



Littfinski DatenTechnik (**LDT**)

Bühler electronic GmbH • Ulmenstraße 43 • 15370 Fredersdorf / Germany • Tel.: +49 (0) 33439 / 867-0

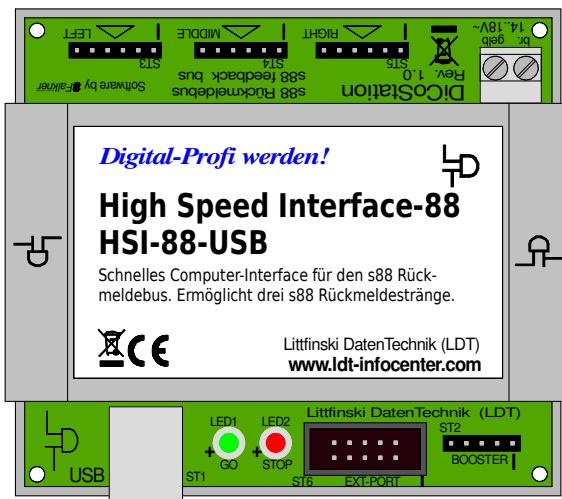
Manual

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.



HSI-88-USB – Manual

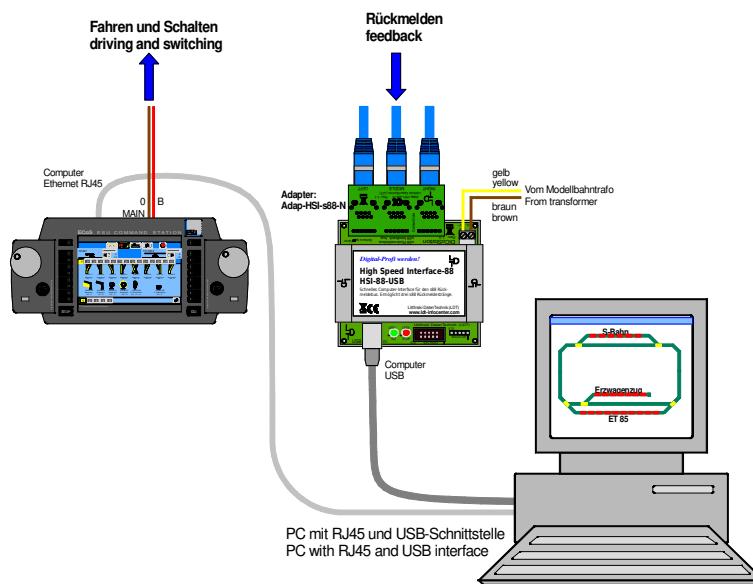
Content:

	Page
1. Preface / Safety Instruction	1
2. USB-Driver installation	2
3. HSI-88-USB connection to the digital layout	6
4. HSI-88-USB implementing into your model railway software	8
5. Firmware Update	9

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**.



page_1070

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**.
- We designed our devices for indoor use only.
- 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**.
- Many **illustrations** at this **manual** are **identified** with a **file name** (e.g. **page_1070**). You can find those files on **our Web-Site** at the section “**Sample Connections**” of the **High-Speed-Interface HSI-88-USB**. You can **download** the files as **PDF-File** and make a **colored print** at the **DIN A4 format**.

HSI-88-USB – Manual

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**, which can be downloaded from our **Web-Site** at the section
“**Downloads / High-Speed-Interface HSI-88-USB for the s88-feedback bus**”
(https://www.ldt-infocenter.com/dokuwiki/doku.php?id=en:dl_hsi_88_usb) **together with the ServiceTool** (file “DiCoStation HSI-88.exe”). The **HSI-88-USB** is a **dual-purpose unit**. During **installation two drivers** will be **loaded**.

There 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 Manual Driver-Installation at sample of Windows 10:

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.

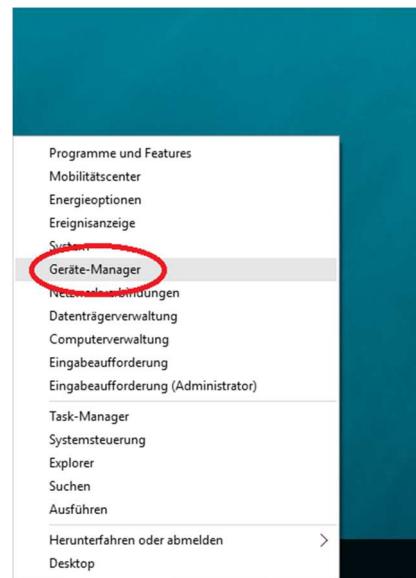
Following connect the **square plug** of the **USB connection cable** to the **socket marked USB** of the **HSI-88-USB**. All other connections of the **HSI-88-USB** will remain without engagement.

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.

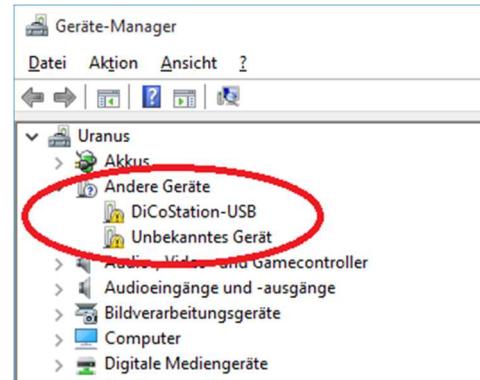
The **driver installation** can be performed **manually**. The following **installation steps** are valid for Windows 10. **Other operation systems** can require **little different steps**.

HSI-88-USB – Manual

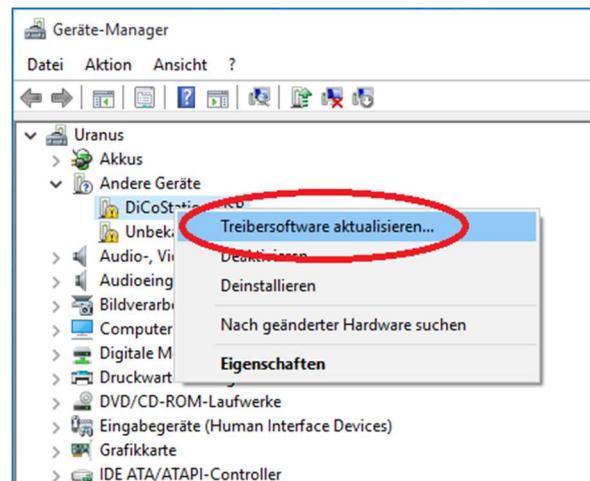
1. Open the **Geräte-Manager** (Device Manager) by **clicking** with the **left mouse-key** onto the **Windows symbol** (mostly at the left bottom) and **select** the **device-manager**.



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**.

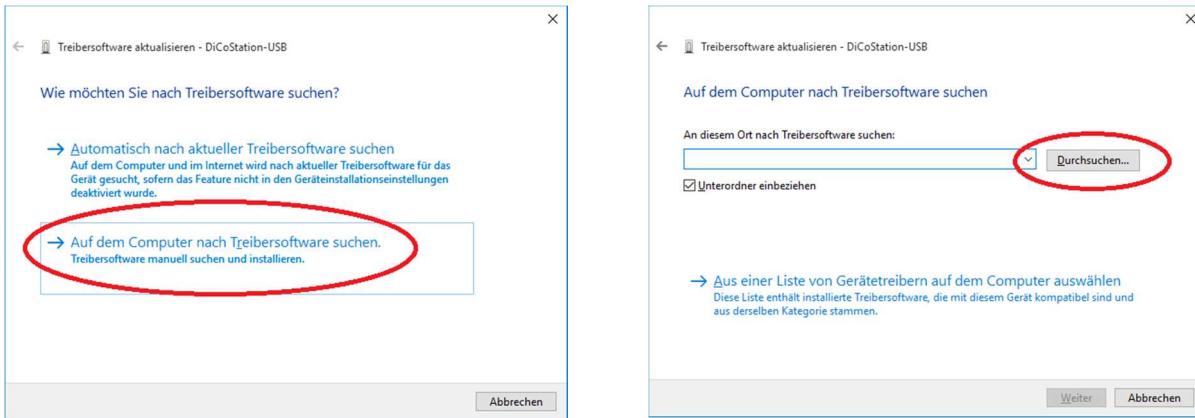


3. Click with **right mouse-key** onto the **first new device** (**DiCoStation**) and select the **menu item „Treibersoftware aktualisieren“** (“Driver software updating”).

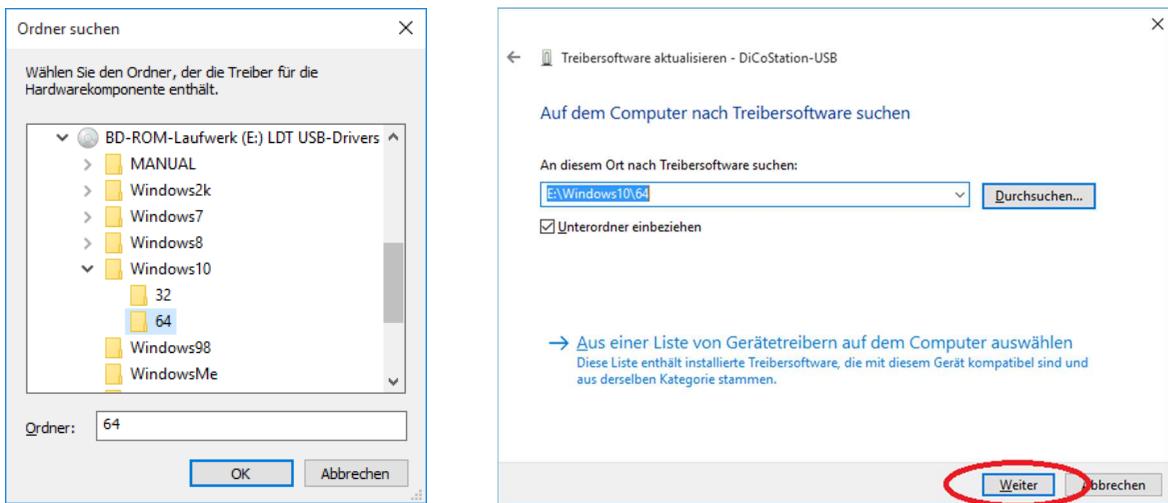


HSI-88-USB – Manual

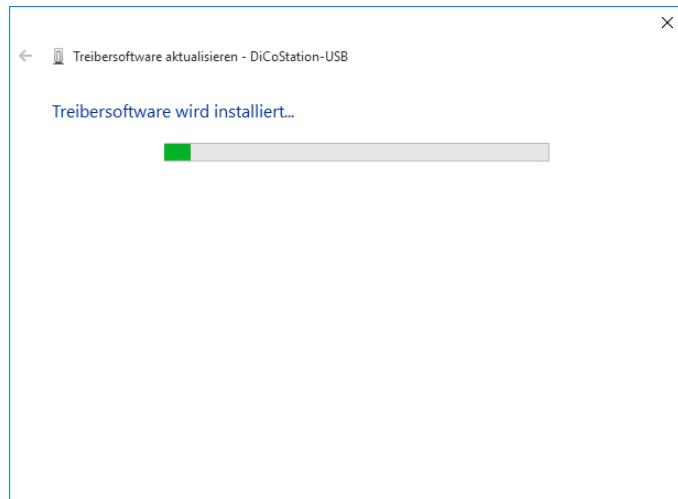
4. Select “Auf dem Computer nach Treibersoftware suchen” (“Searching for driver software on the computer”) (left picture). Now click onto the button „Durchsuchen...“ (“Searching”) (picture right).



5. Select the Download-Directory where you have saved the downloaded driver (at the sample: E:\Windows10\64). If the **directory path has been **correctly accepted** click onto “Weiter” (“Forward”) (sample picture right).**

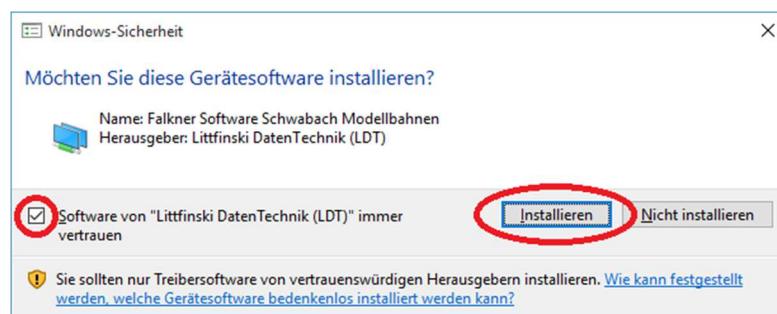


6. Now will be the **driver software installed. In accordance to the operation system this can last **up to several minutes**.**

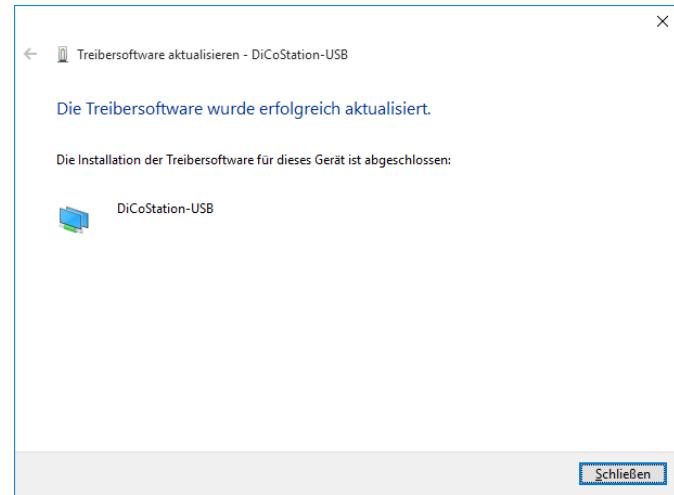


HSI-88-USB – Manual

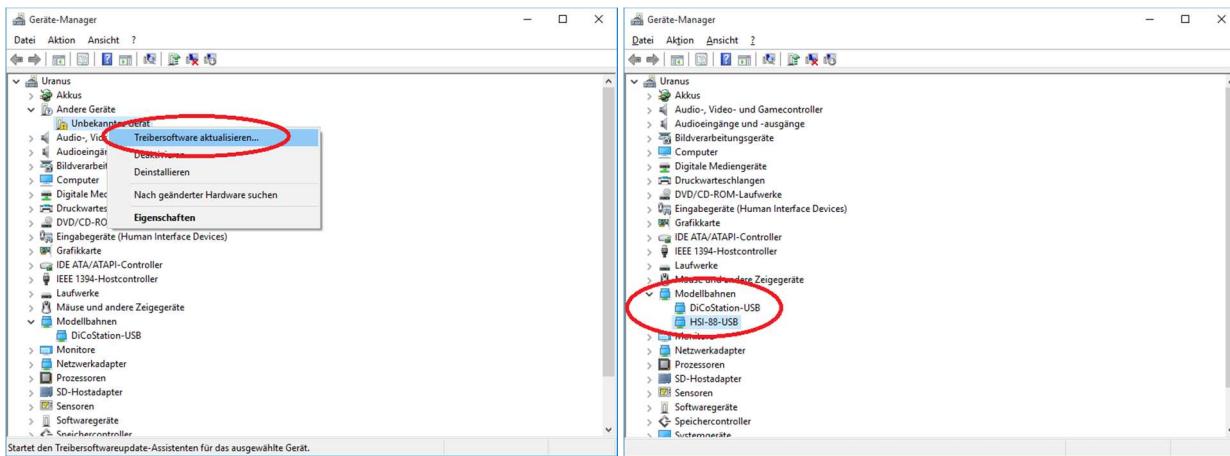
7. In between will be the **origin** of the **driver software** identified by **certificate**. Set the **correct hook** and click onto “**Installieren**” (“Install”).



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).



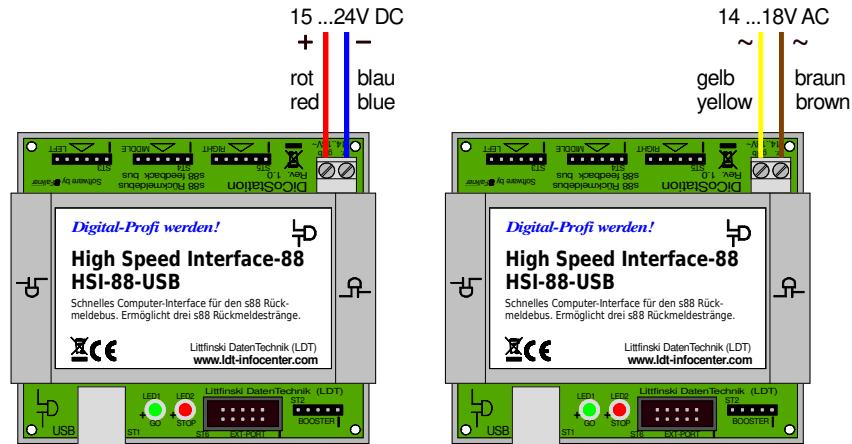
10. The **HSI-88-USB** can now be **used** with **interaction** to your **model railway software**.

HSI-88-USB – Manual

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**.

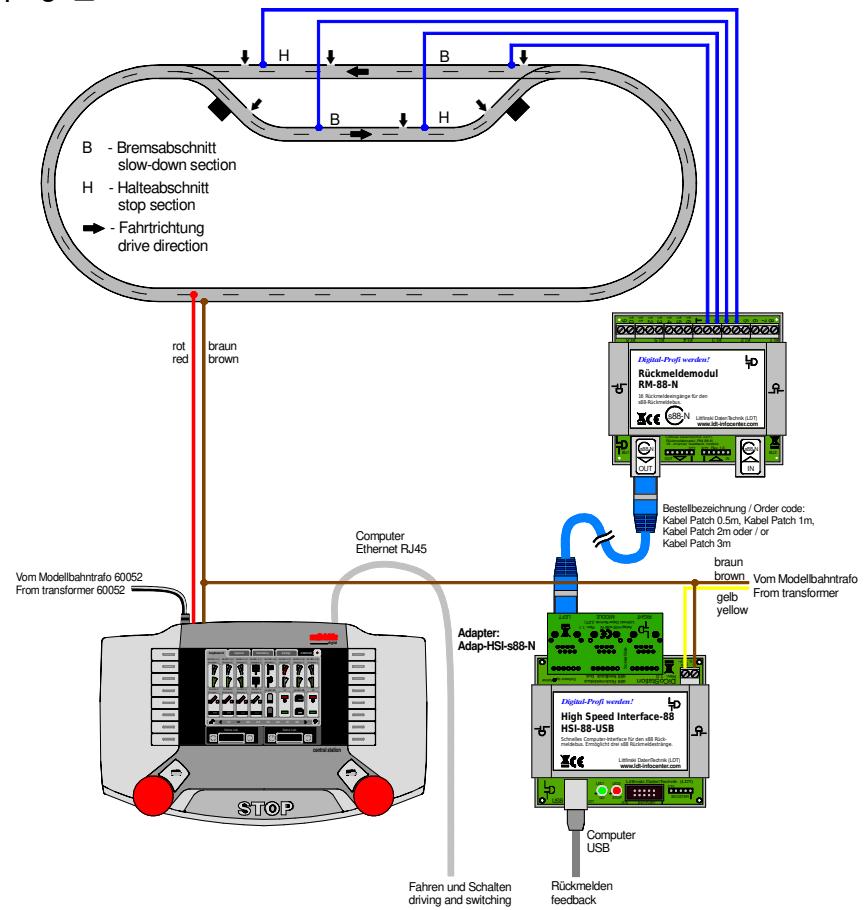
For the supply can be **15 to 24 Volt DC** or **14 to 18 Volt AC** from a **model railway transformer** used. Please attend to the **polarity** at the clamp **KL1** as shown on the pictures.



page_1559

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.



page_1663

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**.

HSI-88-USB – Manual

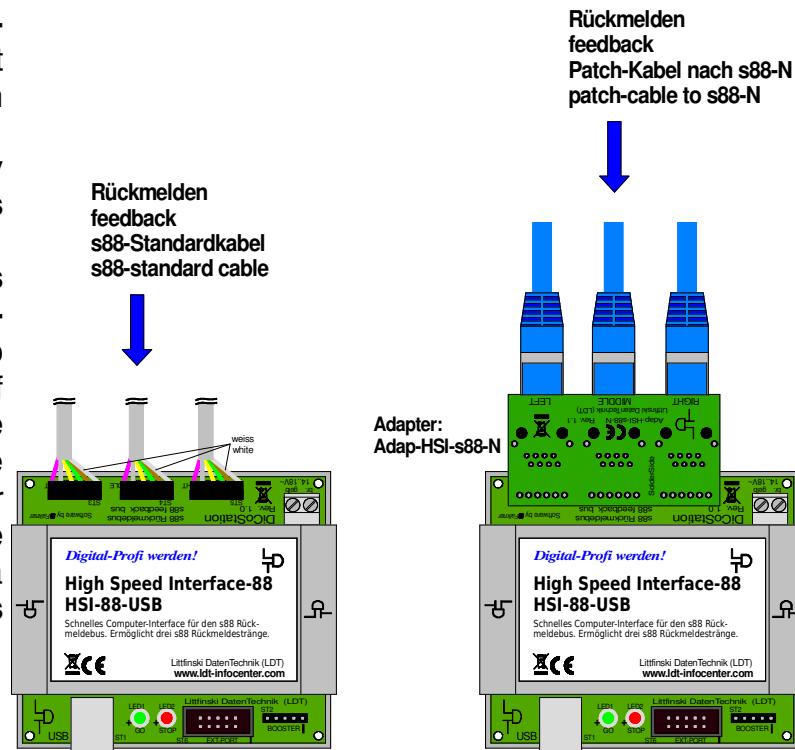
Start always to connect the **first line** to the terminal **Left (L)**. The second line connect to the terminal **Middle (M)**. If you need a third line you should connect this line to the terminal **Right (R)**.

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**.

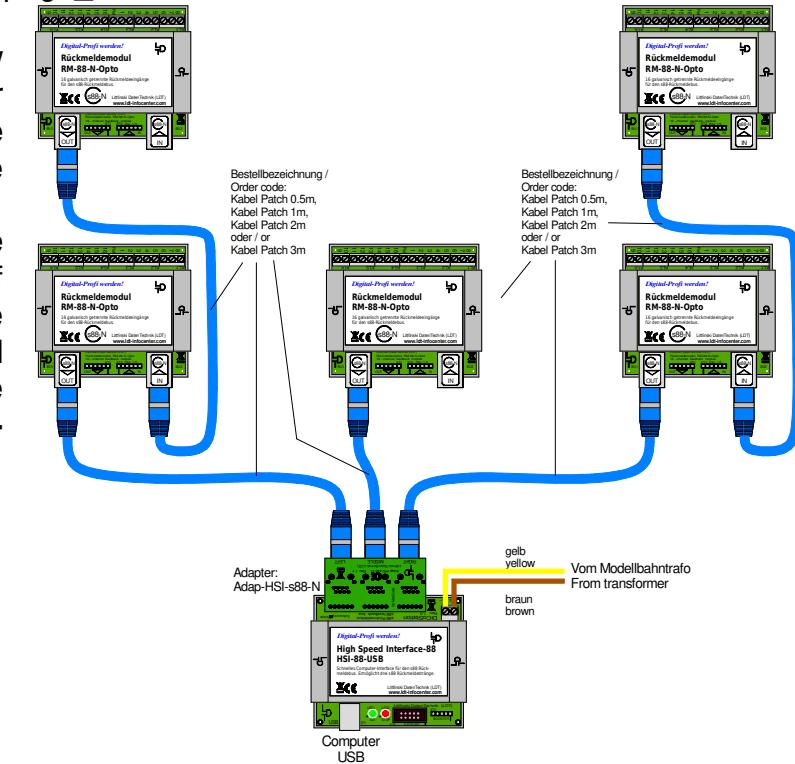
The **6-poles socket bars** of the Adapters **Adap-HSI-s88-N** shall be plugged onto the **three 6-poles pin bars** of the **HSI-88-USB**. Therefore are **RJ-45 sockets** available for the **three s88 bus lines** for an **s88-connection** to the feedback modules via **screened patch-cables** according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



page_1659

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.



HSI-88-USB – Manual

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**.

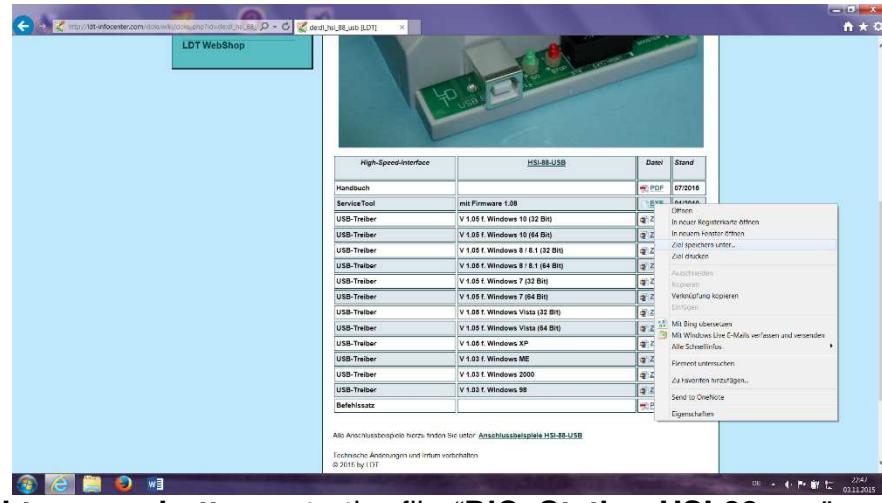
HSI-88-USB – Manual

5. Firmware Update:

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

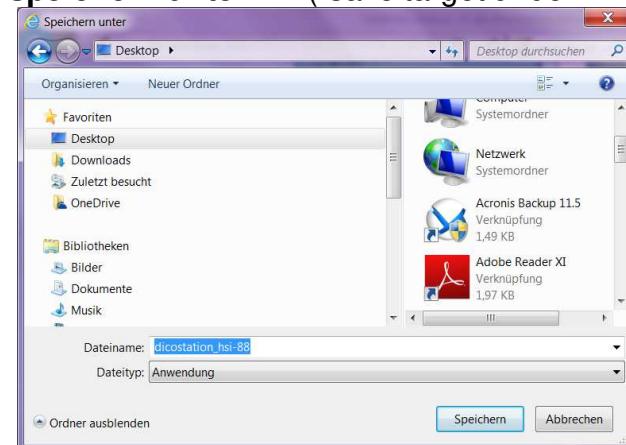
1. At first **load-up** the file “**DiCoStation HSI-88.exe**” to your PC. This file can be found at the **section “Downloads”** on our **Web Site** at the **downloads** for **HSI-88-USB**.

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

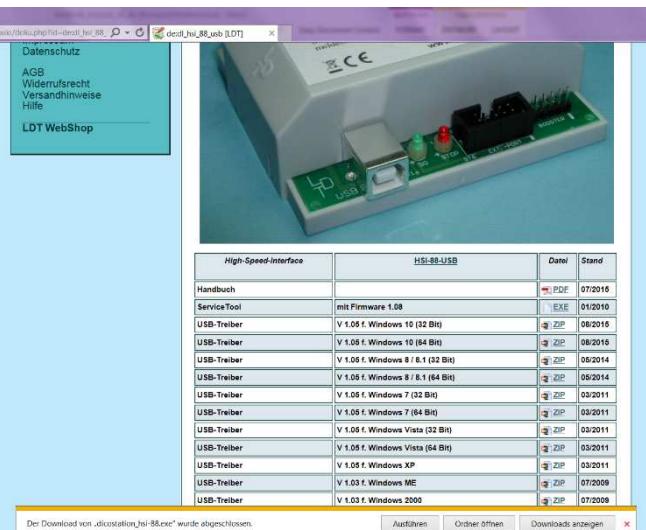


At first click with the **right mouse button** onto the file “**DiCoStation HSI-88.exe**” and then with the **left mouse button** onto „**Ziel speichern unter ...**“ (“**save target under....**”).

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**”.



HSI-88-USB – Manual

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.

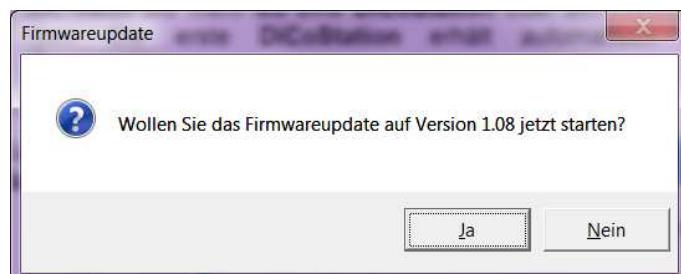
If under **“Verfügbare Firmwareversion”**

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



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”**.



HSI-88-USB – Manual

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.

Made in Europe by
Littfinski DatenTechnik (LDT)
Bühler electronic GmbH
Ulmenstraße 43
15370 Fredersdorf / Germany
Phone: +49 (0) 33439 / 867-0
Internet: www.ldt-infocenter.com

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