MicroSD card

A micro SD card is included in the following devices:
- 52/XC Cores (52-740xC or later),
- 52/XC2 Cores,
- 52/XD Cores,
- 52/XS Cores (52-180xC or later)
- 52/XS2 Cores

This card acts as a dongle and the **licenses stored on the microSD card are bound to the internal serial number of this microSD card**.

All available software licenses and feature upgrade licenses are stored on the microSD card. This includes the following licenses:

52-8511 - PC TFT View Software
52-8550 - Routing/Scheduling Software
52-8551 - Routing Software
52-8552 - Routing Software, single matrix
52-8553 - Additional license for 52-8550
52-8554 - Additional license for 52-8551
52-8555 - Monitoring Software
52-8562 - Snapshot Manager Software
52-8563 - Remote Control Software
52-8564 - Remote Control Software, float.
52-8565 - DSP Control Software

52-8566 - DSP Control Software, float.
52-8571 - Pro-Bel Protocol SW-P-02
52-8572 - ESAM-II control protocol
52-8575 - MIDI Protocol Converter Software
52-8581 - Enhanced DSP Processing
52-8582 - XC/XS Core Audio Network
52-8583 - XC/XS Core Control Networking
52-8584 - XC2 Core Gold upgrade
52-8585 - XC2 Core Silver upgrade
52-8591 - SNMP Support for DHDOS

The microSD card also includes the firmware, the configuration and snapshots of this core device.

In case of a replacement of the core device, it is only required to put the microSD card from the installed device to the replacement device (which has to be the same device type as the device that will be replaced). When the replaced core device will be switched on, it will boot with the last configuration state as the first device.

> **Note**
>
> Only the microSD cards delivered by DHD can be used.

MicroSD card from DHD with hologram label and serial number

It is possible to copy the content of the microSD card, but the licenses will not work on this copy because they depend on the internal unique serial number of the microSD card.

> **Warning**
>
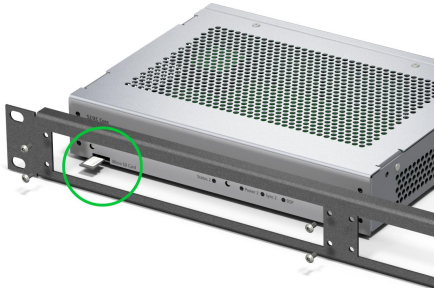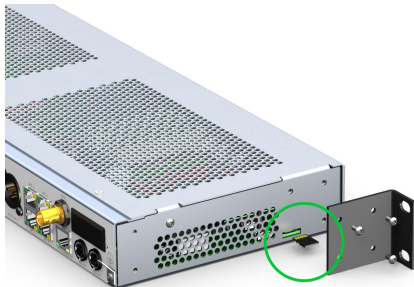> In case of a microSD card failure, the microSD card needs to be returned to DHD!
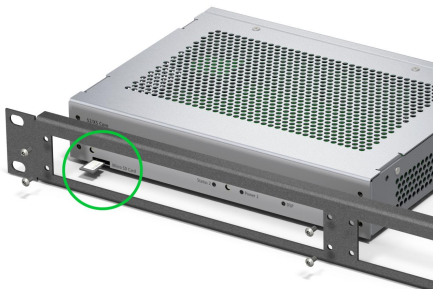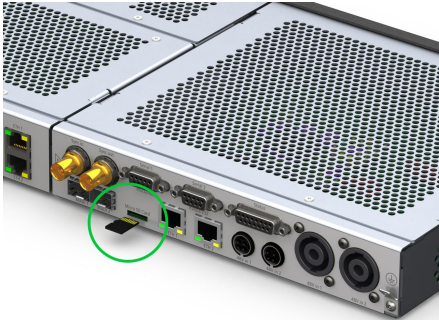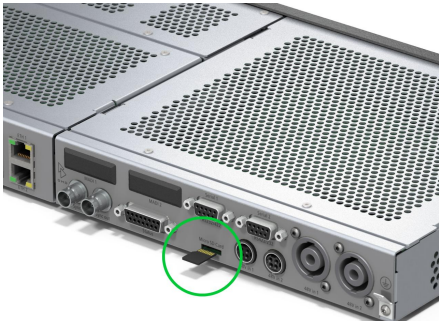> Do NOT throw away the microSD card!
> Do NOT remove the hologram label with the serial number!
> In the event of loss of the microSD card, the licenses will not be replaced.

Position at Core devices

In the following pictures you can see the position of the microSD card slot at each core.

Device	Location of the microSD Card and microSD card orientation	Picture
52/XC2 Core 52-7420, 52-7410	At the left side of the core. • Insert the micro SD card with pins on the top side	
52/XC Core 52-740xC or later	At the front panel of the core, behind the 19"-Adapterpanel. • Insert the micro SD card with pins on the bottom side	
52/XS2 IO Core 52-1830	At the left side of the core, behind the rack mount bracket. • Insert the micro SD card with pins on the top side	

Device	Location of the microSD Card and microSD card orientation	Picture
52/XS2 Core 52-1810	At the left side of the core. • Insert the micro SD card with pins on the top side	
52/XS Core 52-180xC or later	At the front panel of the core, behind the 19"-Adapterpanel. • Insert the micro SD card with pins on the bottom side	
52/XD Core with 52-7456 XD2 Controller	At the rear panel of the core. • Insert the micro SD card with pins on the top side	
52/XD Core with 52-7450 XD Controller	At the rear panel of the core. • Insert the micro SD card with pins on the top side	

> **Important**
>
> The microSD card needs to be plugged into the Core device for operation.
>
> The pin orientation is different between the different core types:
>
> - **52/XC Core and 52/XS Core:** insert the microSD card with **pins on the bottom side**
> - **52/XC2 Core, 52/XS2 Core, 52/XD Core:** insert the microSD card with **pins on the top side**

MicroSD card, side with license code.

MicroSD card, side with pins.

Firmware License

The firmware license is the license which is required for operation of each DHD core or DSP frame.

After loading the firmware license into the device (see Load licenses into the device) it is permanently stored in a separate flash memory. The firmware license will not be stored on the microSD card.

Usually, the cores will be delivered without a firmware license. This firmware license will be sent via e-mail (see Receive the Firmware License)

> **Note**
>
> Until a valid license is entered, the console can be used without restrictions for 800 operating hours. When the core is used for 600 operating hours, `License invalid` will be shown in the TFT and module displays.
>
> After a total of 800 hours of operation without a valid firmware license, the system will be interrupted by a random reset approximately once per hour.

Receive the firmware license code

The firmware license will be generated automatically after the accountants' department received and booked the full payment for the order.

The generated firmware license will be sent automatically to the e-mail address which received the order confirmation. If required one or more additional e-mail destinations can be assigned for receiving the license codes.

The sender for this e-mail is support@dhd-audio.de

i   **Note**

If you did not receive an e-mail with the firmware license, please check your spam folder.

Software Licenses and Feature Upgrade Licenses

All DHD PC software products and all feature upgrades require a license code for the activation in the device.

Usually, the licenses will be already activated in the device if the software licenses or feature upgrade licenses are ordered together with hardware.

To activate a new license on a device, see Load licenses into the device.

The licenses are always hardware related. To order new licenses, DHD always requires the serial number either of the device or the microSD card. All available software licenses and feature upgrade licenses are stored either on a microSD card or on an internal memory.

The following table shows the storage place for each device type and the serial number type which is required to order a new license:

device	licenses are stored on microSD card	licenses are stored on internal memory	serial number type for new licenses
52/XD (all revisions) 52-7450, 52-7456	X		Serial Number Software (MicroSDCard)
52/XC (revisions A or B) 52-7400A, 52-7400B, 52-7402A, 52-7402B, 52-7403A, 52-7403B		X	Serial Number Device
52/XC (revisions C or later), 52/XC2 (all revisions) 52-7400C, 52-7402C, 52-7403C, 52-7420, 52-7410	X		Serial Number Software (MicroSDCard)
52/XS (revisions A or B) 52-1801A, 52-1801B, 52-1804A, 52-1804B		X	Serial Number Device
52/XS (revisions C or later), 52/XS2 (all revisions) 52-1801C, 52-1804C, 52-1830, 52-1810	X		Serial Number Software (MicroSDCard)
52/XR 52-6063, 52-6066		X	Serial Number Device
52/MB 52-5063		X	Serial Number Device
52/RM4200D RM420-852, RM420-853		X	Serial Number Device

You can find the different types of serial numbers in the `Maintenance Window`.

Serial Number Software (MicroSDCard): it will be shown on the `License State` page of the `Maintenance Window`, see Available licenses in the device (follow until step 5)

Serial Number Device: it will be shown on the `Firmware State` page of the `Maintenance Window`, see Available licenses in the device (follow until step 4)

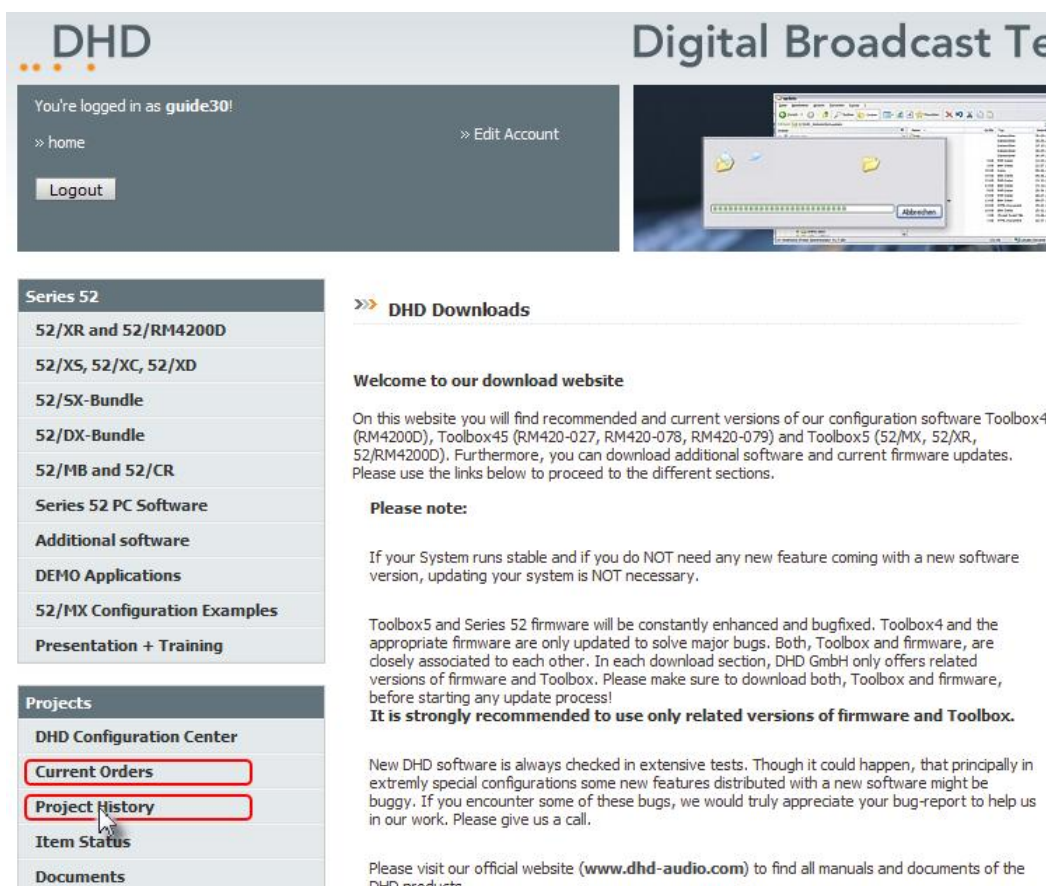For more information about the microSD card, see microSD card.

Receive the license codes

All software licenses and feature upgrade licenses will be delivered as license codes on the delivery note. (for firmware license, see Receive the firmware license code).

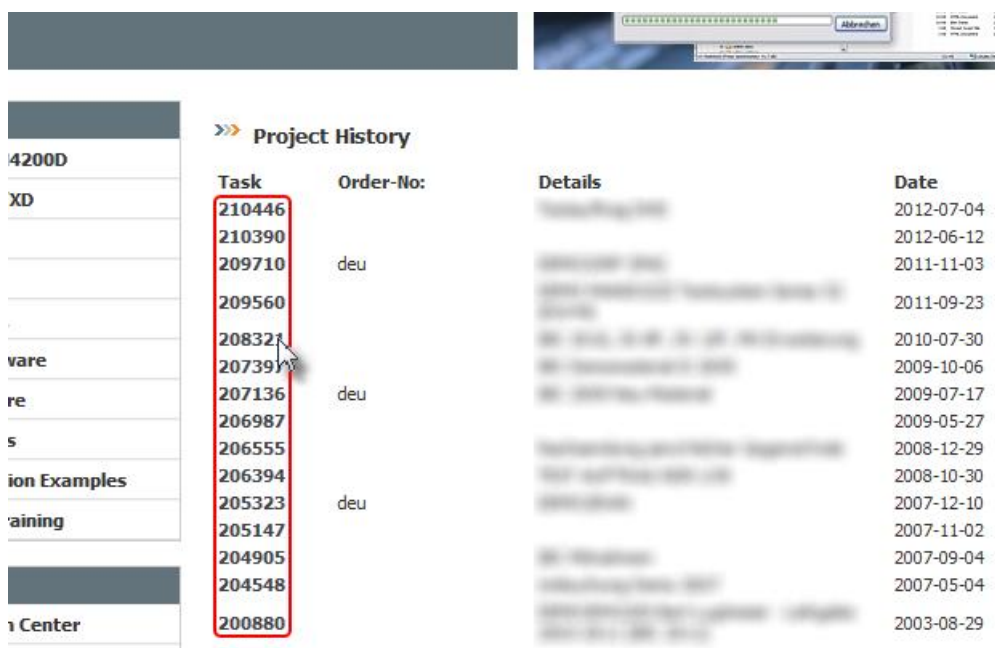You can review all your delivery notes on the update website. To review the license codes, follow these steps:

1. When you are logged in, in the project area click on `Current Orders` or `Project History` to see an overview of your orders.

DHD Update website - Links to the Current Orders area and to the Project History area

2. In the Current Orders area or Project History area you can see a list with orders. In the Task column, click on a task number to see the corresponding documents.
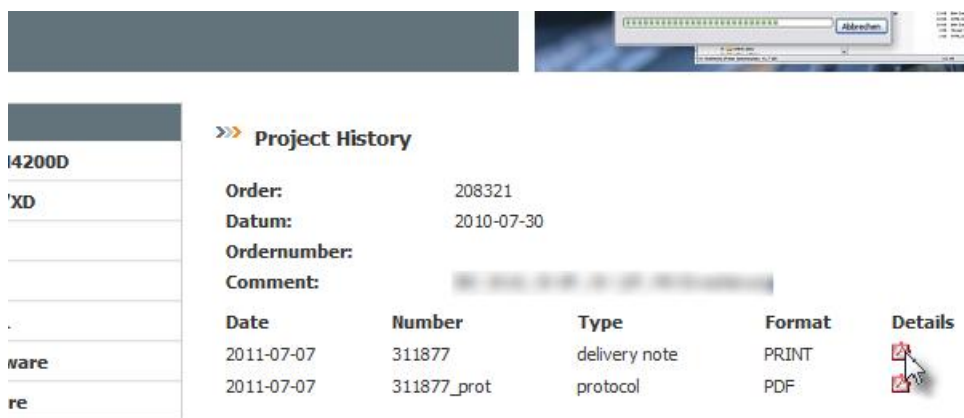
The Project History area shows an overview of the orders

3. In the `Details` column of the `delivery note` row, click 📄 to open the delivery note as PDF-file.

Each order includes different documents, licenses can be found in the
delivery note.

4. In the delivery note document you can find the license code below the serial number and the bar code of each software
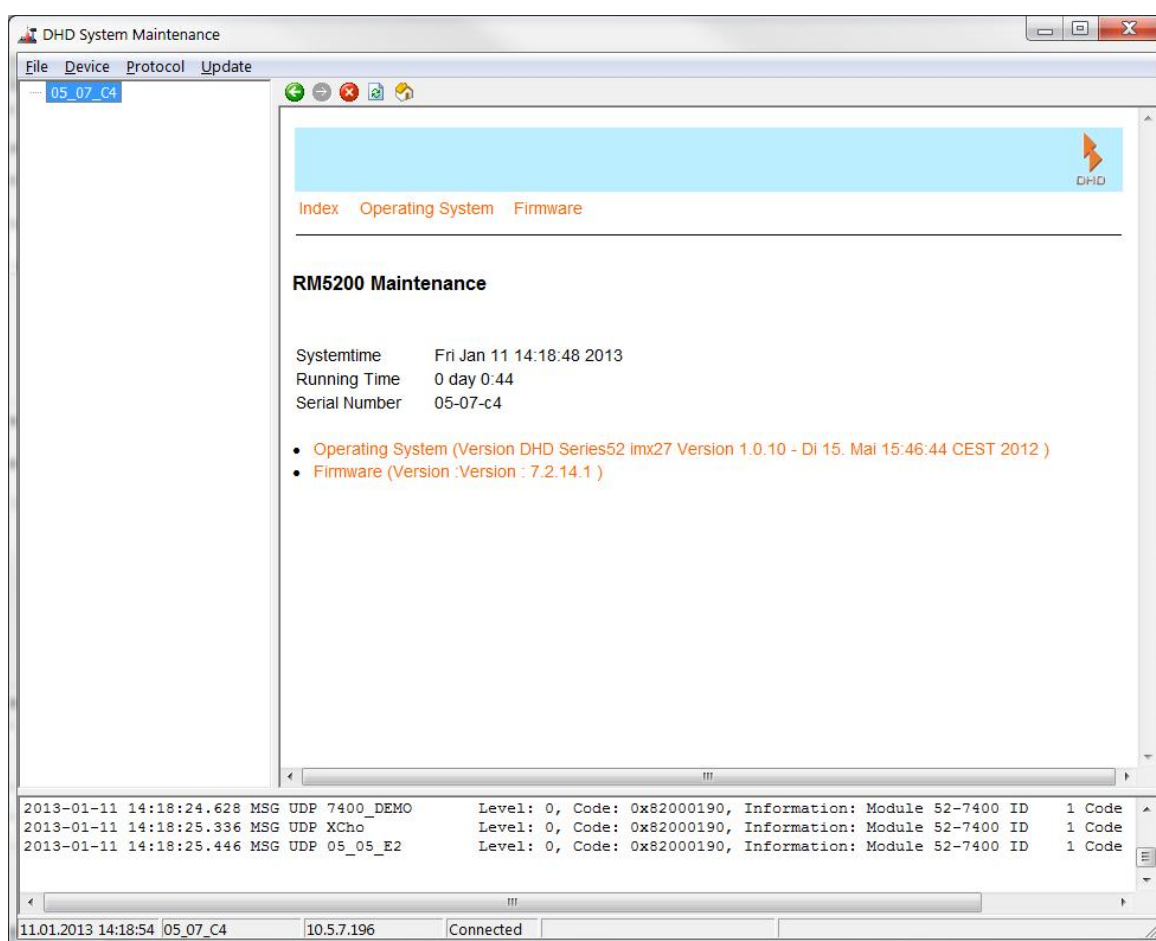   product.

Tip

You can find the software (Operation Manager / Operation Server) itself on the
CD delivered together with the console. You can also download the software
from the update website (http://update.dhd-audio.de).

Available licenses in the device

The `Maintenance Window` of the Toolbox5 software provides an overview of active licenses in the device.
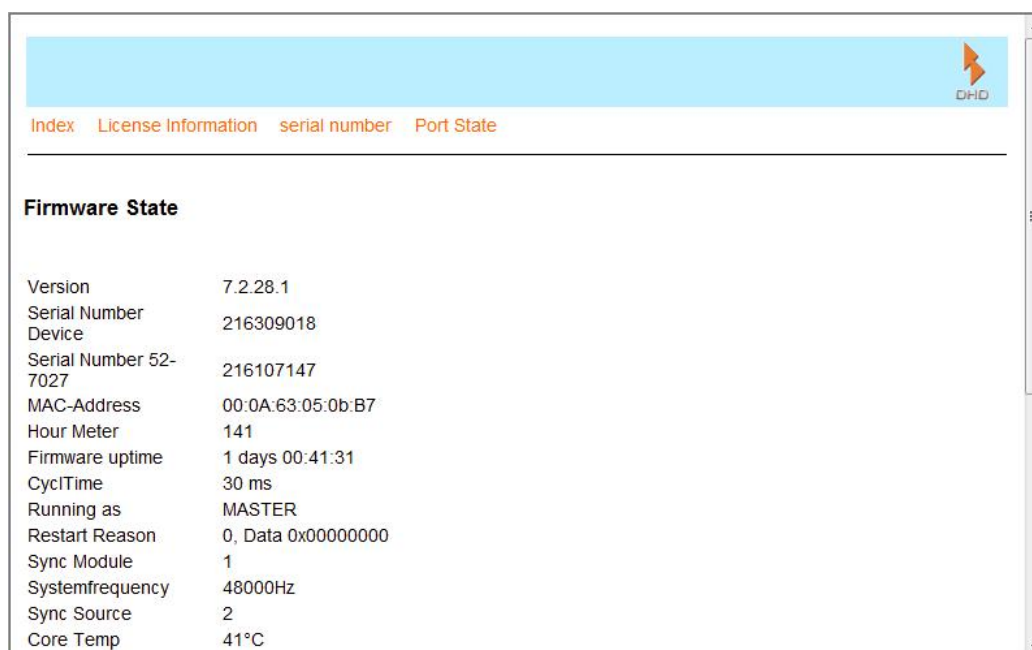
To show this overview, follow these steps:

1. Connect the your configuration PC to the Core.

2. Open the Toolbox5 software. In the `View` menu, select `Maintenance Window` or press F7 on your keyboard. The `Maintenance Window` opens.

3. In the left part of the `Maintenance Window` click on the device for which you would like to enter a license.

Maintenance Window

4. In the right part of the `Maintenance Window`, click `Firmware`, the `Firmware State` page will be shown.

Maintenance Window - Firmware State page

5. Click `License Information`. Now, the license states will be shown for the selected device.

Maintenance Window - License State page

Usually, the core will be delivered without a firmware license. This firmware license will be sent via e-mail (see Receiving the Firmware License). Until a valid license is entered, the `Remaining Operation Hours` will be shown here. After 800 hours operation time without a valid license, `invalid` will be shown.

If a valid firmware license is entered to the core, unlimited valid will be displayed.

> **i**   **Note**
>
> Until a valid license is entered, the console can be used without restrictions for 800 operating hours. When the core is used for 600 operating hours, `License invalid` will be shown in the TFT and module displays.
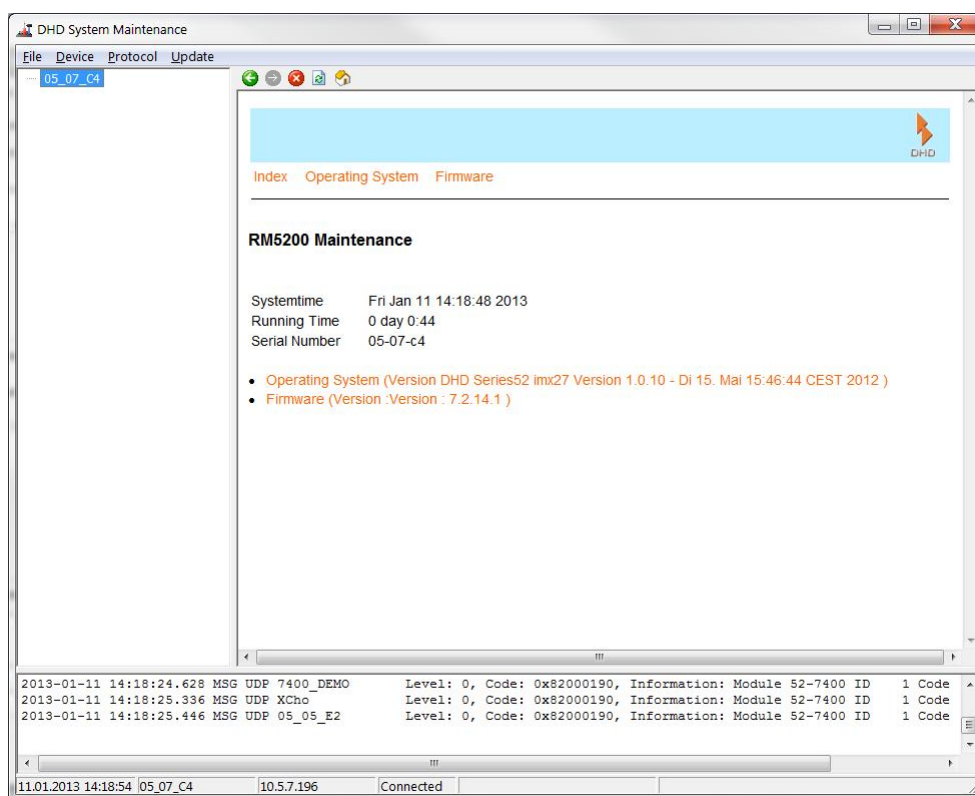>
> After a total of 800 hours of operation without a valid firmware license, the system will be interrupted by a random reset approximately once per hour.

When a license for a PC software or a feature upgrade is available in the device, the product number, the product name and the number of available licenses will be shown in that window.
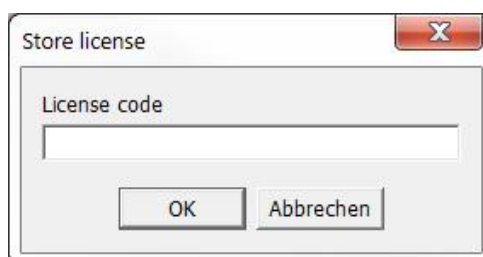
Load licenses into the device

The following steps can be used for firmware licenses, PC software licenses or feature upgrade licenses.

1. Connect the PC with the Toolbox5 software to the Core.

2. Open the Toolbox5 Software. In the `View` menu, select `Maintenance Window` or press `F7` on the Keyboard. The `Maintenance Window` opens.

3. In the left part of the Maintenance Window, select the device for which you would like to enter a license.

Maintenance Window

4. In the `Maintenance Windows`, in the `Device` menu, click on `Enter License`. The `Store License` window opens.

Store License window

5. Enter the license code into the text box and click `OK`. If the license code is correct, in the lower part of the Maintenance Window (the part that shows the log messages), `license stored` is shown for the corresponding device.

> **Note**
>
> A wrong license code will be ignored.

To check the validity of the license, see the Available licenses in the device section.