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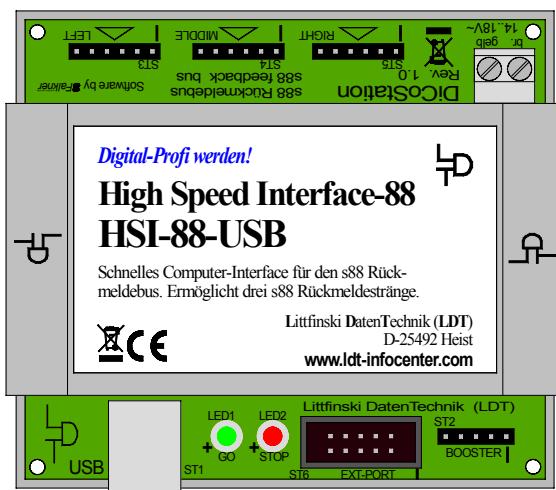
Manual

HSI-88-USB

High Speed Interface for the s88-Feedback Bus and
the **USB**-Interface
from the *Digital-Professional-Series* !

HSI-88-USB-G Part-No.: 030913

>> finished module in a case <<



Transmits the feedback information from the s88 bus via the digital central unit directly to the PC without any detour.

Fast galvanic separated connection to the computer via the USB-interface (1.1 / 2.0 Full-Speed).

3 Feedback-Lines will additionally triple the reading speed of the s88 Feedback Bus.

3 Feedback-Lines will offer as well a simple arrangement of the Feedback Modules below your model layout base plate.

This product is not a toy! Not suitable for children under 14 years. Improper use will imply danger or injuries due to sharp edges and tips! Please store this instruction carefully.

**CE Part-No:
24 94 43**



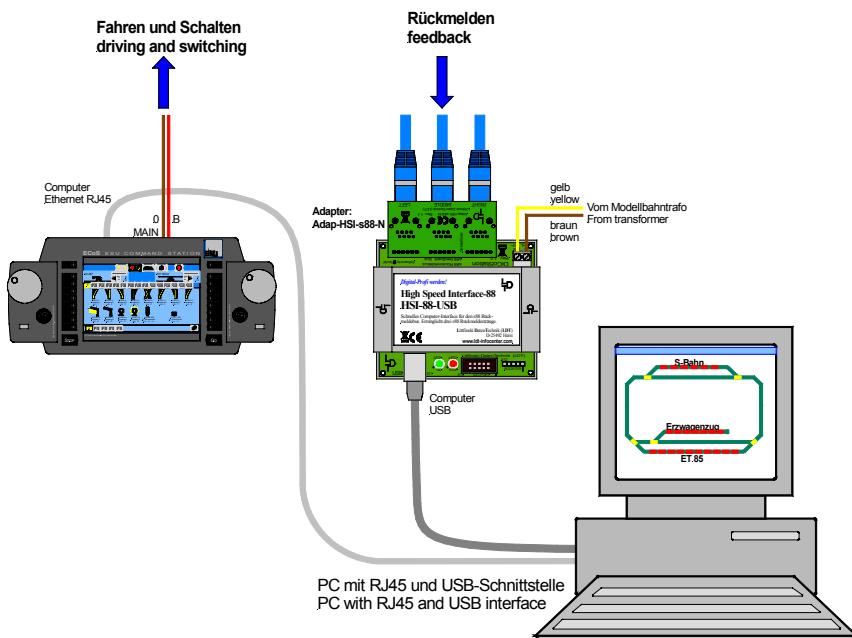
HSI-88-USB – Manual

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1. Preface / Safety Instruction:

You have purchased the **HSI-88-USB** from the assortment of Littfinski DatenTechnik (LDT) for your model railway.

The **HSI-88-USB** is an **Interface** for the **s88-feedback bus**. The **driving** and **switching** will be continued via your **digital central unit**. The **time-critical feedback reports** will be transmitted via the **HSI-88-USB** to the **PC** respectively to the model railway control software **without any delay**.



We wish you to enjoy using this product!

This unit will be supplied with a **24-month warranty**.

Please read this **instruction** carefully. **Claim of warranty will expire** due to **damages caused by disregarding the instructions**. We will **not cover any liability** for the result of **consequential damages**.

You will find **this manual** as **PDF-File** with **colored pictures** on the **enclosed CD** "**USB-Drivers for DiCoStation and HSI-88-USB**". This file can be **opened** and **printed** with the **Acrobat Reader**.

At the section "**Downloads**" you can as well **download** this **handbook** as **PDF-file** with **colored pictures** from our **Web-Site (ldt-infocenter.com)** and **open or print** it with **Acrobat Reader**.

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2. USB-Driver Installation:

The Interface **HSI-88-USB** is an **USB-Unit** for the connection to an **available USB-Interface Port** of the PC. The required **USB-Connection-Cable** will be supplied together with each **HSI-88-USB**.

All **USB-Units** require a so-called **USB-Unit Driver**. The USB-driver for the **HSI-88-USB** will be available at the **enclosed CD “USB-Drivers for DiCoStation and HSI-88-USB”**. The **HSI-88-USB** is a **dual-purpose unit**. During **installation two drivers** will be **loaded**.

On the **CD** are **USB-Drivers** for the following **PC operating systems available**:

- Windows 10 (32- and 64-Bit)
- Windows 8 (32- and 64-Bit)
- Windows 7 (32- and 64-Bit)
- Windows Vista (32- and 64-Bit)
- Windows XP
- Windows 2000
- Windows ME
- Windows 98

2.1 Automatic driver installation:

If the **Windows operation system** identifies a new **USB-Unit** the **installation of the required USB-Driver** will be performed **automatically**. With reference to the **used operation system** is it possible that the **installation** will be a **little different** to the **following description**.

1. **Switch-on** your **PC** and connect the **flat USB-Plug** of the **enclosed USB-Connection cable** to an **available USB-Interface port** of the Computer.

Following connect the **square plug** of the **USB connection cable** to the **socket marked USB** of the **HSI-88-USB**. All other **connections** of the **HSI-88-USB** will remain without engagement.

The red **Light Emitting Diode** of the **HSI-88-USB** will lighten up and on the **PC-screen** the info „**Neue Hardware gefunden**“ (“New hardware found”) will be shortly indicated.

2. Now insert the **enclosed CD “USB-Drivers for DiCoStation and HSI-88-USB”** into the **disk drive** and select **“Software automatisch installieren”** (**empfohlen**). (“Software automatic installation”) (**recommended**) and click on **“Weiter >”** (“Continue >”).

3. The **first USB-driver** will now be copied and installed from the **CD** to your **PC**. Click then in accordance to the **Windows-Operation System** onto the button **“Fertig stellen”** (“Complete”) or **„Schließen“** (“Closed”).

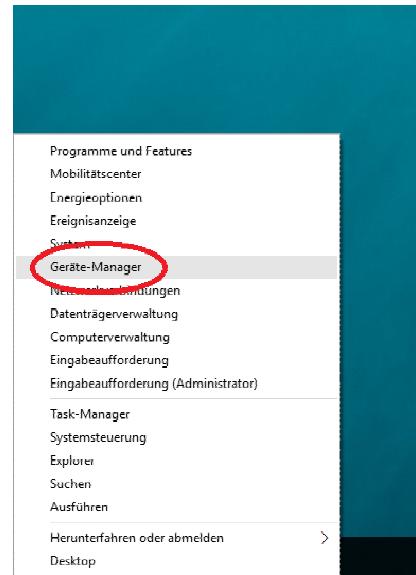
4. Windows **recognizes** now **automatically** that the **loading** of a **second driver** shall be required. For this loading has the **CD “USB-Drivers for DiCoStation and HSI-88-USB”** **to be remain inside the disk drive**. Proceed for the **installation** of the **second USB-Driver** again as **described under 2. and 3.**

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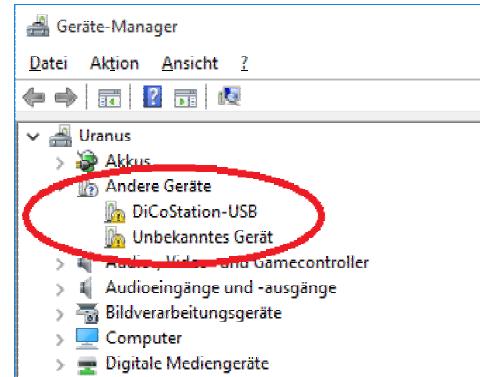
2.2. Manual Driver-Installation at sample of Windows 10:

If Windows can not find and automatic install the USB-Driver for the HSI-88-USB the driver installation can be performed manually. The following installation steps are valid for Windows 10. Other operation systems can require little different steps.

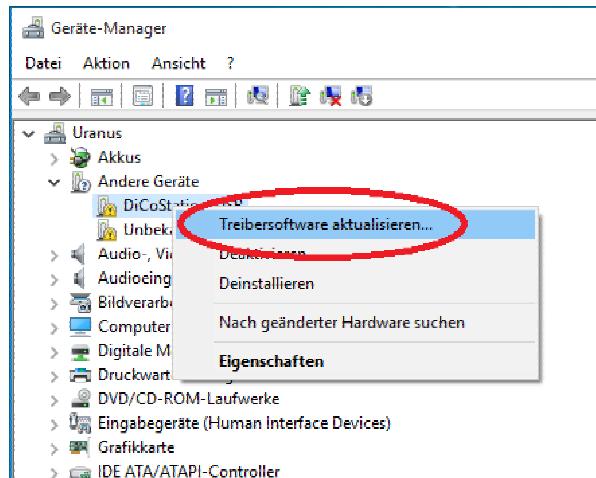
1. Open the **Geräte-Manager** (Device Manager) by clicking with the **left mouse-key** onto the **Windows symbol** (mostly at the left bottom) and select the **device-manager**.



2. If the **HSI-88-USB** has been connected to the **PC** via an **USB-Interface** two new devices will be identified at the **Device-Manager**.

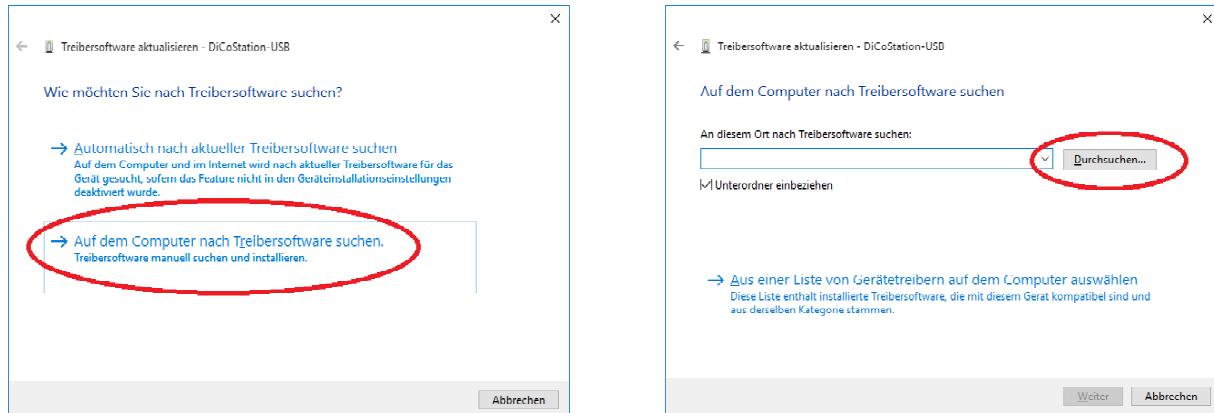


3. Click with **right mouse-key** onto the first new device (**DiCoStation**) and select the menu item „**Treibersoftware aktualisieren**“ (“Driver software updating”).

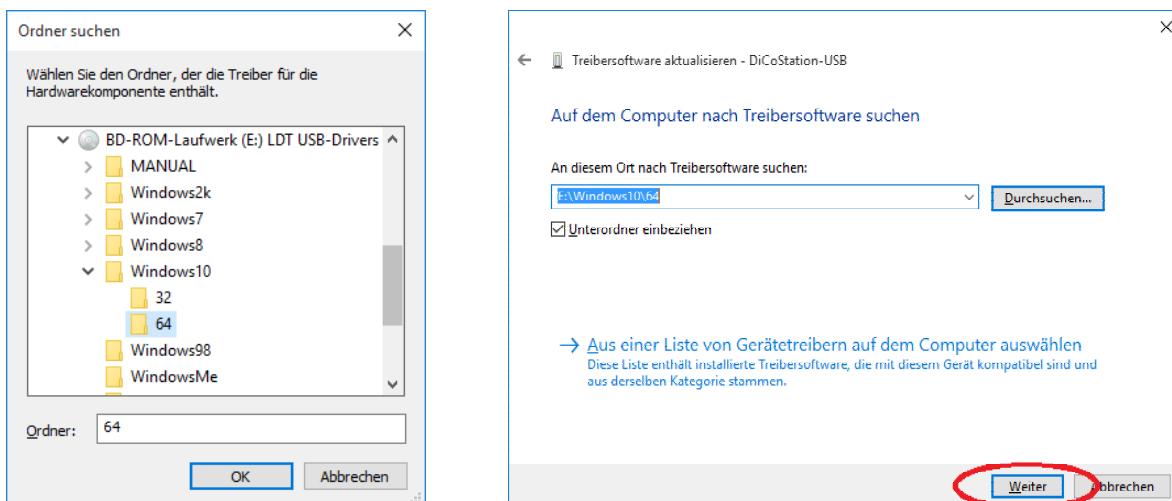


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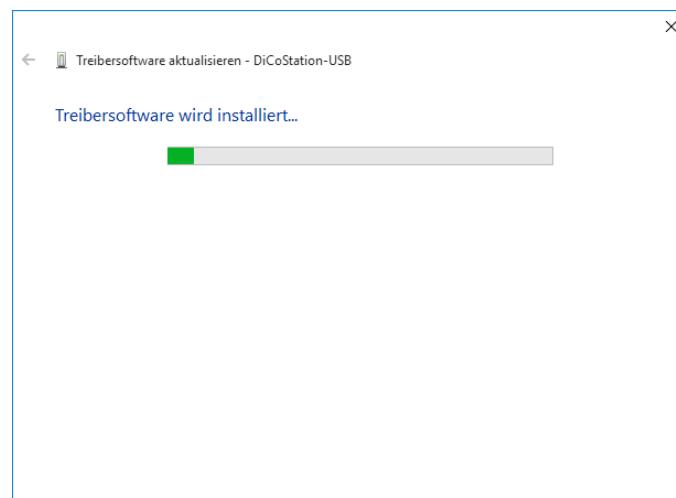
4. Select “Auf dem Computer nach Treibersoftware suchen” (“Searching for driver software on the computer”) (left picture). Insert the supplied CD “USB-Drivers for DiCoStation and HSI-88-USB”. Now click onto the button „Durchsuchen...“ (“Searching”) (picture right).



5. Select the directory suitable to your operation system on the CD-Drive (at the sample picture left: Windows 10 64-Bit) If the directory path has been correctly accepted click onto “Weiter” (“Forward”) (sample picture right).

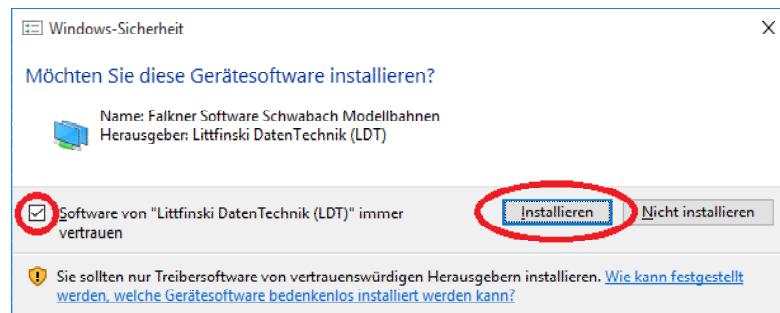


6. Now will be the **driver software installed**. In accordance to the operation system this can last up to several minutes.

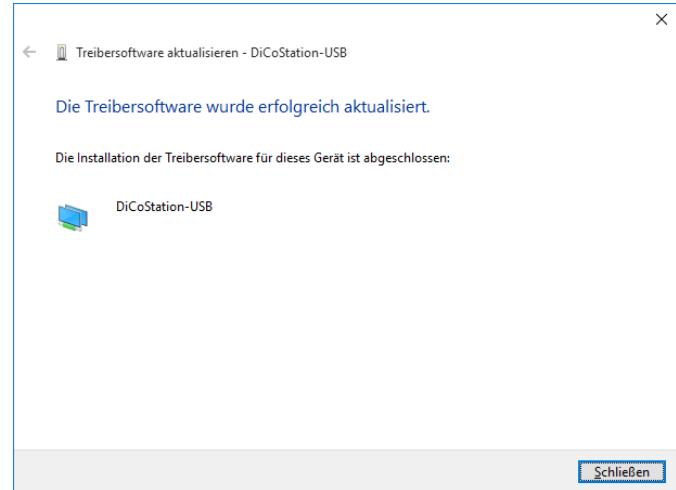


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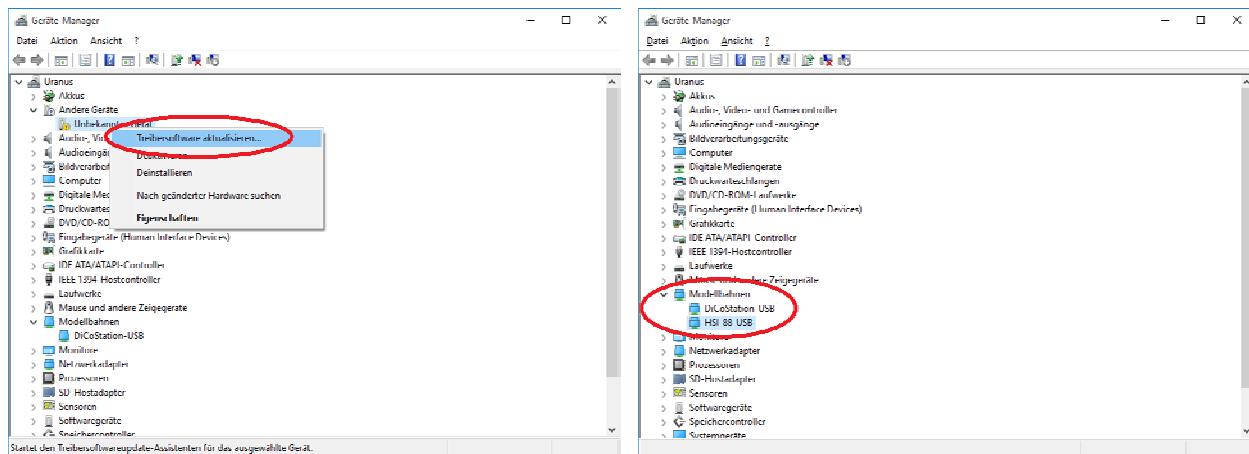
7. In between will be the **origin** of the **driver software** identified by **certificate**. Set the **correct hook** and click onto “**Installieren**” (“Install”).



8. If the **driver software** has been successfully installed click onto “**Schließen**” (“Close”).



9. Repeat the steps 3 to 8 for the second device “HSI-88-USB” (picture left). After successful installation you will find at the **device manager** a new device type “**Modellbahnen**” (“Model railways”) with the **driver software** for **DiCoStation-USB** and **HSI-88-USB** (picture right).



10. Now you can remove the **CD “USB-Drivers for DiCoStation and HSI-88-USB”** from the **disk drive**.

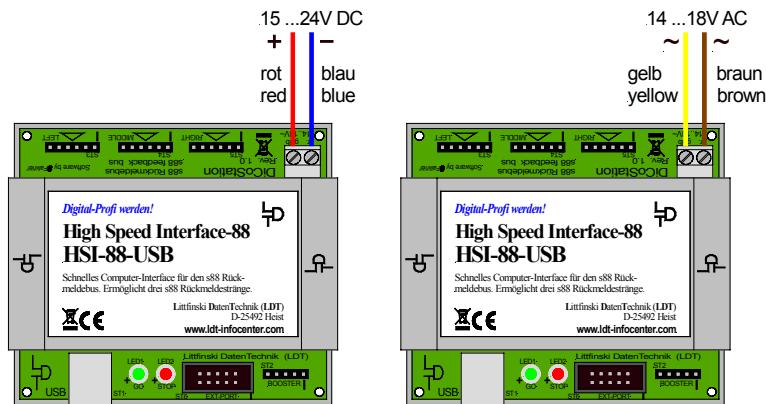
The **HSI-88-USB** can now be **used with interaction** to your **model railway software**.

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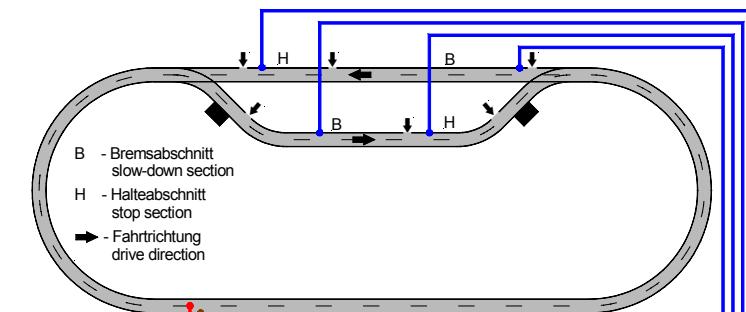
3. HSI-88-USB connection to the digital layout:

The **HSI-88-USB** will get the **power supply** via the 2-poles connection clamp **KL1**.

For the supply can be **15 to 24 Volt DC** or **14 to 18 Volt AC** from a model railway transformer used. Please **attend** to the **polarity** at the clamp **KL1** as shown on the pictures.

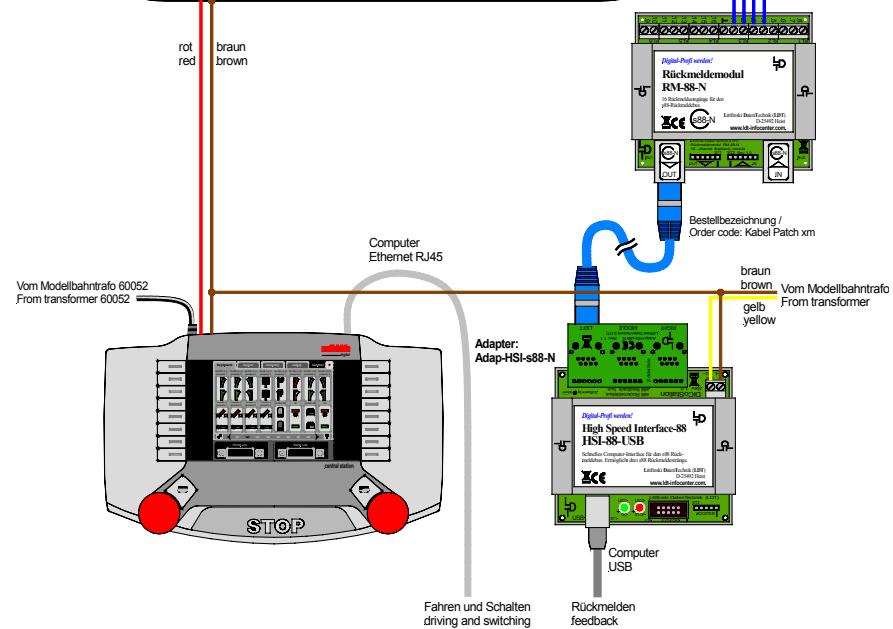


If you use the interface **HSI-88-USB** on a **3L-System** (tracks with middle conductor from **Märklin**) you can use **s88 standard feedback modules** which e.g. in interaction with **contact rails** (one isolated rail) are **switching against ground**.



In this case please attend to the correct connection of the supply cables "brown" (this is layout ground) and "yellow". The connections at the clamp **KL1** is accordingly marked.

If the **HSI-88-USB** will get the supply from a model railway transformer the connection "brown" of the transformer has to be connected to "brown" of the layout ground.



The application of the **HSI-88-USB** allows to install **three s88 Feedback Lines** instead of one. The request speed of the feedback modules will be therefore **three times as fast**. Additionally is the **arrangement** of the feedback modules below the layout base plate **considerable simple**.

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Start always to connect the **first line** to the terminal **Left (L)**. The second line connect to the terminal **Middle (M)**. If you need a third line you should connect this line to the terminal **Right (R)**.

Plug-on the **6-poles-bus plugs** of the **s88-standard cable** that way to the **6-poles pin plug bar** that the **white single wire** will correspond to the **white marking** at the **pin plug bar (picture left)**. Pay special attention that the **bus-plugs** will **not** be plugged to the **pin bar** in an **offset position**. Otherwise the **s88-inputs** of the **HSI-88-USB** will be **damaged**.

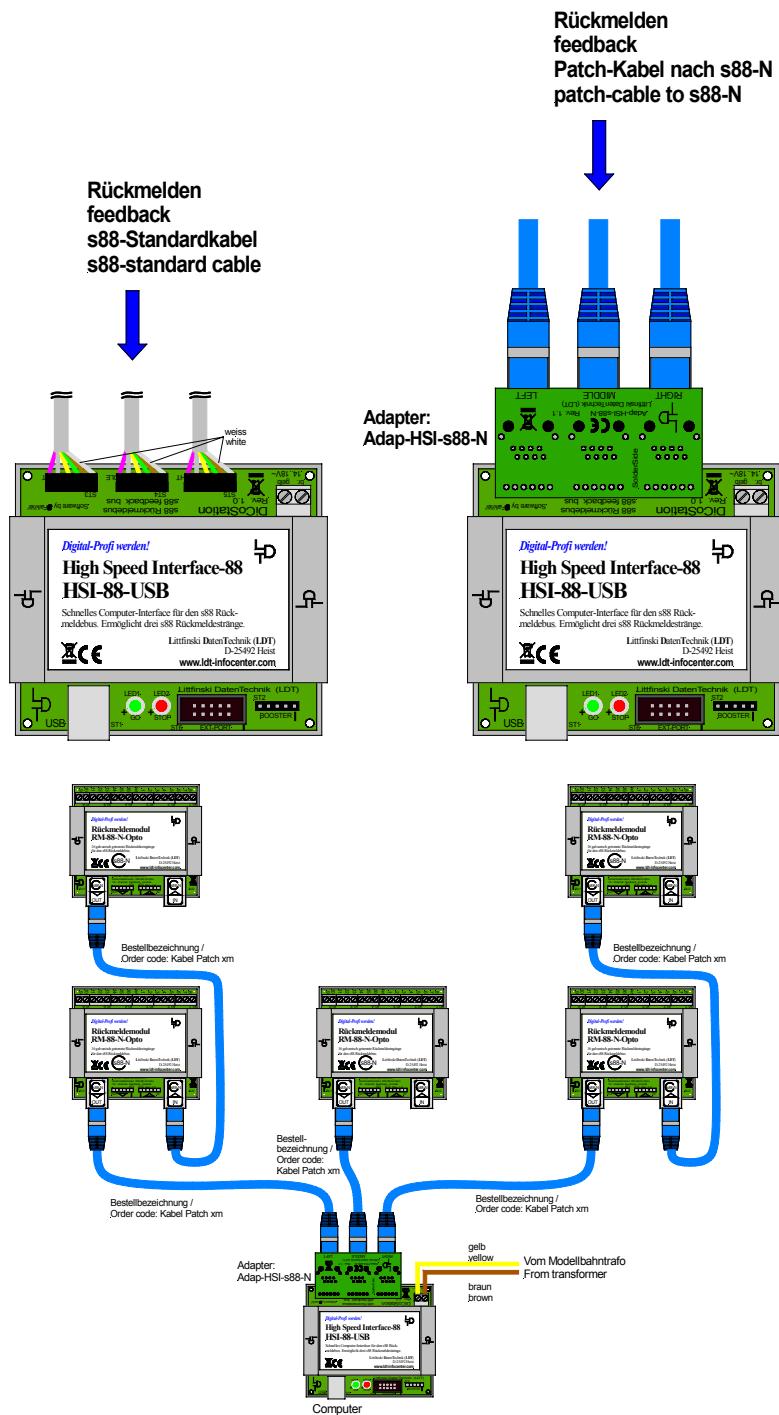
Via the adapter **Adap-HSI-s88-N** is it possible to connect **s88-Feedbackmodules** in

accordance to directly with **screened patch-cables** to the **Interface**.

The **6-poles socket bars** of the Adapters **Adap-HSI-s88-N** shall be plugged onto the **three 6-poles pin bars** of the **HSI-88-USB**. Therefore are **RJ-45 sockets** available for the **three s88 bus lines** for a **s88-connection** to the feedback modules via **screened patch-cables** according to **s88-N**.

Even if you use only a few feedback modules at your layout you should **distribute** the modules **even via the three lines**.

This will give you the **advantage** that the **reading** of the **feedback events** will be considerable **faster reported** to the **PC** respectively to the **model railway control-software**.



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The numbering of the feedback modules: The standard feedback modules of the **s88-feedback systems** consist of **16 inputs**. The **first 16-fold module** at the **Left** input will be always the **first feedback module within the feedback system**. The further counting will continue via the terminal **Middle** until the end of the **Right line**.

With the **HSI-88-USB** is it possible to control up to **31 16-fold-feedback modules** (62 of the type **RM-GB-8-N** with 8 inputs). To each bus line can be a maximum of **31** modules connected. But in **summary to all three lines** cannot be more than **31 16-fold respectively 62 8-fold modules connected**.

It is possible to connect all **s88-feedback bus compatible** feedback modules to the **HSI-88-USB**. Apart from the **LDT-Modules RM-88-N** and **RM-88-N-Opto** for the **3-conductor rail-system** and the **RM-GB-8-N** with **integrated track occupancy report** for the **2-conductor rail-system** is it as well possible to use feedback modules from other manufacturers. **Different brands** and **types** can be mixed within the feedback lines.

Various **application- and wiring-samples** are available on our **Web Site** at the **Internet** within the section **Sample Connections and Downloads**.

The **High Speed Interface HSI-88-USB** works **event controlled**: one or several **changes** of feedback inputs will be **reported** to the PC at once. This **saves** considerable **computing time** and will be noticed within a **reduced reaction time** because the PC has not to request at a cyclical mode (and therefore delayed) about changes but receives those reports actual from the **HSI-88-USB**.

Functional control:

If the **HSI-88-USB** has been **connected** to the **switched-on PC** via the **USB-interface** the **red LED will lighten up**. Whenever **feedback changes** will be **transmitted** to the **PC** the **green LED** of the **HSI-88-USB** will be **flashing up**.

4. HSI-88-USB implementing into your model railway software:

If your **model railway control software supports** the **HSI-88-USB** you have to select at your **model railway software** your **digital central unit** as the **first digital system for driving and switching**.

For the **feedback reports** you have to select at your **model railway software** the **HSI-88-USB as the second digital system**.

The numbering of the feedback modules will be handled different by various software. The detailed procedure should be explained within the **manual** of your **model railway control software**.

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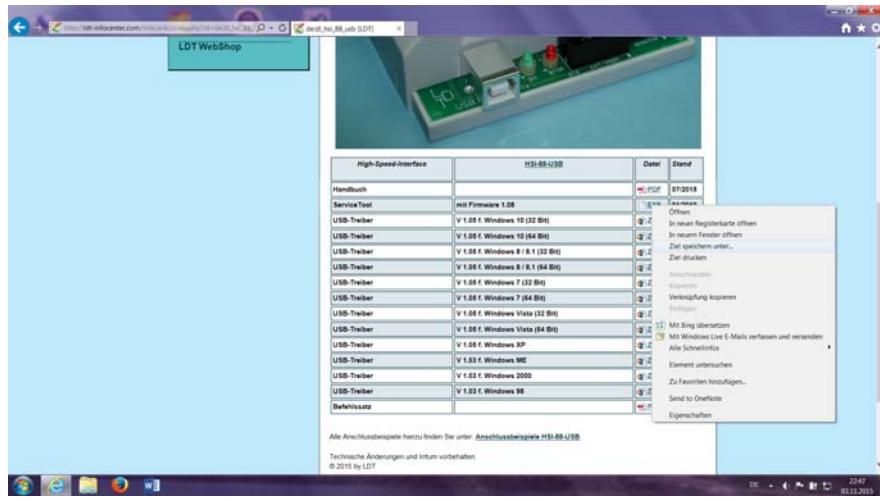
5. Firmware Update:

The software of the **HSI-88-USB** is a so-called **Firmware**. This software can be **easily actualized** via the PC.

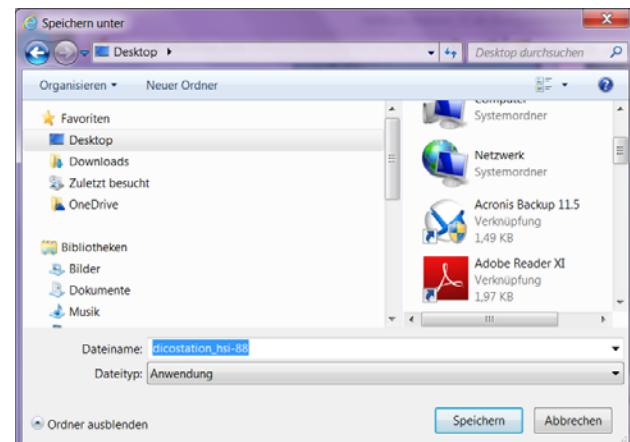
1. At first **load-up** the file “**DiCoStation HSI-88.exe**” to your PC. This file can be found at the **section “Downloads”** on our **Web Site** at the **downloads for HSI-88-USB**.

This file is a **ServiceTool**, which includes the **actual Firmware** as well.

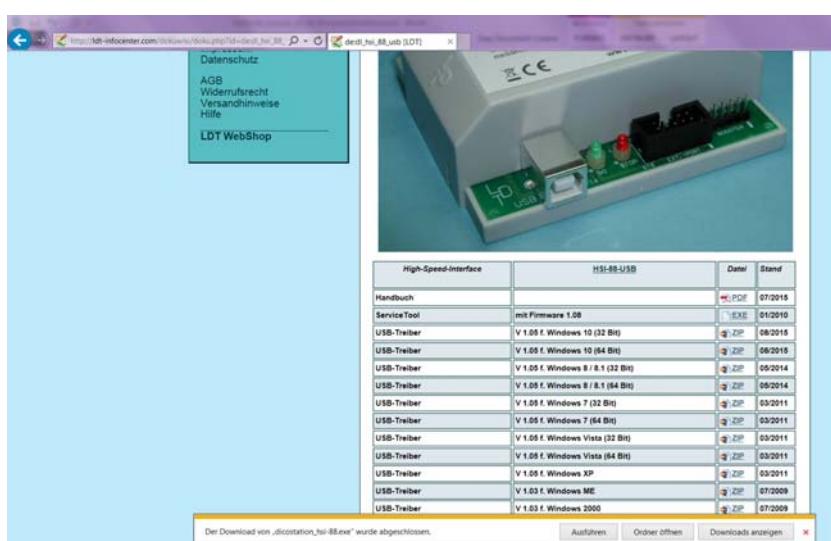
At first click with the **right mouse button** onto the file “**DiCoStation HSI-88.exe**” and then with the **left mouse button** onto „**Ziel speichern unter ...**“ (“**save target under....**”).



2. As **memory cell** on your **PC** select at the window “**Speichern unter**” (“destination storage”) **“Desktop”** and click onto “**Speichern**” (“storage”).



3. Click at the window “**Download completed**” on the very right onto “**X**”.



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4. For the following procedure has the **HSI-88-USB** to be **connected** via the **USB-interface** to the **PC**. The **model railway layout** has not to be switched-on.

5. Call with a double-click the program “**DiCoStation HSI-88**” from the **Desktop** and click onto the section “**Update**”.

Under “**Installierte Firmwareversion**” (“installed firmware version”): the present version stored at your **HSI-88-USB** will be indicated.

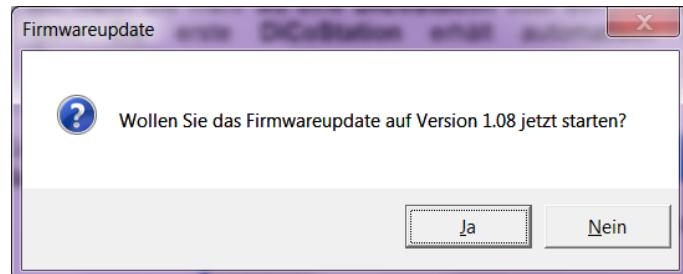
If under “**Verfügbare Firmwareversion**” (“available firmware version”): a **higher version number** will be indicated please **click** onto “**Firmwareupdate**”.



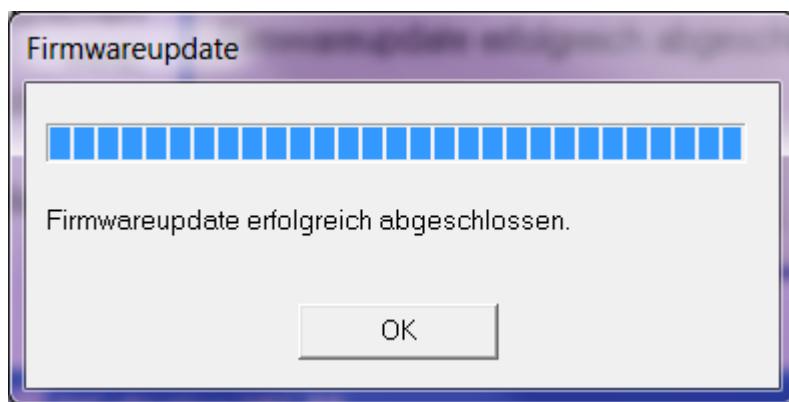
(“available firmware version”): a **higher version number** will be indicated please **click** onto “**Firmwareupdate**”.

Important Information: The **device number** should **never be changed**. Otherwise the model railway software will not **recognize** the **HSI-88-USB** any more. The device number will be important as soon as you use more than one **HSI-88-USB** or **additionally a DiCoStation for driving and switching**. The first **HSI-88-USB** will get automatically always the **device number 1**.

6. Click at the window “**Firmwareupdate**” on “**Ja**” (“Yes”).

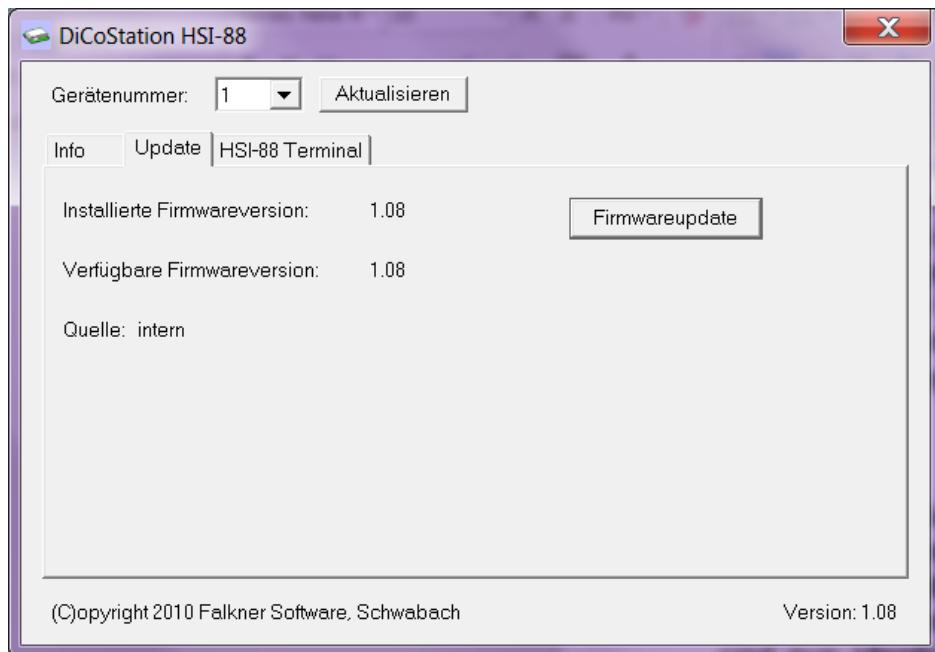


7. During the updates should be the **USB-connection to the **HSI-88-USB** **not interrupted**. After a short **transmittance time** which will be indicated at two additional windows please **click** under the report “**Firmwareupdate erfolgreich abgeschlossen**” (“firmware successful completed”) on “**OK**”.**



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8. "Installierte Firmwareversion" and "Verfügbare Firmwareversion" ("installed firmware version" and "available firmware version") are now **identical**. Close now the ServiceTool "DiCoStation HSI-88" with a **click** on the "X" at the right top window border.



After this successful update you can use the **HSI-88-USB** as usual.

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