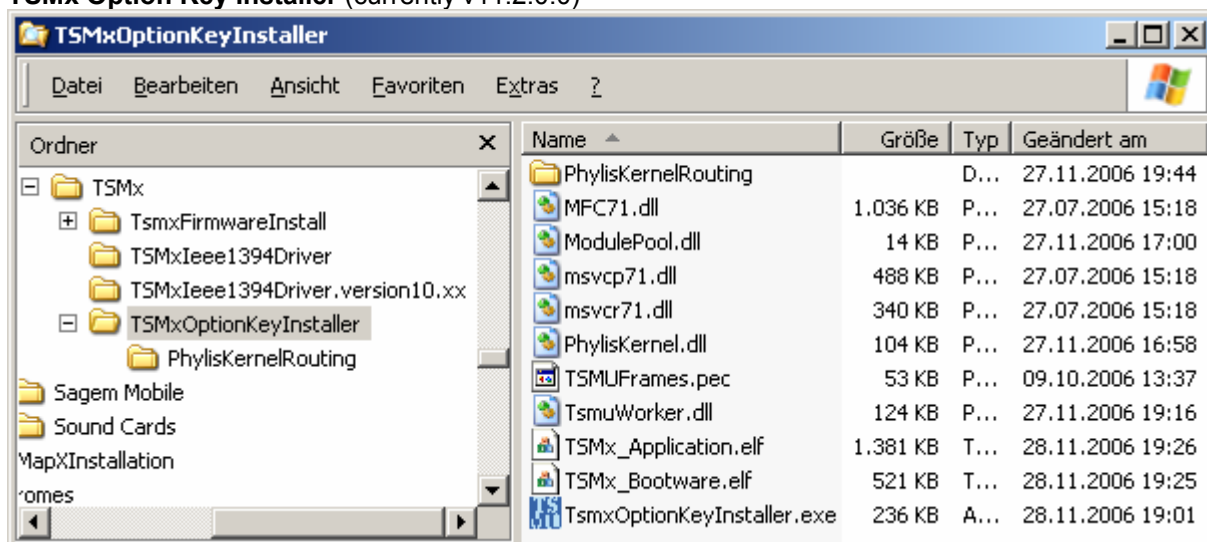


TSMx IEEE1394 Driver Installer (currently v11.0.0.4)



Will switch back to the original ohci1394.sys and install the new add-on driver.

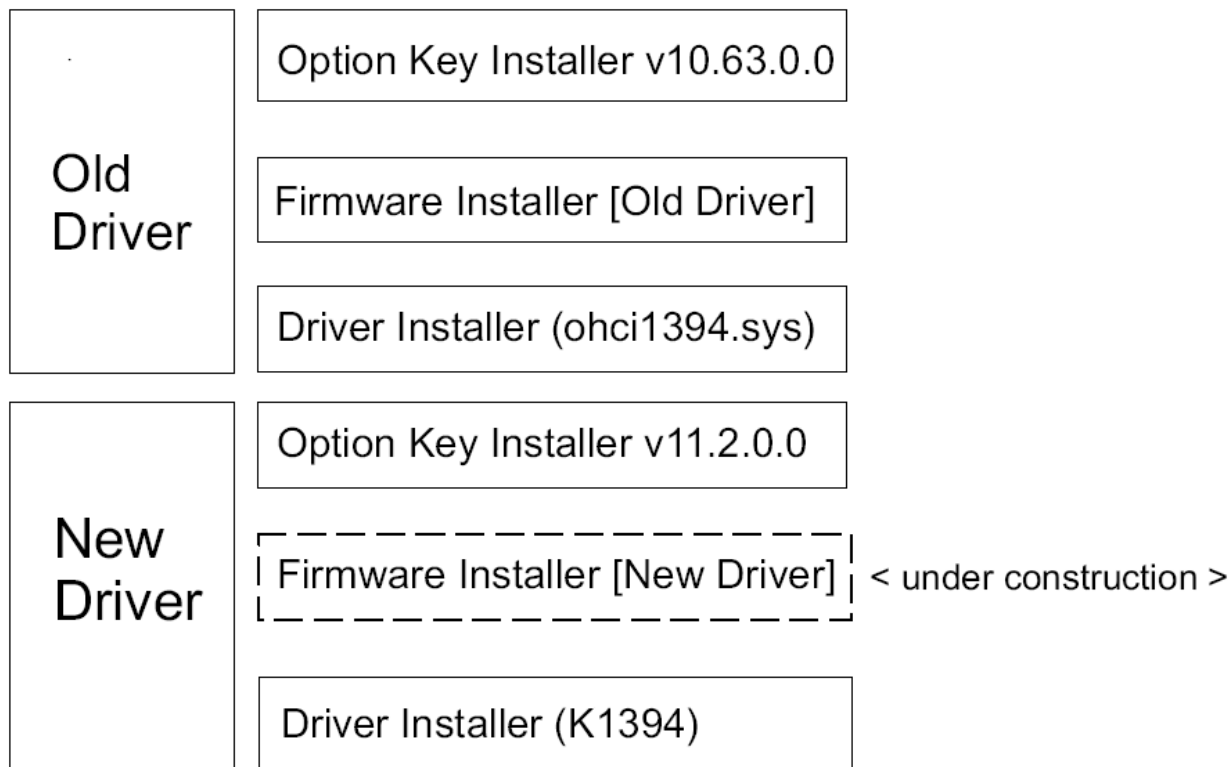
TSMx Option Key Installer (currently v11.2.0.0)



Every time the driver detects a TSMx with a new serial number, it will display “New hardware found” and install itself in the device manager. If the serial number is already known this will be done silently.

2.3 Package Overview

The version numbers may change, but v10.xxxx always refers to the **Old** and v11.xxxx to the **New** driver.



Option Key and *Firmware Installer* only work with the concerning driver.

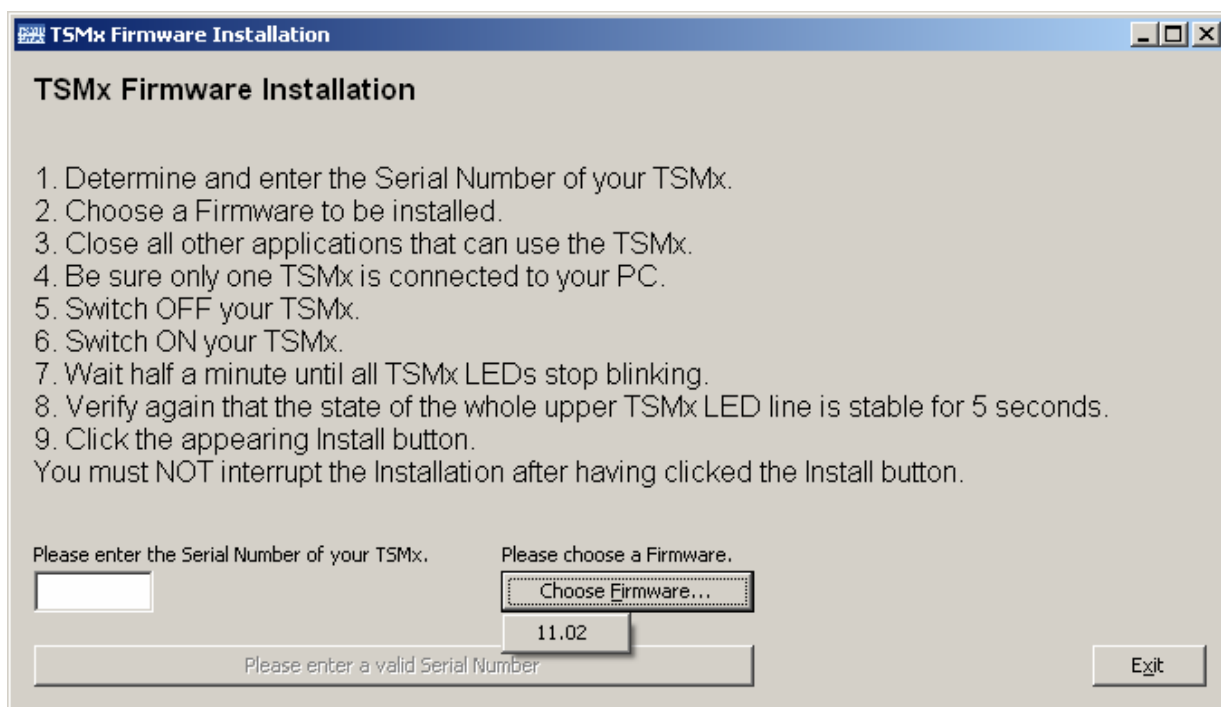
As long as the *Firmware Installer* for the *New* driver is not available, all *Firmware* updates have to be done with the old tool and the old driver, also i.e. from FW 11.04 to 11.05.

For this reason, the ROMES 3NG CD contains the old driver as well, as fallback position.

3. Migration Old to New Driver

3.1 Firmware Update TSMx

The Firmware update to v11.xx is the first step. The *Old* driver can work with both v10.xx and v11.xx, the *New* driver only with v11.xx.



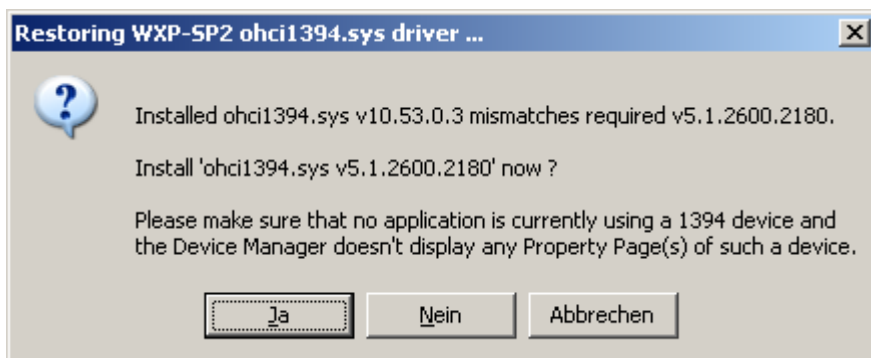
In case you are already running the New driver, and receive a TSMx still running on Firmware v10.xx, you have to go back to the Old driver, upgrade the TSMx to FW v11.xx, and then re-install the New driver.

For this reason it's useful to make sure *all* your TSMx are upgraded before installing the New driver.

3.2 Installing the New Driver

Start the according tool *TSMxDriverInstall.exe*. The TSMx can be connected or not. After successful installation, a connected TSMx will be detected automatically.

If the *Old* driver has been installed before, you will see this message first:



Click on Yes to restore the original ohci1394.sys from Microsoft. After that, the **K1394** driver will be installed.

ROMES 3NG: After this has been performed, the migration is done.

ROMES 3.53 SP10/ 3.60 SP5 [using Old driver before]: Before you start ROMES, the special Service Pack for the new FireWire driver has to be installed. It will exchange a few files in the ROMES directory.

3.3 Return to the *Old* Driver

If it's necessary to go back to the Old driver for Firmware updates, just use the driver install tool *R&S_OHCI1394_InstallationTool.exe*. After that you can do the Firmware update(s). Then re-install the *New* driver.

Important Note: This is sufficient for the Firmware updates, but NOT for ROMES measurements with the *Old* driver. Reason: Certain DLLs in the ROMES path are changed with the update *Old* to *New* driver, and will not be restored by installing the *Old* driver again. If you run the Firmware installer, the old DLL versions are provided in its path – but if you run ROMES, the ROMES path is used.

So in this case it is necessary to re-install ROMES.