hc8/36-KNO

for 3rd generation hc8® with 36 keys

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This user manual helps you to use the program hc8-KNO, e.g. for the

- definition of keypad foils for hc8/36
- programming of the devices
- relating device data to the geometry of junctions
- retrieving data from the devices
- to evaluate and validate the data before export to KNO-WIN

1 Main Menu

Start the hc8-KNO program via its desktop icon that has been created during installation. After starting the program, you are in the main menu that contains 9 sub menu items.
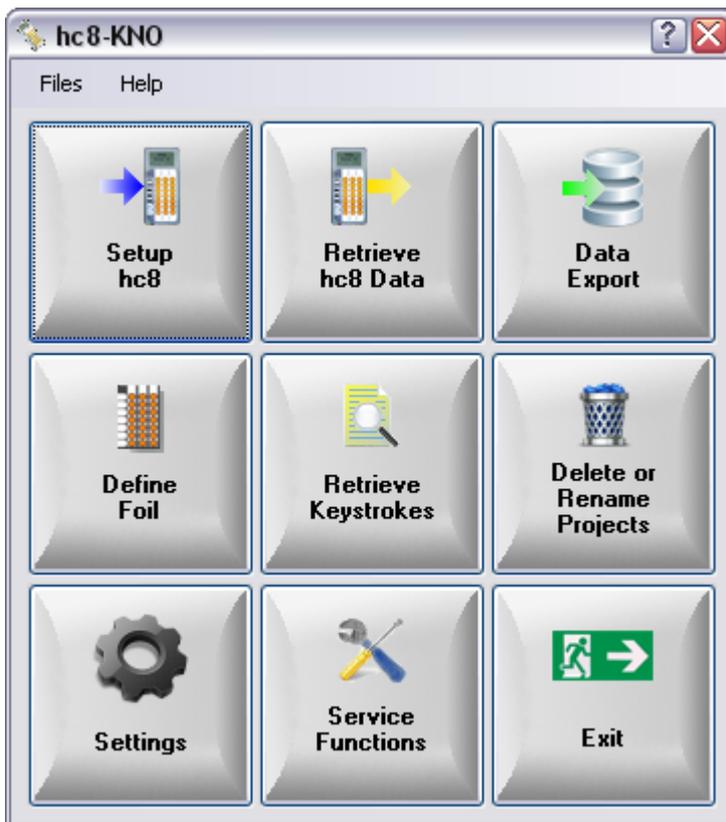
The following 3 items are important for a standard survey:

[Setup hc8]	Starting the hc8/36 before the actual count begins
[Retrieve hc8 Data]	Transferring data from the hc8 to the PC
[Data Export]	Handing the data on the PC over to KNO-WIN

The following menu items you need only occasionally:

[Define Foil]	Define the type of count (lanes, number of classes, vehicle types)
[Retrieve Keystrokes]	Retrieval of individual key press events (instead of interval data)
[Del/Rename Projects]	Database cleanup
[Settings]	Program settings (program default values, directories)
[Service Functions]	hc8/36 settings
[Exit]	Leave the program and close the application.

Use **[?]** to get help for the currently active menu or sub-menu.

2 Setup hc8

Program hc8

Set project name

Name FFBPV_11Jan2011

[Print Project Parameters]

Previous Projects

Project Name	Survey Date
FFBPV_11Jan2011	27.01.2011 06:00
M0120	20.01.2011 06:00
FRE11	18.01.2011 15:00
test_woe_17Jan2011	17.01.2011 14:30
FFBPV	14.01.2011 06:00
FFBPV1	14.01.2011 06:00

Select Foil

Foil Type
- All
- 3 x 2
- 3 x 7
- 4 x 7

Foil Name
- _Kno Muenchen
- _Kno Munich
- _Kno Stand ENG
- _Kno Standard
- Kno Standard 3 m FG
- SON: FG 7 Tasten
- SVZ 3x7

	Car	Car	Car
	LGV	LGV	LGV
	HGV	HGV	HGV
	Bus	Bus	Bus
	MCL	MCL	MCL
	PCL	PCL	PCL
	Other	Other	Other

Define blocks

Start Do 27/01/2011 06:00

Duration [hour:min] 04:00

Interval [min] 15

Sleep time [min] 3

Allow display light ☐

[Add Block] [Delete Block]

Block	Start	Duration	End	Interval	Sleep
1	Do 27.01.2011 06:00	04:00	10:00	15	3
2	Do 27.01.2011 15:00	04:00	19:00	15	3

Define hc8

No. of hc8: 6

[Delete hc8]

[Delete List]

[Search for hc8]

	hc8
E	36
P	43
E	44
E	45
E	58
E	59

Program hc8

[Store Parameters]

[Test in 2 minutes]

[Program hc8]

[Exit]

Use this menu to set the parameters of a traffic count and store them under a project name. Using these parameters, you can program and start several hc8 devices in on go. All devices will receive the same information. Either before or after the traffic count, the devices can be associated with their counting site and lane in menu **Retrieve hc8 Data**.

2.1   Set Project Name

The name of the project can have up to 20 characters and must be unique. Later on, the project name can still be changed when exporting to KNO-WIN. The list on the right lists previous projects that you can leaf through.

2.2   Select Foil

Select a foil from the ones previously defined in menu **Define Foil**. When you select the foil for the count, you define which keys of the hc8 will be released and which text will be displayed when a certain key is pressed. Select the type of foil and select the foil that should be used for the count. If no suitable foil is listed, leave this menu and create a new foil first.

2.3   Define Blocks

Any number of blocks can be defined, even for several days and weeks.

First define the counting block in the area on the left. Then add the block with **[Add Block]** to the list on the right. More blocks can be defined in the same way. Using the data from the list, the hc8 will be programmed later on.

Because the hc8 stores the data internally as individual key press events (each counted vehicle with date and time), the length of the intervals can be still be changed later on before data is retrieved from the devices.

[Allow display light] should only be activated for a count during the night.

2.4   Define hc8

When the above entries have been made, the data loggers can be selected with **[Define hc8]** and programmed with **[Program hc8]**. Use the button **[Search for hc8]**, to automatically find and list all devices within reach of the dongle. Alternatively, you can enter device IDs manually into the list. In case of typing errors or similar, you can remove a selected device from the list with the key **[Delete hc8]**. The key **[Delete List]** removes all devices from the list, so that you can start again with an empty list.

If you want to test the settings, for instance to see that the texts are correctly displayed on the device, simply press **[Test in 2 minutes]**. The settings will not be changed, but the start times of the counting blocks will be moved back to start in 2 minutes time.

Important Note

After the test, do not forget to program the devices again with **[Program hc8]**, so that they have the correct settings for the actual count.

When you press the button **[Program hc8]** all parameter settings will be stored and the devices will be programmed one by one.

With button **[Store Settings]** you can save the data at any time.

3 Retrieve hc8

In this menu item you can associate the counting devices to the counting site (junction, lane). This is done in 3 steps: Select the project, check parameters and define sites and lanes.

3.1 Select Project

Select the project from the list with which the hc8 has been programmed. With function **[Analyse unknown hc8]**, you can read hc8 devices when the programming of the device is unknown. This could be the case, when devices have been programmed at a different PC. To get data from the unknown devices, the program reads the parameters from the devices present and uses them to create a new project and, if necessary, also a new foil.

3.2 Check parameters

The counting blocks and the foil associated with the selected project will be displayed purely for information. Parameters cannot be modified at his point.

3.3 Define sites and lanes

At first, specify the devices from which data should be retrieved. There are 3 possible ways to do this:

- Enable option **[Start with empty list]** to enter the IDs of the devices manually.
- Press button **[Search for hc8]** to automatically create a list of the devices within reach of the USB port.
- Disable option [**Start with empty list]**, to list all devices that have been programmed for this project.

The table lists all specified devices and for each device all of its time blocks. In each row of the table, the site of the survey and also the drive relation for each lane column have to be entered. When the data of a lane column should not be passed on, please enter '00'.

To help with data entry, use option **[Auto Copy]**. When enabled, the program will auto fill the following rows in a sensible way.

You can finish data entry in a row with the keys **[ENTER], [TAB] or [ARROW]**. Depending on the used key, the cursor moves to the next cell for data input. When you work normally from top to bottom, we recommend to use the TAB-key.

Press the button **[Retrieve]** to get the data of the time blocks listed in the table from the devices. This action can be repeated as often as you like, independent of the state of the devices, and independent of whether the site and lane information has already been supplied or not.

4 Export Data

In this menu, you can check the data retrieved from the counting devices. Finally, you can export the data for further processing with KNO-WIN or a different program.

4.1 Select Project

At first, select the project from the list with which the hc8 had been programmed or else, the project, the data of which you would like to export.

4.2 Check Data

Check Data – Group by
With this function you can easily get an overview over the data and check it.

Check Data – Filter: Show only
With this function you can limit the amount of data displayed:

- **[retrieved hc8]** when ticked, only data of devices will be displayed, the data of which has been retrieved but not yet exported.

- **[ignored lanes]** when ticked, only the data of lanes will be displayed, that will not be exported, because the drive relation contains a '0'.

Check Data – Diagram
With this function, you can choose to display a flow diagram in addition to the data. Click on a data record, to display the flow diagram of the corresponding site. The selection is easier, when you group the data either by **[Site]** or by **[Site, Lane]**.

4.3 Exporting

Press the button **[KNO-WIN Export]** to export the data in DBF-files for processing with KNO-WIN. Prior to export, specify the export directory in the main menu **Files / Select KNO-WIN Directory**.

For further processing in KNO-WIN, you can proceed in three different ways:

- When you have specified in **Files / Select KNO-WIN Directory** the directory that is used by KNO-WIN, the data are available to KNO-WIN directly.

- When you have exported the data into a directory of their own, you can select this directory also in KNO-WIN. In this way, the exported data is held as a separate KNO-WIN database.

- When you have exported the data into a directory of their own, you can import the data in KNO-WIN and add it to the existing KNO-WIN data.

The function **[KNO-DOS Export]** is only used by DOS enthusiasts.

The function **[CSV-Export]** saves the data as shown in a CSV-file. This allows to arrange the data with the group-function in an appropriate way and export them, for instance to Excel, for further processing.

5 Define Foil
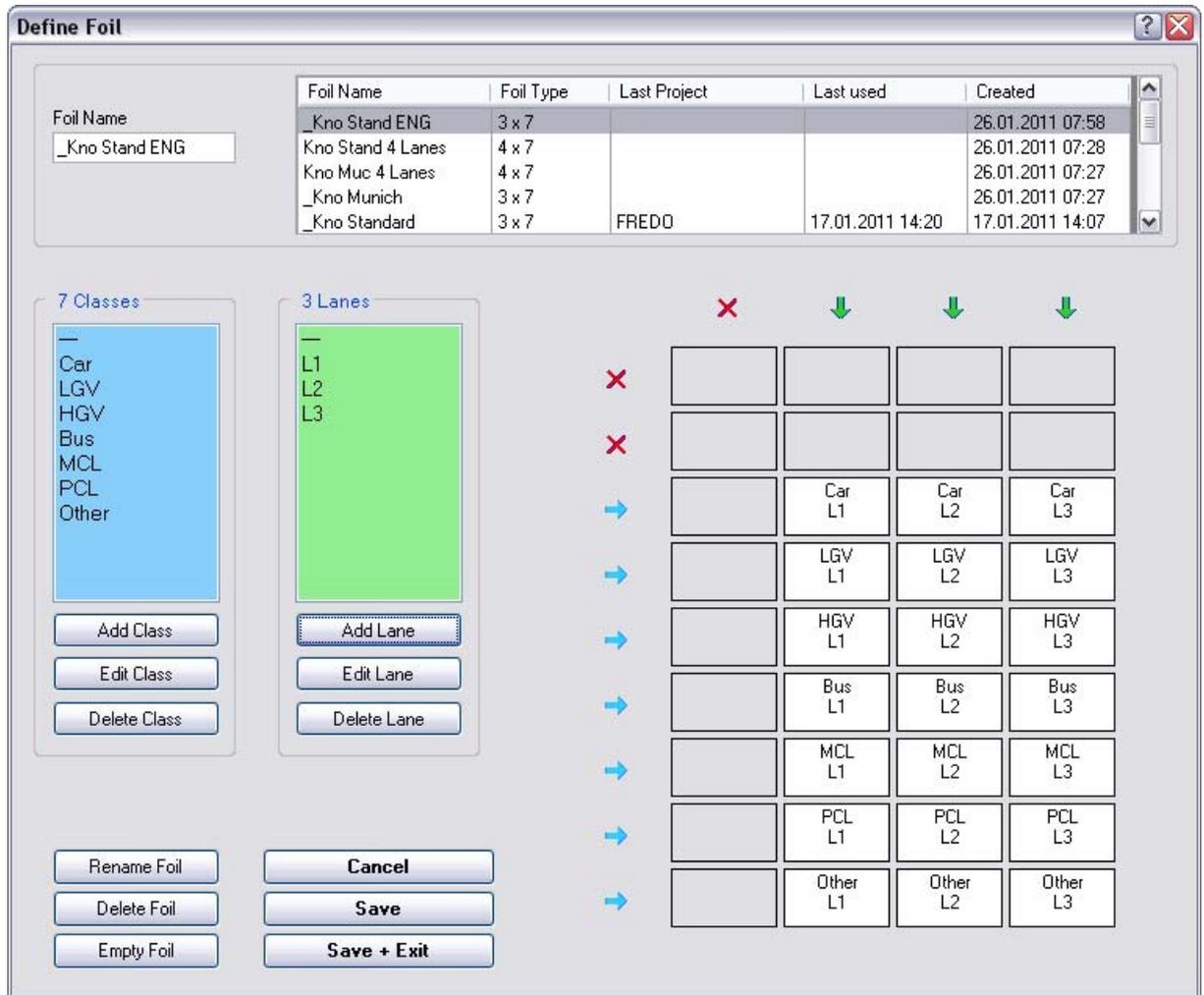
In this menu, you lay down which keys of the hc8 should be usable and which meaning they should have.

To design a new foil, select a similar one from the list to use as a template. Edit the template foil as described below and save under a new name.

Modify lists (7 classes and 3 lanes respectively)
Modify the lane list (green) in such a way to only contain lanes required for the count.
Modify the class list (blue) in such a way to contain only classes required for the count.

Please be aware, that the order of the classes in the list determines the order in which columns are exported later on.

Assigning a lane to all keys of a keypad column
Click on a lane in the lane list. Drag and drop the entry onto the green arrow above the keypad column.

Assigning a lane to a single key
Click on a lane in the lane list. Drag and drop the entry directly onto the key in the keypad.

Assigning a class to all keys of a keypad row
Click on a class in the class list. Drag and drop the entry onto the blue arrow on the left site of the keypad row.

Assigning a class to a single key
Click on a class in the class list. Drag and drop the entry directly onto the key in the keypad.

Lock all keys of a keypad row or column
Lock a row by clicking on the blue row arrows on the left of the keypad. Lock a column by clicking on the green column arrows above the keypad. When a row or column is locked, its arrow symbol changes to a red "X" and all its keys will be cleared. To unlock, click on the red "X" symbol.

Lock a single key
Click on the key to lock it.

Rename Foil
Use function **[Rename Foil]** to assign a new name to an existing foil. First select the foil from the list. Enter the new name into the text field on the top left. Press button **[Rename Foil]** to change the name of the foil in the list and in all projects that have used this foil.

Delete Foil
With function **[Delete Foil]** you can delete an existing foil.
Please be aware, that when you delete a foil that has been used in a project, the data of this project will become incomplete.

Empty Foil
By clicking on **[Empty Foil]** the class list, the lane list and the complete keypad will be cleared.

6 Read Keystroke Values

Retrieve keystrokes

Select project

Project Name	Survey Date
FFBPV_11Jan2011	27.01.2011 06:00
M0120	20.01.2011 06:00
FRE11	18.01.2011 15:00
test_woe_17Jan2011	17.01.2011 14:30
FFBPV	14.01.2011 06:00
FFBPV1	14.01.2011 06:00

Check Parameters

Block	Start	Duration	End	I
1	Do 27.01.2011 06:00	04:00	10:00	
2	Do 27.01.2011 15:00	04:00	19:00	

_Kno Stand ENG

	Car	Car	Car
	LGV	LGV	LGV
	HGV	HGV	HGV
	Bus	Bus	Bus
	MCL	MCL	MCL
	PCL	PCL	PCL
	Othe	Othe	Othe

Retrieve

No. of hc8: 6

	hc8
E	36
P	43
E	44
E	45
E	58
E	59

Search for hc8

Retrieve

Exit

As a rule, counted data is summed up and processed by time intervals. However internally, the hc8/36 stores every single key stroke individually. In this menu, you can retrieve these individual values. Please be aware, that due to the great amount of data, data retrieval and processing can be very time consuming.

6.1 Select project

From the list, select the project with which the hc8 has been programmed. To reduce the amount of data, you can create a project with a shorter time period beforehand.

6.2 Check parameters

The counting blocks and the chosen foil of the selected project will be displayed. This is for information only as parameters cannot be edited at this point.

6.3 Retrieve

On selecting the project, all hc8 that participated in the project will be listed. If keystroke data from only some of the hc8-devices are needed, you can do one of the following:

- use button **[Search for hc8]** to fill the list with hc8 devices that can be detected

- if necessary, use the **[del]** key on your PC keyboard to delete devices from the list

- if necessary, specify the devices to be read manually directly in the list

Use button **[Retrieve]**, to read the keystroke values of all listed hc8 devices and store them in table "hc8KeyStrokes" of the project database

7   Rename or Delete Project

In this menu, you can rename existing projects or delete them completely. Data integrity is maintained in that always all records of a project will be accounted for by the software.

7.1 Select Project

Select from the list the project you want to rename or delete.

7.2 Check Parameters

The counting blocks and the foil of the selected project will be displayed. This is for information only, modifications at this point are not possible.

7.3 Rename or Delete Project

Press button **[Delete Project]** to delete all project parameters and data in the project database.

Press button **[Rename Project]** to rename all project parameters and data in the project database.

8 Settings

Use this menu to make some basic program settings for hc8-KNO. All settings will be saved locally for every individual user.

8.1 Settings: General Settings
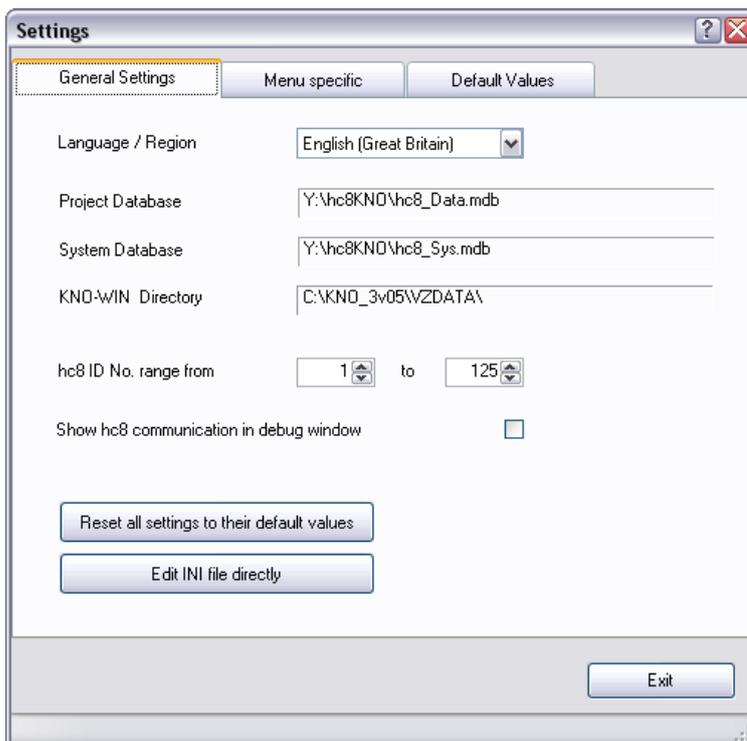
Language / Region
Define here the language of all texts in the program. This setting also defines the used date format.

Project Database
All parameters and values of the surveys are stored in several tables of this database. Choose directories that best suit the organisation on your computer or in your network. Of course you may change the file name as you like, perhaps to distinguish between age groups.
You can set these paths also in the main menu **Files**.

System Database

This database is used to store the global, project independent data. The file should be stored centrally and used by all hc8-KNO users together. In the current software version, this database stores the foil definitions.

KNO-WIN Directory

Normally the data has to be exported from hc8-KNO to KNO-WIN. Define here the directory of your KNO-WIN database. This directory will be suggested in the export menu.

hc8 Number Range

Search for device and programming will be only done for devices in the number range given here. Limit the range to the ID numbers of the hc8 you own.

Show hc8 communication in debug window

In case of communication error, this option can be activated for better analysis. When activated, the complete communication between the PC and the devices can be watched in a separate window.

[Reset all settings to their default values]

This function will delete the INI file with all your personal settings. The data of all projects will remain untouched. Afterwards the program will start with its default settings. Probably you have to redefine the path and file name settings to your existing databases.

[Edit INI file directly]

Editing the INI file directly should only be done by experts. Invalid values or even wrong spelling may cause a program crash.

8.2 Settings: Menu specific
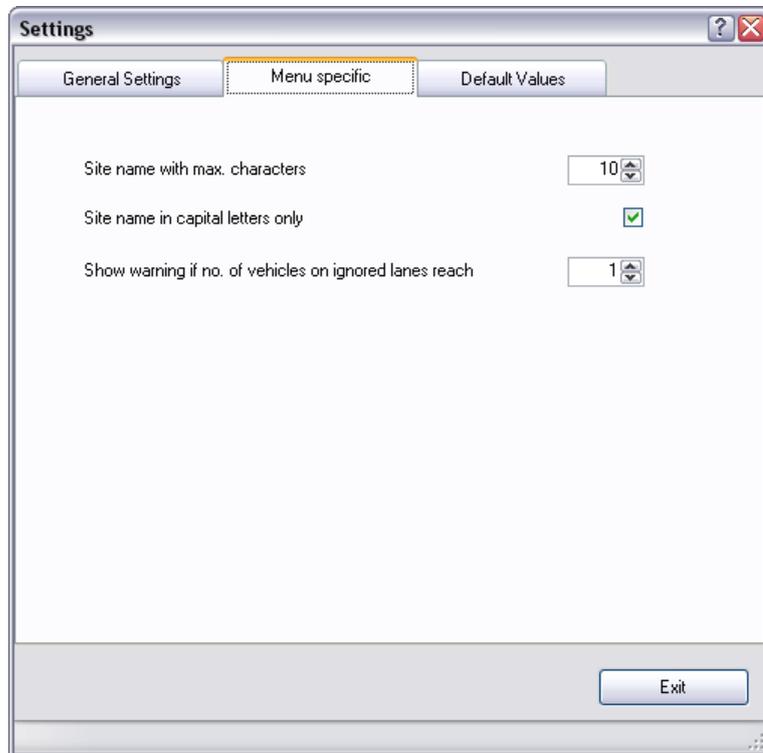
This menu is used only for specific menu items. All settings will be saved locally for every individual user.

Site name with max. characters
The maximum length of a site name is defined here. To stay compatible with KNO-WIN you should limit them to 10.

Site name in capital letters only
Activating this option forces all characters entered for the site name to be changed to capital letters.

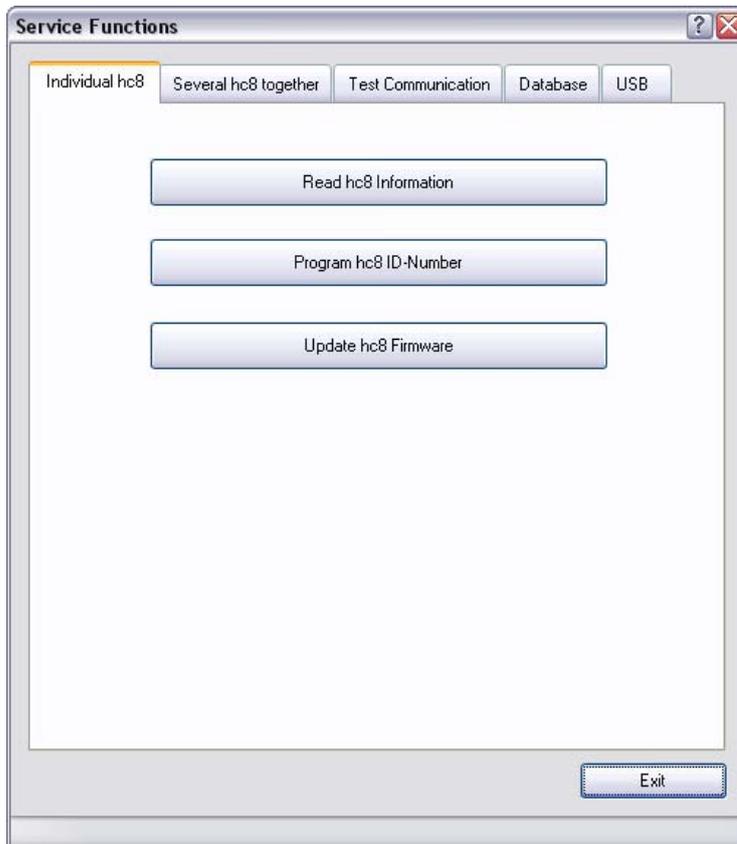**Show warning if no. of vehicles on ignored lanes reach**
The lane number 00 prevents that the data of this lane is being exported (ignored lane). To prevent that this happens by mistake to a lane with a big number of counted vehicles, the hc8-KNO gives a warning. This warning will be given when an ignored lane contains the number of vehicles defined here.

8.3   Settings: Default Values

For each new survey you have to define block start time, duration, interval etc. If you carry out most of your surveys with the same timing, you should enter this schedule here. Then, by entering the data for a new project, these values will be suggested as defaults.

Survey starts in days
Enter here the no of days you normally program the devices before the survey starts. hc8-KNO calculates the start date of the first block by this value.

Activate
Up to 4 blocks for one day can be defined. Only the active rows will be used as proposals. Don't care about the sequence of the rows, the program will use them in the order of time.

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9 Service-Functions

9.1 Service Functions: Individual hc8

This tab contains functions intended for the separate configuration of an individual hc8 device. Prior to configuration, please remove all other devices within reach of the IrDA-interfaces.

[Read hc8 Information]
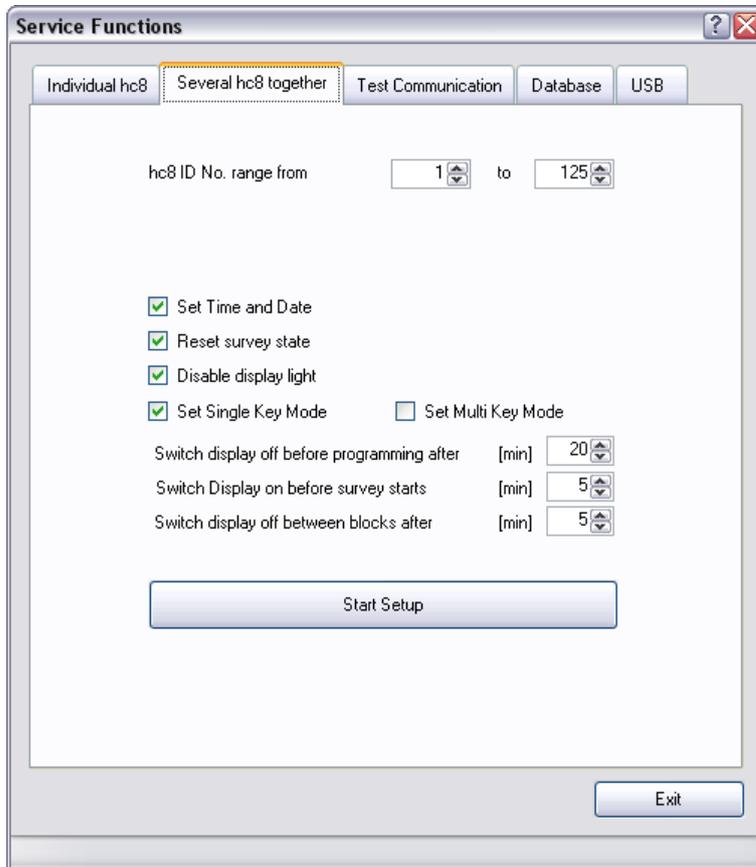Use this function to read and display all state information of the hc8 device.

[Program hc8 ID Number]
Use this function to assign a new device ID to an individual hc8 device.

[Update hc8 Firmware]
Use this function to install updates of the device software, when they are available.

9.2   Service-Functions: Several hc8 together

This tab contains functions for the configuration of several hc8 devices in one go.

hc8 ID No. range
Only devices with an ID No. in this No. range will be configured. You may leave the other hc8 in the docking station.

Reset survey state
The hc8 records internally its data status (survey programmed, data available, data retrieved). If this option is active, the status will be reset to "data retrieved".

Disable display light
If this option is activated, the user cannot switch on the display backlight. This behaviour can also be defined in the **Setup hc8** menu.

Key Mode

The keyboard can be configured in two different modes of operation:
In **[Single Key Mode]** a keypress will be detected only when no other key is pressed at the same time. If the finger hits a key not exactly, only the first key will be recognized, the second key - touched by mistake - will be ignored.

For fast two-handed entry this behaviour is a disadvantage, because always the first key must be released before the next key can be pushed. In the **[Multi Key Mode]** the second key will be recognized, even when the first key is still pressed.

Display on / off

The hc8 has an active state with the display switched on and an idle state with very low power consumption. Of course during a survey, the hc8 is always in the active state. But even when the hc8 is idle, it can be switched to active by a keypush. With the following settings you can define when the hc8 should change into this state automatically:

[Switch display off before programming] defines the time the display stays on after a keypush. For easy programming with the dongle it is better to define a longer period.

To inform the user that the survey / block will start, the hc8 switches to active a few minutes before. With the value **[Switch Display on before survey starts]** you can define this period.

If a hc8 is already programmed for a survey, but the survey / block hasn't started yet, then the hc8 is idle. Pushing a key in this state switches the display on. **[Switch display off between blocks after]** defines the period after which the display switches off again.

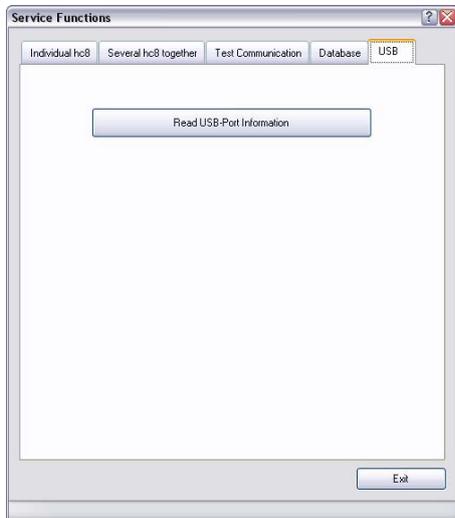## 9.3 Service-Functions: Test Communication
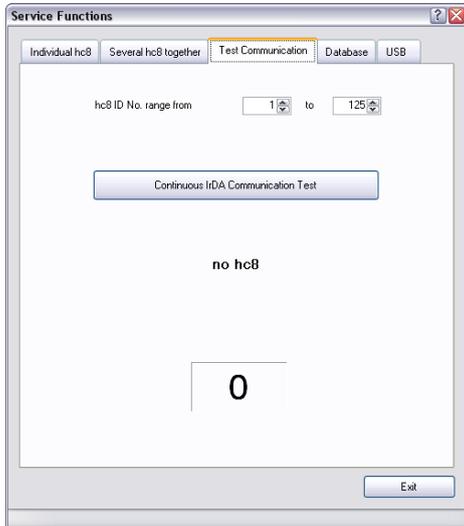
Use this function to test the communication between several hc8 devices and the PC.

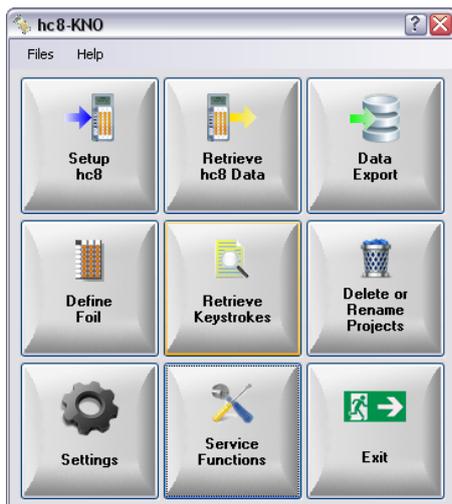## 9.4 Service-Functions: Database
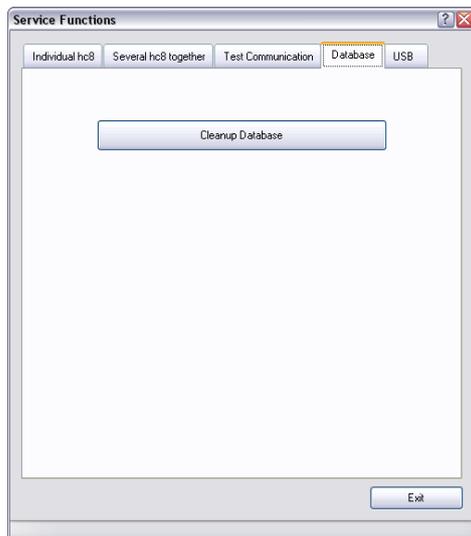
Use this function to check the database and clean it up, if necessary.

9.5 Service-Functions: USB

Use this function to read and display the version number of the connected IrDA-Dongle or Docking Station.

9.6 Exit

Leave the program with **[Exit]**