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Getting Started
Bluetooth Communication
# ISO Handheld Reader ARE H5 and ARE H9

1 Connection establishment

Possible contacts of the ARE H5 and ARE H9 are desktop or laptop PCs, smartphones or PDAs. They may be equipped with integrated ore extended with external Bluetooth modules.

The Bluetooth interface of the potential communication partner has to be ready for use. The hardware and its appropriate driver have to be installed. Follow therefore the installation instructions of the manufacturer.
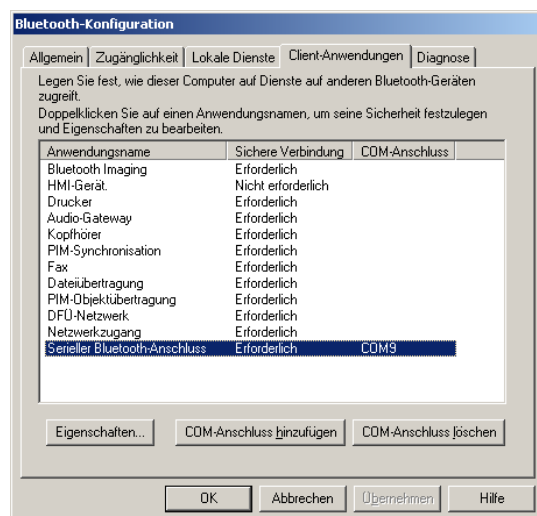
To communicate with the reader the Bluetooth service Serial Port Profile (SPP) is used. On the part of the Bluetooth partner a COM port is available like on cable based connection. The new port can be opened and configured by a terminal application like using a RS232 interface.

On the part of the Bluetooth partner connection establishment to the ARE H5 / H9 is done by using the user interface of the driver. Depending on what module and driver is used, they differ a lot. Some only have limited functions or possibilities to configurate. The general approach stays the same.

In the following example there can be configured a COM port for each master- and slave-communication:
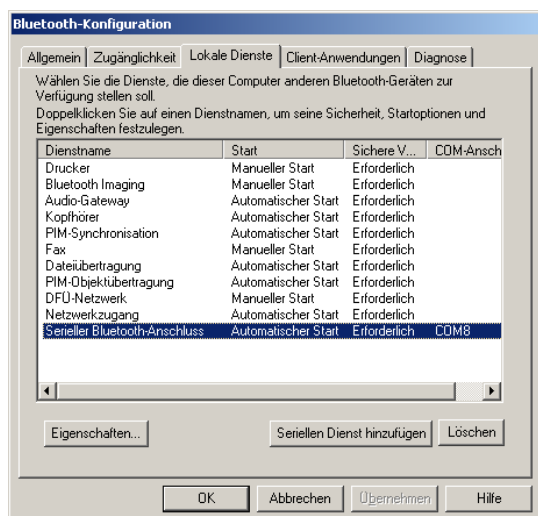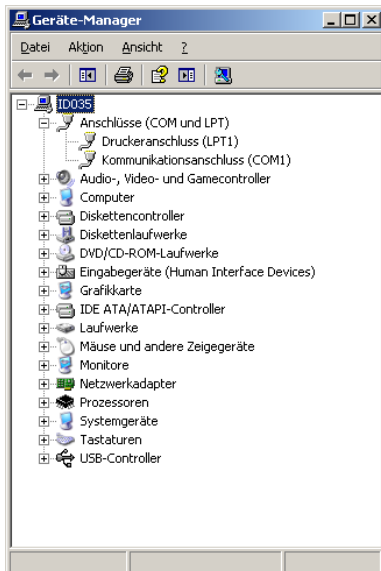

COM 8 for Bluetooth partner = slave   COM 9 for Bluetooth partner = maser
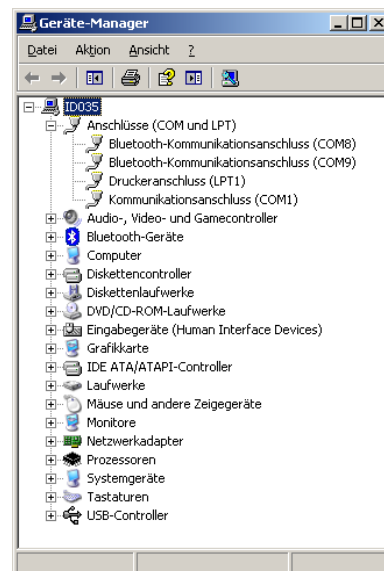
According to this, the additional COM ports appear in the device manager:
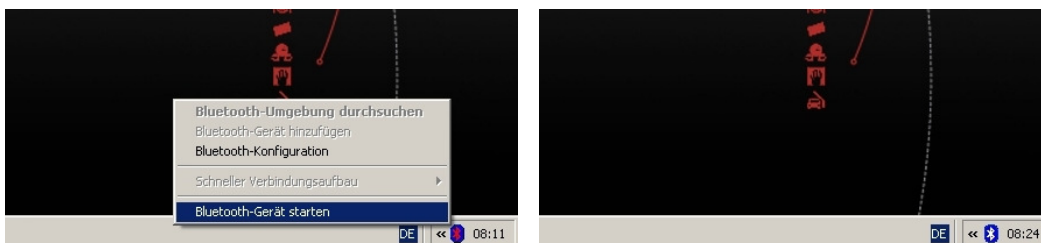

Before installation,   after installation of the Bluetooth driver.

If the Bluetooth driver and hardware is installed, Bluetooth has to be activated like in the following example:


This driver changes the color of its Bluetooth icon from red (inactive) to white (active).

If the ARE H5 / H9 is used as Bluetooth master the reader is establishing connection. The reader has to be in "Operating Mode" "Data>Bluetooth". "Bluetooth Role" has to be set to "Master". At first search all Bluetooth modules within reach of the reader. This can be done with the menu point "Bluetooth Partner" of the reader (switch to "scanning" with the right arrow button and confirm with the main button). If the desired Bluetooth partner is selected in the ARE H5 / H9 (scroll with the right or left arrow buttons to the desired Bluetooth partner and select it with the main button) they begin pairing like in the following example:
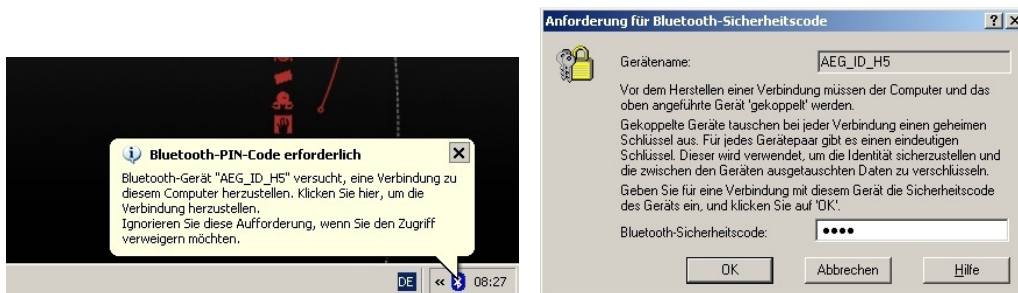
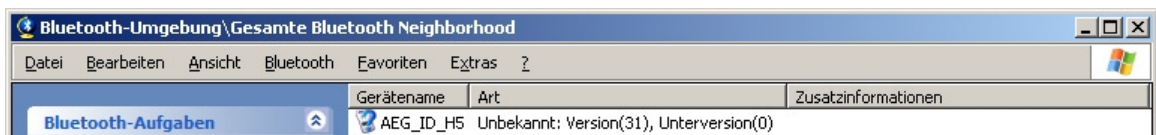The Bluetooth partner hast to confirm the ARE H5 / H9 code number 0000 (4xZero).
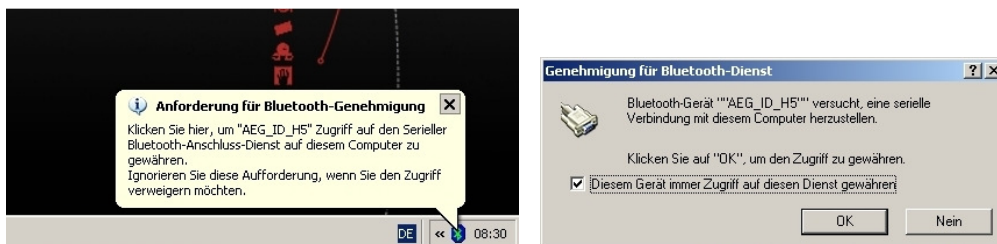

The establishment of the connection has to be confirmed too. If the Bluetooth partner is connected to the reader this driver colors its icon green.

If the devices are already paired, this driver advises with the following message of a further connection establishment:

If the ARE H5 is used as Bluetooth slave the Bluetooth partner is establishing connection. The reader has to be in "Operating Mode" "Data>Bluetooth". "Bluetooth Role" has to be set to "Slave". At first search with the driver of the Bluetooth partner for the ARE H5 and ARE H9.
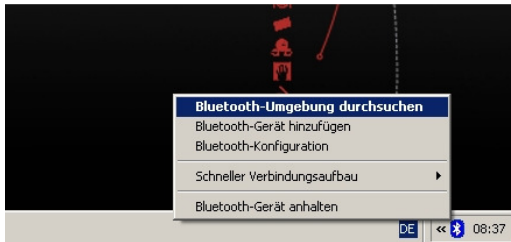
Now the Bluetooth partner has to be paired with the reader (mark device and select „Paarweise Verbindung herstellen").
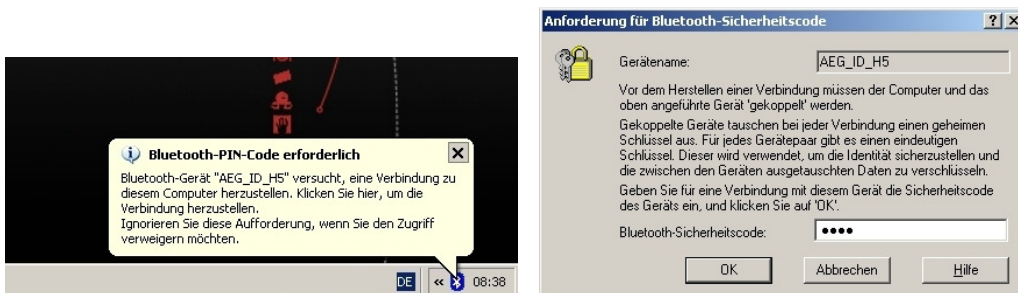
The code number 0000 (4xZero) of the ARE H5 / H9 has to be confirmed.
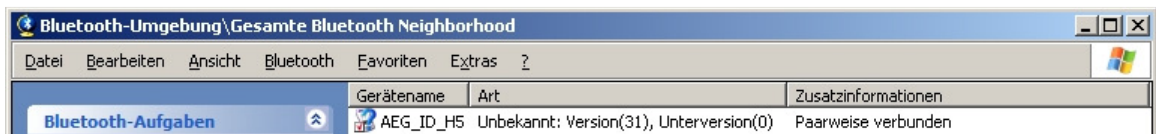
If the handover of the code number was successful, the ARE H5 / H9 is listed as paired in the Bluetooth device list (in this case: "Paarweise verbunden").
Connection establishment is now done automatically if the assigned COM port is opened or can be done manually in the Bluetooth neighborhood (mark device and select "Verbinden Bluetooth Serial Port").
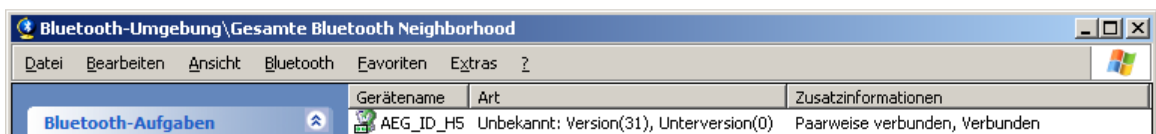
If the reader is connected to the Bluetooth partner this driver colors its icon green.

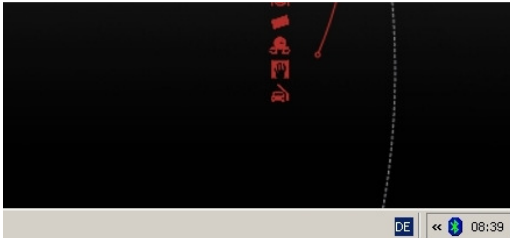
Now the ARE H5 / H9 can send transponder data to the PC. It can be received on the assigned COM port (in this case COM8 if the ARE H5 is master and on COM9 if the reader is slave). For this purpose our "Reader Terminal" can be used on the PC. You find this program on the ARE H5 or ARE H9 CD. It supports the telegram format and the handshake (for a more secure data transfer) between the ARE H5 / H9 and its Bluetooth partner. It also can convert received transponder data in keyboard simulation if you don't want to implement the interface and the communication protocol to your PC application. It also supports access to the reader database and reader configuration.
For PDAs with Windows Mobile operation system you have got a related application and its sources available. The terminal program "H5_B" supports handshake communication and keyboard simulation.

The ARE H5 switches off, if it is not used for more than the configured timeout. If the reader is the Bluetooth master, it closes connection before switching off. If the Bluetooth partner is master, it has to close connection. As an announcement the ARE H5 / H9 sends a DISCONNECT command, five seconds before switching off. In this time the Bluetooth partner can close connection.

If connection is closed this driver colors its icon white again.
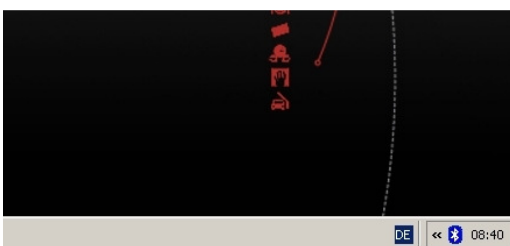
The pairing remains. It is not necessary to pair again on next connection establishment.
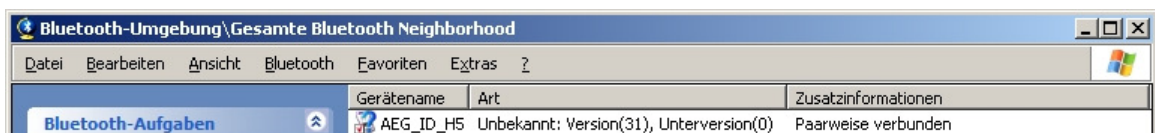
2 Communication

Adjustment of the COM port:

Transfer rate:	19200 Baud
Data bits:	8
Parity:	None
Stop bits:	1
Flow control:	None

Telegram format for transponder data transmission:

ARE H5 parameter „Bluetooth Handshake" off:

ARE H5 / H9		PC
<STX><Transponder data><ETX>	→	

ARE H5 parameter „Bluetooth Handshake" on:

ARE H5 / H9		PC
<STX><ETX>	→	
	←	<STX><ACK><ETX>
<STX><Transponder data><ETX>	→	
	←	<STX><ACK><ETX>

Telegram 5 seconds before the ARE H5 is switching off (reader is Bluetooth slave), to give the Bluetooth partner (master) the chance to close connection:

ARE H5 menu item „Bluetooth Role" „Slave":

ARE H5 / H9		PC
<STX>DISCONNECT<ETX>	→	

Legend:

<STX>	Start of text	0x02
<ETX>	End of text	0x03
<ACK>	Acknowledge	0x06

<Transponder data> examples

TRO 00067D5EC1	Trovan transponder
	ARE H5 Parameter „Type" on
968 000004781435	ARE H5/H9 Parameter „Format" „ISO Animal"
19.03.08 10:13:20 00067D5EC1	ARE H5 Parameter „Time" on

3 Notification of changes

Date	Description of Changes	Version	Author
	First edition	01	MK
28.03.08	Additional description of the driver installation	02	MK
29.10.10	Universal (driver independent) description of connection establishment, English translation	03	MK
09.08.16	ARE H9	04	MM

4 Contacts

To improve our products, as well as its documentation is our permanent effort.
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